FAQ for a Proposed Battery Energy Storage System Project within Mount Sinai, NY
To Be Developed by New Leaf Energy

Prepared by:
The Mount Sinai Civic Association Executive Board
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Summary

A Battery Energy Storage System (BESS) project has been proposed for a parcel of land within the Hamlet of Mount Sinai NY. The Mount Sinai Civic Association, in its role to help guide development of the Hamlet, is reviewing the facts and merits of the proposal to determine the appropriateness of the project for our community.

The Civic has engaged with multiple project stakeholders including the Developer, the landowner, Town of Brookhaven, County of Suffolk, the Mount Sinai Union Free School District, and the Mount Sinai Fire Department to understand the process of development, benefits and risks to the community, and overall objective facts pertaining to this project. This document represents a non-comprehensive set of information gathered by the Civic Association to help understand the details of the project, educate the Membership and community, and aid in an evaluation.

Nothing in this document should be taken as endorsement for or against this project by the Mount Sinai Civic Association Executive Board, or its Membership as a whole. As of publication the Civic Association formally has NO OPINION while we continue to gather information.

This document is divided into several sections:

Project Overview / Background for Need

Q: What is the location of the proposed project?
A: 646 and 650 Mount Sinai Coram Road, Mount Sinai, NY.

Q: Why are Battery Energy Storage Systems (BESS) being proposed for Long Island and other areas of New York?
A: BESS are required as part of the 2019 New York State Climate Act. This law requires that 70% of all energy consumed in NYS to be generated from renewable sources by 2030, and 100% by 2040. This means a shift from fossil-fueled main and peak power generation stations to solar, wind, and hydroelectric sources. Long Island will primarily use solar and especially wind power.

These alternative energy sources require the grid to have electrical energy storage capacity to provide power when wind or solar power is not available. BESS are currently the only solution to this problem. BESS also have other functions in this updated energy production and grid design.

- Store excess wind/solar power generated in off-peak times so it can be used later.
- Release energy to the grid at times of peak demand.
- Taking the place of so-called "peaker" rapid-acting power plants. These plants tend to have high emissions.

Q: Has the state set targets for creating battery energy storage capacity facilities?
A: Yes. NYS has a battery energy storage goal of 3,000 mW by 2030. This is part of the 2019 NYS Climate Act which requires clean energy sources to power 70% of NYS by 2030, and 100% by 2040.

Q: Why is this project being proposed for highly residential Mount Sinai instead of a more industrial location?
A: Battery energy facility siting is dictated and limited by the electrical infrastructure. They must be sited in close proximity to an electrical substation to transmit energy to and from the grid. Only a small set of properties are both potentially available by a willing owner and close enough to an electrical substation. The property in question has a willing owner and is very close to the existing substation on Rt. 25A, making it one of the limited number of technically suitable properties.

Q: Who owns the property now? Is it a company? Why do they want this project? Do they want to hurt the community with this kind of thing?
A: The property is currently owned by a person that is a long-time Mount Sinai resident with deep personal and business relations in the community. They are looking at retirement planning for ways to secure their family's future with a development that would have minimal impact on the community in terms of traffic, noise, pollution, and other factors, but also provide revenue to the school district. This type of project seems to meet many of those objectives.

Q: What is the total energy capacity of the project?
A: The project is 4 separate battery installations on one site. Each installation has a capacity of 5 megawatts (mW), for a combined total of 20 mW. It would deliver 80 mWh of energy to the grid. For reference, 5 mW can power about 4,000 homes. This facility would be able to power 16,000 homes.

Q: What is the current status of the project?
A: As of March 2024:

- The developer has submitted an application for a Change of Zone to the Town of Brookhaven. This requested change requires approval by the Town Board. Further review and approval by the Planning Board and the Town Board are required.
- Initial site plans have been developed.
- An application to the New York State Independent Systems Operator has been made.
- Design work for the interconnection to the PSEG/LIPA substation has commenced.
- The developer has retained Energy Safety Resource Group as the consultant responsible for safety design, training, and implementation.
- The developer has engaged in dialogue with the Mount Sinai Civic Association, the Mount Sinai Union Free School District, and the Mount Sinai Fire Department provide information and answer questions about the project.

Q: Is the Mount Sinai Civic Association for or against this project?
A: As of publication of this document, the Civic Association formally has No Opinion. The Executive Board is gathering information about the project in consultation with other stakeholders. Until we feel we have enough information to form an objective opinion we will offer no opinion either way. The Civic opposes use of PILOTs due to current financial harm they cause to school districts.

Q: How will the Civic decide its position and what actions will it take?
A: The Civic board will consider the potential risks and benefits of the project, and present them to the Civic Membership for consideration. Considertions will include matters of safety, impact on school district finances, and others. We have invited the Developer to make a public presentation to the Membership at a future Civic meeting. Active Civic Members in good standing will have an opportunity to vote to endorse the project in one of three ways: Support, Oppose, or No Opinion. The Civic board will then inform our government representative of our position.

Safety

Q: What processes, facilities changes, and procedures will be necessary to accommodate a potentially large volume of contaminated water generated by a lithium battery incident?
A: Safety, design, and fire response practices for the proposed facility call for no water to be used.

The facility will be using Tesla Megapack 2 XL battery units. Each section of each module is self-contained and designed prevent the spread of a fire from one section to another. In the event of a thermal episode or fire, they are designed, tested, and proved under independent test conditions to "self-consume" in 4-6 hours. Best practices for this type of installation is to NOT use water to cool or extinguish the battery packs as this will slow the self-extinguishing process and be counter-productive. Fire fighters may use a fogging powder to cool and protect surrounding equipment. Therefore, it is not expected that large quantities of water would be required during a thermal incident, and therefore runoff contamination is not expected.

Battery manufacturer website: https://www.tesla.com/megapack

Q: The response to a thermal incident at a Southampton battery facility used a large amount of water. How would the Mount Sinai facility differ in response to a fire?
A: The Southampton incident is still under investigation. However, the following is known at this time:

- That facility utilized a different brand, design, and chemistry for its batteries.
- The facility was designed as an enclosed building where workers entered to monitor and maintain the batteries.
- As an enterable structure, building codes required it to have fire sprinklers. Activation of the sprinkler system contributed to the significant runoff during the event.

The facility proposed for Mount Sinai will not have an enterable enclosure, but rather is more like a reach-in closet so all items are serviced from the outside. No sprinkler system is required. The design of the system proposed for Mount Sinai calls for water not to be used, thereby reducing or eliminating runoff.

Q: What kind of emergency procedures are needed in the event of an incident? Will the school and nearby homes need to be evacuated?
A: The developer has a safety team that is committed to working with the MSFD and other agencies to develop a comprehensive safety plan. Large scale evacuation is not expected to be required. Through independent testing, the battery manufacturer (Tesla) has determined that known safe distances for the proposed batteries in an active thermal runaway is 5 feet upwind, 20 feet downwind, and general isolation area of 100 feet. This indicates that a large area evacuation will not be warranted. The proposed systems are designed to isolate and contain a thermal event to one cell and prevent spread to other battery cells. The developer and its safety team have successfully created test and response procedures for locations such as densely populated areas of New York City.

Q: In the event of a fire or thermal event, will the fire department need to pump lots of water, toxic foams, or other materials onto the site?
A: No. The Tesla Megapack 2 XL is designed to "self-consume" in the event of a thermal event. This usually occurs in 4-6 hours. Copious water, foams, or other special equipment/materials are not expected to be used or required. The recommended response is to take a defensive posture and allow the battery to self-consume. MSFD would be trained in proper response procedures.

Q: What kind of chemicals or toxins are released in the event of a fire or thermal event?
A: The battery manufacturer (Tesla) and independent testing agencies have conducted a variety of intensive failure testing.

- In general, battery fires resemble plastic fires in terms of emission of toxic gases including CO, HCl, HF, HCN, and benzene. However, there are no exotic chemicals from a battery fire that would not be seen in a house fire, and testing of the levels of emissions are consistently trace compared to those emitted by, for example, a couch fire. ConsistFpent testing of air quality and ground water around battery fire test sites and failure sites have recorded no measurable toxic gases or groundwater contamination..
- The battery enclosures are designed to contain a fire/thermal event and prevent spread to adjacent batteries, limiting smoke emissions.
- Safe distances from a fire/thermal event for the batteries proposed have been established via safety testing. These distances are 5 feet in the upwind direction, and 20 feet in the downwind direction. The general isolation area is 100 feet. This indicates a relatively safe environment in the event of a thermal incident.

Q: I've heard that battery systems can burn for days, producing toxic smoke. Is this true?
A: The primary reason installations have been shown to burn for more prolonged periods is the unnecessary use of water, rather than letting the system put itself out. While water may still be used in unique scenarios, applying water is no longer the default emergency response procedure. See above for response on the smoke contents.

Q: Can these battery energy facilities explode? I heard about one exploding in Arizona.
A: There are a variety of system designs and battery chemistries. Both greatly impact the potential for spread of fire and explosion in a battery energy storage systems. Early systems did not account for, or improperly handled, buildup of flammable gasses during a thermal event. Current industry regulations implemented after the Arizona incident require protections against explosion.

The Tesla Megapack 2 XL systems being proposed include explosion prevention measures to mitigate this possibility in compliance with current regulations. These measures include the design of the enclosures and venting mechanisms to prevent build up to explosive conditions.

The Tesla Megapack 2XL system has undergone independent 3rd party testing which shows that no harmful heat flux would be experienced within 15 feet of the battery containers in an unlikely, worst-case fire event. The third-party testing also showed the following:

1. A cell overheating event is unlikely to spread fire within the module it is in. In the unlikely worst-case scenario where several cells simultaneously overheat, the system has demonstrated its ability to isolate a fire into the cabinet that it occurs in, leaving even adjacent cabinets in the same container unaffected.
2. The passive venting on the system and its overpressure protection measures prevent the system from creating explosion hazards during a fire event.
3. The system is capable of burning itself out within a few hours without intervention.

Continuous remote monitoring of the batteries is expected for this project. The temperature, voltage, and performance of each cell will provide early notification to enable a remote intervention or shutdown to avoid a fire from initiating.

Q: What arrangements need to be made to provide for first responder safety training?
A: New Leaf Energy will cover the costs of fire department training (initial and regular follow up trainings). Periodic training will be provided for the life of the facility. New equipment is not expected to be needed for the fire department, as the required equipment is not unique to battery fires. New Leaf will confirm that the fire department is adequately prepared prior to operation. The operator is required to provide a 24/7 emergency response phone number plus 4-hour on-site response time.

Q: Do battery energy facilities emit any materials during their operations? Anything noxious, toxic, or bothersome?
A: No. They make no emissions in normal use. In the event of a fire or thermal event, the main component released is carbon monoxide, although concentrated emissions from any type of fire are not safe to breathe.

Q: The intersection of Mount Sinai-Coram Road and 25A has a high rate of traffic accidents. The home on the corner where the facility is proposed has been struck by several vehicles. What steps are proposed to prevent damage and fire to the facility by a car accident?
A: The developer has been made aware of the high accident rate at the location. The initial plan included some bollards to prevent vehicular damage. They will be revising the plans to include significantly more robust barriers to prevent damage from a vehicle.

Q: The property collects lots of puddles after rains. Isn't this flooding bad for a battery facility?
A: If the project goes forward, the property will be fully surveyed and likely need to be regraded as part of the building process. This would address any existing drainage issues. Existing regulations require an extensive stormwater runoff plan to be created and submitted as part of the review/approval process.

Developer Background

Q: What is the name of the company with responsibility for the planning, construction, operation, and maintenance of the proposed battery facility? What is the "track record" of this company? If it is new, who are the principles and what information is available to ensure that they have the capability to manage the construction, maintenance, and operation of such a facility?
A: New Leaf Energy will be the developer and operator of the facility. New Leaf has its roots in a 20+ year business called Borrego. Borrego's development business spun off in 2022 to become New Leaf Energy, and retained the same leadership and team. The New Leaf team began developing energy storage in 2016 (primarily in Massachusetts and New York). To-date, the team has developed a total 575 MWh of energy storage, with an additional 14 GWh under development that will be installed across multiple states. There are 5 projects either under construction or near construction in New York City and Westchester and approximately 60 additional projects in the downstate area of New York also in development. https://www.newleafenergy.com/

Q: Is the developer involved in other projects on Long Island?
A: Yes. They currently are in the planning phase for projects in Bellport, Holtsville, Yaphank, Port Jefferson Station and Riverhead. None are yet completed.

Costs / Project Financials

Q: Who has the responsibility for the costs involved in necessary improvements in the equipment and training of fire department personnel; police and other responders; medical personnel at the nearby (Mather) hospital, etc.?
A: It is currently not expected that MSFD will incur additional equipment costs related to this facility. The project owner would work with MSFD to develop an initial training program and response plan, and provide periodic training to remain current. This would be provided by the owner's safety consultant at no charge to the fire district. Fire district personnel are already undergoing training related to battery facilities.

In addition, the facility is remotely monitored 24/7 via a Battery Monitoring System (BMS). The B<S will monitor performance aspects of the batteries and be able to automatically shut down cells before a thermal event. Thermal imaging detectors to sense overheated units are being proposed. In the event of an on-site emergency, a phone number with instant response will be posted at the site. First responders will be provided telephone guidance by an 24/7 on-call expert. Further, state law requires 4 hour response time by an expert to guide any response.

Q: How are these battery storage facilities funded? Will they cause an increase in our electrical rates due to new infrastructure costs?
A: These facilities are funded, owned, and operated by independent businesses. Utilities such as LIPA issue Requests for Proposals for entities to build battery storage facilities that supply power to the grid. Unlike the construction of a substation they are not a LIPA-owned capital project that increases infrastructure costs.

The facility owner generates revenue via a existing cost differential of electricity rates, and operate similar to a peak generation power plant, or "peaker". Peaker plans come online at times of high demand to satisfy electrical demand, when they can sell their electricity at a premium. Battery Energy Storage Systems recharge their batteries during off-peak times when electricity rates are lowest, and release the electricity back to the grid during high-demand times when rates are higher. The revenue is the spread between the two electricity rates.

BESS also act as a buffer and storage medium for wind power generation. Instead of wasting power generated by windmills at night when demand is lower, BESS store that power for use during periods of higher demand.

Q: What will be the impact of the development of this facility on the taxes of the individual homeowners and small companies in the local community?
A: This is currently unknown but being actively pursued by the Civic. The Civic's objective is that any development should provide a meaningful net positive financial impact to the community and the school district. The amount and manner of revenue contribution will be an important consideration.

The Civic is working with the developer and the Mount Sinai Union Free School District to determine the tax impact. There are specific aspects of NYS law regarding BESS that dictate tax impact. The developer has expressed a desire to work with the community and taxing authorities to provide a benefit over the existing use that will generate positive revenue for the life of the project. Of concern is existing state law that negatively impacts school district revenue when PILOTs are used. The school district and the developer are working together to investigate options.

New Leaf can confirm that they are able to provide a community benefit agreement to the school district instead of a PILOT. New Leaf has done this numerous times in the past. They are discussing how to do this for the Mount Sinai project.

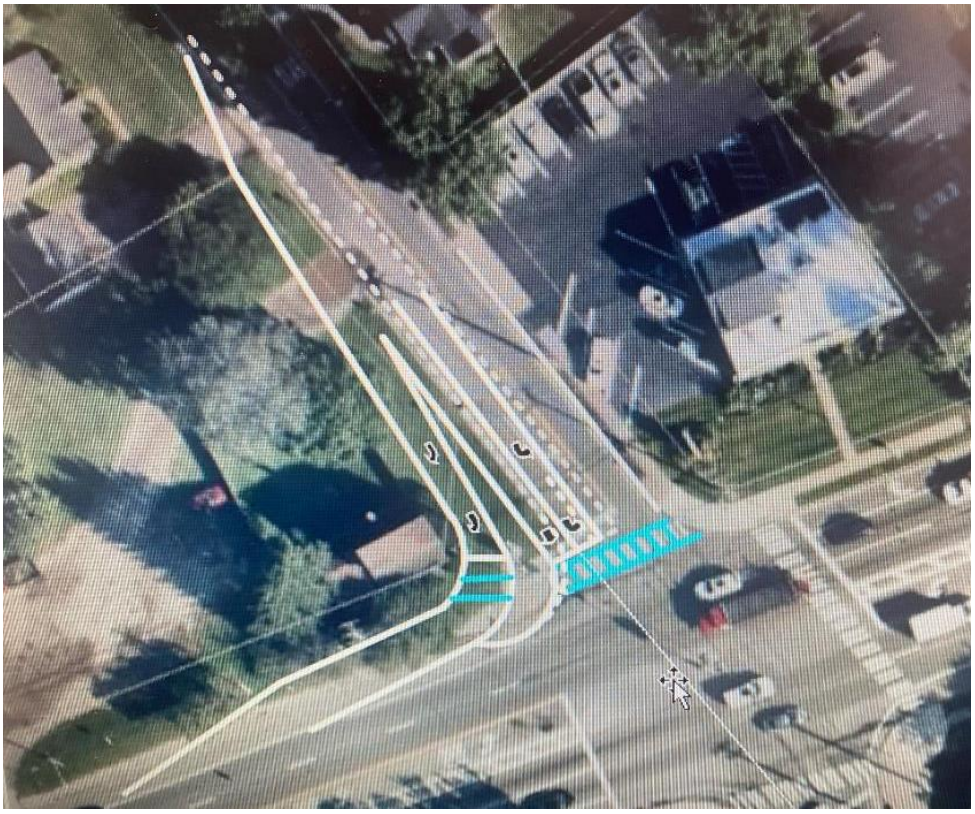
Q: What happens to the batteries when they are used up? How is the facility decommissioned? Who will have responsibility for the relevant costs?
A: The batteries used in this project have an expected 25-year life span. At the conclusion of their useful life, the batteries and their components still have economically useful value. The battery manufacturer (Tesla) has an established decommissioning, recovery and recycling program. The units will be removed and recycled in an environmentally responsible manner. The facility will then be revamped or fully decommissioned. This is done at the expense of the facility's owner. A decommissioning bond that covers the expected costs must be posted before the facility is permitted to operate.

Q: What is the impact on property values to homes nearby other similar battery energy storage facilities?
A: Unknown at this time. At the request of the Civic Board, the developer's land-use attorney is investigating comparisons. There is not a similarly situated project on Long Island that has been completed at this time.

Construction / Site Considerations / Operations

Q: What will be the specific changes in the Coram-Mount Sinai Rd. and its intersection with Route 25A to accommodate A) the normal increase in traffic due to construction of the proposed project; and B) the changes necessary to handle traffic remediation in the event of a lithium fire at the facility?
A: Construction impact of the facility itself is expected to be contained within the footprint of the site and have minimal impact on the roadways. The battery storage units ship pre-assembled and are lifted into place onto concrete pads. This enables rapid installation to minimize disruption. Other details will emerge over time.

Q: Are roadway changes necessary to handle traffic remediation in the event of a fire at the facility?
A: The Civic understands that this intersection has existing chronic congestion. As part of the approval considerations, The Civic Board has proposed to the Town and the Developer modifications to the northern side of the intersection specifically for the Southbound lane. Our proposal includes shifting of the southbound lane(s) to the west, and addition of a right-hand turn-lane with an entry lane. This proposal is aimed at reducing congestion for south-bound traffic by providing an additional turn lane that will allow vehicles to flow through the interchange. It would also help reduce an existing problem of vehicles in the wrong direction to enter the left turn lane.



Q: What kind of traffic will this facility create?
A: The traffic would be negligible, and substantially less than the current use. The facility would be an automated utility with no on-site staff, similar to the existing LIPA sub-station on Rt. 25A in Mount Sinai. It is expected a small crew will visit the site approximately once every six weeks to perform routine maintenance.

Q: How will this project be connected to the electrical facility across Mount Sinai Coram Road? What are the plans for managing traffic during such construction?
A: The substation to which this facility would connect is not across Mount Sinai Coram Road. Rather it is located to the west along NYS 25A. There is one intermediate property between the proposed battery facility and the substation. We expect that the facility would utilize the existing LIPA right-of-way abutting the north side of the property to connect to the substation. Therefore, we expect no need for traffic management due to routing of electrical connections.

Q: What is the projected timeframe for the initiation, construction, and startup of the project assuming that all regulatory requirements have been accomplished?
A: Battery Energy Storage System projects are governed by the NYS ISO (Independent System Operator), which puts each project in a queue. There is typically a multi-year timeline imposed by the requirements of the ISO and local Town of Brookhaven zoning, planning, and permitting processes. Once all regulatory processes are completed the project is expected to take a few months to complete. The expected timeline from inception to switch-on may be as long as five years.

Q: How are we assured that the facility will be properly decommissioned at the end of its life?
A: The project owner is required to post a decommissioning bond at the beginning of the project. This ensures that funding will be available to properly decommission the facility without additional cost to the community or electrical rate payers.

Q: While the existing structures on the site will be demolished, to what extent will the other nearby houses (for example, across the street) be impacted by the construction of this project?
A: It is too early in the project to determine this yet.

Q: Are there environmental hazards to vegetation or wildlife from this proposed battery storage facility?
A: The site currently has minimal vegetation but would be cleared as part of the project. Similarly, there is minimal to no wildlife present on the currently residential property. The facility would be fully fenced to prevent wildlife entry. The area outside of the fence would be heavily landscaped for aesthetic value.

Q: What kind of noises or sounds to battery storage facilities created during operation? Buzzing, humming, fan noises, clicks, etc? If any, from how far away can they be heard? What are the sound levels in dB at the property edges?

A: The Tesla Megapack 2 XL is equipped with fans that operate similar to an HVAC unit. The measured dBA of a MP2XL operating a 100% fan speed is approximately 68dBA 10m from the front. 68dBA is sometimes compared to the noise level of a normal conversation or slightly quieter than a vacuum. Based on the Long Island climate, New Leaf does not anticipate that the fans will run at greater than 50% capacity.

Q: Has research shown that there are no carcinogen concerns to humans or wildlife from the normal operation of battery storage facilities? What about in the event of a fire or thermal event, either emissions or residual materials?

A: During normal operations, there are no emissions (air or aqueous) generated from the systems to cause harm to life. In general, battery fires resemble plastic fires in terms of emission of toxic gases including CO, HCI, HF, HCN, and benzene. However, there are no exotic chemicals from a battery fire that would not be seen in a house fire, and testing of the levels of emissions are consistently trace compared to those emitted by, for example, a couch fire. Consistent testing of air quality and ground water around battery fire test sites and failure sites have recorded no measurable toxic gases or groundwater contamination.

Security

Q: How would the facility be monitored? Are there staff on-site?
A: The facility would be a remote-operated utility installation with physical security. It would be remotely monitored 24/7 via a Battery Monitoring System (BMS). BMS monitor various system parameters for both system health and safety. Data/alerts are send to human operators for review and action as needed. Thermal imaging detectors to reveal overheated units are being considered. In the event of an emergency on-site, a phone number with 24/7 human response will be posted at the site. First responders will be provided advance training, and guidance by an on-call expert in the event of an incident. Further, state law requires maximum 4 hour response time by an expert to guide any response.

Q: Since the Battey Monitoring System (BMS) is remotely monitored, what precautions are in place to mitigate cybersecurity risks? Could a malicious actor take steps to damage the facility, which might lead to an adverse event?
A: Tesla developed a comprehensive Cybersecurity Program guide to address cyber infrastructure security risks by employing and enforcing certain policy categories that include: Remote Access, Account Management, Separation of duties, Least privileges and Public Access. There is a firewall to restrict accessible IP addresses and https security certificate validation that encrypts all data communication to each system's BMS. These combined measures are used to prevent, mitigate and thwart the ability for any malicious actor to gain access to the Tesla control system.

In addition, the system has automatic back stops to override operation signals that would put it outside of safe operating parameters, for example: automatically ignoring charge signals if it would force the system out of safe operating temperatures. If unsafe parameters are sent to the system and automatically overridden multiple times, the system will safely disconnect and must be manually restarted in person. In the unlikely event of a cybersecurity attack, the system is designed to automatically resist unsafe parameters, and PSEG and New Leaf will have access to a manual disconnect switch on site to take the system offline until remote controls are restored.

Lastly, PSEG's grid and the battery do not share controls, meaning that a cybersecurity attack on one will not compromise the other to a cybersecurity attack.

Q: Describe the nature of cybersecurity program and precautions to secure the facility against improper remote access.

A: At the Tesla level, mechanisms in the design and implementation of internal information system networks prohibit connections from external networks explicitly disallowed with Tesla Energy's Access Control Policy. Direct remote terminal access between the Tesla Corporate network and internal information system networks is not allowed. These connections must utilize intermediate information system jump servers between the corporate network and the internal information systems network. Tesla also uses cryptography to protect the confidentiality and integrity of remote access sessions to internal information systems and external-facing information systems that require any form of user authentication. Any additional user access is protected by a firewall to restrict accessible IP addresses.

Q: How will the facility be remotely monitored in the event of an area power failure such as a hurricane, including extended power failure? What are the disaster response times and procedures during adverse weather such as a blizzard or hurricane?
A: While the system is remotely monitored during normal operations, there will always be a subject matter expert on call and within a 4-hour radius of the system, which follows the NY State Interagency Safety Group recommendations for energy storage installations. The system cabinet is designed to withstand adverse weather and we expect the system to perform normally during these events unless directly impacted by debris or a power outage. If there were a direct impact to the system, it is self-monitoring to sense over-voltage, high temperatures, cell failures, etc. and will automatically isolate and/or power down the system as necessary. The system is also required to follow stringent “anti-islanding” requirements by PSEG to disconnect from the grid when there is a power failure on the grid. The system cannot generate electricity while its inverter is in an “anti-islanding” mode. This prevents power from being fed onto the grid while it is being repaired, to protect line worker safety. The system would be disabled from operating (verified in-person if it cannot be verified remotely) until it is determined safe to resume operations. Depending on the event and risk of failure, New Leaf would resort to in-person monitoring for a time period determined in consultation with the local fire department.

Q: What communications technology is used to maintain the BMS communications system? E.g., landline, commercial cellular, redundant cellular, satellite, etc. Is there failover provisions in the event the primary communication method goes off-line, such as a carrier outage?
A: Tesla establishes both an alternate/secondary telecommunication service as well as alternate/secondary control center, in the event the primary system capabilities become unavailable. These alternate services cannot share a single point of failure with the primary service and must be sufficiently separated from the primary service provider such that they are not susceptible to the same hazards. According to Tesla's cybersecurity policy, Tesla must have the capability to recover and re-establish the information systems to a known secure state after disruption, compromise or failure.

Versioning History		
Date	Edited By	Description
3/29/2024	B. Arrington	Initial Version