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To Whom It May Concern:

Below is a fascinating and revealing article behind a paywall. It discusses just a few of the complications that will result from NYS's [Clean Energy Standard](#) (CES).

Note that these observations are coming from a top [NYISO](#) person, the **state's electric grid operator**. In other words this is someone on the electrical energy front lines who is struggling to deal with NY politicians' energy policies — which (in NY) are divorced from Science or economics, and completely oblivious of the technical consequences.

As such, hearing these unusually frank observations from an insider, should be an eye-opener. To help unpack some of his technical jargon and politically tailored comments, I interjected some notes (in green). [Note: the paragraph numbers are also mine, to make it easier to reference certain sections of this lengthy interview.]

The obvious question: **why is NYS going down this rat-hole?** The simple answer is that NY energy policies are written by lobbyists (for the benefit of their clients), and few of our state politicians have chosen to fight the system.

Let me know any questions.

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## **NY State Grid Operator Eyes Strategies To Deal With Increasing Renewables**

— Marie J. French | *Politico* | May 3, 2018

(1) ALBANY — Officials at the state's grid operator are planning to make market changes to prepare for a future with more intermittent renewable generation and behind-the-meter resources.

—> “Intermittent renewable generation” = “unreliable, unpredictable, etc.”

(2) More incentives for flexible resources such as storage or fast-ramping fossil fuel plants that can quickly respond to demand, a price on carbon and fine-tuning the capacity market are some of the options the New York Independent System Operator (NYISO) outlines in its [2018 Power Trends Report](#). Running the grid is getting increasingly complex and will only become more so amid Gov. Andrew Cuomo's push to get 50 percent of the state's electricity from renewables by 2030 ([CES](#)), and the proliferation of distributed resources, according to the report.

—> “running the grid is getting increasingly complex” => more unreliable and much more expensive.

—> “price on carbon” => carbon tax (they avoid using the word “tax”).

(3) “As we add more solar or more wind, the predictability of supply is going to be significantly more complicated. The wind can change pretty radically, the sun does change pretty radically, but predictably, and we need the generation fleet to be able to respond more quickly to varying degrees of ramp or change of time,” NYISO Executive Vice President Rich Dewey said.

—> “The predictability of supply is going to be significantly more complicated” => wind and solar are inherently unpredictable (i.e. relentlessly uncontrollable), so the cost of covering for them will become VERY large.

(4) “Not a high enough percentage of the fleet has fast-ramping capability so we need to develop market signals to incentivize that kind of behavior.”

—> “Not a high enough percentage of the fleet has fast-ramping capability” => wind energy requires 100%, 24/7 **augmentation** of a fast-ramping source, which is almost always Gas (turbine). Wind energy does **NOT** exist on the Grid by itself.

**What exists on the Grid is a Wind+Gas package.** The more wind added to the Grid will require more fossil fuel Gas to be added to the Grid.

(5) The annual Power Trends report is an important tool for the grid operator to educate policymakers, energy industry players and environmental advocates about changes to the grid and future challenges. The report shows that electricity demand is expected to decline over the coming decade, by about 0.14 percent annually. Energy efficiency and increased behind-the-meter solar is expected to account for a large chunk of that decline, as demand would otherwise be increasing. This year's forecasted decline is slower than the 2017 forecast rate through 2027 of 0.23 percent. One factor driving the change is the addition of forecast increases in demand from growth in electric vehicles. In a change from last year's forecast, the peak demand is also expected to decline in the coming years as well by about 0.13 percent annually.

—> “NY electricity demand is expected to decline over the next decade” => What he does not say is that a good portion of this will also be due to the high cost of living in NYS — e.g. its electricity costs, which are among the highest in the nation. The CES and renewable are a large reason for this. These high costs mean that many people are leaving NY for more affordable regions.

(6) “Peak demand is a key metric NYISO uses to determine how much electric generation capacity must be available to ensure the lights stay on during the hottest days of the year when air conditioners across the state are cranked up. The declining peak demand is tied to increases in energy efficiency, solar resources and other behind-the-meter generation that customers install on-site. The growth in those types of resources creates challenges for the grid operator because they're hard to track and are typically intermittent — meaning the NYISO can't control when they'll run, just like large-scale wind and solar generators. Behind-the-meter solar growth has less impact on peak demand because its generating less around 4 p.m. when the highest demand typically arises,” Dewey said.

—> “Intermittent behind-the-meter resources” = “unpredictable residential solar”

(7) “This contributes to the need for fast-ramping generation, likely derived from fossil-fuel generators, in the market.”

—> Again, more wind means guaranteed continued dependence on fossil fuels, specifically Gas (turbine) generation.

(8) “We expect — as solar installations increase and extend throughout the state - for this to be an increasing problem in the operation of the grid,” Dewey said. Last year's report focused on the problem of transmission between upstate (where many of the proposed new renewables are expected to be built) and downstate (where the greatest demand for power is located.) The "Tale of Two Grids" hasn't gone away and NYISO continues to pursue transmission projects to address public policy needs, warning that more transmission infrastructure must be built to prevent market deficiencies.

—> “market deficiencies” => Blackouts.

(9) Dewey also said that the disparity where downstate generation is more heavily reliant on high-emissions resources will be exacerbated by the closure of the Indian Point nuclear plant, which is expected to be replaced with natural gas or dual-fuel resources.

—> Closing any NYS nuclear facility is contrary to lowering CO2. Any “replacement” will result in higher CO2. Additionally upstate NY will bear the brunt of these foolish policies (e.g. closing Indian Point) by being inflicted with more industrial wind facilities...

(10) Beyond transmission needs, additional market changes could also send stronger signals for locating new electricity generation closer to where it is needed and balance out times when the wind isn't blowing or the sun isn't shining, according to the report.

—> “additional market changes” and “stronger signals” => subsidies, or state energy policy changes. The latter would be preferable, but NY energy policies to date have not been sensible, scientific, or economic...

—> Clearly power plants should be located near where they are needed.

(11) A key way NYISO is proposing to do that, through its usual stakeholder process, is to give more incentives for flexible resources that can respond quickly to dispatch signals. That could be done through changes to the NYISO's ancillary services market, which pay resources to be available on short notice. It's anticipated that more of those resources will be needed as more renewables come online. Storage could help provide some of that added flexibility as it matures, but traditional fossil-fuel plants are expected to get more of their revenues from being available to ramp up quickly when called on by the grid operator.

—> “Stakeholder process” => usual collection of NGOs and self-serving entities who are looking for preferential treatment. Consumers are NOT a stakeholder!

—> Once again, more wind means *guaranteed* continued dependence on fossil fuels. When NYISO says it will “give more incentives” it means utilities will charge ratepayers more, and then NYISO pass this ratepayer money to an energy supplier, in an attempt to try to rectify some of the problems caused by the CES.

(12) The NYISO is also considering refining its capacity market, which pays resources to be available for at least four hours at a time. Some emerging resources such as storage might not be able to meet that requirement but still can provide valuable services to the grid. Other generators may be able to exceed that demand but may not be getting the right level of compensation.

—>Regarding the “capacity market” comment, this is a very significant matter. Wind energy does not have true **Capacity Value** (as no one knows how much wind will be available next Tuesday at 3 PM)... Due to this serious deficiency, wind energy should be penalized — but it is not. NYISO should have recommended that, but they probably know that such a reality would be politically problematic. Instead NYISO is recommending the opposite: to give a bonus to dependable electricity sources! (What a distorted reality situation we’ve gotten ourselves in...) One major problem with this proposal is who pays these bonuses? Ratepayers.

—>The problem through this article (and Report) is that no one is addressing the elephant in the room: Wind energy should be paying ALL costs caused by it. For example, in the prior paragraph, the costs for incentivizing a flexible resource (Gas) should be entirely attributed to Wind energy. So far this cost attribution has NOT happened, due to the political power of wind energy proponents — as they do NOT want the real costs of wind energy to be understood or identified.

(13) The grid operator is evaluating the potential of different capacity duration levels as part of integrating distributed energy resources into the statewide electric system. These potential market changes to deal with the growth of renewables, storage and distributed resources are partly driven by New York's push to accelerate these trends, according to the NYISO. Dewey said it's clear that public policy is driving trends in the market, noting proposals for offshore wind to connect to the grid. He also said that the amount of solar capacity looking to come online has doubled since March 2017 and the amount of proposed storage increased from zero to 435 megawatts over that period.

—> “Public policy is driving market trends” => Note that he does **not** say what *should* be driving energy trends: Science, true financial costs, reliability, etc.

(14) Cuomo’s 50 percent renewables goal (and emissions reduction goal of 40 percent from 1990 levels by 2030) will drive more renewables. His REV policy supports a growing amount of distributed energy resources and he's also mandated the state get to 1,500 megawatts of storage by 2030. The state's subsidies for new renewable projects and existing nuclear plants has raised concerns from owners of existing fossil fuel plants and other players. The Independent Power Producers of New York, which represents both renewable and fossil fuel merchant generators in the state, has pushed for a price on carbon in the NYISO market to more clearly value emissions reductions and level the playing field for unsubsidized generators.

—> “...has pushed for a price on carbon” => This is a political idea, completely devoid of Science or economics: i.e. consistent with the rest of NY’s energy policies.

(15) The carbon pricing proposal is wending its way through NYISO's stakeholder process. The Power Trends report notes that such a price signal could complement the state's Clean Energy Standard. "More explicit carbon dioxide emissions pricing might make renewable energy credit procurements under the state's CES initiative more effective by increasing the rewards for clean energy produced at times and locations that reduce emissions the most," the NYISO report states. "This approach could potentially achieve more carbon dioxide emissions abatement from the same resources, which in turn serves as an effective signal to investors in new resources."

—> Again, none of the “stakeholders” involved here are representing the public. Citizens should strenuously object to any “price on carbon” as it is simply a renewable energy lobbyists’ trick to get them more market share, and at a higher price — with the resulting lowering of reliability and raising costs to ratepayers. Further, any science-based analysis of the impact of carbon (i.e. a **comprehensive and objective** analysis of the PROS and CONS) would likely conclude that carbon is a NET positive societal benefit. **THIS PART IS EXTREMELY PROBLEMATIC!**

[For more information as to what is transpiring, see the [NYISO page](#) that shows the meetings and documents submitted to date.]

(16) Additionally, a price on carbon could lead to some older, less efficient fossil fuel plants retiring and being replaced with more efficient fossil fuel resources. The NYISO report raises concerns about the aging fleet of gas and steam-turbine generators, noting that by 2028, more than 8,300 megawatts of capacity for those resources will reach an age at which 95 percent have been deactivated nationally. "We need to both plan from an electrical system planning standpoint as well as a market transition," Dewey said. "We need to plan for the orderly replacement transition of these plants." Ideally, the replacements for these plants should help supply the flexibility to quickly respond to peak demand in the afternoon when solar [and wind] generation drops off, he said. Overall, Dewey said the NYISO is confident it can address the operational complexities presented by changes to the state's resource mix. "The characteristics of storage, distributed energy resources, the granular placement of those assets as well as the indeterminacy of those renewables makes the operation of this very constrained, congested grid, very complicated," he said. "But on balance, we do feel like we've got a good strategy."

—> Renewable “indeterminacy” makes the grid operation “very complicated.” The question is: then WHY are we: **a) disrupting our successful grid, b) undermining our reliable supply of electricity and c) ballooning the costs of electricity to NYS ratepayers???** They have no LEGITIMATE, Science-based answer.

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PS — As far as other implications of the NYS CES, look at this [study](#) (by a PhD expert) which concluded that NYS’ CES:

- 1) would cost the citizens of NYS in excess of **One TRILLION Dollars**, and
- 2) the benefits would be so small, **that they would be immeasurable.**

Between this study and the [NYISO Report](#), what else is needed to be known?