Ms. Doreen Harris
NYSERDA
Albany, N.Y.

Dear Ms. Harris,

Our comments on “The Draft Blueprint for Consideration of Advanced Nuclear Technologies.” Comments originally submitted on November 8, 2024. Please replace our former comments with this re-edited submission. The little *’s indicate new and additional information.

This Draft Blueprint for consideration of Advanced Nuclear Technologies was prepared by the Brattle Group for NYSERDA et al. – Governor Hochul and Public Service Commission (PSC) and Chair Mr.Rory Christian. This Blueprint seems to be nothing more than a nuclear industry driven “white paper” advertising campaign. NYSERDA has accepted this and apparently there “is no liability” on the part of the Brattle Group for disinformation. This entire document of the Draft Blueprint for Consideration of Advanced Nuclear Technologies is a conceptual nightmare – pretty close to Donald Trump’s “concepts.” Let’s take this by the numbers.

**1**. **Potential Role of Advanced Nuclear Technologies in New York’s Energy Future.**
**Nuclear energy is not clean.** Including the entire life cycle of destruction – from the mining and milling of uranium, from the massive amounts of cement which accounts for up to 8% of Green House Gasses (GHS) which is used for the construction, through to trucking of construction material and also the moving of nuclear waste, to plant operations which rely on fossil fuel use to long term storage of very dangerous radioactive waste, we can say that nuclear power is not clean nor is it “carbon free.”
**Nuclear power is not reliable**. Because of severe weather events: droughts, brush fires (*brush fire caused by a lawn mower at the Vermont Yankee Power Plant – on November 6, 2024 – we did not hear of this until after submission date), earthquakes (April 5, 2024), intensive storms, flooding, storm surges, many instances of SCRAMS (Safety Control Rod Axe Man) - the sudden shutting down of a nuclear reactor, and hotter ocean and river waters - power is often cut to nuclear power plants because of storm surge and the fact that cooling water is not cool enough to cool. We can say that because of global warming and climate changes effect upon nuclear power plant operations, nuclear energy is not clean or reliable.
**Nuclear energy is not affordable.** It has not been profitable for operators and has certainly not been affordable for the rate payers. That is why many nuclear power plants have either closed or have had the benefits of massive bail-outs subsidized by taxpayers. In NY we are still paying for the 7.5 billion dollar bailout, to keep ancient and trouble prone power plants in business. The cost overruns in timelines and in actual costs has cost ratepayers and taxpayers millions if not billions of dollars in increases on their utility bills, all the while, the operators collect extra money from the government for decommissioning and the storage of nuclear waste on site from the Department of Energy (DoE). The “new” Vogtle Power Plant in Georgia is a prime example of cost and

timeline over-runs with the final cost being approximately 35 billion dollars, twice as much as was “planned for”. There are nuclear power plants that never even got built – abandoned – that rate payers and tax payers are still paying for. Small or Advanced Modular Reactor (SMR) companies, such as Holtec SMR LLC, have had a blast vying for billions of dollars from the federal government to bring to life these mythical reactors and to re- boot former closed reactor sites into operations – such as the Palisades Michigan Plant, shuttered and now owned by Holtec and the Three Mile Island Plant which had a partial melt down in 1979, which a different company is petitioning the Federal Energy Regulatory Commission to re-start. SMR companies have spent billions of dollars for research &development from the DoE and have all failed to produce. They bailed all while having made huge profits from federal money while producing nothing. It is also not affordable for the Government. ***From the Annual Cost Report in the Energy Monitor Wall Street From Lazard in the article “SMR: What Is Taking So Long?” by Oliver Gordon:** ‘While nuclear costs have increased with time, the levelised cost of electricity for solar and wind has declined rapidly. This is expected to continue over the coming decades.” We can say that nuclear power is not clean, reliable or affordable.

**Readiness.** The draft states **“Advanced nuclear technologies raises a host of questions that would have to be addressed such as “readiness.”** It takes approximately 10-20 years to build a nuclear power plant to the point where it can come on line. The timeline does not support meeting the goals of the Climate Leadership Community Protection Act (CLCPA), which mandates “clean renewable energy” that is also cost effective, can come online quickly and is less damaging to our environment, the earth, our health, our communities and all plant, animal and aquatic life. We can say that nuclear power is not clean, reliable, affordable and that readiness does not exist.

**Nuclear power uses vast amounts of water.** Bitcoin mining, AI and data centers will be sucking up water – not for public benefit, but for corporate agendas and profits. This may very well put many communities at risk to their health as there will be water wars – a lack of clean water as the power plants can use anywhere between 30 million to 3 billion gallons of water a day. The operator/owners then send the radioactive, **tritium laced waste water** back into streams, rivers, lakes and oceans as well as vaporizing the radioactive water and releasing it into our air. *According to a study by the University of New Mexico’s Native American Budget and Policy Institute, “uranium extraction in and of itself requires vast amounts of water and even more concerning, no uranium mining operation has ever successfully protected nearby groundwater or surface water from contamination.”

**2**. **Profile of Advanced Nuclear Technologies.**

**2.1.** The Draft states that **nuclear energy does not produce direct emissions.** What does “direct” actually mean? If a plant is not belching oil and gas directly into the air – does that mean it does not produce emissions? This statement is not true if you take into account Number 1. This is misinformation. Then the next sentence states that nuclear energy produces the lowest emissions. Again not true if you look at the

cumulative effects of number 1. It seems you want it both ways. No emissions AND low emissions.

* A recent study by climate scientists in Estonia using satelite data that focused on Canada and Russia, **"When Pollution Brings Snow" by Syris Valentine printed in The Nautilus November 14, 2024** (we did not know of this until after submission date) have shown that power plants – including nuclear power plants do indeed emit emissions, that metals and minerals from industry can trigger snowfall over hundreds of miles, changing snow patterns over vast areas of land. The triangle that is created in the atmosphere points directly back at the offending power plants. **However, the scientists do not know what the emissions are from the nuclear power plants.** Why would the State of NY be interested in pushing for more nuclear energy when it does not know these details. The devil is in the details.

N**uclear power is not "a balancing and regulating resource" that "can complement New York's build out of renewables."** It cannot complement – there are too many known risks – costs, environmental and to Environmental Justice (EJ) communities – along with the massive amount of nuclear waste that NY State must deal with. In the article from the * **Energy Monitor – "SMR: What Is Taking So Long?",** Dr. Ramana is quoted as saying: "If one is using a nuclear power plant to back up renewable, it will be operating at an even lower efficiency, spreading out a large capital cost over fewer kilowatt hours. Better to address the variability of renewable using a combination of demand-side responses, diversity of technology and geography and storage…Nuclear energy is an expensive way to generate electricity." Some of the other costs that are not even being considered and have not even been mentioned – such as health care costs for cancer and diseases that people suffer from as a direct result from uranium mining, from the production of electric energy at nuclear power plants and from living in close proximity to nuclear power plants must be included in this discussion.

**2.2**. **Modular Design.** Supposedly SMR's will be shop fabricated, then transported as modules to sites for installation as demand arises. Designs are years away from production, shipping has many complications, assembling and building on site will take new workers as SMR's are not just small commercial reactors. Nuclear reactors and SMR's are not IKEA products. * **According to Nuclear Engineering International** - "The regulatory framework is not in place. HALEU fuel will need new packaging and then there will need to be new regulations around that. And Simon Chaplin from the World Nuclear Transport Institute has said: "Transportation could be a deal breaker if you can't move the fuel or you can't move the reactor to the site or take it away again. Dead in the water." Finally, according to AI Overview: "Transporting an SMR presents several challenges, including its large size and weight, potential need for specialized infrastructure and the regulatory complexities around transporting highly enriched fuel-HALUE , limited route options to do with size constraints and the potential for significant logistical difficulties in reaching remote locations, all of which can contribute to high transportation costs and safety concerns."**There is no flat pack for nuclear.**

**3**. **Sodium and Molten Salt Reactors.** All reactors use uranium, which has created serious harms to indigenous and low income communities. High Assay Low Enriched Uranium (HALEU) fuel does indeed raise very serious concerns regarding nonproliferation and nuclear waste. It is astounding that only on page 9 of the Draft Blueprint is nuclear waste even mentioned. * **Please refer to "Assessment of the Current State of Knowledge on Storage and Transportation of Molten Salt Reactor Waste – Final Report, prepared by George Adams, Patrick LaPlante, and Wi-Ming Pan of Southwest Research Institute Center for Nuclear Waste Regulatory Analyses. January 2023.Prepared for U.S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research.**1.1 Background: Modern MSR's are in the early stages of development and limited information is available on processing, storage, and transportation of the molten salt. In addition, it is feasible that salt processing would be needed to remove fission products, recover fissile and fertile material and immobilize the waste salt. There is no NRC Regulatory precedent for licensing such operations…therefore, it is important to identify the current experience with MSR salt storage, transportation and processing as well as the applicability of spent fuel management approaches and technologies to the storage and transportation of molten salt waste (and wasteforms), including potential high level waste generated… Because of limited options for disposal and regulatory complexities, continued storage of the salt waste material from the MSRE shutdown has been necessary for several decades. It would need final disposal in geologic repository for commercial high level waste. A clear path for final disposition has not been identified." Furthermore "**Molten Salt Reactors produce significantly more tritium than is produced by Light Water Reactors, there is a need for tritium capture technology and for managing the tritium waste."** This is just part of the opening statement of a 44 page document.

**3.3**. **High Temperature Gas Reactors. ***SMR's use HALEU fuel. This fuel creates more lethal spent fuel. According to nuclear waste expert Lindsey Krall, in a study co-authored with former NRC Chair Allison MacFarlane: "our results show that most SMR designs will actually increase the volume of nuclear waste in need of management and disposal by factors of 2-30 per unit of energy generated for the reactors in our case study." (quote from the CounterPunch article - The ADVANCE Act: a Bipartisan Surrender to the Nuclear Lobby – by Mays Smithwick and Jacqui Drechsler)

**3.4**. **Fusion**. The Draft Blueprint states: "Fusion could become a viable option for NY States energy supply only if and when a company can demonstrate the ability to achieve net positive power generation from fusion at a competitive cost…This and other claimed fusion reactor timelines may be unrealistic." Does the cost include the billions of taxpayer federally funded dollars? The Draft goes on to say that: "Although it produces high amounts of radiation when operating, it leaves relatively short lived nuclear waste and is considered "inherently safe." What do you consider "short lived" to be and what do you consider "inherently safe" to mean? By what definitions, standards and by whom? Using the Brattle Group company which was paid to write a white industry paper called "The Draft Blueprint for Consideration of Advanced Nuclear Technologies" instead of using actual experts is disgraceful.

**4.2.1**. **Safety Risks and Perceptions.** You are right: Your first statement: "Public concerns about nuclear safety remains high prodded by the highly visible accidents at TMI (1979), Chernobyl (1986) and Fukushima (2011)", Offers of "promises of safer designs and inherent safety features" does not take into account so many other risks – such as the cumulative risks of cooling waters being too hot to cool, storm surges rising too high, sea level rise, aside from the fact that all manner of debris from storms, flooding and storm surges can block the vents that help to cool the canisters (in casks) of the hot rods – the spent nuclear fuel, which can lead to very serious issues of radioactive leakage. It is also now known that earthquakes travel longer distances, that natural gas pipelines that feed nuclear power plants or land close to power plants behave in very curious and dangerous ways due to earthquakes - just to mention a few risks that have not even been mentioned. In the paper "Deeds not words: Barriers and remedies for Small Modular nuclear Reactors", a third expert commented on public acceptability: "Emergency response support for local communities. Large nuclear plants pay fees/taxes to supplement local police and fire departments for emergency needs. The designs for SMR's suggest the risk is very low and emergency planning zones don't extend beyond the site. This means no funds would be given to support local emergency responders, which may result in public opposition due to the appearance of understanding potential risks and significantly changing local expectations established by larger nuclear plant operations."
**Your second key question for consideration by the State for nuclear safety** "How can the State adopt and improve best practices in nuclear safety?" The answer: To not allow anymore nuclear reactors and nuclear waste in New York State. A Pause should be put in place until further studies and research are designed, implemented and brought forth to the public after being peer-reviewed. It is upon our state agencies to prove beyond a reasonable doubt to us – the people - that nuclear energy is quicker to build than renewable energy, costs less to implement than renewable energy, is safer for the public than renewable energy according to scientists and that there is safe disposal, not community dump sites. Time,Cost and Safety.

**4.2.2 Physical Security.** According to an NRC hearing I attended and my understanding of take-aways, the NRC and operators are moving away from people powered security and may not be relying on feet on the ground security forces as this has become a complaint of the operators – such as Holtec International LLC, on cost. Apparently the future for security is AI and video like "war" games. It is very possible that SMR's will be operating automatically and may be unmanned. All nuclear reactors should be considered a security risk as if they are terrorist targets. Do not ever forget that on 9/11, American Airlines Flight 11, hijacked by terrorists, circled around Indian Point Nuclear Power Plant, then flew down stream over the Hudson River into the World Trade Center Towers. And please remember that the Price Anderson Act puts all liablity and losses onto the people – you and me – not the operators/owners, the NRC or the State. There is no insurance to cover this should there be an attack on a nuclear power plant – or an accident – no matter what kind of reactor – current commercial or of the "advanced SMR" type.

**4.2.3 Siting Challenges and Opportunities.** The Draft says: "**Ideally, there could be benefits."** When one looks at the future – nuclear power plants to fuel and cool AI, data centers, bitcoin, Amazon – all with massive water needs – and the possibilty of radioactive releases into our air and water, what communities are left with is a toxic neighborhood radioactive waste site. There is no opportunity here that can compensate for the environmental, physical and mental health damage that comes from living next to such a dump site. Paragraph 2 states that "The site should be sited at least 20 miles away from population centers." This does NOT include the local, usually low-income/ environmental justice population where a nuclear reactor would be sited. The NRC wants to expand siting and have "consistent and deliberate engagement with communities," This has never happened. For instance, the Decommissioning Oversight Board for Indian Point and several of the agencies that sit on the Board continue to make community communication to and with local stakeholders extremely difficult. And NYSERDA's statement regarding this project (your Draft Blueprint for NY State) states "Additional public activities." What does that mean? Because we – the people – the public – only found out about your closed to the public but open to government agencies and the nuclear industries meeting of September 5, 2024 in Syracuse, N,Y. by happenstance. There was no way for us to reach you. It took many attempts by advocates to get an email address to write into someone. We had to petition you and our elected officials - whom you also did not inform, for an extension for comments on this. What kind of public engagement is that? What you are considering, re-nuclearizing New York State, affects us – everyone in N.Y. State! You must develop a process and reach out to every homeowner, condo and co-op owner and renters - all of the residents of N.Y. State, to make sure that everyone is informed of your stupid, risky plan for more nuclear power and radioactive waste in N.Y. State. You must have hybrid public hearings by zoom for every county in N.Y. State. You have had 60 years to figure out what to do with the massive amount of nuclear waste that has been generated. There never was a plan for safe disposal and there still is no plan for safe disposal – because there is no safe disposal.

**4.3. Environmental and Climate Justice. The Drafts key question number 1:** What role should the State play in promoting environmental and climate justice in the fuel cycle of advanced nuclear facilities in light of the fact that almost all of this activity will occur out of State?" You are talking about uranium mining, milling and transportation of procurement of uranium from other states. *According to the same study previously mentioned regarding water usage by the University of New Mexico's Native American Budget and Policy Institute: "uranium has been found in 85% of homes in the Navajo Nation and the same study has found that the bodies of every single person, including babies, had traces of uranium in their blood." This should be a big red flag for NYSERDA, Governor Hochul and the Public Service Commission. This mining, the harms and disregard for the indigenous people and their land is part of the Colonialization process that continues – even in NY State – even now, in the 21st century. EJ issues and concerns will be ignored as they always have been. Although there is no law that says "if our energy supply chain and needs harms others from out of

State and out of our borders", we should not do this, doesn't mean that just because a law doesn't exist yet, it can and should be done. *During a National Environmental Justice Advisory Council (NEJAC) meeting on January 5, 2022, the Chair – Mr. Michael Titchen (in response to a statement and question of mine regarding this very topic of harms to others) stated that: **"We should be looking to see if we are importing dirty energy into our border. Where our energy is coming from and if it harms others."** I will be happy to provide you with a recording. *The White House Environmental Justice Advisory Council (WHEJAC), headed by Peggy Sheppard, stated and recommended "that nuclear power should not be included in the green energy transition." Now that the Radiation Exposure Compensation Act (RECA) failed to pass in Congress there is no more financial compensation for the people who mine the uranium, the downwinders and for people who have been harmed NY nuclear radiation. No more follow up on blood work, DNA damage and no more financial help with medical bills either. The best answer: Don't do this. Don't harm indigenous communities, just because they and the supply chain of uranium begins* out of state. Former Governor Cuomo, NYSERDA and NY State PSC did this to indigenous communities in Canada with the Tier 4 REC's for Hydropower from Quebec – the disaster called Champlain Hudson Power Express. Don't make another harmful tragic mistake. The best answer is to say no. No to uranium mining. No to nuclear power. No to nuclear waste. **Renewable energy is not radioactive.**

**4.4**. **Costs, Supply Chain Development and Financing**. Costs are out of control. Supply chain development, including uranium is horribly harmful. And financing, borne on the backs of the ratepayers – and double whammy – borne on the backs of the taxpayers through Federal dollars in bail outs, DoE loans, grants and "research and development money" to greedy corporations and LLC's like Holtec International LLC., will leave all of us suffering financially for decades. I have three quotes from a June 2024 Congressional Hearing on Nuclear energy. 1. From former NRC Chair Mr. Jackzo: "Climate change is solvable...The challenges are political. All of this (the pushing for more nuclear energy) are mechanisms for this entrenched industry – the nuclear industry, to preserve itself." 2. Dr. Ramana: "It is a politicians logic to do something – my thoughts are that they do something, and allocate massive amounts of money for this industry – which doesn't work." 3. Mark Jacobson: "40% of the IRA money is spent on useless alternatives to climate change – like throwing spaghetti at a wall to see what sticks, with lots of misinformation regarding health risks and societal costs. Time, costs and emissions are not taken into account with Nuclear." The Vogtle Plant Reactor in Georgia has cost 35 billion dollars. *In reading the peer-reviewed paper by Benito Mignacca, Giorgio Locatelli anf Tristano Sainati "Deeds not words: Barriers and remedies for Small Modular nuclear Reactors (available online June 20, 2020), three major conclusions are drawn regarding elements hindering SMR construction. 1. **Financing**. Although SMR's should be a less risky investment and the lack of a supply chain enabling to harness the advantages of modularization and modularity determine a high perceived investment risk. 2**. Economics** – according to the experts, SMR would be uncompetitive with respect to other energy sources, and this represents a critical element hindering SMR construction and 3**. SMR technological readiness**. This

element is particularly relevant for SMR designs adopting “never commercially operated” technologies such as molten salt fueled and cooled advancd reactor technologies. The perceived investment risks, availability of funds and the availability of cheaper alternative technologies are the main elements hindering SMR construction. Other critical elements: Public acceptability and uncertainty about the cost/benefit analysis.

**4.6**. **Waste Generation and Disposal. Waste Generation -** The Blueprint draft states that “the waste is radioactive for many years after it is produced, for thousands of years.” More misinformation from the Brattle Group – some of it is radioactive for up to several hundreds of thousands of years. You go onto say that “proper handling, storage and disposal is critical for ensuring public safety.” This is worth repeating! *****SMR’s use HALEU fuel. This fuel creates more lethal spent fuel. According to nuclear waste expert Lindsey Krall, in a study co-authored with former NRC Chair Allison MacFarlane: “our results show that most SMR designs will actually increase the volume of nuclear waste in need of management and disposal by factors of 2-30 per unit of energy generated for the reactors in our case study.” *SMR’s are proposed to run on HALEU – high –assay low-enriched uranium, which is enriched to slightly less than 20 weight percent, U-.235 – just below the internationally recognized value for nuclear weapons potential, threatening global security” (both quotes from the **CounterPunch article - The ADVANCE Act: a Bipartisan Surrender to the Nuclear Lobby – by Mays Smithwick and Jacqui Drechsler**). **There is no disposal facility** - only on-site storage of 60 years of radioactive waste generation and or the moving of highly radioactive casks with brittle hot rods from place to place until a repository is created. The fact that there is no disposal site means that on site storage becomes long term storage– or even worse – radioactive waste from decommissioned nuclear power plants is shipped to other storage sites in other communities and in other states –exposing people everywhere to the possibilities of accidents and radiation exposure. This is done without a communities knowledge of when, where, how and what is blowing though their towns. There have been truck transport accidents (truck accidents, fires etc…) whether due to operator error, traffic and or weather conditions or road worthiness of the trucks and we all are aware of the many railcar accidents that plague the railroad industry with insufficient infrastructure, safety or truly trained and aware operators. All nuclear power plants are radioactive waste dump sites – all communities become radioactive communities. All transportation of radioactive nuclear waste is like a literal bomb waiting to explode.

N.Y. State already knows this and has liability for West Valley in West N.Y. This site, owned by NYSERDA, contains massive amounts of long-lasting and highly radioactive nuclear waste from the 1960’s and 70’s that was brought to Western Valley in West NY from across the country and Puerto Rico for reprocessing and disposal. There is NO disposal. NY State and NYSERDA are on the hook for a massive price tag in the billions of dollars (estimate from 15 years ago – probably higher price tag now) for the cleanup. NY must pay itself and beg for money from the DoE and reduces its own cleanup standards. This waste threatens the Great Lakes and sole source aquifer. There is NO solution for the permanent isolation and disposal of high level radioactive

waste. The Brattle report, which created the Draft Blueprint for Advanced Nuclear Technologies for N.Y. State, did not mention this huge nuclear power legacy liability that NYSERDA and NY State have.

**Safety and Health in the Hands of the Nuclear Regulatory Commission (NRC) and Owner/Operators**. I write of Holtec International LLC in particular as it is the company decommissioning Indian Point – just across the Hudson River from where I live in Rockland County. Let's take a look at some recent incidents.

Approximately one year ago Holtec International LLC was fined for handling and **transporting radioactive machinery** across State lines from its facility at Oyster Creek, N.J. to Indian Point, N.Y. in an unsafe manner – exceeding DOT's regulations and **exposing their workers to radioactive waste.** Holtec International LLC was recently caught **exposing workers to exceedance of radioactive exposure limits and guidelines** at their Pilgrim Plant in Massachusetts. There is now a lawsuit because two of those workers were seriously harmed by the radiation they were exposed to – one has severe radiation sickness and the other had to have surgery to remove part of his tongue and esophagus. You can read about this in the article **"Pilgrim Worker Claims He Was Poisoned By Radiation" in the Provincetown Independent, November 16, 2024**. At San Onofre in California, Holtec International LLC was caught in **a loading accident** where a **spent fuel canister holding the most dangerous material on earth** – **spent fuel rods which were being moved into casks, almost fell and did get scratched and gouged when they were finally moved into casks, which leads to the possibility of through wall cracks and serious radiation leaks.** The NRC continues to give Holtec International LLC Level IV Violations with no fines for their horrendous repeat bad player behaviors. Level IV Violations certainly will not help the two workers who will probably die sooner rather than later in life due to Holtec's seemingly blatant abuses and potential criminal behaviors.

It is apparent that this dangerous company Holtec is in charge of several decommissioning sites on the East Coast – and also in charge of the Decommissioning Trust Funds for these sites, which they occasionally raid for non decommissioning activities. Holtec International LLC also buys its own thin walled canisters, prone to cracks and which cannot be evaluated for safety over time - making money on their own products which we the public are forced to have used instead of thick walled canisters and casks such as are used in Europe. I hope to God that Holtec will not be considered a candidate for anything more to do with nuclear decommissioning and certainly not to do with "operating" any nuclear power plants in New York State – whether of the conventional commercial nuclear power plants or of the mythical SMR power plant type. They have zero experience and we – NY State should not be Holtec's testing and stomping ground.

**N.Y. State Governor Hochul signed the Save the Hudson bill to stop Holtec International LLC from dumping 1.5+ million gallons of radioactive waste water from Indian Point Nuclear Power Plant during decommissioning, into the Hudson River. Why on earth would she want more nuclear waste in NY State?** There should not be any “next steps” funded by DoE or NY State rate payers and tax payers to keep the nuclear industry fueled. We believe that NY State should clean up its mess and not add to the misfortune of the toxic radioactive waste legacy we are already leaving for future generations. **State and Federal resources should be allocated – not into new nuclear with the poisoning of our air, soil, water and more forever nuclear waste, but into energy mitigation measures, transmission possibilities for made in NY State Renewable energy and incentives for true renewable non-radioactive energy procurement for the public. For the people and by the people.**

Sincerely,
Jacquelyn Drechsler and
Jocelyn DeCrescenzo

December 1, 2024