



Greengate Power Corporation

Luna Solar+ Project

April 5, 2023



Alberta Utilities Commission

Decision 27843-D01-2023

Greengate Power Corporation

Luna Solar+ Project

Proceeding 27843

Applications 27843-A001 to 27843-A003

April 5, 2023

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1 Decision summary

1. In this decision, the Alberta Utilities Commission approves applications from Greengate Power Corporation to construct and operate the Luna Solar+ Project, located near the city of Brooks in Newell County. The project consists of a 930-megawatt (MW) solar power plant, a battery energy storage system with a storage capacity of up to 160-MW/320-megawatt-hour (MWh) and the associated Apollo 1041S Substation and Artemis 1067S Substation.

2 Applications

2. Greengate filed applications with the Commission for approval to construct and operate the Luna Solar+ Project. The solar power plant would consist of approximately 2.2 million bifacial photovoltaic modules on a single-axis tracking system, 260 inverter and transformer stations, and underground collector lines that would connect to the two project substations. The battery energy storage system (BESS) would utilize lithium iron phosphate batteries and be rated up to 160 MW and have a storage capacity of 320-MWh. The Apollo 1041S Substation and Artemis 1067S Substation would each contain three 240/34.5-kilovolt (kV) transformers, up to four 240-kV circuit breakers, up to fifteen 34.5-kV circuit breakers, and associated substation equipment.

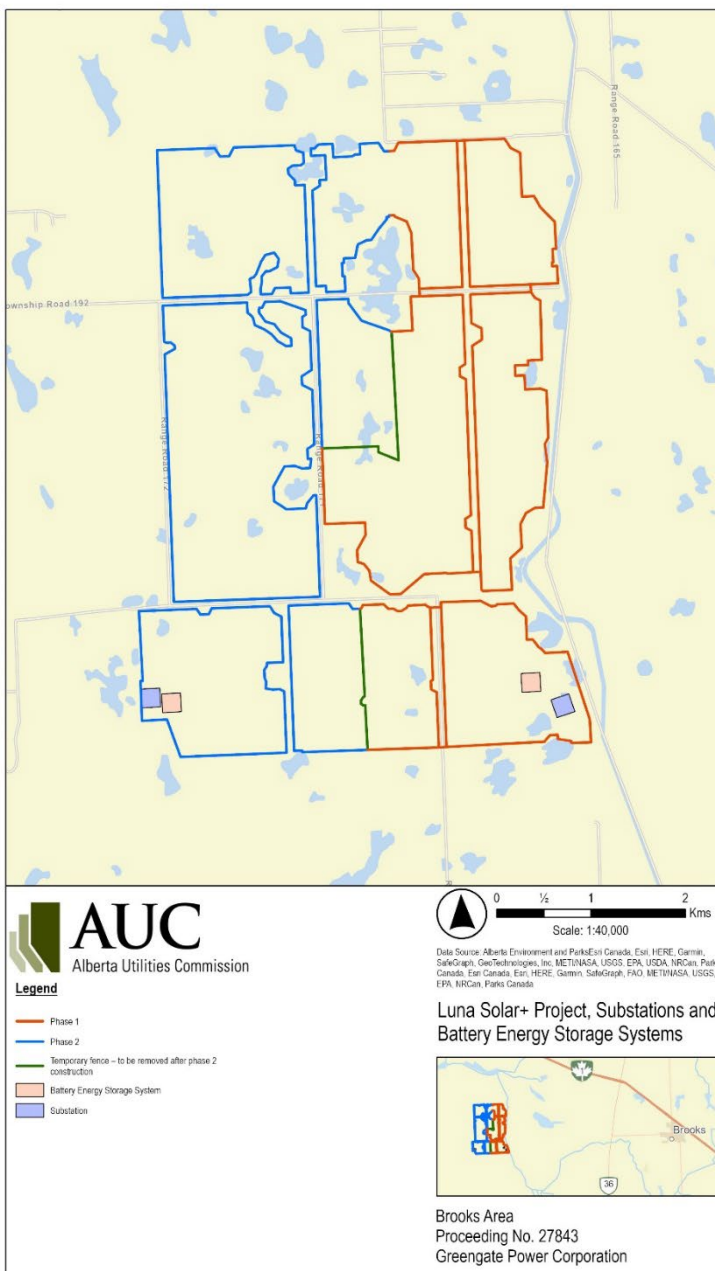
3. The construction of the project is anticipated to be completed in two phases. Phase one would consist of a 465-MW solar power plant with an 80-MW/160 MWh BESS and the associated Apollo 1041S Substation. Phase two would consist of a 465 MW solar power plant with an 80-MW/160 MWh BESS and the associated Artemis 1067S Substation.

4. Greengate stated that the manufacturers and model types for the photovoltaic modules, inverter/transformer stations, main power transformers and BESS will be determined during the detailed design and optimization phase and it will notify the Commission prior to construction. Greengate will also confirm whether the finalized design of the project is expected to increase the land, noise and environmental impacts beyond those reflected in the initial application to the Commission.

5. The project would be sited on approximately 5,624 acres of privately owned, cultivated land in Newell County within the following sections and as shown on the map in Figure 1:

| Luna Solar+ Phase 1 | Luna Solar+ Phase 2 |
|---------------------|---------------------|
| 1-19-17-W4M (all) | 2-19-17-W4M (all) |
| W6-19-16-W4M | 11-19-17-W4M (all) |
| W7-19-16-W4M | W12-19-17-W4M |
| E12-19-17-W4M | W13-19-17-W4M |
| E13-19-17-W4M | 14-19-17-W4M (all) |
| 18-19-16-W4M (all) | 34-18-17-W4M (all) |
| E35-18-17-W4M | W35-18-17-W4M |
| 36-18-17-W4M (all) | |

Figure 1. Luna Solar+ Project location



6. Separate applications will be submitted for approval to construct transmission infrastructure to connect the project to the Alberta Interconnected Electric System.
7. Greengate's applications included:
- A participant involvement program (PIP) summary, which details consultation with stakeholders within 400 metres of the project and notification to stakeholders within 800 metres of the project.¹
 - A copy of the renewable energy project submission filed with Alberta Environment and Protected Areas, Fish and Wildlife Stewardship (AEPA), which is specific to wildlife and wildlife habitat and describes baseline environmental conditions and associated surveys or studies; identifies potential environmental impacts from the project; and describes mitigation to prevent or limit those impacts.²
 - An environmental evaluation, completed by Matrix Solutions Inc., which predicted the project's effects on the environment, recommended measures to avoid or mitigate the project's predicted adverse environmental effects, and proposed monitoring to evaluate the efficacy of these measures.³
 - A conceptual conservation and reclamation plan, completed by Matrix Solutions Inc., that describes the existing baseline conditions and land use associated with the project and outlines site-specific conservation and reclamation activities that have or will be undertaken.⁴
 - The AEPA renewable energy referral report, dated October 28, 2022, which ranked the project an overall low risk to wildlife and wildlife habitat.⁵
 - A site-specific emergency response plan for the construction and operation of the project that was provided to local first responders and authorities.⁶
 - A solar glare assessment, completed by Green Cat Renewables Canada Corporation (GCR), which predicted that glare from the project is not likely to have the potential to create hazardous glare conditions for the roads that were assessed.⁷
 - A noise impact assessment (NIA), completed by GCR, which confirmed that the project will comply with Rule 012: *Noise Control*.⁸
 - A *Historical Resources Act* approval, issued on October 20, 2022.⁹

¹ Exhibit 27843-X0015, Attachment 14 - Participant Involvement Program Report.

² Exhibit 27843-X0012, Attachment 11 - AEPA-FWS Renewable Energy Project Submission.

³ Exhibit 27843-X0008, Attachment 7 - Environmental Evaluation.

⁴ Exhibit 27843-X0010, Attachment 9 - Conceptual Conservation and Reclamation Plan.

⁵ Exhibit 27843-X0013, Attachment 12 - AEPA-FWS Renewable Energy Referral Report.

⁶ Exhibit 27843-X0006, Attachment 5 - Emergency Response Plan.

⁷ Exhibit 27843-X0007, Attachment 6 - Solar Glare Hazard Assessment.

⁸ Exhibit 27843-X0011, Attachment 10 - Noise Impact Assessment.

⁹ Exhibit 27843-X0014, Attachment 13 - Historical Resources Approval.

8. For Phase one, Greengate expects construction to begin in the second quarter of 2024, with a commercial operation date in the fourth quarter of 2025. For Phase two, Greengate expects construction to begin in the second quarter of 2025, with a commercial operation date in the fourth quarter of 2026. Temporary fencing will be constructed between the two phases during Phase one to secure project infrastructure. The temporary fencing will be removed once the Phase two fence is erected. Greengate requested a construction completion date of June 2026 for Phase one and a construction completion date of June 2027 for Phase two to account for unforeseen delays.

9. The Commission issued a notice of applications to area stakeholders, the Blood Tribe, Piikani Nation, Siksika Nation, Tsuut'ina Nation, Stoney (Goodstoney) Band, Stoney (Bears paw) Band and Stoney (Chiniki) Band. The Commission did not received any statements of intent to participate in response to the notice.

3 Discussion and findings

10. The Commission has considered the applications in their entirety, and for the reasons outlined below, the Commission finds that approval of the project is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment.

11. The Commission begins by discussing issues that are relevant to the project as a whole, including project consultation and the project's environmental and noise impacts. The Commission then discusses considerations that relate primarily to the power plant, substations, and BESS, in that order.

3.1 Considerations relevant to the project as a whole

12. The Commission considers that the information requirements specified in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines* have been met.

13. Greengate's PIP consisted of notification to stakeholders, including occupants, residents, and landowners located within 800 metres of the project boundary, and personal consultation with stakeholders located within 400 metres of the project boundary. There are no aerodromes within 4,000 metres of the project. Greengate held a community open house on November 14, 2022, in Brooks. The PIP provided stakeholders with an opportunity to be informed of the project and provide feedback. Greengate consulted with the Siksika Nation, Piikani Nation, Blood Tribe, Stoney Nakoda First Nation, and Tsuut'ina First Nation. No specific concerns were raised about the project.

14. Greengate consulted with the County of Newell. No questions or concerns were raised by the County of Newell. Greengate will submit a development permit application following the Commission's process. The Commission finds that Greengate's PIP has satisfied the requirements of Rule 007.

15. The Commission accepts AEPA's assessment that the project presents an overall low risk to wildlife and wildlife habitat. There are five seasonal wetlands (Class III) and one semi-permanent wetland (Class IV) within the project area; however, all infrastructure is sited

outside of the 100-metre setbacks where applicable, which aligns with the *Wildlife Directive for Alberta Solar Energy Projects*. All infrastructure is sited to meet the setback requirement for the single intermittent watercourse found within the project area.

16. AEPA's moderate risk to breeding birds was determined due to the occurrence of sensitive species and overall breeding bird use found within the project area. AEPA determined that the risk to migratory birds is moderate due to the high numbers of migratory birds observed during surveys, along with two small stopover sites located within the project area.

17. The project is located within the sensitive amphibian range, sensitive raptor range, burrowing owl range and sharp-tail grouse range. Field surveys identified Boreal chorus frogs as the only amphibians, which are not abundant in the province. No burrowing owls or sharp-tailed grouse or leks were observed. The applicant has adhered to setbacks for all raptor stick nest detected within and around the project.

18. The project is entirely sited on private cultivated lands which has a reduced impact on the environment due to the disturbed nature of the land use. While native pasture exists adjacent to the south edge of the project area, the applicant proposed to re-seed project lands within 100 metres of native grassland habitat with a native seed mix to limit the potential for weed and non-native species encroachment onto adjacent native grasslands. AEPA assessed the risk to native and critical habitat as low based on project siting, proximity to native habitat, and proposed mitigations.

19. The Commission is satisfied that, with diligent implementation of the mitigation measures and adherence to the commitments made by Greengate in this proceeding, the identified environmental effects of the project can be mitigated to an acceptable degree. The project is located on cultivated land that is not irrigated.

20. Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants* requires approval holders to submit annual post-construction monitoring survey reports to AEPA and the Commission. Therefore, the Commission imposes the following condition of approval:

- a. Greengate Power Corporation shall submit an annual post-construction monitoring report, first for Phase one, which can be later combined with Phase two once Phase two becomes operational. The reports are to be submitted to Alberta Environment and Protected Areas – Fish and Wildlife Stewardship and the Commission no later than January 31 of the year following the mortality monitoring period, and on or before the same date every subsequent year for which Alberta Environment and Protected Areas requires surveys pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.

21. The NIA identified approximately 30 dwellings within a community approximately 1.3 kilometres northwest of the project boundary. Among these dwellings, Greengate selected three dwellings (R1, R2 and R3) as receptors in the NIA. Greengate explained that it selected these three dwellings as receptors, because they are the nearest dwellings to the project and they are potentially the most affected dwellings among the community.

22. The NIA established permissible sound levels (PSLs) at receptors to be 43 A-weighted decibels (dBA) nighttime and 53 dBA daytime, based on the receptors' dwelling density and proximity to transportation infrastructure. Greengate identified five energy-related facilities that

are close to the project and have the potential to influence cumulative sound levels at receptors as the baseline case. GCR measured noise at these baseline case facilities, and established their sound power levels based on the measurements.

23. Major sound sources of the project modelled in the NIA include 260 inverter/transformer stations at the solar power plant, 104 energy storage battery units and 26 inverter/transformers stations at the project BESS, and six 240/34.5-kV, 200-megavolt ampere high-voltage transformers at two project substations. The NIA established sound power levels of the project sound sources based on manufacturer or vendor data, and predicted that cumulative sound levels will be compliant with applicable PSLs at all receptors.

24. The Commission finds that the NIA meets the requirements of Rule 012 and accepts the conclusion that noise from the project will comply with the rule.

25. Greengate stated that when the project is decommissioned and the land reclaimed, it has a contractual obligation with the project landowners to remove all project infrastructure from the lands. It is obligated to obtain a reclamation certificate in accordance with the *Conservation and Reclamation Directive for Renewable Energy Operations* and any other applicable laws and regulations in effect in Alberta at the time. Greengate submitted that decommissioning and reclamation will be planned and completed in consultation with landowners, occupants, residents, relevant government agencies and other stakeholders having interest in the reclamation of the project.

26. Greengate stated that funding to cover the costs of decommissioning and reclamation would be provided through performance security in the form of either a cash bond, letter of credit, or corporate/paternal guarantee. The performance security will be allocated in full to the single constituent landowner. Greengate confirmed that the landowner has the right to independent legal advice on this matter.

27. Greengate stated that in the event of bankruptcy or insolvency, or if it fails to meet its decommissioning and reclamation obligations, the performance security is the sole funding mechanism at the project level to directly and specifically fund decommissioning and reclamation of the project.

28. Greengate does not have a contractual obligation with the landowner to periodically review the amount of performance security. However, Greengate stated that it does review its asset retirement obligations on a quarterly basis. Any changes to the asset retirement obligations are presented on the balance sheet, with accompanying notes describing the nature of the change in liability.

29. Greengate stated that any future owner of the project would be required to adhere to the same pre-existing contractual obligations, but provided no details as to how a subsequent owner would be deemed credit-worthy or when they would provide acceptable security.

30. The Commission finds that Greengate has adequately considered the decommissioning and reclamation activities that will be required at the end of the project's life, including its obligations under the *Conservation and Reclamation Regulation*. Greengate stated that its conceptual conservation and reclamation plan will be updated throughout the project's life until a reclamation certificate has been obtained. In addition to its reclamation obligations under provincial legislation, Greengate stated it has a contractual obligation with the landowner to

remove all project infrastructure from the lands. An essential aspect of decommissioning and reclamation covenants of a proponent centre on the provision of adequate security. Financial circumstances and project ownership can change over the decades of life of a development project; the certain and timely provision of adequate security effectively addresses such liability. Greengate stated that funding to cover the costs of decommissioning and reclamation will be provided through performance security in the form of either a cash bond, letter of credit, or corporate/paternal guarantee.

3.2 Considerations specific to the power plant

31. The solar glare assessment identified 30 dwellings within 1.5 kilometres from the project boundary and selected three dwelling as the most affected receptors. These dwellings are within one community, located approximately 1.3 kilometres from the project boundary. The solar glare assessment identified six local roads (Range Road 170, Range Road 171N, Range Road 171S, Range Road 172, Township Road 190 and Township Road 192) within 800 metres of the project boundary as receptors. The assessment confirmed that there are no aerodromes within four kilometres, and there are no dwellings, highways, major roadways, or railways within 800 metres from the project boundary.

32. The solar glare assessment indicated the project would be mounted on a single-axis tracking system with a maximum tracking angle of 60 degrees and assumed that the project would use anti-reflective coating on the solar panels.

33. The assessment predicted yellow and green glare along Township Road 190 and Township Road 192. Township Road 192 was predicted to be the route most impacted by glare from the project. The assessment noted that drivers of commercial vehicles travelling along this road may observe moderately short durations of yellow glare in the morning or evening in February to April and August to October. It is highly unlikely that an observer will be affected by the full duration of glare in the predicted periods.

34. The solar glare assessment concluded that the project would not likely have the potential to create hazardous glare conditions for the roads that were assessed.

35. As the predictions and associated conclusion in the solar glare assessment were premised upon the use of an anti-reflective coating, the Commission imposes the following condition of approval:

- Greengate Power Corporation shall use anti-reflective coating on the project solar panels.

36. Given the predictions from the glare assessment, the Commission is satisfied that the glare impacts from the project will be minimal. However, the Commission requires Greengate to promptly address complaints or concerns from stakeholders regarding solar glare if Greengate receives any at the post-construction stage. Accordingly, the Commission imposes the following condition of approval:

- Greengate Power Corporation shall file a report with the Commission detailing any complaints or concerns it receives or is made aware of regarding solar glare from the project during its first year of operation for phase one and phase two, as well as its response to the complaints or concerns. Greengate Power Corporation shall file these reports no later than 13 months after each phase of the project becomes operational.

37. Greengate stated that the final selection of the photovoltaic solar modules will be made prior to construction, based on the required electrical characteristics and economic aspects of available modules at the time of procurement. As such, the Commission imposes the following condition to ensure the final equipment does not result in impacts greater than those considered in this application. Should the final equipment result in greater impacts, Greengate must submit an amendment application to the Commission for consideration:

- Once Greengate Power Corporation has finalized its equipment selection for the photovoltaic power plant it must file a final project update to the Commission to confirm that the project has stayed within the final project update specified allowances for solar power plants. The final project update must be filed at least 90 days prior to the start of construction.

3.3 Considerations specific to the substations

38. The Commission finds that impacts from the construction and operation of the substations will be minor in nature. The footprint of the substations are within the project boundary, which the Commission considered in its assessment of the solar power plant. Further, the NIA concluded that the substations will operate in compliance with Rule 012.

39. The Commission notes that each of the substations will contain one telecommunications tower; however, Greengate has stated this is outside of the scope of this application and will be subject to a separate regulatory process. As Greengate has not finalized all of the substation components, specifically the quantity of 240-kV and 34.5-kV circuit breakers, the Commission imposes the following condition to confirm the final substation equipment:

- Once Greengate Power Corporation has finalized its equipment selection for the substations, it must submit a final project update to the AUC confirming quantity and rating of the circuit breakers. The final project update must be filed at least 90 days prior to the start of construction of the substations.

3.4 Considerations specific to the battery energy storage system

40. Greengate's proposed BESS will be rated at 160 MW with a storage capacity of 320 MWh. The BESS is proposed to consist of 104 Tesla Megapack 2XL containers of lithium iron phosphate batteries, each paired with an inverter and transformer skid. Greengate stated that it is not considering any battery chemistry other than lithium iron phosphate. Greengate has not selected the battery vendor so specifications are subject to change.

41. The Commission considered the noise and environmental impacts of the BESS in its consideration of the project as a whole, and finds that impacts from the construction and operation of the BESS will be minor in nature.

42. The Commission understands that the use of lithium iron phosphate¹⁰ batteries mitigates some safety concerns related to battery technology because the materials in a lithium iron phosphate battery are thermally and structurally stable chemical compounds that are less prone to thermal runaway than those in other types of lithium-ion batteries. Greengate submitted that the BESS will contain an automated control and monitoring system that monitors charging and

¹⁰ Lithium iron phosphate batteries are a type of lithium-ion battery which use iron phosphate as the cathode. They are also referred to as LFP batteries or LiFePO₄.

discharging rate, voltage, temperature, state of health, and other cell parameters. Greengate submitted that the BESS monitoring system and safety features will be confirmed once the BESS equipment is finalized.

43. Given that the battery vendor and the monitoring system remain to be confirmed, the Commission imposes the following condition of approval:

- Greengate Power Corporation shall select lithium iron phosphate batteries for the BESS. If an alternate battery chemistry is selected, Greengate Power Corporation shall submit specifications such as the cell combustion phase duration and peak temperature to the Commission, along with confirmation the alternate chemistry possesses better thermal stability than lithium iron phosphate. Greengate Power Corporation shall also confirm the BESS monitoring equipment. Greengate Power Corporation cannot proceed with construction of the BESS until it receives written approval from the Commission.

44. Greengate retained Calvin Consulting Group Ltd. to conduct an air quality dispersion modelling and risk assessment for the BESS. The modelling assumed a worst-case scenario where a fire would occur in the container closest to the nearest residence, which is located approximately 2.3 kilometres south-southeast of the phase one BESS and four kilometres east-southeast of the phase two BESS. It was assumed that 10 per cent of the batteries in any one module would burn simultaneously until such time as all modules in a container have burned. The report stated it is highly unlikely for the fire to spread to other containers.

45. The applicant stated that, while other compounds such as hydrogen chloride (HCL), methanol, styrene and toluene maybe released during a thermal runaway event, it modelled carbon monoxide (CO) and hydrogen fluoride (HF) because they are the two main compounds of potential concern from LFP fires and are most likely to exceed the *Alberta Ambient Air Quality Objectives* (AAAQO).

46. The report modelled the dispersion of HF and CO and found that the predicted concentrations for HF and CO exceed their respective AAAQO at the BESS fencelines; however, this dissipated with distance. At or beyond 100 metres downwind from the emissions source the CO hourly-average AAAQO is met for each BESS. Likewise, the HF hourly-average AAAQO is met at or beyond 400 metres downwind from the emission source for each BESS. At the nearest residence the predicted concentrations were well below the respective AAAQO.¹¹

47. The air quality dispersion modelling assessment also compared the HF and CO concentrations with the American National Institute for Occupational Safety and Health's (NIOSH) Immediately Dangerous to Life or Health (IDLH) values. The maximum predicted 10-minute average concentrations for HF and CO were below the IDLH values at all off-site locations.¹² The report concluded that the risk to the public and local residents is low given the safety features of the BESS, low probability of fires using the lithium iron phosphate chemistry, and the predicted air quality concentrations of HF and CO in the event of a fire.

48. Greengate stated that the monitoring system for the Tesla Megapack monitors at all levels (cell, module and Megapack level) to identify abnormal operation and take necessary measures

¹¹ Exhibit 27843-X0006, Attachment 5 - Emergency Response Plan, PDF page 104.

¹² At 100 metres for the each BESS, HF was predicted to be a maximum of 0.1052 parts per million (ppm) with an IDLH limit of 30 ppm and CO was predicted to be a maximum of 12.0 ppm with an IDLH limit of 1,200 ppm.

to prevent thermal runaway, such as isolating a cell, a module, or even emergency shutdown of the entire container. The Commission finds that, with monitoring systems and safety features built into the BESS, the safety risk of the BESS is low; however, the Commission notes that BESS components have not been finalized. The Commission imposes the following condition of approval to ensure that potential emissions impacts are considered:

- Upon final equipment selection of the BESS, Greengate Power Corporation shall confirm the findings of the air quality dispersion modelling and risk assessment remain valid and continue to meet the *Alberta Ambient Air Quality Objectives* and the American National Institute for Occupational Safety and Health's Immediately Dangerous to Life or Health (IDLH) values at the nearest residence.

49. Greengate's emergency response plan considers the BESS and summarizes information for first responders to safely and effectively respond to incidents that involve the BESS. Greengate has committed to keeping emergency responders informed and engaged in emergency response planning. Greengate has also committed to provide on-site training by a qualified third party to all emergency responders who may be required to respond to any BESS related emergencies at the project site. A safety manager will be assigned prior to the start of construction to work alongside the emergency response team to update the emergency response plan. After construction, the operations team will continue to maintain and implement the emergency response plan. While the Commission considers that site-specific emergency response plans and training are important tools to prepare for and respond to emergency incidents, the Commission also understands that not all emergency risks can be mitigated. Accordingly, the Commission imposes the following conditions of approval:

- Greengate Power Corporation shall continually review and update its site-specific emergency response plan, and make any changes required to incorporate input received from local fire departments on mitigation measures and other related requirements, and from Newell County and other interested stakeholders. The updated plans are to be provided to Newell County and local fire departments.
- Greengate Power Corporation, and any subsequent operator, shall at all times during the construction and operation of the project, maintain insurance coverage that is sufficient to protect against any reasonably foreseeable liabilities.
- Greengate Power Corporation, and any subsequent operator, shall implement any ongoing upgrades to improve the safety of the project, including but not limited to firmware and software enhancements, monitoring capability enhancement, process changes and safety standards as they are developed and notify the Commission of these changes.

50. In light of the foregoing, and subject to the conditions set out in this decision and commitments undertaken by Greengate, the Commission considers the applications to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

4 Decision

51. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 27843-A001 and grants Greengate Power Corporation the approval set out in Appendix 1 – Power Plant Approval 27843-D02-2023, to construct and operate the solar power plant and battery energy storage system.

52. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 27843-A002 and grants Greengate Power Corporation, the approval set out in Appendix 2 – Substation Permit and Licence 27843-D03-2023, to construct and operate the Apollo 1041S Substation.

53. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 27843-A003 and grants Greengate Power Corporation, the approval set out in Appendix 3 – Substation Permit and Licence 27843-D04-2023, to construct and operate the Artemis 1067S Substation.

54. The appendices will be distributed separately.

Dated on April 5, 2023.

Alberta Utilities Commission

(original signed by)

Carolyn Dahl Rees
Chair

Appendix A – Summary of Commission conditions of approval in the decision

This section is intended to provide a summary of all conditions of approval specified in the decision for the convenience of readers. Conditions that require subsequent filings with the Commission will be tracked as directions in the AUC's eFiling System. In the event of any difference between the conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail

The following are conditions of Decision 27843-D01-2023 that require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 27843-D02-2023:

- Greengate Power Corporation shall submit an annual post-construction monitoring report, first for Phase one, which can be later combined with Phase two once Phase two becomes operational. The reports are to be submitted to Alberta Environment and Protected Areas – Fish and Wildlife Stewardship and the Commission no later than January 31 of the year following the mortality monitoring period, and on or before the same date every subsequent year for which Alberta Environment and Protected Areas requires surveys pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.
- Once Greengate Power Corporation has finalized its equipment selection for the photovoltaic power plant it must file a final project update to the Commission to confirm that the project has stayed within the final project update specified allowances for solar power plants. The final project update must be filed at least 90 days prior to the start of construction.
- Greengate Power Corporation shall select lithium iron phosphate batteries for the BESS. If an alternate battery chemistry is selected, Greengate Power Corporation shall submit specifications such as the cell combustion phase duration and peak temperature to the Commission, along with confirmation the alternate chemistry possesses better thermal stability than lithium iron phosphate. Greengate Power Corporation shall also confirm the BESS monitoring equipment. Greengate Power Corporation cannot proceed with construction of the BESS until it receives written approval from the Commission.
- Upon final equipment selection of the BESS, Greengate Power Corporation shall confirm the findings of the air quality dispersion modelling and risk assessment remain valid and continue to meet the *Alberta Ambient Air Quality Objectives* and the American National Institute for Occupational Safety and Health's Immediately Dangerous to Life or Health (IDLH) values at the nearest residence.

The following are conditions of Decision 27843-D01-2023 that may or do not require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 27843-D02-2023:

- Greengate Power Corporation shall use anti-reflective coating on the project solar panels.
- Greengate Power Corporation shall file a report with the Commission detailing any complaints or concerns it receives or is made aware of regarding solar glare from the project during its first year of operation for phase one and phase two, as well as its

response to the complaints or concerns. Greengate Power Corporation shall file these reports no later than 13 months after each phase of the project becomes operational.

- Greengate Power Corporation shall continually review and update its site-specific emergency response plan, and make any changes required to incorporate input received from local fire departments on mitigation measures and other related requirements, and from Newell County and other interested stakeholders. The updated plans are to be provided to Newell County and local fire departments.
- Greengate Power Corporation, and any subsequent operator, shall at all times during the construction and operation of the project, maintain insurance coverage that is sufficient to protect against any reasonably foreseeable liabilities.
- Greengate Power Corporation, and any subsequent operator, shall implement any ongoing upgrades to improve the safety of the project, including but not limited to firmware and software enhancements, monitoring capability enhancement, process changes and safety standards as they are developed and notify the Commission of these changes.

The following is a condition of Decision 27843-D01-2023 that requires a subsequent filing with the Commission and will be included as a condition of Substation Permit and Licence 27843-D03-2023:

- Once Greengate Power Corporation has finalized its equipment selection for the substations, it must submit a final project update to the AUC confirming quantity and rating of the circuit breakers. The final project update must be filed at least 90 days prior to the start of construction of the substations.

The following is a condition of Decision 27843-D01-2023 that requires a subsequent filing with the Commission and will be included as a condition of Substation Permit and Licence 27843-D04-2023:

- Once Greengate Power Corporation has finalized its equipment selection for the substations, it must submit a final project update to the AUC confirming quantity and rating of the circuit breakers. The final project update must be filed at least 90 days prior to the start of construction of the substations.