



Critique of HB951

7-20-21 (revision 8-5-21)

1 - Should Solar Lobbyists Dictate NC Energy Policy?

When the Green New Deal (GND) was first introduced by left-wing extremists, it was soundly (and rightly) criticized as being technically, economically and environmentally unscientific and non-sensical (e.g., [here](#), [here](#), [here](#) and [here](#)).

Since Representative Alexandria Ocasio-Cortez (AOC) was one of the GND's main [advocates](#), is that any surprise? Her credentials include zero scientific qualifications, but do show her as having been a bartender. Have we really stooped this low so that America's national energy policy is being directed by such unqualified people?

Not to be outdone in the race to the bottom, some NC House Legislators have passed [HB951](#), which is NC's version of the Green New Deal (and would make AOC proud). What's startling is that the sponsors of the NC GND is a cadre of Republicans!

Republicans *should* be strictly supporting **science-based energy policies**. Science-based energy policies are those that have **proven NET societal benefits**. Such policies are based on three pillars: 1) Technical, 2) Economic and 3) Environmental considerations. None of that is found in the 50± page polemic: [HB951](#).

Instead, we have a bill that is clearly written by lobbyists for the solar industry, lobbyists for Duke Energy, and lobbyists representing other Left-wing organizations. Not surprisingly, HB951 has **zero net** technical, economic, or environmental benefits for NC citizens, NC small businesses, or the military in NC.

Right under our nose, the solar industry has arranged for NC to be their lap dog. Consider that: **a)** NC has given the solar industry well over a [BILLION](#) dollars so far, **b)** NC has zero statewide solar rules and regulations, *and* **c)** the solar industry has no requirement to prove that their product is providing any net benefits! *Sweet!*

Rather than being happy with this utopian arrangement, the solar industry perceives the NC legislature's extreme benevolence as a sign of weakness and incompetence — and with good reason. As a result they are now asking for MORE! That's why they wrote HB951: **a)** to get hundreds of millions of dollars of *additional* handouts, **b)** to *reduce* the trivial (local) solar facility regulations even further, *and* **c)** all the while still not providing one iota of proof that their product is a net societal benefit!

This bill needs to be immediately killed before other NC legislation becomes infected.

2 - Observations on Some HB951 Provisions

For those who masochistically want more gory details about [HB951](#), here are some. There are at least ten key concerns with this disturbing bill:

- 1 - This is a NC version of the Green New Deal. *Why would NC Republicans be sponsoring — or voting for — anything even remotely like the Green New Deal?* NC Democrats have [complained](#) about this bill, but this strategy is from Chapter One of their playbook: *pretend to oppose left-wing ideas advanced by the right, as this will give you leverage to get even more extreme concessions!*
- 2 - The stated objective of HB951 to promote an “All of the Above” energy policy is technically, economically and environmentally unsound [*Part 1, Section 1.(a) (6)*]. Instead, NC legislators should have an “[All of the Sensible](#)” energy policy.
- 3 - The [first version](#) of this bill was about NC providing money to promote [SMRs](#) — a good thing. The [current version](#) completely drops any mention of SMRs, but does have a paragraph [*Part 1, Section 3*] about “Advanced Nuclear.” The lobbyists who wrote this bill do not favor nuclear, so it carefully says money *may* be spent on nuclear, **not will** be spent. This is a subterfuge by weasel word wizards, to fool the unwary. HB951 is loaded with such land-mines. This needs to be rewritten so that a significant commitment to advanced nuclear is guaranteed.
- 4 - It is technically impossible to replace a coal facility with just wind and/or solar. When a coal facility is retired, it is currently being replaced by: **a)** gas (by itself: see [here](#): #2a), **or b)** a wind+gas package, **or c)** a solar+gas package (see [here](#)). There is no practical option (now or in the foreseeable future) of solar (or wind) + batteries (e.g., see [here](#)). Further, when a 1 Gigawatt (GW) coal facility is replaced by Solar + Gas, it requires 1 GW of Solar *plus* 1 GW of Gas. In other words, such a plan requires a complete duplication of our energy sources — which is not only uneconomical but also has significant environmental liabilities. (See Part 3: *NC Solar Summary*.) [*Note: When Texas tried to skip this requirement, they suffered severe blackouts. [Here](#) is the explanation of what recently happened there.*]
- 5 - Regarding the six (6) NC coal facilities proposed to be retired [*in Part 1*]:
 - a) With just one exception [*Section 1.(c) (2)*], [HB951](#) says nothing about coal plants transitioning to gas — which is the [optimum](#) and normal plan of action.
 - b) In only one case are the proper words used to describe the requirements of the coal replacement [*Section 1.(c) (3) a.*]:

“The resource has continuous generating and dispatch capabilities and other operating characteristics that provide system reliability benefits that are equal to or greater than the retiring {coal} plant.”

- c) In half of the cases [*Section 1.(c)*], the coal facility replacement is an “ESS” (Energy Storage System). This is confusing as clearly, an electricity *generating* facility can not be “replaced” by a *storage* system.
- d) This bill *should* show this transition sequence: Coal → Gas → SMRs. That would be a scientific solution, which would also be more economical and environmentally friendly than what is in the latest version of HB951.

- 6 - The marketing meme that “solar and wind energy will save us from Climate Change” is virtue signaling from technically uninformed parties. For example, there is no scientific study that concludes that solar (or industrial wind energy) saves a consequential amount of CO₂, when the entire life-cycle is accurately calculated. Even more problematic, this [Report](#) (which references 50+ studies) concludes that wind energy can make climate change **worse**.
- 7 - The NC siting situation with solar is particularly troublesome, as state legislators have yet to pass meaningful legislation spelling out environmental, setback, etc. requirements that solar facilities need to meet, statewide. (Wind energy, on the other hand, has nominal rules and regulations *via* [H484](#) for eight years.) To date, solar regulations have been left up to a hundred different NC counties to sort out — which is an unreasonable burden. HB951 doesn’t fix any of this, and it should.
- 8 - Unfortunately, HB951 makes things worse. The “expediting” of the NCUC renewable energy approval process [*e.g., Section 1.(f) (3)*] will be to the detriment of citizens, the environment, small businesses, and the military. Proper investigations into human health impacts, community financial impacts, ecosystem impacts, military impacts, etc., take time. For HB951 to accelerate or skip these is not only irresponsible, but also an abdication of legislative obligations.

[HB951](#) is effectively saying to NC counties: just rubber-stamp any solar facility proposed for your community — don’t worry about any environmental or economic impacts. As spelled out [here](#) and in Part 3 of this Report, there is considerable scientific evidence to say that there are major concerns with solar projects that need to be addressed.

Note: An [Amendment](#) to HB951 (introduced after midnight) tried to nominally address this serious deficiency: it proposed to give NC counties more say in the siting of solar projects. **Legislators voted against it!** Apparently, some NC legislators oppose local citizens having a meaningful say about what happens in their community — *even in the case (like here) where there are no statewide regulations to protect them!* Solar lobbyists oppose local citizens having a say about solar regulations, as they are well aware that no fully informed NC community would want a solar project (see Part 3: *North Carolina Solar Summary*).

9 - HB951 appears to introduce a radical new (self-serving) concept in the NCUC renewable energy approval process: “Performance-Based Regulation” [*Part I, Section 1. (a). 8 plus Part II*]. This appears to be a radical departure from current policies, and deserves studies plus a comprehensive and objective investigation to unearth all of the “unintended” consequences.

10-The last thing the lobbyists involved here want, is for the public to know the actual financial impact of HB951. As such, they have done a superior job of obfuscating the full economic cost of HB951. (Note that the renewable industry has already [pilfered](#) in excess of **\$1 Billion** from NC citizens — *after the initial estimate of the handouts was \$15± Million!*) A back-of-the-envelope guess is that HB951 will result in **NC citizens paying an additional \$1 Billion to prop up solar and renewables. Again, all of this is for no proven net societal benefit...**

NC needs science-based energy policies, with **proven** net societal benefits (*see Part 5*). Instead we are being proposed (e.g., HB951) *political-science* based energy policies, written by lobbyists to benefit their clients, and to promote a Left-wing agenda.

Hopefully the NC Senate will: **a)** put a stake through the heart of solar lobbyists dictating NC energy policy, *and b)* pass quality siting requirements for solar (which include a safe solution for the disposal of thousands of toxic solar panels).

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PS: These are three good commentaries relevant to NC HB951:

- [Costs and control in focus as major energy legislation discussed in House](#)
- [Powering the future of North Carolina](#)
- [Some Economics about Early Coal Facility Retirements](#)

3 - North Carolina Solar Energy Summary

Let's step back and look at some of the key consequences of promoting and subsidizing solar in North Carolina:

- a) solar projects have **no meaningful NC state rules or regulations** to abide by (note that wind energy has had [statewide siting rules](#) for eight years now);
- b) [HB951](#) is attempting to further **handicap local communities** from enacting meaningful rules or regulations by forcing an “expedited” approval process;
- c) solar projects require 100% backup, so **we must pay for twice the energy sources**;
- d) solar projects require 100% backup, which is typically from gas, so that needs to be factored in when discussing cost, environmental impact, CO2 reduction, etc.;
- e) solar facilities are likely a **net energy sink** (e.g., see this [study](#));
- f) when a comprehensive and objective financial analysis is done, solar is **5x± the cost of conventional electrical energy sources** (e.g., [here](#), [here](#), [here](#), [here](#) & [here](#));
- g) NC is on the road to shell out **\$1± Billion more to benefit the solar industry**. No scientific, thorough, objective studies have shown that solar is a net benefit to NC.
- h) See this 2021 Study: [Built Solar Facilities are Chronically Underperforming](#);
- i) solar has a high potential for **substantial environmental harm**, like polluting aquifers with **carcinogens** (e.g., [here](#), [here](#), [here](#), [here](#) and [here](#));
- j) solar will likely **reduce nearby home values** (e.g., [here](#), [here](#), and [here](#));
- k) solar can take prime farmland out of production (e.g., [here](#)), which results in loss of jobs, loss of farm equipment & supplies sold, and a loss of consumer produce;
- l) solar results in an **enormous toxic disposal problem** for the state (e.g., [here](#), [here](#), [here](#), and [here](#)) — *who will pay for that and where are the NC rules about this?*
- m) Solar has no scientifically-proven consequential net reduction of climate change; in fact, some studies (e.g., [here](#), [here](#), [here](#) and [here](#)) conclude that solar facilities might make climate change **worse**; *and*
- n) going solar likely **benefits Communist China** (e.g., [here](#) and [here](#)).

Some other relevant information about solar energy:

[Gov. Cooper's "Clean Energy Plan" — Raising Prices and Polluting More?](#)

[Uncle Sam's Solar Racket — a Cesspool of Waste and Corruption](#)

[Wind and Solar Are Intermittent and Incapable of Meeting Our Needs](#)

[Why Wind and Solar Energy are Doomed to Failure](#)

[Surprising Disadvantages of Using Solar Energy](#)

[Leaders Hopelessly Misguided on Wind and Solar Power](#)

Study: [The More Solar on the Grid, the Less Value it Has](#)

[Big batteries could be bigger bombs than Beirut fertilizer](#)

[Cost comparison: actual Nuclear vs Solar facilities](#)

Solar Panel Toxicity

When potential solar project host communities ask solar developers what toxic materials are in their solar panels, they typically say that *they are not aware of any*.

Although that may seem evasive, it may be an accurate response as:

- a) Most solar panels come from China,
- b) China does not have anywhere near the [environmental concern](#) that we do, *and*
- c) Chinese suppliers are unlikely to divulge negative information about their products.

The takeaway is: **buyer beware**. In other words, potential host communities for industrial solar facilities should be aware of what we *do* know — and then act accordingly to fully protect their community.

So what DO we know? We know that these are some of the toxic (some carcinogenic) chemicals that have been identified as likely being in solar panels (*click on the links to get an idea of what some of the adverse health consequences are*):

[Per- and Polyfluoroalkyl Substances \(PFAs\)](#)

[Polytetrafluoroethylene \(PTFE\)](#)

[Fluorinated Ethylene \(FEP\)](#)

[Cadmium Telluride](#)

[Copper Indium Selenide](#)

[Cadmium Gallium diselenide](#)

[Copper Indium Gallium diselenide](#)

[Silicon Tetrachloride](#)

[Hexafluoroethane](#)

[Polyvinyl Fluoride](#)

Also, here is a [basic explanation](#) of the silicon manufacturing part of solar panels. The following are some *additional* toxic chemicals that have been identified as possibly being involved in the fabrication of solar panels, which might end up in the finished product:

Hydrogen chloride

Silicon tetrachloride

Hydrochloric acid

Sulfuric acid

Nitric acid

Sulfuric acid

Polycyclic aromatic hydrocarbons

Formaldehyde

Arsine gas

Trichlorosilane gas

Silane gas

Sulfur dioxide

Sulfur hexafluoride

Sodium hydroxide

Potassium hydroxide

Lead

Now that they know this about solar toxicity, *what do conscientious NC state (and county) legislators do to protect their citizens and eco-systems from these life-threatening chemicals?*

There are two major concerns with these toxic materials:

- a) Over the 20± year estimated life of solar panels, how do we make sure that these chemicals will not migrate from solar panels into soils and local aquifers? *and*
- b) How will solar panels with these materials be safely disposed of at the end of their useful life, and who will pay for it? (Note: *these panels will **not** biodegrade, plus it is extremely difficult to recycle very much of these panels.*)

The answers to both questions should be found in **NC laws**. It is unconscionable to have NC legislators **mandate** solar projects (e.g., *via* Renewable Portfolio Standards [RPS] legislation like [Senate Bill 3, 2007](#)), yet not likewise pass accompanying legislation to protect NC citizens and the environment from well-documented toxic threats that can result from their RPS.

For NC legislators to throw the responsibility of protecting citizens and the environment onto the backs of local representatives, is beyond unreasonable. What sense does it make to require that a *hundred* NC counties have to get educated on the impacts of these toxic materials, and then pass a *hundred* local ordinances that try to address that threat to their NC community?

For some other relevant information about industrial solar energy, go [here](#), and also [here](#) (and search over “solar”).

4 - North Carolina Wind Energy Summary

Let's seriously consider some of the key consequences of promoting and subsidizing industrial wind energy in North Carolina:

- a) wind projects have [nominal](#) NC state rules and regulations to abide by;
- b) [HB951](#) is attempting to further **handicap local communities** from enacting meaningful rules or regulations by forcing an “expedited” approval process;
- c) wind projects require 100% backup, so **we must pay for twice the energy sources**;
- d) wind projects require 100% backup, which is [typically from gas](#), so that needs to be factored in when discussing cost, environmental impact, CO2 reduction, etc.;
- e) when a comprehensive and objective financial analysis is done, wind is **3x± the cost of conventional electrical energy sources** (e.g., [here](#), [here](#), [here](#), [here](#) & [here](#));
- f) NC is on the path to shell out **\$1± Billion more to benefit renewables**. No scientific, thorough, objective studies have shown that wind is a net benefit to NC;
- g) [numerous studies](#) have concluded that there can be **serious human health effects** to people living within a mile of an industrial wind facility;
- h) wind energy can cause serious **environmental harm**: like adverse hydrogeological impacts (e.g., [here](#)), destroying ecosystems (e.g., [here](#)), killing wildlife (e.g., [here](#)), etc.;
- i) wind will likely **reduce nearby home values within two miles** (e.g., [here](#));
- j) wind can reduce crop yields within 10 miles (due to [killing of bats](#)), take prime farmland out of production, which results in loss of jobs, loss of farm equipment & supplies sold, and a loss of consumer produce, (see [here](#) for more details);
- k) [multiple studies](#) have concluded that tourism will likely decline in communities hosting wind facilities, or where coastal communities see offshore turbines;
- l) [studies](#) have found that hunting is undermined in communities with turbines;
- m) research by independent experts has shown that industrial wind projects can cause [serious interference](#) with military facilities;
- n) wind turbine leaseholders can suffer [major economic losses](#);
- o) this [report](#) concludes that it costs \$532,000 to decommission a *single* wind turbine;
- p) offshore wind has some additional major liabilities (e.g., see [here](#));
- q) wind energy has no scientifically-proven consequential net reduction of climate change — but it can make climate change **worse**, (e.g., see this [Report](#)); *and*
- r) due to wind energy's extensive reliance on rare earths, using wind turbines **benefits Communist China** (e.g., see [here](#), this [study](#), and this [report](#)).

For some other relevant information about industrial wind energy, go [here](#), and [here](#) (and search over “wind”).

5 - North Carolina Electrical Energy Policy Priorities

- 1 - NC *should be* promoting an “**All of the Sensible**” energy policy (NOT an “all of the above” policy).
- 2 - NC *should* reinforce that the NCUC’s primary obligation when approving ALL energy projects, are **reliability** plus **cost** to ratepayers / taxpayers.
- 3 - NC *should* clarify that the NCUC shall not approve an alternative electrical energy project until it is **technically, economically** and **environmentally proven** to be a **net societal benefit**.
- 4 - NC *should* require that every solar or wind energy facility be 100% backed up by gas (the most practical, reliable, economical, environmentally-friendly option). In turn, all costs, environmental impacts, and CO2 reduction should include both.
- 5 - NC *should* formalize a plan to retire inefficient coal facilities in an orderly, economical, environmentally sensitive fashion: Coal —> Gas —> SMRs.
- 6 - NC *should* pass meaningful solar siting rules and regulations, including provisions for disposing of toxic solar panels (*to be paid for by the solar developer*).
- 7 - NC *should* update its industrial wind energy siting rules and regulations.
- 8 - NC *should* allow Counties to pass additional renewable energy siting rules that local citizens believe are appropriate for their community.

These are recommendations that the [NC Energy Policy Council](#) should take the lead on spelling out and promoting — and the legislature should aggressively support.