Pragmatic Environmentalist of New York Summary Update August 7, 2023 to August 20, 2023

This is the latest summary update of my recent posts at Pragmatic Environmentalist of New York. 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 posts with minimal technical jargon. If you do not want to be on this mailing, list then let me know. Previous updates and a pdf copy of the following information are also available.

Climate Act Costs

The most important posts the past two weeks focused on the costs of the Climate Act. The costs so far are high and this is just start. I published two posts on recent Public Service Commission actions.

Climate Act Ratepayer Costs Will be Enormous

I received some feedback to my All Otsego commentary Zero Emissions Transition Realistic that noted that the Public Service Commission's first annual informational report on the implementation of the Climate Act included the first admission of ratepayer costs. In my commentary I mentioned that more costs were coming but did not estimate specific ratepayer impacts. In this analysis I found that for the worst- case Climate Act related costs monthly bills for utility in the state will double.

In the PSC informational report, it is reported that authorized Climate Act funding to date was $43.8 billion and that Climate Act costs that received cost recovery in the 2022 residential bills $1.2 billion. The worst-case rate case cost recovery would be the ratio between the two or 37.2 times higher. However, this will not give an exact utility-specific estimate for several reasons:

- Climate Act costs per utility depend on the specific projects that each company must undertake (I think the primary driver is transmission and distribution service upgrades) so the money authorizations per utility for 2022 and the future will not necessarily be the same,
- There is a timing issue too inasmuch as the costs will not be allocated all at once, and
- There are two bill components (supply and delivery) that are affected differently by the PSC process.

In order to give a rough idea, I used a lower ratio to try to account for the differences. The following table gives a conservative estimate of future costs by using a ratio of 30. I multiplied the ratio of 30 by the 2022 utility-specific monthly Climate Act related costs to estimate the future Climate Act costs. The future total monthly bill equals the 2022 bill minus the 2022 Climate Act related costs plus the future authorized funding Climate Act cost estimated as 30 times the 2022 costs.

Combine Informational Report Tables 4, 7, and 8 to Estimate Potential Future Ratepayer Costs for Authorized Funding

Informational Report Table 4: 2022 Electric Climate Act Recoveries in thousands of dollars								
Program	**Central Hudson**	**Con Edison**	**NYSEG**	**NMPC**	**O&R**	**RG&E**	**LIPA**	**Total**
Total	$61,817	$425,577	$124,068	$333,825	$36,754	$59,500	$134,248	$1,175,788

Informational Report Table 7: 2022 Typical Monthly Electric Bills with Climate Act related costs disaggregated							
Residential - 600 kWh	**Central Hudson**	**Con Edison**	**NYSEG**	**NMPC**	**O&R**	**RG&E**	**LIPA**
Total Bill	$154.20	$181.79	$93.73	$95.91	$141.65	$98.06	$168.65
Climate Act	$9.34	$7.91	$7.15	$9.38	$8.71	$7.54	$6.27
Percent	6.10%	4.40%	7.60%	9.80%	6.10%	7.70%	3.70%

Informational Report Table 8:Authorized Funding to Date	$43,756,000
Ratio of Authorized Climate Act Funding to Climate Act Costs Recovered in Rates	37.21419167
Conservative Rounded Ratio of Authorized Climate Act Funding to Climate Act Costs Recovered in Rates	30

Future Typical Monthly Electric Bills with Climate Act related authorized costs disaggregated							
Residential - 600 kWh	**Central Hudson**	**Con Edison**	**NYSEG**	**NMPC**	**O&R**	**RG&E**	**LIPA**
Total Bill	$425.06	$411.18	$301.08	$367.93	$394.24	$316.72	$350.48
Climate Act	$280.20	$237.30	$214.50	$281.40	$261.30	$226.20	$188.10

Using the conservative ratio of 30 and assuming a similar distribution of costs per utility, I estimate that the Upstate monthly ratepayer costs associated with the Climate Act will total at least $214.50 for NYSE&G consumers, $226.50 for RG&E customers, and $281.40 for NMPC customers. The Climate Act related costs for every utility in the state will be greater than the total current monthly bill in the worst case. Given that this only addresses the delivery component of the bill and the New York Cap-and-Invest program intends to add costs to the supply component that are not included here, I am comfortable saying costs will double.

More on the Enormous Ratepayer Costs of the Climate Act

At this time New York State Electric & Gas and Rochester Electric & Gas are nearing completion of their latest rate case requests. One of the last components of the process is an evidentiary hearing where parties to the proceeding consider the reasonableness of the Public Service Commission and utility joint proposal (JP) for the rate case and develop the record to determine whether the JP is in the "public interest." I looked at the comments submitted following the meeting with an eye towards seeing if Climate Act costs impacted the rates and found confirmation of my estimated impacts.

The post makes two points, First, the rate increase is extraordinary. One of the parties to the case, Multiple Intervenors, argued that the delivery rate impacts are magnitudes higher than the impacts that the Commission previously found to be unacceptably high and included the following summary table of impacts. The cumulative percentage total reflects the fact that the first rate-year is in effect for all three years, the second rate-year is in effect for two years, and the final rate-year is in effect for one year. This calculation projects that NYSEG electric delivery rates will be double the current rate in three years.

Business Unit	Levelized Net Base Delivery Increases[2]	Cumulative Total (in Dollars)[3]	Cumulative Total (in Percentages)[4]
NYSEG Electric	17.1%	$933.814 million	102.6%
NYSEG Gas	5.6%	$72.92 million	33.6%
RG&E Electric	11.0%	$331.34 million	66.0%
RG&E Gas	10.2%	$72.92 million	61.2%

The second point is that even though I could not determine how much Climate Act spending contributed to these rate increases I can say that more than half and arguably two thirds of the capital expenditure budget was related to the Climate Act. Most of these costs are probably due to transmission upgrades necessary to get solar and wind project energy to where it is needed. The Climate Act portion of the capital expense in rate year 4/23 to 3/24 is $603 million of $1,085 million (56%) total. If the costs for advanced metering infrastructure (smart meters) are included as Climate Act costs, which I believe is appropriate, the rate year capital costs are $713 million or 66% of the total.

Capital Expenditures Estimate

Plan Highlights	Rate Year 4/23-3/24 ($ Millions)	(%)	Five Years 2022-2026 ($ Millions)	(%)
Climate Act	$551	51%	$3,036	55%
Bulk Energy Ssystem	$131	12%	$466	8%
Advanced Metering Infrastructure	$110	10%	$408	7%
TLD Replacements	$37	3%	$261	5%
Leak Prone Main	$50	5%	$253	5%
Make Ready	$45	4%	$242	4%
Distribution Line	$48	4%	$227	4%
Resiliency	$48	4%	$208	4%
Grid Automation	$37	3%	$197	4%
Distribution Line Deficinces	$21	2%	$146	3%
Ithaca Electrification	$7	1%	$55	1%
Total	$1,085		$5,499	

The bottom line is that Climate Act costs are a major factor in the extraordinarily large rate case request. None of the parties to the case stepped up to say that this is an issue. These rate increases are inevitable for every future rate case for every New York utility. I pointed that there is an ignored safety valve affordability provision in Public Service Law §66-p (4) that should be addressed. I believe that provision would find that the rate case impacts are unacceptable so the Public Service Commission should temporarily suspend or modify the obligations of the Climate Act until we have a better understanding of the costs to implement the Act.

Zero-Emissions Proceeding

The Public Service Commission (PSC) recently initiated an "Order initiating a process regarding the zero-emissions target" that will "identify innovative technologies to ensure reliability of a zero-emissions electric grid". I published a couple of articles about it.

New York Zero-Emissions Resource Proceeding

During the Climate Act implementation, it was recognized early that "as renewable resources and storage facilities are added to the State's energy supply, additional clean-energy resources capable of responding to fluctuating conditions might be needed to maintain the reliability of the electric grid". Three and half years later, the State is finally getting around to address this critical requirement. This post summarizes the proceeding, gives an overview of the questions raised by the PSC, and describes the comments I submitted.

The press release describes the process to "identify innovative technologies to ensure reliability of a zero-emissions electric grid":

> Today's action recognizes that as renewable resources and storage facilities are added to the State's energy supply, additional clean-energy resources capable of responding to fluctuating conditions might be needed to maintain the reliability of the electric grid. The Commission's work to meet the Climate Act targets must include exploration of technologies that can support reliability once fossil generation has been removed from the system. The order initiates a process to identify technologies that can close the anticipated gap between the capabilities of existing renewable energy technologies and future system reliability needs. Within the order, the Commission asks stakeholders a series of important questions, including how to define 'zero-emissions' for purposes of the zero emissions by 2040 target, and whether that definition should include cutting edge technologies such as advanced nuclear, long duration energy storage, green hydrogen, and demand response. The order further elicits feedback from stakeholders on how to best design a zero-emissions by 2040 program, consistent with the Climate Act's requirement of delivering substantial benefits to disadvantaged communities and New York State's electric grid reliability rules, while also leveraging other state and federal efforts to research, develop, and deploy zero-emission resources.

I listed the questions posed in the order with my thoughts. My comments only addressed one question. In response to the question whether further studies were needed I explained that in order to determine whether any of the innovative technologies to "ensure reliability of a zero-emissions electric grid" are adequate it is necessary to determine how much energy they can provide relative to the amount needed in the worst case. The future New York electric grid is supposed to rely heavily on wind and solar resources whose availability is dictated by the weather. The "zero emissions" technology is supposed to provide reliable energy when wind and solar resources are unavailable. It is obvious that we need to know the magnitude of the backup energy needed during worst-case conditions but I have yet to see what I consider to be an adequate analysis. My comments explained the problems and made recommendations for what should be done.

New York Zero Emissions Proceeding Richard Ellenbogen Comments

This post summarizes the comments by Richard Ellenbogen that I think describe the overarching problems of the Climate Act. I highly recommend reading his comments. Ellenbogen offers alternatives that would be cheaper, will reduce GHG emissions in the short term, and are technologies that will actually "work much more rapidly based upon the physics of how utility systems actually operate." Alas he argues that going to zero is not appropriate. The ideologues on the Climate Action Council who shaped the Scoping Plan demand perfection but do not seem to comprehend that the real world makes that impossible.

I don't think the ideologues currently pushing the net-zero agenda understand the risk of their plans. The proposed Scoping Plan cannot work as written and will cost enormous amounts of money. There is no indication that proponents understand the risks to reliable energy inherent in the Scoping Plan and that poor energy policy will cause greater health and economic damage than climate change. When these problems get to the point that they cannot be denied, I believe it is likely that public backlash will be so strong that there will be no appetite for any of the idealistic dogma in the Scoping Plan energy policy. Moreover, even the alternatives proposed by Ellenbogen will be off the table for future energy policy.

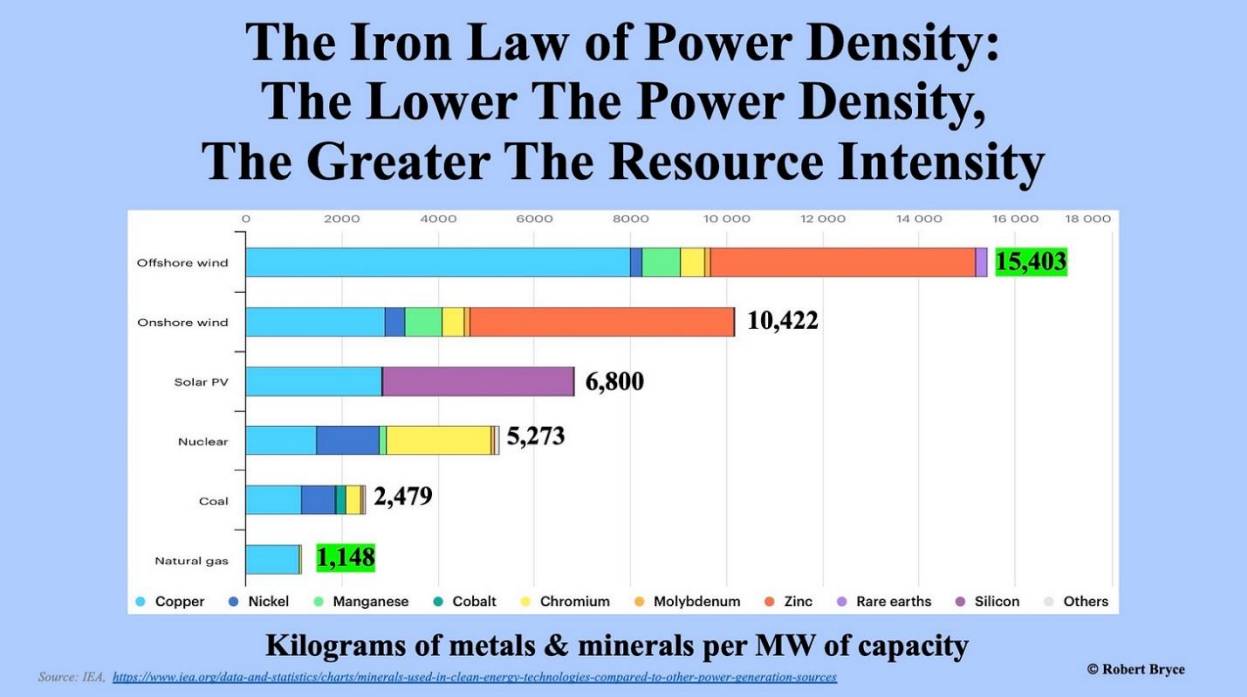
Pragmatic Environmentalist Principle

New Pragmatic Environmentalist Principle – Bryce Iron Law of Power Density

When I started this blog, I included a page of principles that I think represent pragmatic environmentalism. My overarching belief is that it is necessary to balance environmental impacts and public policy. However, I did list specific principles that characterize what is needed to reflect this balance and to highlight specific rules that characterize environmental and energy related issues. This post describes Robert Bryce's Iron Law of Power Density that I am going to include as another pragmatic environmental principle.

The Iron Law of Power Density states that the lower the power density , the greater the resource intensity. Bryce explains that there are a couple of facets to the Law. The first is the effect on resources needed and the second is the area needed to produce power. He describes the effect on resource intensity:

> The shape and size of our energy systems are not being determined by political beliefs about climate change. Instead, those systems are ruled by the Iron Law of Power Density which says: the lower the power density, the greater the resource intensity. This can easily be seen in the graphic below. It includes a screen grab from a 2021 International Energy Agency report on the mineral intensity of various methods of electricity generation. The mineral intensity of offshore wind, including huge amounts of copper and zinc, is shocking: roughly 15,400 kilograms per megawatt of generation capacity. That is roughly 13 times more than the amount needed for natural gas-fired generation (1,148 kg) and six times more than what's needed for a coal plant (2,479 kg).



He summarizes the effect of the area needed to produce power.

> The only way to substantially increase the production of wind and solar energy is by seizing more and more land, (or ocean) so they can be covered with more and more steel, concrete, copper, and silicon. As I reported in these pages on August 4, in "Massive Riots, Renewable Resentments," the backlash against the encroachment of large wind and solar projects is real, it's global, and it's growing. As can be seen in the Renewable Rejection Database, the total number of rejections and restrictions on wind and solar in the U.S. now totals 575.

Guest Post

Guest Post: Washington State Cap and Invest Update

Last month I published several articles about the experiences of Washington State as they implement their cap-and-invest program because I think it is likely that New York's experiences will be similar. In one I elevated a comment from Washington resident Paul Fundingsland into a post. He recently did "a bit of research with some comments, thoughts and a more or less rough idea of what seems to be going on in the Washington State cap-and-invest scheme" that I converted into a guest post.

His post summarized the GHG emissions by sector in Washington. The state has so much hydro that fossil fueled resources are already very small. According to the Washington State Department of Ecology, the 2019 breakdown of Washington State greenhouse gas emissions is: Residential, Commercial, Industrial heating 25%, Transportation 39%, Electricity 21%, Other 14%. Electrical power is 64.6% hydro supplied by eight hydro plants owned and operated by the Federal Government. Natural gas is currently at 14.4%, nuclear at 7.8%, wind 8.7%, coal at 2.9%, biomass at 1.3% and a small contribution of solar.

He astutely picked up on the ramifications:

> So, unlike the lower emissions resulting from a coal to natural gas switch as fortuitously happened during the initial years of the east coast RGGI scheme, there is not a lot of low hanging CO2 emissions fruit to begin with to harvest or claim as a success from the electricity sector in Washington. And with the free emissions allowances the emissions reduction pool from this sector is even further diluted.

The lack of low hanging fruit means that the Washington cap-and-invest program is going to focus on a limited number of sectors that require significant cuts at the start of the program. This will necessarily drive the costs up.

Fundingsland concludes:

> At the end of the day, the goal of any meaningful, measurable reduction of CO2 emissions or theoretical effective pathway to stop "climate change" looks to become a glazed over afterthought in this quagmire of a Washington State bureaucratic money-making machine.
>
> With this scheme, Washington State Government now joins the lucrative profit side of the climate industrial complex at the expense of its constituents while giving a completely different connotation to the term "Net Zero".

Overview Posts

I posted a couple of articles on topics that I did not have time to address on my own. The first addressed extreme weather attributed to climate change and the second addressed multiple topics.

July Climate Alarmism

It seems that every day we are faced with another claim that we are facing an existential threat from climate change and the proof is right in front of us. So simple, so obvious and so wrong. I summarized articles that rebut the fear mongering stories about July weather events.

The story that July was the hottest month in 120,000 years is the best example of the media glomming on to a story that does not stand up to scrutiny. A post at Watts Up With That cites two prominent atmospheric scientists:

> Professor Mass said the climate was "radically warmer" around 1000 years ago during what's known as the Medieval Warm Period, when agriculture thrived in parts of now ice-covered Greenland. "If you really go back far enough there were swamps near the North Pole, and the other thing to keep in mind is that we're coming out of a cold period, a Little Ice Age from roughly 1600 to 1850.
>
> Professor Christy said an explosion of the number of weather stations in the US and around the world had made historical comparisons difficult because some stations only went back a few years; meanwhile, creeping urbanization had subjected existing weather stations to additional heat. "In Houston, for example, in the centre it is now between 6 and 9 degrees Fahrenheit warmer than the surrounding countryside," he explained in an interview with The Australian.

> Professor Christy, conceding a slight warming trend over the last 45 years, said July could be the warmest month on record based on global temperatures measured by satellites – "just edging out 1998" – but such measures only went back to 1979.

If you want short rebuttal summaries to these and other false climate change stories for July check out this fact check report. It covers the following stories: monthly average temperature is the hottest, the UN proclamation that we are in an era of global boiling, the hottest day in 125,000 years, Atlantic current to collapse by 2025, record for hot days in Phoenix, hottest day in Death Valley, emissions causing hot oceans, hottest seawater ever, and more.

Articles of Note Relevant to the Climate Act

I have a "to-do" list of posts and analyses that I want to do that does not seem to be getting shorter. Rather than adding to the list with articles about specific posts that I have read that I think are relevant, this post describes articles that caught my attention.

There were several articles about climate and weather that caught my attention related to the post on July weather attribution to climate change. Roger Pielke, Jr described the difficulty trying to attribute a particular weather event to climate change. There have been notable weather events all summer and this post goes into a deep dive explaining what is going on. The big recent issue was the Lahaina, Maui fire disaster that naturally was attributed to climate change. Cliff Mass did an excellent job explaining what really happened: a high amplitude atmospheric wave forced by strong winds interacting with the mountains of northwest Maui. He explains that:

> It did not matter whether the grass or light vegetation were wet or dry the days or weeks before: this extraordinary atmospheric animal would ensure they were dry enough to burn. Prior dry conditions during the weeks before were immaterial.

There have been rumblings that President Biden is going to declare a "climate emergency". Alex Epstein explains why that would be a terrible idea.

I found a link to a discussion Will California's push on electric vehicles reduce inequality — or deepen it? in California about electric vehicles and the net-zero transition. The panel discussed reasons why it is difficult to make an equitable transition for the transportation sector.

There was a lot of discussion about a Montana Court decision when a judge ruled as unconstitutional the state's failure to consider climate change when approving fossil fuel projects. I found links to a couple of articles that described problems associated with the decision.

The Montana Attorney General's office retained Dr. Judith Curry to prepare expert evidence but ended up not using it. She explained the inside story, her written expert report, and why she was not asked to testify at the trial. I found it fascinating and there is plenty of ammunition included to debunk many of the arguments used by proponents of the net-zero transition. This will be useful when the inevitable lawsuit is filed in New York.