AUC
Alberta Utilities Commission

AUC inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta

Module A Report

January 31, 2024

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Proceeding 28501

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Published by the:
Alberta Utilities Commission
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1 Executive summary

1. This is the report of the Alberta Utilities Commission (AUC or the Commission) on land-use related issues in the inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta. This report addresses four issues related to the development of power plants, as identified in the Government of Alberta's order-in-council:

- The development of power plants on specific types or classes of agricultural or environmental land.
- The impact of power plant development on pristine viewscapes.
- The implementation of mandatory reclamation security requirements for power plants.
- The development of power plants on lands held by the Crown in the Right of Alberta.

2. The report also addresses the role of municipal governments in the development and review of power plant applications.

3. The report is the culmination of an inquiry process conducted between August and December 2023 that involved open houses, workshops with First Nations and Métis communities, written submissions, and oral submissions and questioning. The Commission received hundreds of written and oral submissions from Albertans across the province representing diverse interests and viewpoints.

4. Within the report, the Commission provides observations based on the information and feedback it gathered throughout the inquiry. The Commission also commits to changes to its own practices and procedures. Lastly, the Commission identifies options that the Government of Alberta may pursue should it determine that legislative or policy change is needed. These observations, commitments and options are listed by topic as follows:

Role of municipal governments

Observations:

- Municipal participation in AUC proceedings has been increasing.
- Municipalities want changes to how the AUC considers land-use planning and other municipal issues in AUC proceedings.
- With AUC enhancements to its process, changes to Section 619 of the *Municipal Government Act* are not necessary.

AUC Commitments:

- Municipal participation rights will be automatically granted and municipalities will be eligible to request cost recovery for participation.
- The Commission will undertake a review of Rule 007 related to municipal submission requirements and clarify consultation requirements.

Agricultural and environmental land

Observations:

- The existing regulatory framework is generally sufficient for the protection of environmental land.
- There are a number of agricultural and environmental mapping tools that exist to assist proponents with siting of power plants in Alberta.
- There is no consensus about which land constitutes "prime agricultural land."
- Power plant development has not historically been a primary driver of agricultural land loss in Alberta.
- Market forces have favoured non-prime agricultural land for renewable projects, resulting in about four per cent of renewable projects locating on class 2 land as of October 2022.
- Based on the AESO high renewable net-zero scenario, and assuming all renewable development locates on class 2 land, the percentage of agricultural class 2 land loss is estimated to be less than one per cent by 2041.
- Agrivoltaic programs are an emerging tool to help mitigate agricultural impacts from projects on the land, but they would benefit from further study.
- Municipalities want to protect agricultural land and minimize land fragmentation.

AUC Commitment:

- Explore requirements for proponents to provide soil field verification earlier in the application process.

Options:

- Assess the value of creating a province-wide integrated multi-criteria evaluation tool to identify and evaluate agricultural land.
- Do not place restrictions on use of any particular agricultural land classes. Rely on the enhancement of AUC processes, including increased municipal government involvement and focus on agricultural land preservation.
- Develop an agricultural directive as a tool to reduce agricultural land impacts.

- Restrict development on some classes of agricultural land.

- Enhance regional planning to guide areas for development.

Crown land

Observations:

- There was general support for enabling power plant development on Crown land, as long as key concerns are addressed through the review and approval processes. Development of brownfield, industrial or previously disturbed sites should be prioritized.

- First Nations and Métis communities are concerned about Crown land power plant development impacting their rights.

- Parties identified challenges associated with developing power plants on Crown land, including lack of proximity to transmission and renewable resources.

Options:

- Perform a benefit-screening exercise to determine if it is worth implementing a policy to use Crown land for power plant development.

- Rely on existing processes utilized for the disposition of Crown land by the government and the review of power plant applications by the AUC.

- Implement a new two-step land disposition process for Crown land dispositions by the government, and continue to rely on the existing process for review of power plant applications by the AUC.

Reclamation security

Observations:

- Existing power plant reclamation requirements are sufficiently defined to ensure effective reclamation, but no timing trigger exists to initiate reclamation.

- Effective construction practices to reduce land disturbance, particularly soil impacts to agricultural lands, could be better defined.

- There is no reclamation security regime that applies to all power plants.

- The reclamation risk profile for renewable power plants is relatively lower than other industries' reclamation risks as there is no fuel depletion risk and a lower contamination risk.

- There were mixed views of whether a mandatory reclamation security regime for power plants should be implemented.

- Parties had a range of recommendations for an acceptable reclamation security regime, with proponents proposing the least stringent requirements and landowners proposing the most stringent requirements.

AUC Commitment:

- The Commission will review Rule 007 requirements regarding proponent commitments in relation to reclamation and security funding obligations.

Options:

- If implementing a reclamation security regime, set key outcomes, principles, and parameters for the regime.

- If implementing a reclamation security regime, a range of options are available for the government to ensure the proponent funds all reclamation costs.

Pristine viewscapes

Observations:

- There is no universal definition of a pristine viewscape.

- Individuals value viewscapes uniquely, from their own personal perspective. The impact from power plant development on viewscapes can occur at the general public level, the community level and the individual level.

AUC Commitment:

- The Commission will enhance the existing visual impact assessment requirements within Rule 007 to include a more structured visual impact assessment methodology within the AUC application review process.

Options:

- Provide guidance on valued viewscapes.

- Define "no-go" restricted viewscape zones.

5. The Commission appreciates the contributions of all parties who participated in this portion of the inquiry. Throughout this process, the Commission heard about the importance of balancing competing interests. These interests include having a regulatory framework in place for the rapidly growing renewables industry that is robust, fosters public trust, enables stakeholder interests to be considered, and supports a transition to decarbonizing the electricity system. At the same time, the framework should not impose unnecessary restrictions or create uncertainty such that investment is driven away from the province. The Commission has considered these factors and the submissions of the parties in developing its observations, AUC commitments, and options in the report.

2 Background

6. On August 3, 2023, the Government of Alberta issued an order-in-council directing the AUC to hold an inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta. The order-in-council can be found in Appendix 1.

7. The order-in-council directed the Commission to inquire into and report to the Minister of Affordability and Utilities on the following:

1. Considerations on development of power plants on specific types or classes of agricultural or environmental land.

2. Considerations of the impact of power plant development on Alberta's pristine viewscapes.

3. Considerations of implementing mandatory reclamation security requirements for power plants.

4. Considerations for development of power plants on lands held by the Crown in Right of Alberta.

5. Considerations of the impact the increasing growth of renewables has to both generation supply mix and electricity system reliability.

8. The Commission determined that the inquiry would be separated into two modules to explore the issues identified in the order-in-council. Module A addresses issues 1 through 4 above. Because these issues overlap with matters considered by municipal governments in their own land-use planning, Module A also explored the role of municipal governments in the development and review of power plant applications.

2.1 Process

9. On October 4, 2023, the Commission issued a notice for Module A of the inquiry. The Commission offered stakeholders a variety of ways to provide input to the Commission. Stakeholders could provide written submissions by completing an online comment matrix, or filing written submissions on the AUC's eFiling System. The comment matrix is included as Appendix 2 of the report. Stakeholders could also provide oral submissions to the Commission.

10. In early November 2023, the AUC held open houses in Red Deer, Medicine Hat and Pincher Creek where it shared information with stakeholders about the inquiry and how they could participate.

11. The Commission received hundreds of written submissions from stakeholders, First Nations and Métis communities. Stakeholders include Albertans across the province, municipalities, power plant proponents, and various organizations such as landowner, municipal, environmental and industry associations. Several stakeholders filed expert reports along with their written submissions.

12. The Commission engaged Deloitte Inc. to facilitate three workshops with First Nation and Métis consultation co-ordinators and their staff to discuss the inquiry issues and provide

advice to the Commission panel. Deloitte prepared a written summary report of the workshops and written submissions from Indigenous groups.[1]

13. The AUC commissioned and made publicly available a number of expert reports related to the issues in Module A. The list of experts retained by the Commission and scope of their reports is set out below.

Expert	Scope of report
Ecoventure Inc.	• To review the decommissioning and reclamation practices, costs from completed projects, models for liability management and end-of-life security programs in Alberta and other jurisdictions. • To review reclamation closure requirements and provide recommendations and a framework for closure endpoints. • To develop cost estimates for decommissioning and reclamation based on metrics such as land use, location, area, type of disturbance, etc.
Tannas Conservation Services Ltd.	• To provide an inventory of agricultural land in Alberta, including its classification and location within the province and what that means from a productivity perspective. • To examine the impact of power plant development on agricultural land. • To discuss required physical reclamation work to achieve equivalent land capability.
Dr. Colin Mackie	• To explore and make recommendations around best practices for the design of a reclamation security program, including a discussion of specific components and their implications.
Nichols Applied Management Inc.	• To provide a review and discussion of the impact of power plant development on Alberta's pristine viewscapes.

14. The oral submissions took place over eight days in December 2023. During this time, the Commission heard from stakeholders, and questioned the authors of the reports it commissioned, along with authors of expert reports filed by stakeholders.

2.2 Report structure

15. The Commission begins by briefly describing the ministries and agencies with roles in the regulation of power plants in Alberta. The Commission then discusses the participation of First Nations and Métis communities in the inquiry, and feedback these groups provided on how power plant development should proceed.

16. Each subsequent section of the report focuses on one of the key inquiry topics, in the following order: the role of municipalities, agricultural and environmental land, Crown land,

[1] First Nations and Métis Engagement, authored by Deloitte Inc. for the Alberta Utilities Commission. Available at Exhibit 28501-X0460.

reclamation security, and pristine viewscapes. Within each section, the Commission has broadly structured its findings into three categories:

- **Observations** – These provide background information and context that may be helpful in informing legislative or policy change.
- **AUC Commitments** – These are commitments made by the AUC in response to specific stakeholder concerns identified throughout the inquiry. AUC commitments are intended to enhance the AUC's application review process. These are changes that can be implemented expediently by the AUC on its own initiative, without requiring legislative or policy direction.
- **Options** – These are intended to identify options for specific paths forward that the government may pursue, as it determines whether legislative or policy change is needed.

17. The report references Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*. Rule 007 sets out minimum filing requirements (referred to as information requirements) for proponents to include in applications to the AUC for power plant approvals. Following receipt of the order-in-council, the Commission added new information requirements to Rule 007 relating to agricultural land, municipal land-use planning, viewscapes and reclamation security. The interim Rule 007 information requirements are listed in Appendix 3 of the report. These were implemented on an interim basis until the Commission completes a full review of Rule 007, planned for 2024.

18. As described above, the Commission received extensive feedback on each of the inquiry topics. Appendix 4 contains a more detailed overview of the submissions received.

2.3 Ministry and agency roles

19. In October 2022, the Government of Alberta established the Ministry of Affordability and Utilities. Its responsibilities include managing and developing policy for the utilities sector and overseeing a reliable and affordable electricity system for Albertans. The ministry is responsible for several agencies that oversee the utilities sector including the AUC and the Alberta Electric System Operator (AESO).

20. The Ministry of Environment and Parks was renamed the Ministry of Environment and Protected Areas in October 2022. The ministry works to protect and enhance Alberta's environment and ecosystems and ensures that Alberta's natural resources are managed using responsible approaches. Its responsibilities include administering reclamation certificate applications, reclamation security programs for certain types of development, and the renewable energy referral report process. Renewable energy referral reports are reports from Alberta Environment and Protected Areas (AEPA) outlining the environmental risk of a project, including risk to wildlife and wildlife habitat, and are provided to the AUC as part of the power plant application review process.

21. The AUC is an independent quasi-judicial agency responsible for ensuring that the delivery of Alberta's utility services takes place in a manner that is fair, responsible and in the public interest. The AUC regulates the utilities sector to protect social, economic and

environmental interests of Alberta where competitive market forces do not. The AUC, among other responsibilities, ensures that electric generation facilities are constructed and operated in an efficient and environmentally responsible way.

22. With respect to power plants in particular, the AUC determines whether the construction and operation of a power plant is in the public interest, with a specific focus on social, economic and environmental considerations. In making this determination the AUC routinely considers input from other Alberta ministries such as AEPA for guidance on environmental issues, and Arts, Culture and Status of Women for *Historical Resources Act* approval.

23. While not directly involved in the approval of power plants, the AESO is responsible for the safe and reliable operation of the Alberta Interconnected Electric System. It serves a number of specific functions including:

- Managing and operating the provincial power grid.
- Planning and operating the electricity market.
- Planning the future of the electricity system and its infrastructure.
- Connecting generators and large power consumers to the transmission system in a safe and reliable manner.

3 First Nation and Métis communities engagement

24. First Nations and Métis communities were engaged to participate in the inquiry through written submissions, oral submissions and participation in workshops.

25. First Nations and Métis communities hold constitutionally protected rights that have the potential to be affected by power plant development. The Commission sought advice from these communities on the inquiry topics, including how these topics relate to their respective Section 35 rights and traditional ways of life.

26. The Commission recognizes that the consultation coordinators and staff for First Nations and Métis communities are technical experts from their respective communities and have valuable insight to share with the Commission relating to their experiences with power plant development and the regulatory process. Members of First Nations and Métis communities also have insight to share as consumers of electricity and, in some cases, as owners, partners and developers of power plant projects.

27. The AUC offered capacity funding to First Nations and Métis communities who participated in the inquiry. Each First Nation and Métis community was eligible for up to $5,000 in funding to reimburse travel costs, and compensate for time preparing for and attending workshops.

28. Deloitte facilitated three workshops that took place in October and November 2023. Two were in-person and one was virtual. The workshops were held with First Nation and Métis

consultation coordinators and staff to discuss the inquiry issues and provide advice to the Commission. Twenty communities were represented at the workshops.

29. In general, workshop attendees appreciated the opportunity to discuss the issues and share their ideas with each other and directly with the Commission. Attendees expressed frustration about the short timeline, the narrow scope of the inquiry, insufficient funding and time to prepare. Many of the attendees also indicated that one-on-one engagement between the AUC and individual communities would have been more effective. The workshops were intended to allow for a more personal opportunity for communities to provide advice to the Commission; however, the Commission acknowledges these frustrations and recognizes the limitations of the workshops and timelines. Attendees also expressed frustration and concern about Alberta's overall consultation process and how the province is addressing cumulative effects. Although these topics are not directly within the scope of the inquiry, the Commission appreciates the comments and has accordingly, included them within this report.

30. Deloitte delivered an oral workshop summary to the Commission panel for two of the workshops. These oral summaries were transcribed and placed on the public record of the inquiry.[2] Deloitte also prepared a report summarizing the workshops and feedback gathered from First Nations and Métis communities through written submissions.[3] Written submissions were received from three First Nations and two Métis communities. Two communities registered to provide oral submissions but subsequently withdrew.

31. The following themes emerged from the workshop and written submissions:

- Consultation and relationship building with each First Nation and Métis community is essential to protect the land, their rights[4] and way of life.
- Alberta's Land-use Framework and regional planning for the seven land-use regions should continue.
- Electricity generation should be developed with the goal of minimizing environmental impact (e.g., utilize pre-disturbed land, reclaim land faster, prioritize human and environmental safety, and avoid wetlands, old growth forests, and culturally sensitive areas).
- Some First Nations and Métis communities have an interest in renewable electricity development as these projects may align with their community values, but they face barriers to participate (e.g., understanding the regulatory process, lack of information about where development is permitted/restricted, and access to capital).
- Consideration should be given to cumulative impacts given that the extent of development, and associated environmental impacts, reduces the quality and quantity of land available for First Nations and Métis communities to practice their rights and traditional way of life.

[2] Exhibit 28501-X0048, Indigenous Engagement Workshop – November 2, 2023; and Exhibit 28501-X0067, Indigenous Engagement Workshop – November 14, 2023.
[3] First Nations and Métis Engagement, authored by Deloitte for the Alberta Utilities Commission. Available at Exhibit 28501-X0460.
[4] Aboriginal and treaty rights as set out in Section 35 of the *Constitution Act*, 1982.

32. Workshop attendees also emphasized that as stewards of the land and rights holders they should be involved in policy development and other work that comes out of the inquiry. Attendees proposed that, in the interest of economic reconciliation and in recognition of the potential impact of energy development on their rights, First Nations and Métis communities should play a larger role in the development of power plant projects, whether that be through impact benefit agreements, equity partnerships or other arrangements. The Commission reaffirms the AUC's commitment to ongoing meaningful participation of the First Nations and Métis communities in its regulatory processes.

33. First Nations and Métis communities also provided specific feedback for each of the four topics in Module A.

34. Regarding the development of power plants on specific types or classes of agricultural or environmental land, First Nations and Métis communities emphasized a need to clarify the terminology used in this topic, such as the definition of "environmental land." The communities expressed the importance of Indigenous monitors being present throughout the life of a project, as locals have significant knowledge about land impacts. Similar to what the Commission heard from the general public, First Nations and Métis communities supported the use of previously disturbed land for new power plant projects, rather than siting those projects on undisturbed land or further encroaching on traditional territory. The communities suggested that they would benefit from better access to information about areas within the province where power plant development is contemplated. The communities explained that human and environmental safety should be a top priority.

35. Regarding the impact of power plant development on Alberta's pristine viewscapes, First Nations and Métis communities emphasized the need for the government to clarify the definition of pristine viewscape as that definition varies depending on the location, community and individual. Some communities advocated for the inclusion of visual impact assessments in project assessments. Other communities expressed the importance of "clean, pure, sacred, and untouched" landscapes for cultural practices, as these practices require a landscape that is natural and free from signs of development. The communities emphasized the importance of protecting land with spiritual significance. Communities explained that changes to viewscapes can negatively impact mental health as well as the Indigenous tourism industry.

36. Regarding the implementation of mandatory reclamation security requirements for power plants, First Nations and Métis communities emphasized the need to examine the definition of reclamation: should reclamation be defined as the restoration of land to its previous state before the project began, or should it be defined as the restoration of land to its optimum pristine state? Communities expressed a desire to be involved in the development of reclamation plans for power plants so they can more effectively use their traditional knowledge of the project area. Communities were concerned about who would be responsible for reclaiming a project should the proponent become bankrupt. First Nations and Métis communities suggested that strong reclamation security requirements should already be in place to provide assurance that reclamation activities will be conducted. Communities discussed examples of reclamation security requirements in other industries, such as oil and gas, and mining. They expressed a strong preference for the reclamation security to be calculated and held by a third party (i.e., the AUC or Alberta government), independent of the proponent. The reclamation process should be transparent so there is assurance to the public that the reclamation work will be completed.

37. Regarding the development of power plants on Crown land, First Nations and Métis communities stated that their access to the land is important for exercising Section 35 rights and traditional practices. When considering a new project on Crown land, the communities emphasized that impacts to the land and to First Nation and Métis land users should be a primary consideration. Communities explained that proponents and the government should work with Elders and Indigenous knowledge holders to better understand the potential impacts of a project on Crown land. Many participants stressed that they support the development of renewable power plants and increasing access to power, but not at a cost to land, wildlife and constitutional rights. The Commission received a suggestion to consider land offsets to reduce the amount of land impacted by development and to consider a "no net loss of land" goal. Communities also suggested that cumulative effects assessments should be mandatory, as current environmental assessments tend to be site-specific and do not adequately consider broader environmental impacts. Communities discussed the importance of land-use planning for managing cumulative effects of projects on the land. They submitted that the Land-use Framework regional plans should be completed and updated, as there are currently gaps in Alberta's land-use planning documents. Communities stressed the importance of clear and transparent communication regarding the scope and location of a proposed project, so they can better understand the potential impacts.

4 Role of municipal governments

Role of municipal governments in the development and review of generation projects.

4.1 Context

38. Municipalities have a unique role in land-use planning and a strong interest in advancing local objectives and concerns. The Commission received feedback from municipal districts, counties, towns, cities, and municipal associations (collectively "municipalities") where generation projects are currently being proposed, being constructed, or in operation within their administrative boundaries.

39. Municipalities advocated for more robust participation in the AUC's generation application review process, so as to provide their viewpoints and concerns, and ensure that, wherever possible, projects align with their local land-use planning frameworks. Municipalities requested that the AUC grant them automatic participation in the AUC's application review process for generation projects and grant eligibility to recover costs of participation. In addition, they requested that proponents perform more robust consultation with municipalities on their municipal land-use planning policies, bylaws and plans in siting generation projects in Alberta.

40. Participation in the AUC's application review process can come in two forms: "standing" whereby a hearing is automatically triggered; or "participation rights" where the Commission sets the scope of how the party may participate. Where a party has standing based on an interest in land, they are eligible to claim costs for their participation. In contrast, parties who are granted participation rights are generally not eligible to claim costs for their participation.

Observation: Municipal participation in AUC proceedings has been increasing.

41. Over the years, the scope and extent of municipal participation has varied in generation applications before the Commission. Recently, the Commission has received more submissions from municipalities expressing concern over proposed generation projects within their administrative boundaries.

42. Under Section 9(2) of the *Alberta Utilities Commission Act*, a person, including a municipality, is entitled to standing to participate in an AUC proceeding if the Commission determines that: (i) the person has a legally recognized right; and (ii) the Commission's decision may directly and adversely affect that right. Municipalities that raise issues related to land-use planning, access, permitting, and compliance with municipal bylaws, have typically been denied standing by the Commission as the municipality's interest does not amount to a legal right. Instead, municipalities have typically been allocated some form of participatory rights to make submissions relevant to their interest. There have been some circumstances where a municipality has met the test for standing, such as where a project might impact a roadway or right-of-way that the municipality is entitled to occupy, or where a municipality owns land in close proximity to a project.

43. Where a municipality has been permitted to participate in an AUC proceeding, the Commission has generally held that municipalities are not entitled to recover costs of participating under Rule 009: *Rules on Local Intervener Costs*. The basis for this conclusion is that municipal interventions undertaken in furtherance of their statutory mandate to defend and advance the collective interests of their residents and other municipal interests are not the kinds of intervention for which the legislature intended to allow cost recovery.[5]

AUC Commitment: Municipal participation rights will be automatically granted and municipalities will be eligible to request cost recovery for participation.

44. The Commission has broad authority to control its own processes, and within that authority it has the discretion to allow a party to participate in a proceeding even if that party is not entitled to standing. Going forward, municipalities will automatically be granted full participation rights in AUC proceedings considering electricity generation projects proposed within their municipality. The Commission recognizes that municipalities have significant expertise in land-use planning and that increased municipal participation in the Commission's process will promote enhanced consideration of municipal views.

45. The Commission also has broad discretion to "order by whom and to whom its costs and any other costs of or incidental to any hearing or other proceeding of the Commission are to be paid"[6] and "the Commission may make rules respecting the payment of costs to an intervener other than a local intervener."[7] To accommodate enhanced municipal participation in its process, the Commission will review its costs recovery regime for facilities proceedings (which includes power plants) and develop rules that enable cost recovery eligibility for participating

[5] AUC Decision 2011-489: AltaLink Management Ltd. And EPCOR Distribution & Transmission Inc. – Heartland Transmission Project Local Intervener Costs Claim Cost Awards, Proceeding 457, Application 1606609, December 14, 2011, paragraphs 14-26.
[6] Section 21(1), *Alberta Utilities Commission Act*.
[7] Section 21(2), *Alberta Utilities Commission Act*.

municipalities. This cost recovery change will facilitate participation by municipal staff through appropriate honorariums for staff and potentially costs of external counsel to assist the municipality in participating in the AUC process. As with all cost recovery claims, the Commission will determine the level of cost recovery on a case-by-case basis, commensurate with the value of the participation to the Commission review process. The Commission will initiate public consultation on a cost recovery regime for municipalities in the first half of 2024. In the interim period before new cost recovery rules are adopted, individual Commission panels tasked with considering an application will retain discretion to determine whether to award costs to any participants, including municipalities.

46. Granting full participation rights and changing the cost recovery regime means a municipality will be able to participate in the same way it could if it were granted standing. These changes to municipal participation in the Commission's process and the cost recovery regime can be implemented by the Commission without the need for legislative changes or new government policy.

Observation: Municipalities want changes to how the AUC considers land-use planning and other municipal issues in AUC proceedings.

47. In Alberta, municipalities derive their authority from the *Municipal Government Act* (MGA).[8] Section 619 of the MGA provides that an AUC licence, permit, approval or authorization prevails over any municipal statutory plan,[9] land-use bylaw, subdivision decision, or development decision. Under Section 619 of the MGA, if a project proponent seeks a land-use zoning approval from a municipality and the municipality's decision conflicts with that of the AUC, the Commission's decision will prevail, subject to a municipality's authority to decide certain matters which may not have been addressed by the Commission.

48. Rule 007[10] broadly contains information requirements requiring a proponent to provide high-level information about relevant municipal plans and land-use planning documents. In particular, proponents are required to identify any other acts or approvals that may apply to a project and provide the status of each of the approvals,[11] and to summarize consultation with local jurisdictions.[12]

49. Following the government's direction to hold the inquiry, the AUC issued interim Rule 007 information requirements,[13] one area of which is designed to strengthen consideration of municipal plans and land-use planning documents in the AUC's review process.

50. Throughout the inquiry, parties emphasized that municipal views on local land-use planning are important, and that land-use planning issues should form a more significant part of

8 Government of Alberta, *Municipal Government Act*, RSA 2000, Chapter M-26, April 1, 2023.
9 Statutory plans include intermunicipal development plans, municipal development plans, area structure plans, and area redevelopment plans.
10 Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*.
11 Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, WP21, SP21, TP25, OP25, and HE20.
12 Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, WP28, SP29, TP31, OP31, and HE26.
13 Bulletin 2023-05: Interim Rule 007 information requirements, September 6, 2023, PDF page 2.

the AUC's application review process. Municipalities expressed an interest in being heard on matters such as visual effects, construction traffic, road degradation, infrastructure needs, and end-of-life equipment disposal.[14] When raised in a proceeding, the Commission considers these issues, and generally defers to the municipality on matters such as traffic, road and emergency management. In addition, Rule 007 currently requires proponents to assess and mitigate off-site impacts, such as those related to glare, noise, weed control, stormwater management, dust control, waste management, and emergency response planning.

AUC Commitment: The Commission will undertake a review of Rule 007 related to municipal submission requirements and clarify consultation requirements.

51. More detailed information about a proposed project's alignment with municipal requirements may assist the Commission in assessing whether the project is in the public interest. The Commission is undertaking a review of Rule 007 in 2024, including the interim information requirements related to municipal plans and land-use planning documents, to identify any gaps or supplemental information that will assist the Commission in its public interest determination.

52. The Commission heard from some municipalities that a municipal concurrence letter or municipal land-use planning checklist should be a mandatory information requirement. Such a letter would either confirm that a project aligns with municipal planning frameworks, or provide justification for any instances of non-alignment. The Commission sees value in a template form for municipalities to provide information to the Commission and will consider this proposal as part of its review of Rule 007.

53. During the inquiry, the Commission observed that a proponent's obligations in Rule 007 related to notification and consultation with municipalities may be unclear. Numerous municipalities stated they were not notified or consulted on power generation projects based on the language in Appendix A1 of Rule 007[15] that proponents "should consider" engaging with local authorities. A similar sentiment was shared by certain landowners who suggested that the AUC's consultation and notification requirements could be improved.

54. Rule 007 contains both information requirements and guidelines. The existing information requirement[16] states that power generation proponents must "summarize consultation with local jurisdictions (e.g., municipal districts, counties)." The guidelines in Appendix A1 for developing a participant involvement program (PIP) for a project state that it is paramount that a proponent communicate effectively with local authorities and suggests that proponents should consider engaging with local authorities early in the process. With respect to landowners generally, Rule 007 contains more specific PIP requirements including a specified radius for consultation and notification activities.

55. As part of its Rule 007 review, the Commission will review the information requirements and the PIP guidelines for changes to ensure that a proponent's obligations regarding notification and consultation with municipalities and landowners in general are clear. The Commission will

[14] Refer to Section 7 of this report.

[15] Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, Appendix A1 – Participant involvement program guidelines, Section 3, PDF page 121.

[16] Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, WP28, SP29, TP31, OP31, and HE26.

also consider a requirement to identify a specific contact person at the affected municipality, to ensure that all project-related communications are directed towards the appropriate municipal staff. While some parties, including proponents, suggested that the Commission could implement a streamlined application process whereby certain types of applications would be processed on an expedited basis, the Commission observes that where there are no objecting parties, the Commission rarely holds a hearing. The Commission considers that exploring opportunities for further clarity around its consultation requirements may promote greater resolution of municipal and landowner concerns outside of the formal regulatory process, resulting in a more efficient application review. Therefore, a framework for streamlining may be unnecessary. However, the Commission is committed to efficiency and regulatory burden reduction, and will continue to explore opportunities for improving its application processing. This could, as an example, include a streamlined process where a project aligns with municipal plans and is located on previously disturbed areas or areas identified for development.

Observation: With AUC enhancements to its process, changes to Section 619 of the *Municipal Government Act* are not necessary.

56. Some individual municipalities expressed a view that amendments to Section 619 of the MGA are required to provide authority to municipalities to deny power plant projects. However, the Rural Municipalities of Alberta (RMA) and the Association of Alberta Municipalities (AAM) were not in favour of municipalities having final decision-making authority over approving power generation projects within their municipalities.

57. As noted by the RMA, municipalities are subject-matter experts in land use. The Commission considers it is appropriate for municipalities to have a more significant role in the AUC approval process, as described above. The changes the Commission has committed to will provide a greater voice for municipalities and enhanced consideration of municipal land-use issues in AUC proceedings. Necessary amendments to AUC rules will be implemented in 2024. Where there is a municipal concern that a project approval would be inconsistent with municipal decisions, stated interests, statutory plans, or other land-use planning documents, the Commission can address these issues in its decision as part of its public interest determination, with the benefit of direct involvement from the municipality in arriving at its decisions. These Commission commitments will facilitate greater municipal participation in the Commission approval process without requiring any legislative changes to Section 619 of the MGA.

58. The provincial legislature has jurisdiction over the development and management of facilities in the province for the generation of electricity. The legislature has granted the AUC the authority to approve the construction and operation of power plants, under legislation that is intended to provide for the economic, orderly and efficient development of generation. Providing municipal governments final decision-making authority over the approval of electricity generation development in their respective municipalities would shift electricity generation approval decisions from the provincial level to the local/municipal level. This may result in decisions that favour local interests, as opposed to decisions based on the broader provincial interest. A core principle of deregulation, as reflected in Section 5 of the *Electric Utilities Act*, is the establishment of a “level playing field” for the development of new generation. Regulation of new generation projects at a provincial, rather than a municipal level, promotes a more consistent approach to development and is protective of the level playing field principle. Maintaining Section 619 of the MGA allows for a balancing of the public interest of all Albertans at the provincial level by an independent provincial agency.

5 Agricultural and environmental land

Considerations on development of power plants on specific types or classes of agricultural or environmental land.

59. Throughout the inquiry, parties emphasized the importance of preserving Alberta's agricultural and environmentally sensitive land. Members of the public in particular were concerned with agricultural land preservation and food production. At the same time, many parties commented on the importance of renewable electricity in meeting Alberta's sustainable energy goals, but expressed differing views on how and where renewable power plants are best located. Parties highlighted that agriculture and environmentally sensitive land face ongoing pressures due to climate change and conflicting land uses (conflict due in part to renewable electricity development).

5.1 Environmental context

60. "Environmentally sensitive land" is a broad term for areas that have important environmental attributes. Parties generally agreed that environmentally sensitive land should be protected.

61. Submissions primarily equated environmentally sensitive land to native grasslands, wetlands, watercourses, and unique wildlife habitats, although numerous other features were suggested such as ground and air migration corridors, named lakes, and important bird areas. Throughout the inquiry a particular emphasis was placed on the need to protect the province's native grasslands. Some parties noted that if development restrictions were to be placed on high-quality agricultural land, this may result in more development being sited on lower quality agricultural land that contains native grassland. While these concerns relate to all power plants, parties tended to focus on wind and solar power plants, as these can have broad surface impacts. Some parties suggested that enhanced environmental regulation is required to adequately protect environmentally sensitive land, while others considered the existing framework, if enforced, to be sufficient.

62. Environmentally sensitive land is defined and protected by different provincial and federal acts, regulations, directives, and guidelines. The following, non-exhaustive list of legislative instruments protects environmental land against the impacts of all types of generation development:

- *Environmental Protection and Enhancement Act* (EPEA)
- *Water Act*
- *Wildlife Act*
- *Soil Conservation Act*
- *Weed Control Act*

63. The following additional list specifically defines environmental protection requirements for solar and wind development:

- The *Wildlife Directive for Alberta Solar Energy Projects* and the *Wildlife Directive for Alberta Wind Energy Projects* (Wildlife Directives).
- The *Conservation and Reclamation Directive for Renewable Energy Operations* (C&R Directive).

64. Many of these legislative instruments, such as the EPEA, the C&R Directive, the *Soil Conservation Act* and the *Weed Control Act* also protect agricultural land. The C&R Directive incorporates the agricultural or cultivated land reclamation criteria specified in the 2010 Reclamation Criteria for Wellsites and Associated Facilities for Cultivated Lands.

5.2 Agricultural context

65. The public and municipalities generally shared concerns about the impact of agricultural land being taken out of production, particularly by renewable generation projects. These include economic concerns, and concerns about food security and land-use sustainability. Other parties suggested that agriculture can co-exist with wind and solar power plants.

66. The Commission heard that the agriculture sector contributes 2.2 per cent of Alberta's GDP and is the primary economic driver in many rural communities.[17] Many members of the public emphasized that high-quality agricultural land must be managed thoughtfully, with a view to preserving agricultural use.

67. Most municipalities expressed the desire to protect agricultural land within their jurisdictions. These municipalities were of the view that the Commission does not give enough consideration to municipal development plans and land-use bylaws, or place enough weight on the importance of agricultural land, in its decision making. In addition to the direct impacts of siting a power plant on agricultural land, municipalities expressed concerns about how power plant development can affect adjacent or nearby agricultural land, such as through the proliferation of weeds. Municipalities also emphasized that fragmentation of agricultural land should be minimized. Section 4 discusses the role of municipal governments and the AUC's commitment to enable enhanced participation by municipalities and consideration of municipal concerns.

68. In response to concerns about agricultural land impacts, proponents emphasized that their projects offer many economic benefits to hosting landowners. Hosting a power plant can provide a landowner with a steady and diversified income stream. Proponents also noted that land use decisions are subject to market forces that generally encourage the siting of renewable energy projects on lower quality agricultural land. This is because on highly productive agricultural land, farming may remain more beneficial than entering into a power plant lease. Proponents further explained that siting decisions need to account for factors such as solar and wind potential and proximity to transmission infrastructure. In some cases, these factors may make it necessary to locate on productive agricultural land. In the view of proponents, landowners are well-positioned to determine the optimal use of their land. Municipalities acknowledged that

[17] Report titled Agricultural Land Evaluation Report for Energy Projects, prepared by Tannas Conservation Services Ltd. for the Alberta Utilities Commission. Available at Exhibit 28501-X0059, PDF page 14.

landowners cannot be forced to farm their land, but emphasized land-use bylaws restrict what land uses a landowner may undertake on their land.

Observation: The existing regulatory framework is generally sufficient for the protection of environmental land.

69. The regulatory framework that protects environmental land against the impacts of wind and solar generation is robust, and in some cases more comprehensive than the regulatory framework governing other forms of industrial development. A number of parties suggested that further environmental regulation of the wind and solar industries is unnecessary and potentially unfair given the magnitude of their environmental risks and their overall benefits, as compared to other forms of industrial development.

70. Some parties expressed concern that standards and management practices contained in the Wildlife Directives are not treated as mandatory by the Commission. The Commission emphasizes that standards and management practices in the Wildlife Directives should be taken seriously by proponents, and upheld to the greatest extent possible. At the same time, the Commission accepts that departures from these standards and management practices may be acceptable when balancing other public interest factors and when site-specific risks are limited, justified, and adequately mitigated. The Commission considers that the Wildlife Directives should be reviewed and updated when necessary to reflect best industry practices and the current state of environmentally sensitive features. Where environmentally sensitive features (e.g., native grasslands) face acute pressures, mandatory standards or restrictions may be warranted and should be communicated as such. The Commission recognizes that environmental requirements and practices will continue to evolve.

Observation: There are a number of agricultural and environmental mapping tools that exist to assist proponents with siting of power plants in Alberta.

71. There are multiple publicly available mapping resources for characterizing environmental and agricultural features across Alberta. These are developed from a variety of disciplines and range in their levels of detail and focus. Agricultural mapping resources tend to focus on soils, vegetation, water, topography, pests, and climate, whereas environmental mapping resources focus on wildlife and natural habitats.

72. Historically, an area's capability for agricultural production was assessed through a comprehensive land inventory of rural Canada maintained throughout the 1960s to 1980s (Canada Land Inventory [CLI]).[18] The CLI mapped the land capability for agriculture, forestry, wildlife and recreation in rural areas across Canada for use in land-use planning. The CLI has largely been superseded in Alberta by the Land Suitability Rating System (LSRS).[19] The LSRS provides agricultural land suitability classifications that have been modelled using climate, soil and landscape factors and is provided in the Agricultural Regions of Alberta Soil Inventory

[18] Agriculture and Agri-Food Canada. 1998. Canada Land Inventory. National Soil Database. https://sis.agr.gc.ca/cansis/nsdb/cli/index.html.

[19] Government of Alberta. 2023. Agricultural Regions of Alberta Soil Inventory Database (AGRASID). Version 4.1. https://www.alberta.ca/agricultural-regions-of-alberta-soil-inventory-database.aspx.

Database (AGRASID). AGRASID is the primary spatial database of soils for Alberta's agricultural areas.[20]

73. There are two benefits to using the LSRS instead of the CLI. First, the LSRS provides more refined mapping in Alberta and is more current (delivered and maintained through AGRASID). Second, unlike the CLI, the LSRS considers regional climate in addition to soil and landscape factors in the assessment of agricultural suitability. Both the CLI and LSRS classify lands into seven classes ranging from class 1 (highest agricultural capability and no significant limitations) to class 7 (lowest agricultural capability). While a number of parties rely on the CLI database, the Commission prefers the use of the LSRS database as it is more accurate, more frequently updated, and retains the same class rating system as the CLI.

74. In addition to the soil databases, there are multiple environmental mapping tools available in Alberta. The Grassland Vegetation Inventory (GVI) provides a refined vegetation and land-use assessment for the grassland regions of Alberta consolidating "imagery analysis (i.e., digital colour-infrared stereo photography), ecological range sites based on soils data for native vegetated areas, and land-use data for non-native or unvegetated areas."[21] GVI offers a mapped inventory of anthropogenic, native and water features and in the context of agriculture, classifies areas into irrigated and non-irrigated crops and tame pasture. Likewise, GVI provides a useful dataset for conducting initial assessments on the potential presence of native features that can be utilized during renewable project siting to avoid environmental impacts to sensitive native grasslands and wetlands.

75. Alberta Vegetation Inventory (AVI), Primary Land and Vegetation Inventory (PLVI), and Irrigation Land Rating (ILR) are spatial databases that are less relevant for renewable development in southern Alberta or agriculture. AVI and PLVI provide an ecological assessment for parkland and forested areas in Alberta. The ILR is a land classification for irrigation used to determine the degree of suitability of land for irrigation. In Alberta, this classification is a mandatory requirement for land to receive water for irrigation within the irrigation districts.[22]

AUC Commitment: Explore requirements for proponents to provide soil field verification earlier in the application process.

76. Some parties cautioned against the over-reliance on spatial databases and recommended that field verification be used to adequately evaluate agricultural potential. One question raised in this inquiry was whether proponents should be required to field verify soil quality prior to submitting an application to the Commission (compared to the current requirement of field verifying soil during pre-disturbance site assessments, which are conducted after approval is granted), and if so, what the scope of these assessments should be. The Commission considers that the enhanced agricultural information requirements set out in the interim information requirements for Rule 007, along with the information provided from desktop databases, is sufficient to identify and generally characterize the quality of agricultural land in proposed project areas at the application review stage. However, the Commission will commit to exploring

[20] Government of Alberta. 2023. Agricultural Regions of Alberta Soil Inventory Database (AGRASID). Version 4.1. https://www.alberta.ca/agricultural-regions-of-alberta-soil-inventory-database.aspx.

[21] Report titled Agricultural Land Evaluation Report for Energy Projects, prepared by Tannas Conservation Services Ltd. for the Alberta Utilities Commission. Available at Exhibit 28501-X0059, PDF page 24.

[22] Government of Alberta. 2016. Land classification for irrigation in Alberta. https://open.alberta.ca/publications/2406282.

whether earlier soil field verification, particularly for higher classes of land, should be considered during its upcoming review of Rule 007.

Observation: There is no consensus about which land constitutes "prime agricultural land."

77. There is no universal consensus about which land classes constitute "prime agricultural land." Some parties, including some experts, suggested that classes 1 and 2 lands are considered "prime agricultural land" with classes 3 and 4 being "moderately productive agricultural land." Other parties, including one expert, suggested that classes 1 to 3 would all be considered "high-quality agricultural land;" some members of the public suggested classes 1 to 4. Some parties also suggested irrigated land should be treated as prime agricultural land.

78. The Commission also heard contrasting views about whether any class 1 land exists in Alberta. While parties agreed that Alberta has not historically had any class 1 land, at least one expert suggested that the addition of new climate data to AGRASID may result in some class 2 land being upgraded. Other experts disputed this suggestion. For the purpose of this report, the Commission assumes there is no class 1 land in the province.

79. Although the discussion of high-quality agricultural land focused on land in classes 1 to 3, the Commission recognizes that this is not the only productive land in Alberta. Alberta farmers are well-versed in farming practices designed to optimize productivity on more marginal lands, and significant agricultural value can be realized within land that is not considered prime. For example, one expert indicated that with the right inputs and farming practices, class 4 land can be as productive as class 3 land.[23]

Observation: Power plant development has not historically been a primary driver of agricultural land loss in Alberta.

80. To frame the impacts of generation development on agricultural land within Alberta, it is important to understand how much agricultural land exists and how this land base has changed over the years. The reports received by the Commission estimated an agricultural land inventory within Alberta of approximately 20 to 25 million hectares, of which 13.6 million hectares are actively farmed. Approximately five to seven million hectares are rated as class 2 agricultural land.[24]

81. The Commission received a submission which referenced the Government of Alberta, *Annual Report 2021: Land Use Changes in Alberta.* In that submission, it was reported that Alberta's 2020 agricultural land inventory dropped 0.1 per cent from 2011 quantities.[25] During this time, 52,000 hectares of class 2 and 3 agricultural land was lost while 28,100 hectares of

[23] Report titled Agricultural Land Evaluation Report for Energy Projects, prepared by Tannas Conservation Services Ltd. for the Alberta Utilities Commission. Available at Exhibit 28501-X0059, PDF page 32.

[24] Report titled Renewable Energy Project Agricultural Land Utilization Review, prepared by DNV for CanREA and RMA. Available at Exhibit 28501-X0397, PDF page 6;
Report titled Alberta Utilities Commission Proceeding 28501 Expert Report, prepared by Matrix Solutions Inc. for the Renewable Generators Alliance. Available at Exhibit 28501-X0416, PDF page 16; and
Written Submission of Ian Urquhart. Available at Exhibit 28501-X0343, PDF page 12.

[25] Exhibit 28501-X0343 stated it was 0.001 per cent decrease; however, the data from Annual Report 2021: Land Use Changes in Alberta listed the total agricultural land in Alberta as 21,013,670 hectares in 2011 and 20,990,373 hectares in 2020, which is a decrease of 0.1 per cent.

class 4, 5 and 6 agricultural land was gained by converting other land types into agricultural land.[26]

82. There are many drivers that contribute towards the loss of agricultural land besides power plant development. Primary drivers of agricultural land loss tend to vary in different regions of the province. From 2019 to 2021, the largest driver of agricultural land loss was expansion of pipelines and industrial sites (non-solar or wind), which accounted for 1,859 hectares and 1,607 hectares of land loss, respectively. In comparison, solar generation projects resulted in the loss of 833 hectares of agricultural land and wind turbines resulted in a loss of 205 hectares (1.6 sections of land) during this time. Other key drivers of agricultural land loss between 2019 and 2021 include urban residential development, mines and wells, and roads. The total loss (gross) of agricultural land by all drivers during that period represents 0.05 per cent of the 2019 agricultural inventory. The Commission recognizes that certain areas of the province have experienced a higher percentage of land loss due to power plant development. One report indicated that in the Lethbridge-Medicine Hat economic region,[27] close to half of the agricultural land loss in that region between 2019 and 2021 was due to solar generation development.[28]

83. When focusing on the loss of the highest quality agricultural land (LSRS class 2) between 2019 and 2021, industrial sites (including thermal power plants) were responsible for 731.7 hectares of land loss, urban residential for 393.4 hectares, and mine sites for 303.8 hectares. In comparison, wind turbines were sited on 62.5 hectares of LSRS class 2 land and solar projects were not sited on any class 2 agricultural land. Overall, between 2019 and 2021 the gross loss of LSRS class 2 lands from all drivers was 1,964.1 hectares (which is approximately 7.6 sections of land) or approximately 0.03 to 0.04 per cent of LSRS class 2 lands.[29]

Observation: Market forces have favoured non-prime agricultural land for renewable projects, resulting in about 4 per cent of renewable projects locating on class 2 land as of October 2022.

84. Some parties submitted that there are market forces that drive the siting of renewable generation projects towards less productive land (i.e., away from class 2 land). The Commission heard that high-value crop land can generate revenue that exceeds the current market price of solar land leases, and therefore market and economic forces will naturally preserve high-value agricultural land for agricultural purposes.

85. According to one report,[30] 91 per cent of all currently installed wind and solar projects in Alberta are located on class 3 or 4 land. Only about 4 per cent are located on class 2 land, and the remaining 5 per cent are located on other land.

[26] Written Submission of Ian Urquhart. Available at Exhibit 28501-X0343, PDF page 12.
[27] This region spans the southern part of the province from the British Columbia border to the Saskatchewan border.
[28] Report titled Renewable Energy and Agricultural Land Use in Alberta 2019-2021, prepared by Conservation Solutions Lab for Business Renewable Centre-Canada. Available at Exhibit 28501-X0452, PDF page 61.
[29] It was estimated there is between 5 to 7 million hectares of class 2 land in Alberta.
[30] Report titled Renewable Energy Project Agricultural Land Utilization Review, prepared by DNV for CanREA and RMA. Available at Exhibit 28501-X0397.

86. A separate report found that between 2019 and 2021, new solar generation projects were not sited on LSRS class 2 land, occupied 194 hectares of class 3 land and 593 hectares of class 4 to 7 land.[31] Wind generation was sited on 62.5 hectares of class 2 land, 23 hectares of class 3 land and 119.3 hectares of class 4 to 7 land during this time frame. The higher proportion of class 2 land for wind power projects may reflect other siting constraints, including the need to site projects where wind speeds are suitable and the need to avoid environmentally sensitive attributes. Importantly, the Commission recognizes that this does not include the applications the Commission approved or received in 2022 and 2023.

Observation: Based on the AESO high renewable net-zero scenario, and assuming all renewable development locates on class 2 land, the percentage of agricultural class 2 land loss is estimated to be less than 1 per cent by 2041.

87. Notwithstanding that power plant development is not currently the primary driver of agricultural land loss, the Commission recognizes that power plant development will continue, particularly in light of increased demands for electrification. The Commission received estimates from parties of the amount of land that will be required in the future for renewable power plant development. While overall estimates are low, the Commission recognizes that, given the location of wind and solar resource potential in the province, the majority of agricultural land loss would be clustered in specific areas. As a result, the percentage of agricultural land loss in these areas would be higher.

88. Many parties referred to the *AESO Net-Zero Emissions Pathways Report*, to inform an understanding of how much power plant development might be expected in the future. This report reviews potential electricity supply and demand combinations that may enable Alberta to reach a net-zero electricity system by 2035. Of the scenarios assessed, the one referred to by the AESO as the "Renewables and Storage Rush Scenario" requires the most renewable generation capacity. Under this scenario, the AESO estimated that 9,957 megawatts (MW) of wind generation capacity and 5,186 MW of solar generation capacity would be required through 2041. While these figures are estimates, this scenario is useful for illustrating potential future power plant development with conservative inputs (i.e., erring on the side of greater renewables development).

89. One expert who participated in the inquiry estimated that the installed capacity, as of October 2022 for wind generation is 3,653 MW on 153,451 hectares of total project area, and for solar generation is 1,116 MW on 3,126 hectares of project area.[32] This correlates to 42 hectares per megawatt of installed capacity for wind generation and three hectares per megawatt of installed capacity for solar generation. Applying these ratios to the AESO's "Renewables and Storage Rush Scenario", the total estimated generation footprint would be 418,194 hectares for wind generation and 15,558 hectares for solar generation.

90. This expert also indicated wind projects directly impact about 5 per cent of the total land leased.[33] This is due to the fact that agricultural activities such as cultivation and grazing can

[31] Report titled Renewable Energy and Agricultural Land Use in Alberta 2019-2021, prepared by Conservation Solutions Lab for Business Renewable Centre-Canada. Available at Exhibit 28501-X0452, PDF page 64.

[32] Report titled Renewable Energy Project Agricultural Land Utilization Review, prepared by DNV for CanREA and RMA. Available at Exhibit 28501-X0397, PDF page 8.

[33] Report titled Renewable Energy Project Agricultural Land Utilization Review, prepared by DNV for CanREA and RMA. Available at Exhibit 28501-X0397, PDF page 9.

co-exist with wind generation, whereas cultivation around solar generation is more difficult given the density of the solar panels within the project area. The disturbed areas for wind generation primarily include turbine foundations and access roads.

91. Applying this 5 per cent factor to the 418,195 hectares total wind generation footprint, the estimated disturbed footprint would be 20,909 hectares for wind generation. When added to the total disturbed footprint for solar of 15,558 hectares, the total disturbed land amounts to 36,468 hectares. Utilizing the conservative assumption that 100 per cent of this footprint is located on class 2 land, this would impact 0.5 to 0.7 per cent of class 2 land. It should be noted that, based on current installed renewable generation as of October 2022, less than 5 per cent of projects have been installed on class 2 land. These estimates also assume no further advancement in technology which could increase generation efficiency per hectare.

92. Another method for estimating future land-use needs is to assume that all future renewable generation will come from solar development, as solar power plants are more restrictive on farming activities. As stated above, as of October 2022, the total installed capacity of wind and solar generation was 4,768 MW and the AESO's "Renewables and Storage Rush Scenario" estimated that a total of 15,143 MW of wind and solar generation is required. In a situation where the entire additional 10,375 MW of generation was supplied by solar generation, the necessary land requirement would be an additional 31,125 hectares.

93. Assuming that all generation needed to meet net-zero by 2035 was built using today's solar technology, and assuming that all of that solar generation was sited on class 2 agricultural land, approximately 0.4 to 0.6 per cent of the existing class 2 agricultural land would need to be converted from agricultural purposes.

94. The Commission again emphasizes that these projections are estimates based on information filed in the inquiry, and are provided for directional purposes. Net-zero by 2035 may not be attained, and not all new generation will be solar.[34] However, conservatively estimating future agricultural land losses can provide helpful context for any policy decisions.

95. Researchers from the University of Calgary conducted a similar exercise to determine the footprint needed to construct the approximately 5,200 MW of solar generation capacity required under the AESO's "Renewables and Storage Rush Scenario."[35] They determined that 3,900 MW of additional solar generation would be required, beyond the presently installed solar capacity. Using data from the footprint of existing solar installations in Alberta, the researchers estimated that the additional generation capacity would require just over 15,400 hectares of land, or 0.08 per cent of Alberta's total agricultural land.

Observation: Agrivoltaic programs are an emerging tool to help mitigate agricultural impacts from projects on the land, but they would benefit from further study.

96. Agrivoltaics refers to dual-use systems that co-locate solar generation and agricultural use. Agrivoltaics can be adapted to many forms of agriculture, such as horticulture, annual crop

[34] As of October 2022, 2,988 MW of new wind generation was approved but not in-service, and it is expected that additional wind generation projects will be applied for.

[35] Energy and Environmental Policy Trends – Farms, or Solar Farms?, prepared by the University of Calgary School of Public Policy. Available at Exhibit 28501-X0397, PDF page 13.

production, livestock production, beekeeping and hay production. Agrivoltaic systems can offer several advantages including diversified income sources for farmers, improved land productivity, and the generation of energy without total land conversion.

97. Solar generation facilities require a smaller total lease area per megawatt, as compared to wind projects, but the relative magnitude of land disturbance is higher because the photovoltaic infrastructure essentially covers the entire leased area. Unlike wind generation, it is difficult to cultivate around solar project infrastructure, unless the project has been specifically designed for this purpose. Parties recommended that agrivoltaics be explored, as an option for reducing the impacts to agriculture. There are already some examples of agrivoltaics being employed in Alberta. Sheep are used to manage site vegetation by grazing under and around solar panels in several projects within Alberta, including the largest solar project in Alberta (Travers 465 MW). The Commission heard from one hosting landowner that the land is more productive as a result of the solar panels and the grazing program has provided economic opportunities. Another project is piloting crop production between solar panel rows for a small portion of the site, and a study is planned to evaluate the results.

98. While wind projects require a larger lease area than solar projects, the relative magnitude of land disturbance is smaller because turbines are separated across the landscape. The rest of the land within the leased project area remains relatively undisturbed, and can continue to be used for farming, ranching or for whatever other agricultural purpose it is currently utilized.

99. Some parties suggested that employing agrivoltaic programs should be mandatory, at least for the higher classes of land. While the interest in agrivoltaics is growing, this concept is in its early stages of development in Alberta and is not a complete solution to concerns regarding agricultural land loss. Additional studies and research would help determine what types of agrivoltaics will work most effectively in Alberta. Although it is premature to require all proponents to implement agrivoltaics, the Commission encourages proponents to continue evaluating and proposing various forms of agrivoltaic programs for their projects.

Observation: Municipalities want to protect agricultural land and minimize land fragmentation.

100. Municipalities expressed concern with their ability to protect agricultural land. In addition to the quantity of agricultural land lost, a common concern was the fragmentation of agricultural land. Fragmented agricultural land may impact the efficiencies afforded by contiguous farming and necessary economies of scale, and may encourage further fragmentation of agricultural land. Municipalities proposed a range of approaches to protect agricultural land within their regions including:

- Specifying go/no-go areas for renewable generation.
- The use of advanced land-use planning tools to specify areas suitable for all types of industrial development.
- Increased reliance on and compliance with existing land-use bylaws, statutory plans and zoning.

- The creation of a municipal referral letter to the Commission when projects are applied for.
- Municipalities having a greater voice regarding land-use planning in AUC proceedings.
- Revisions to the *Municipal Government Act* to give municipalities more power.

101. Municipal concerns and opportunities for greater municipal participation in power plant decisions are discussed in Section 4.

5.3 Options

102. The Commission acknowledges that wind and solar development has the potential to impact agricultural land. However, increased restrictions on the development of wind and solar generation projects risk creating an uneven playing field between these industries and other forms of development that also disturb or take up agricultural land. Regulatory restrictions on the development of wind and solar generation may indirectly harm the public by slowing the adoption of technology that contributes to diversifying the electricity sector, decarbonizing the electric grid, and combatting climate change.

Option: Assess the value of creating a province-wide integrated multi-criteria evaluation tool to identify and evaluate agricultural land.

103. Currently there is no single multi-criteria evaluation tool that integrates environmental, vegetation, soils and agricultural information on a province-wide basis that can be used to inform the siting of renewable projects in Alberta. Instead, several discrete spatial databases are used and evaluated. Use of the various databases may not always be consistent across projects.

104. Some parties advocated for the creation of a centralized and comprehensive database to evaluate project siting with respect to environmental and agricultural risks. They submitted that it would be beneficial to develop a province-wide tool as current integrated tools, applied on a municipality-by-municipality basis, can be onerous to locate and apply, or have inconsistent weighting of inputs to determine project suitability. Many parties advanced proposals for how such a tool could work. As a threshold issue, an assessment of the value of creating such a tool could be undertaken to understand its potential benefits, as compared to the time and resources it would take to implement.

105. One of the experts retained by the AUC, Tannas Conservation Services Ltd. (Tannas), proposed the development of a provincial Agricultural Land Quality Model (ALQM).[36] This model would aggregate LSRS, irrigation, and native habitat data and apply a weighting to generate a value for each database. The highest value of each database would determine the ALQM score and be used to identify appropriate project areas or evaluate project areas for potential risk. The output from such a model would primarily evaluate the agricultural impact.

106. Others suggested that the Land Evaluation Site Assessment (LESA) model, which is an assessment approach developed in the United States and in Ontario and has been tailored for use

[36] Report titled Agricultural Land Evaluation Report for Energy Projects, prepared by Tannas Conservation Services Ltd. for the Alberta Utilities Commission. Available at Exhibit 28501-X0059.

by some municipalities in Alberta (e.g., Edmonton Municipal Region Board [EMRB]), is a comparable approach to ALQM in evaluating agricultural land for siting renewable energy projects and would likely reach similar conclusions, without the need to develop a new database and model. The LESA, as applied in the EMRB, is a weighted evaluation of:

- Soil capability score (derived from LSRS and CLI classifications).
- Agricultural land density (percentage area in agricultural use).
- Parcel fragmentation (calculated fragmentation values).

107. One expert proposed[37] that a LESA approach may be applied to evaluate:

- Agricultural productivity potential derived from LSRS and irrigation suitability class.
- Solar or wind power generation potential.
- Transmission proximity.
- Land use suitability.
- Proximity to environmentally sensitive areas.[38]

108. Both models offer a transparent and accountable approach to evaluating potential siting. The LESA model may allow for more-customization, including consideration of economic factors, while the ALQM has a primary focus of agricultural considerations.

Option: Do not place restrictions on use of any particular agricultural land classes. Rely on the enhancement of AUC processes, including increased municipal government involvement and focus on agricultural land preservation.

109. Under this option, the government would rely on enhancements to the AUC process to more comprehensively assess agricultural land impacts. The specific enhancements are the addition of agricultural information requirements to Rule 007 and full participation for municipalities in the AUC process.

110. One of the AUC's interim Rule 007 information requirements is intended to gather more detailed and standardized information on the agricultural value of proposed project land, the risks of projects to agriculture (notably soils), and the protective mitigations that could be applied. As part of the AUC's review of Rule 007, the AUC will consider whether these interim information requirements need further refinement or enhancement based on feedback received during the inquiry.

[37] Report titled Expert Report for the Alberta Utilities Commission Inquiry into the ongoing, economic and efficient development of energy generation in Alberta. Prepared by Serecon Inc. for the Renewable Generators Alliance. Available at Exhibit 28501-X0417.

[38] *Ibid*., PDF page 20.

111. In concert with enhanced agricultural information requirements, going forward, municipalities will be granted full participation rights in AUC proceedings considering power generation projects proposed in their municipality. The Commission recognizes that municipalities have significant local knowledge and that enabling their participation will allow for greater understanding and consideration of municipal views, particularly their views regarding agricultural land preservation.

112. It is important to note that this option does not preclude development on certain classes of land or soil types, nor does it give municipalities final decision-making authority over generation projects. This option retains the current framework where the decision on whether a power plant project is in the public interest rests on the Commission's balancing of numerous factors. While many members of the public and some municipalities would prefer a prohibition of renewable generation development on prime agricultural land, both the RMA and AAM stated they did not support a blanket prohibition on development, nor did they support granting municipalities final decision-making authority over project development. In their view, limiting development to certain classes of land or having "no-go" zones may increase density of development in other areas and lead to concentration of power plants within discrete areas of Alberta.

113. Instead, the RMA and AAM expressed a desire for municipalities to be heard and participate in the Commission's process. They stated that municipalities have undertaken thoughtful planning on how best to use the land in their region (which, in some case may include the conscious choice to develop areas of high-quality agricultural land) and should have significant influence over where development occurs. The Commission places significant weight on the fact that these municipal associations do not support blanket restrictions. The Commission considers that providing potentially affected municipalities with full participation rights and modifying the cost recovery regime will substantially address this concern.

Option: Develop an agricultural directive as a tool to reduce agricultural land impacts.

114. Under this option, a guideline would be created by government to provide power plant proponents (and potentially other industries) with a more transparent framework for siting, constructing, and operating facilities on agricultural land.

115. The creation of an agricultural directive was proposed in the Tannas report.[39] Such a directive could provide guidance on pre-site assessments, designs, and monitoring requirements that would be expected by the province for the purpose of protecting agricultural land. In the event that a directive is developed, a focus on guidance (rather than mandatory restrictions) would allow for flexibility to balance other siting constraints. An agricultural directive would provide a standardized and transparent means of determining appropriate siting and construction of development, and the Commission could consider a project's adherence with such a directive when assessing whether that project is in the public interest.

116. Some parties suggested that if a directive were created, it should be applied to all forms of development (e.g., residential, oil and gas, renewables, commercial and industrial) and not just

[39] Report titled Agricultural Land Evaluation Report for Energy Projects, prepared by Tannas Conservation Services Ltd. for the Alberta Utilities Commission. Available at Exhibit 28501-X0059, PDF page 73.

wind and solar facilities. It was also noted that an agricultural directive should appropriately consider the rights of private landowners.

117. In the Commission's view, if this option is pursued, the development of such a directive should be discussed with a wide range of stakeholders through a collaborative process to ensure that the directive contains a fair, efficient, and transparent set of guidelines that appropriately consider the magnitude, area, and duration of impacts to the environment and agriculture, while appropriately respecting the rights of landowners, and limiting costs and risks to applicants. It is also important to note producing such a directive would likely require significant time and resources. Therefore, the government may wish to consider this option as a "next step," rather than an immediately deployable solution.

Option: Restrict development on some classes of agricultural land.

118. Under this option, the government would restrict the development of power plants (and potentially other infrastructure) to certain classes of agricultural land through legislation or other means. This option assumes that the government has determined that it is not in the public interest to develop power plants on certain classes of agricultural land. The government would need to decide which class or classes of land to restrict. Class 2 contains the highest quality soil in Alberta as the province lacks the adequate climate for class 1 land. A number of parties advocated for a blanket restriction of development on class 2 land, while others advocated for the inclusion of class 3 or class 3 and 4 land in such a restriction as well.

119. However, as explained above, the RMA and AAM expressed concerns that restrictions may have unintended consequences. They also stated that development on some high-quality agricultural land can be optimal for the overall development of the region, if it is appropriately planned. A blanket prohibition based on soil quality may also overlook other site-specific considerations. For example, higher classes of land may be in close proximity to important existing infrastructure; or productivity of lower classes of land may be increased through irrigation or farming practices. Some parties noted that irrigated land, given its agricultural value and the investment by the government in all the enabling irrigation infrastructure (e.g., canals) across the province, may be appropriately considered for restriction of renewable or any other industrial development.

120. Should the government proceed with this option, it should consider providing for exceptions to any restrictions, such as land with high-quality soils that is zoned industrial, commercial, or residential by a municipality. If the protection of agricultural land is paramount to achieve policy goals, the government should also consider whether to apply such restrictions to all types of industrial development, not just renewable generation.

Option: Enhance regional planning to guide areas for development.

121. Throughout the inquiry, regional planning was referenced as a valuable tool that could assist with identifying suitable areas for development. Identification of these suitable areas could assist in guiding renewable power plant (and other industrial) development to not locate on

certain agricultural lands, environmentally sensitive lands, or within certain viewscapes. In carrying out its duties, the Commission is bound to act in accordance with any applicable regional plan developed under the *Alberta Land Stewardship Act* (ALSA). Presently, however, the regional planning framework established under the ALSA has resulted in only two of seven regional plans being developed, the South Saskatchewan Regional Plan (SSRP) and Lower Athabasca Region Plan (LARP). Consideration could be given to updating the SSRP and LARP and completing the other plans, which would provide comprehensive guidance on development in the province and additional certainty to all industries, including the renewables sector. Some parties also recommended that regional planning should be more prescriptive, and suggested that currently drafted regional plans lack specific requirements in favour of general guidance and broad objectives. For example, the Commission heard that sub-regional plans could identify specific areas within the province that are preferred for wind and solar development.

122. Regional planning is likely to be time consuming and resource intensive since effective regional plans consider a multitude of factors, tools and consultation. However, among other benefits, regional planning can incorporate regional variabilities in environmental resources, preferences of the public, existing infrastructure, and provide transparency to proponents.

123. While the ALSA land-use regions are congruent with the province's major watersheds and aligned with municipal boundaries, many parties also described the benefits of regional planning on a municipal scale. The Commission acknowledges that municipal land-use planning is a complex process that seeks to balance a number of oftentimes competing interests and land uses, and that municipalities have significant expertise in this process. Any regional planning at the provincial level should consider work already done by municipalities and include them in the process.

124. In addition to considering municipal planning, provincial regional planning should also incorporate transmission and distribution system planning. An understanding of the existing and planned transmission and distribution system will allow for a more informed regional planning process, particularly from the perspective of power plant siting. Further, as discussed in Section 8 below, regional plans could be a tool for addressing impacts to viewscapes.

6 Crown land

Considerations for development of power plants on lands held by the Crown in Right of Alberta.

6.1 Context

125. Alberta consists of approximately 60 per cent Crown land[40] and 40 per cent private land. Power plants, including thermal and hydro power plants, have been constructed on Crown land in the past, and the province has also authorized other types of energy development on Crown land (such as transmission lines and oil and gas facilities).

126. With some exceptions, renewable power plants have not historically been developed on Crown land. Because of this fact, and because they may result in surface impacts that are unique from other Crown land developments, some of the key issues in this inquiry were (i) whether

[40] For the purposes of this section, the term Crown land refers specifically to land of the Crown in the right of Alberta.

wind and solar power plants should be permitted on Crown land and (ii) if so, whether the existing regulatory framework governing Crown land dispositions and power plant approvals applies or needs to be adapted to accommodate wind and solar projects on Crown land.

127. There is currently no government policy specifically authorizing or setting parameters for the development of wind and solar projects on provincial Crown land, and there is no form of Crown land disposition specifically intended to facilitate this type of development.

Observation: There was general support for enabling power plant development on Crown land, as long as key concerns are addressed through the review and approval processes. Development of brownfield, industrial or previously disturbed sites should be prioritized.

128. Support for development of power plants on Crown land was largely predicated on having limits on the amount, type, or location of Crown land made available for development. Those parties who did oppose the development of power plants on Crown land were primarily concerned with potential environmental impacts, such as the destruction of native grassland or the prospect of other environmentally sensitive land being opened up for development. Examples of other environmental features that parties identified as requiring protection include parks, and locations with species at risk, water bodies and migratory paths.

129. The public expressed concern about the potential for power plants on Crown land to conflict with the interests of existing users. Existing users could include disposition holders (e.g., those holding grazing leases or timber permits), as well as recreational users of Crown land and First Nations and Métis communities exercising their constitutionally protected rights. Parties emphasized the need for the government to consult with existing users of Crown land, if broadening the use of Crown land for power plant development. Many described the importance of preserving Crown land for recreational users and tourism. Other concerns heard by the Commission about power plant development on Crown land are similar to concerns commonly voiced in relation to power plant development on private land.

130. Parties were very supportive of power plant development on brownfield, industrial or disturbed Crown land, with a recognition that these types of projects tend to be technically challenging to construct. Existing disturbed areas could include highway rights-of-way or abandoned oil and gas facilities.

131. One party in the inquiry retained a consulting firm to prepare a report regarding development of Crown land in various jurisdictions (Crown land report).[41] The Crown land report noted that Alberta is one of only a few provinces in Canada that does not have a policy for the development of renewable power plants, other than hydro, on Crown land.

132. The Crown land report provided a summary of the existing Crown land tenure system and approval process in British Columbia, as well as an overview of the processes followed in other provinces across Canada. British Columbia uses a two-step approach to land tenure, where proponents are first granted a broad licence to investigate a particular area, and then are granted a

[41] Report titled Expert Report on Crown Lands and Impact Assessment Streamlining, authored by Legacy Environmental Ltd. for the Renewables Generators Alliance. Available at Exhibit 28501-X0418. See Appendix 4 for a more detailed summary of the report.

second licence to occupy specific land after completing further work, including an environmental impact assessment.

133. As it relates to competing land-use dispositions, the Crown land report provided examples of two different approaches used in other Canadian provinces: British Columbia has a "first-in-time, first-in-right" approach to Crown land tenure when different prospective land uses conflict; Manitoba reserves the right to make land already under disposition available for wind development where it is in the greater provincial interest. The authors of the Crown land report suggested a third, hybrid approach, which would first rely on consensus-seeking to determine whether the land can be co-used or accommodation can be made, while reserving the right for the government to make a final decision if consensus cannot be reached. For land-use conflicts between proponents and non-disposition holders (such as recreational users), parties highlighted the importance of consultation with existing users, and weighing the public interest of development.

Observation: First Nations and Métis communities are concerned about Crown land power plant development impacting their rights.

134. First Nations and Métis communities emphasized the importance of Crown land to their people, culture, rights[42] and way of life. First Nations and Métis people have a unique historical relationship to the land and a strong interest in land stewardship.

135. Some First Nations and Métis communities expressed that Albertans need reliable and affordable power, including renewable electricity projects, to meet climate change goals, but not at a significant cost to land, wildlife and their rights.

136. First Nations and Métis communities expressed that the current consultation process for disposition of Crown land does not adequately protect their rights. They stressed that the government needs to work with each First Nation and Métis community to ensure they have sufficient access to land to protect their rights and way of life. They also stated that Indigenous knowledge should be incorporated into Crown land management and throughout the life of projects on Crown land. First Nations and Métis communities indicated more needs to be done to understand and manage cumulative effects, and called for a renewal of the Land-use Framework and regional planning process.

Observation: Parties identified challenges associated with developing power plants on Crown land, including lack of proximity to transmission and renewable resources.

137. Even if development on Crown land is broadened, there are practical considerations that may disincentivize the siting of utility-scale wind or solar power plants on Crown land. Most of the province's Crown land is located in northern Alberta, whereas Alberta's prime solar and wind resource is located in the south. Additionally, the Crown land that is available in southern Alberta contains a significant amount of the province's remaining native grassland.

[42] Aboriginal and treaty rights, as set out in Section 35 of the *Constitution Act*, 1982, can be exercised on unoccupied Crown land and other land to which the members of an Indigenous group have a right of access for such purposes.

138. The relative remoteness of Crown land and lack of nearby transmission infrastructure may serve as an additional deterrent. Some parties cautioned the government to not overlook the potential costs associated with new transmission infrastructure, if development on Crown land is to be encouraged. Other parties suggested that smaller projects may be better suited for Crown land, as these projects can connect to the electricity grid through the existing distribution system if nearby transmission infrastructure is not available. One party suggested that the province could identify optimal areas for development and then build transmission to those regions.

139. Despite these challenges, the Commission notes that there are potential development opportunities for proponents. For example, the Fort Chipewyan solar project is a 2.2-MW solar power plant located on Crown land in the community of Fort Chipewyan in northern Alberta. The project is wholly owned and operated by Three Nations Energy, a joint venture of the Mikisew Cree First nation, Athabasca Chipewyan First Nation, and the Fort Chipewyan Métis Association. Further opportunities, particularly for small-scale power plants, may exist across the province on Crown land.

6.2 Options

140. The development of wind and solar power plants on Crown land presents an opportunity for the province to expand the available land base for renewable generation. Making Crown land more broadly available for renewable development would provide greater flexibility for the siting of projects and may offer economic opportunities for remote municipalities. In addition, because much of Alberta's Crown land is located in less densely populated areas, development on Crown land is potentially less likely to directly and adversely effect nearby residents, compared with projects sited on private land. This approach would also align with the province's enablement of other industries on Crown land such as natural gas facilities, hydro facilities, and oil and gas facilities, which are already permitted on Crown land.

Option: Perform a benefit-screening exercise to determine if it is worth implementing a policy to use Crown land for power plant development.

141. Proponents, First Nations and Métis communities and other stakeholders would benefit from clear policy guidance explaining whether power plant development is permissible on Crown land, and under what circumstances. As a threshold issue, given the practical constraints on wind and solar development on Crown land, it may be worth assessing whether the benefits of developing such a policy would outweigh its costs. A threshold screening of this nature would consider the degree to which the province's Crown land overlaps with the prime solar and wind resource. It may also involve high-level assessment of transmission costs necessary to connect any Crown land areas suitable for renewable development with the Alberta Interconnected Electric System.

142. If the government decides to implement a policy for the use of Crown land for power plant development, the policy should consider cumulative and regional effects, enhanced regional planning, and prioritized development on existing brownfield or disturbed land. Such a policy should also consider the protection of environmentally sensitive areas, such as native grassland, as well as areas currently being used for recreational or tourism purposes and by existing disposition holders. Further, when considering changes to the management of

Crown land, it is important that the government involve First Nations and Métis communities throughout the process.

Option: Rely on existing processes utilized for the disposition of Crown land by the government and the review of power plant applications by the AUC.

143. The Crown land report authors, and many parties who provided submissions, generally agreed that Alberta has adequate existing processes for considering the disposition of Crown land for industrial activities. Parties believed that Alberta is well positioned to adapt its current processes around Crown land dispositions to accommodate renewable power plants. For example, the existing disposition process could be adapted to add a tenure stream for wind and solar development. Similarly, the existing AUC review process for power plants already applies to power plants sited on Crown land and can continue to be relied on with minimal adjustments.

144. While the Wildlife Directives already apply to Crown land, AEPA may wish to assess whether updates to these directives are warranted if power plant development on Crown land is to become more prevalent. Additionally, because of the likelihood that power plants developed on Crown land would require additional transmission infrastructure, these directives could incorporate guidance on transmission connection projects associated with remote developments.

Option: Implement a new two-step land disposition process for Crown land dispositions by the government, and continue to rely on the existing process for review of power plant applications by the AUC.

145. While the authors of the Crown land report stated that Alberta's current process for Crown land disposition is robust, and could be extended to include dispositions for renewable power plant development, the report authors also identified benefits associated with a two-step land disposition process.

146. In a two-step process, the first step is the issuance of a licence to investigate a large area for renewable energy development, with no guarantee of a disposition. At this stage, the government would need to provide guidelines or set limitations on the extent of the Crown land that can be investigated. On the broad end of the spectrum, these boundaries could allow investigative licences on any Crown land outside of national and provincial parks. On the stricter end of the spectrum, the government could impose limitations based on factors such as environmentally sensitive areas, existing lease holders, agricultural land, etc. Generally, allowing an initial investigation to be conducted on a broad basis promotes flexibility and innovation, as proponents can use their expertise to determine if a particular area is conducive to their development, and consider project configurations that involve multiple compatible land uses.

147. During the second step, a proponent would identify a specific project area for which a final disposition is sought, and undergo an assessment process to examine the potential interaction between the proposed project and other land users, as well as environmental and social attributes. At the conclusion of the second stage, the government may issue the proponent a licence of occupation with conditions of approval. The government may consider defining a set term during which the licence of occupation remains valid, as well as rules around the renewal of

such a licence if a project is not constructed within the allotted time period. In addition to issuance of a licence of occupation at the second step, a proponent would also require AUC approval of the power plant in order to proceed with a project.

7 Reclamation security

Considerations of implementing mandatory reclamation security requirements for power plants.

7.1 Context

7.1.1 Reclamation requirements

148. Reclamation obligations currently arise under two primary mechanisms. First, proponents are subject to a legislative requirement to reclaim projects to equivalent land capability under the EPEA[43] and its regulations. The EPEA is the primary provincial legislation through which regulatory requirements for air, water, land and biodiversity are managed. It is administered by AEPA and the Alberta Energy Regulator (AER). The EPEA establishes mandatory reclamation standards for power plants. Second, proponents are typically parties to private lease agreements with hosting landowners. These lease agreements may include additional reclamation requirements, and may require the proponent to provide reclamation security.

149. Under the EPEA, an operator must: (a) conserve specified land; (b) reclaim specified land; and (c) unless exempted by the regulations, obtain a reclamation certificate in respect of the conservation and reclamation.[44] Collectively, these obligations are often referred to as "the duty to reclaim."

150. Subject to some limited exceptions, the duty to reclaim applies to operators of thermal, hydro, solar and wind power plants, and the reclamation obligations under the EPEA extend to all land used in relation to these power plants. The duty to reclaim does not currently apply to operators of energy storage projects.

151. To satisfy the duty to reclaim, land must be returned to equivalent land capability. Equivalent land capability means that "the ability of the land to support various land uses after conservation and reclamation is similar to the ability that existed prior to a specified land activity being conducted on the land, but that the individual land uses will not necessarily be identical."[45] AEPA has authority to establish standards, criteria, guidelines and directives for conservation and reclamation.[46] These standards, criteria, guidelines and directives can assist operators in ensuring that equivalent land capability is achieved.

152. There is currently no mandatory financial security requirement for a proponent to guarantee its reclamation obligations. Most power plants are located on privately owned land and are hosted voluntarily by landowners who can negotiate the terms of entry and as such, may negotiate some form of financial security for future reclamation obligations. Unlike, for example, oil and gas or transmission line proponents, where a power plant is located on privately owned

[43] *Environmental Protection and Enhancement Act*, RSA 2000, c E-12 (EPEA).
[44] EPEA, Section 137.
[45] *Conservation and Reclamation Regulation (*C&R Regulation*)*, Section 1(e).
[46] C&R Regulation, Section 3(1).

land, a power plant proponent cannot obtain a right-of-entry order, and must secure landowner consent to construct a project.

Observation: Existing power plant reclamation requirements are sufficiently defined to ensure effective reclamation, but no timing trigger exists to initiate reclamation.

153. The C&R Directive, published by AEPA in 2018, specifies the conservation and reclamation requirements for renewable energy operations that produce electricity from wind, solar or heat from the ground. The requirements in the C&R Directive are comprehensive and include the requirement to complete a pre-disturbance site assessment, prepare and update a conservation and reclamation plan, complete interim monitoring site assessments, and complete a reclamation certificate site assessment to obtain a reclamation certificate once land is returned to equivalent land capability.

154. There is no equivalent directive setting out conservation and reclamation requirements for thermal and hydro power plants. However, these power plants must also be reclaimed to equivalent land capability. In order to demonstrate that equivalent land capability has been met and receive a reclamation certificate from AEPA, the operator must provide, among other information, the characteristics of the conserved and reclaimed land and documentation of the conservation and reclamation procedures followed.

155. The statutory requirement to demonstrate that land has been returned to an equivalent land capability reduces the risk of poor reclamation standards being applied to power plant projects. However, there is no time trigger in the EPEA or its regulations mandating when an operator must initiate reclamation after the project's end of life. Instead, an operator is incentivized to obtain a reclamation certificate in a timely manner because the operator may be ordered to perform further reclamation work for matters that become apparent for a fixed period of time after the reclamation certificate is issued by AEPA. During the inquiry, some parties expressed concern with the lack of clarity around reclamation timelines, and indicated that reclamation activities should be anchored to a specific trigger.

Observation: Effective construction practices to reduce land disturbance, particularly soil impacts to agricultural land, could be better defined.

156. Construction practices exist that aim to minimize disturbances to land, such as compaction, admixing, and topsoil loss. Minimizing these types of land disturbances can support more effective land reclamation. Examples of these construction practices include the use of silt fencing and soil stockpiling. While the benefits of these construction practices are generally well understood within industry, the Commission heard concerns that these practices are not identified or described in detail in the C&R Directive. Specific inclusion of these best practices in the C&R Directive may provide clearer guidance to proponents and promote more effective reclamation.

157. In contrast, construction practices intended to minimize disturbance to wildlife and wildlife habitat are described within the Wildlife Directives. These directives require proponents to develop and submit a construction and operation plan to AEPA, and to ensure that construction activities for wind and solar projects "minimize habitat disturbance and fragmentation through use of matting, reduced soil stripping, frozen construction, minimize fencing and reduced road grades, and other available minimum disturbance techniques."

As an example, proponents must schedule construction activities to avoid sensitive periods for wildlife, including the breeding season.

7.1.2 Reclamation security requirements

Observation: There is no reclamation security regime that applies to all power plants.

158. The EPEA contemplates that reclamation security must be provided by certain types of operators. Section 135(1) of the EPEA states:

> **135(1)** If required by the regulations, an operator shall provide financial or other security and carry insurance in respect of the activity carried on by the operator on specified land.[47]

159. The scope of who may be required to post security under the EPEA is limited to applicants or holders of certain authorizations.[48] Currently, this scope does not include power plant operators. AEPA retains discretion to designate additional activities that require security to be provided.[49] Individual power plant operators may be required to provide reclamation security as a condition of a lease agreement, land disposition, municipal development permit, or where a power plant forms part of a larger industrial operation that is subject to a reclamation security regime. However, there is currently no reclamation security regime that applies to all power plants.

160. Other types of industrial development do have reclamation security regimes in place. For example, the AER administers the Mine Financial Security Program (MFSP) for coal and oilsands mining operations. The MFSP requires a base amount of security for each mine project, which is intended to provide the funds necessary to safely secure the mine site and remove infrastructure. Additionally, an operator is required to contribute additional security, depending on certain characteristics such as the asset-liability ratio of the project, the amount of remaining reserves to be mined, and whether ongoing reclamation activities have been completed or deferred.

161. The AER also administers a suite of liability management programs for oil and gas activities. In 2020, the AER implemented a new liability management framework for oil and gas operators, intended to improve and expedite reclamation efforts. The AER is moving to employing a holistic assessment of an operator's capability to meet reclamation obligations. The holistic assessment is intended to replace the current liability management rating used to assess an operator's ability to address its reclamation obligations, which is calculated as a ratio of the company's deemed assets to its deemed liabilities.

162. For geothermal developments, the AER requires applicants to provide a security deposit of at least 50 per cent of the total estimated liability of their development at the time of application. The AER can require a security deposit of up to 100 per cent of the total liability estimate if higher risks are identified with the application or as warranted by a holistic assessment.

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47 EPEA, Section 135(1).
48 EPEA, Section 84(1).
49 C&R Regulation, Section 17(2).

163. Financial security is also typically collected from hazardous waste and recyclable projects, landfills, metal production plants, quarry activities, sand and gravel operations, and waste management facilities. For these operations, AEPA determines the required amount of financial security. The security amount must be sufficient to complete conservation and reclamation, based on a number of factors including the estimated conservation and reclamation costs and the nature, complexity and extent of the activity.[50] Security can be submitted in a variety of forms including cash, performance or surety bonds, or letters of credit.[51] The security amount is paid into the Environmental Protection and Enhancement Fund, which is held and administered by the Minister of Environment and Protected Areas.

Observation: The reclamation risk profile for renewable power plants is relatively lower than other industries' reclamation risks as there is no fuel depletion risk and a lower contamination risk.

164. While the scope of the inquiry was not limited to renewable power plants, the bulk of the submissions received by the Commission regarding the reclamation risk of power plants focused on wind and solar. Interest in developing wind and solar projects in Alberta has heightened over the past decade, and there has also been a heightened interest in understanding the abandonment and reclamation risk profile of these power plants. As it relates to non-renewable forms of generation, historically, there has not been a high level of concern raised about the reclamation standards and reclamation security associated with those power plants in the province. However, many parties suggested that any reclamation security regime implemented should apply to all forms of generation.

165. Proponents invest significant capital funds (equity and debt), typically in the hundreds of millions, to bring a utility-scale renewable project to commercial operation. Once in commercial operation, renewable electricity projects enable electricity to be produced at relatively low operating costs as the fuel costs are essentially free. This high initial investment, coupled with low operating costs and a stable revenue stream, disincentivizes a proponent from abandoning a project once it has reached commercial operation. Proponents also suggested that if a project was abandoned prior to end of life, because of insolvency or for other reasons, the project could continue to provide a secure revenue stream to creditors or purchasers. As the project approaches its end of life, factors such as deteriorating infrastructure and declining production may contribute to a higher abandonment risk.

166. The revenue stream for renewable generation in Alberta is reasonably secure, either through selling into the Alberta electricity market or through long-term power purchase agreements. Electricity is an essential service for Albertans and as such, demand for electricity is relatively inelastic. The market price for electricity is driven by supply and demand within Alberta, and not by global market forces, as is the case with other commodities like oil and gas. Utility-scale renewable projects are typically backed by long-term power purchase agreements for renewable energy and renewable energy certificates, which are produced when a power plant generates emissions-free electricity and can be sold to emitters. Renewable energy certificates provide additional value in project economics, based on the price of carbon.

[50] C&R Regulation, Section 18(1).
[51] C&R Regulation, Section 21.

167. A renewable electricity power plant may be partially or fully repowered when its wind turbines or solar panels nears end of life, extending the life of the plant. When a renewable electricity plant reaches its end of life, the renewable fuel source (i.e., wind or solar energy) does not deplete. The repowering of a renewable power plant involves the replacement of these wind turbines or solar panels, likely with more efficient technology that may improve project economics. The balance of equipment, access roads and land rights remain relatively unchanged. The option of repowering a renewable project may reduce the risk of project abandonment. However, few existing renewable electricity power plants have reached this stage in Alberta and as such, there are very limited examples to understand the financial viability and likelihood of repowering such power plants.

168. As compared to some other forms of industrial development, renewable power plant projects have well-understood, and relatively contained reclamation risks. Comparatively, renewable projects disturb land less intensively than thermal and hydro power plants and extractive industries such as mining or oil and gas production; however, the land area disturbed may be greater. In addition, the risks associated with groundwater and off-site contamination are generally low. While thermal power plants may have a higher contamination risk, the risk is typically contained to the project site.

169. To date, the Commission understands that there have not been any instances of abandoned utility-scale renewable power plants in the province. Proponents and experts noted that the occurrence of abandoned power plants, particularly solar and wind power plants, is not common in North America or worldwide. The Commission recognizes that few solar and wind power plants have reached the decommissioning and reclamation stage, which is a factor in the current experience of abandonment for renewable facilities.

Observation: There were mixed views of whether a mandatory reclamation security regime for power plants should be implemented.

170. The Commission heard mixed views on the need for a mandatory reclamation security regime, and whether the absence of such a regime for power plants is inconsistent with industry norms or indicates a regulatory gap. Some parties noted that the industries required to provide reclamation security are generally extractive in nature, have a high potential for contamination or involve waste facilities, whereas it is not common to require reclamation security for industries with fixed infrastructure like power plants. Others felt that the imperative of protecting the public from absorbing reclamation costs applies equally to power plants. Among parties who supported a mandatory reclamation security regime, there were a range of views on how it should be designed.

171. Proponents generally took the view that private lease agreements between proponents and hosting landowners sufficiently manage reclamation security. Proponents argued that landowners are well-positioned to decide what is the best, and most economic, use of their land. They submitted that mandating reclamation security would interfere with the ability of parties to contract freely, could potentially diminish the economic viability of power plant projects, and may create barriers to investment. Proponents argued that these latter concerns would be exacerbated if mandatory reclamation security were imposed on projects for which lease agreements have already been executed. Many proponents, including the Canadian Renewable

Energy Association (CanREA) and the Renewable Generators Alliance,[52] did support introducing a requirement that proponents provide proof to the AUC that reclamation security will be provided to the hosting landowner. In addition, CanREA was supportive of measures such as increased transparency of security arrangements.

172. Landowners generally took the view that mandatory reclamation security should be implemented to protect the public and municipalities from the potential burden of paying reclamation costs if a proponent were to abandon a project or fall short of adequate reclamation. These parties suggested that leaving reclamation security to be negotiated in private lease agreements between proponents and hosting landowners does not provide adequate assurance that sufficient funds will be available to conduct reclamation. Municipalities agreed, and while some municipalities have required security deposits as a condition of the development permit, they considered that a provincial approach would be more effective.

173. A number of parties emphasized that there is significant inequality in bargaining power and lease negotiation experience between proponents and hosting landowners, especially considering that hosting landowners tend to be unfamiliar with the regulatory framework and power plant review process. These concerns are exacerbated by a perception that some land agents acting on behalf of power plant proponents were not candid or forthright with landowners. Some parties suggested that the acquisition of land rights for power plant developments should be regulated under the *Land Agents Licensing Act*.

174. In response to concerns about unequal bargaining power, some proponents suggested that standardized language regarding reclamation obligations or security requirements could be included in lease agreements. The adoption of standardized language could provide assurance to the public that there is a consistent approach for all power plants, and assist in protecting hosting landowners from unacceptable reclamation at the end of project life. Several parties, including some proponents, advocated for education initiatives to support prospective hosting landowners. The focus of such education would be to assist landowners in gaining awareness about reclamation requirements, the scale of the costs required to reclaim land, and the risks of reclamation liability. This would help landowners to make informed decisions about whether to host a power plant on their own property and to negotiate better lease agreements to address reclamation requirements and associated reclamation security. The Farmers' Advocate Office could play a role in providing resources, education, or even develop standardized lease terms. CanREA suggested it could collaborate with the Farmers' Advocate Office on such initiatives.

175. Another concern the Commission heard about relying on private lease agreements to secure reclamation obligations is that the beneficiary of the reclamation security (often a landowner) would not likely be in a position to actually execute reclamation requirements in the event of a project abandonment by a proponent. Neither hosting landowners nor rural municipalities typically have the expertise, industry knowledge, or resources to conduct the scale of reclamation work required for power plants.

[52] The Renewable Generators Alliance is a group of 19 proponents who joined together to participate in the inquiry.

Observation: Parties had a range of recommendations for an acceptable reclamation security regime, with proponents proposing the least stringent requirements and landowners proposing the most stringent requirements.

176. Parties presented a range of views regarding the optimal structure and features of a reclamation security regime, including views on the acceptable forms of security, timing, amount, and beneficiaries.

177. If the government determines that a form of mandatory reclamation security regime is necessary, proponents emphasized that consultation with the industry is required to ensure that economic interests and risk factors are taken into account. Proponents advocated against a "one-size-fits-all" approach. Further, proponents submitted that any mandatory reclamation security should be applied on a go-forward basis to future projects only.

178. The forms of security generally accepted in other industries include cash, letter of credit, surety bond, parental company guarantee, and reclamation trust. Proponents generally considered that letters of credit, surety bonds or parental company guarantee provide adequate protection, and that there should be an array of acceptable forms of security to provide flexibility based on the economic considerations of a project. Landowners and municipalities generally considered that cash or cash equivalent is the safest form of security. Landowners and municipalities expressed particular scepticism about whether parental company guarantees are a reliable form of security, as these are exposed to risk based on the strength of the parent company and subject to change due to corporate reorganizations. Dr. Mackie, one of the experts retained by the Commission, also recommended against accepting parental company guarantees.

179. Proponents generally considered security should be required later in the project life closer to the end of project life and that the hosting landowner should hold the security, as is currently contemplated in existing private lease agreements. Landowners and municipalities generally considered that the security amount should be equal to the cost of reclamation, should be required at the start of a project or earlier in the project life and should be held by a government department or independent agency.

180. Lastly, some renewable power plant infrastructure can be salvaged at the end of the project's life, and may provide value to offset reclamation costs. During the inquiry, there was no consensus about the future value likely to be recouped through salvage. Proponents submitted that 100 per cent of the estimated salvage value of the equipment should be used to offset the estimated decommissioning cost for a project. The inclusion of the salvage value would lower the total reclamation cost estimates which in turn would lower the amount of reclamation security that a proponent has to put forward. The rationale for including salvage value is that wind and solar power plants contain valuable recyclable metals.

181. Other parties, including Dr. Mackie, cautioned against allowing full salvage value to be included in estimating net reclamation costs. These parties noted that salvage values would depend on the market value for the power plant components at an uncertain date well into the future. Further, currently there are few facilities available for recycling these components. For these reasons, many parties suggested that salvage values should not be relied on in preparing reclamation cost estimates, or alternatively that a smaller percentage of salvage values be incorporated and salvage value estimates should be determined by independent, third-party professionals. As future experience on actual salvage value is gained, a higher percentage of

salvage value could be more confidently incorporated into the salvage value estimates. Starting a publicly available database of costing and salvage values for completed reclamation plans would provide benchmarking data that would assist the regulator and proponents in understanding reclamation costs.

182. Appendix 4 contains a more detailed overview of submissions on reclamation security.

7.2 Options

183. The Commission is mindful of the need to balance the economic and efficient development of generation in the province through private investment, with the imperative of ensuring that reclamation liability does not fall to the public.

Option: If implementing a reclamation security regime, set key outcomes, principles, and parameters for the regime.

184. A reclamation security regime should successfully balance three main outcomes:

- Ensure that the reclamation of the site satisfies all mandatory reclamation requirements.
- Ensure that the proponent pays for the total reclamation cost.
- Ensure that the regime is risk-based, commensurate with the reclamation and abandonment risk, and cost-effectively manages the risk without being unnecessarily onerous on the proponent.

185. The costs associated with reclaiming power plant sites are not insignificant. Estimates provided to the Commission suggest that the cost of decommissioning a wind power plant would be in the range of $95,000/MW, in addition to land reclamation costs ranging from $25,000 to $59,000 per hectare.[53] Costs of decommissioning a solar power plant would be in the range of $70,000/MW plus land reclamation costs of $25,000 to $59,000 per hectare and costs of decommissioning a thermal power plant would be in the range of $35,000 to $75,000/MW, plus land reclamation costs of $25,000 to $59,000 per hectare.

186. In the Commission's view, any business decision by a proponent to enter the generation market must properly take into account, and plan for, the costs of decommissioning and fully reclaiming a project to equivalent land capability. The Commission understands that, even in the absence of a reclamation security regime, many proponents take steps to ensure that sufficient funds will be available to reclaim their projects at end of life. Nevertheless, given the inherent risk that some power plant proponents may become bankrupt or abandon a project, it is reasonable to put mechanisms in place to ensure that these costs do not fall to the public. Such an approach is consistent with the established legal principle that those who produce pollution should bear the costs of managing it.

[53] Report titled Consideration of Implementing Mandatory Reclamation Security for Power Plants, authored by Ecoventure Inc. for the Alberta Utilities Commission. Available at Exhibit 28501-X0057, PDF page 144.

187. A reclamation security regime should consider the following key principles:

- Follow a transparent and structured framework which allows proponents, hosting landowners, municipalities, and the general public to understand the objectives and features of the regime.
- Be risk-based, which means that it is tailored to the risk profile of the generation industry in Alberta.
- Reclamation cost estimates should be site-specific, developed by industry experts and independently reviewed and updated regularly throughout the life of the project.
- The timing of the security should align with the reclamation risk profile of the generation industry, particularly the abandonment risk.
- The form of the security should ensure sufficient funds will be available when needed, and should manage the risk of new project owners, project abandonment or proponent insolvency.
- Reclamation security requirements should be cost-effective in managing the reclamation risk.
- Reclamation security should be managed by a government department or independent regulatory agency.
- A security regime should apply to all generation types.
- A trigger should be in place to ensure reclamation occurs at the project end of life, minimizing the risk of reclamation deferral when there is inactivity of power generation at the site.
- Diligent consideration should be given to whether and how the security regime should apply to existing power plants, recognizing that all power plants compete in the same electricity market. A reclamation security regime should respect and not duplicate existing obligations, such as private lease agreements and other security mechanisms. Any reclamation security regime to be applied to existing power plants should include a transition period for implementation.
- Diligent consideration should be given to reasonable exceptions to the security regime, such as power plants with a smaller reclamation cost due to size of generation capability (e.g., less than 10 MW) or those sites already covered by another security regime.

188. In creating a reclamation security regime, the following parameters should be considered and clearly defined:

- Enabling legislation that identifies the key features to be included, the government department or independent agency accountable, the method to ensure compliance, and the consequence for non-compliance.

- The reclamation requirements or standards, which define the scope of reclamation work needed to achieve a reclamation certificate, and will be the basis upon which reclamation cost estimates are created.

- The amount of the security, including how to determine the estimated reclamation cost amount, the independence of the cost estimates, the frequency to update the cost estimates, and the treatment of any facility salvage value.

- The timing of when security needs to be in place and the percentage required, should a graduated scale be used through the project life.

- The types of security that are acceptable. The commonly accepted forms are cash, letter of credit, surety bond, and reclamation trust. There is a need to carefully assess whether parental company guarantees provide sufficient protection against insolvency, abandonment or ownership changes.

- The reclamation trigger (such as years of operation or some other trigger) that obligates the proponent to initiate reclamation work at the project end of life. This is to avoid a large time gap from when a project is de-energized and no longer commercially viable to when reclamation work begins.

- The inclusion of landowner protection measures including specifics such as the use of licensed land agents, public educational initiatives, and funding provided by the proponent for legal representation.

- The requirement to provide benchmarks and data including the obligation to compare cost estimates to actual reclamation costs. Given the infancy of the regime, accruing actual reclamation cost data, as it becomes available, for different type and size of power plants, will assist in refining the program as needed. This data should be made publicly available.

- The need to implement, and the administration process for, a generation reclamation fund to cover abandoned and insolvent projects. The structure of the fund can be developed and enacted at a later date, if and when the prospect of abandoned generation projects materializes.

189. The majority of proponents strongly emphasized that further consultation by the government is required to develop and implement the details of a reclamation security regime. A recommended approach to implementing a reclamation security regime would involve the government enacting legislation to mandate that proponents provide reclamation security, consultation with industry to develop regulations or directives specifying the details of the security program, and conditions being imposed on project approvals stipulating that reclamation security requirements are to be met.

Option: If implementing a reclamation security regime, a range of options are available for the government to ensure the proponent funds all reclamation costs.

190. Among other parameters, the three key components of a reclamation security regime are the amount of security (and how it is calculated), the timing of when the security needs to be in place, and the acceptable type of security. Proponents expressed that the greater the flexibility afforded in each of these components, the less likely the requirements will be a barrier to project economics and investment in the generation industry.

191. The table below provides a range of options, with varying degrees of stringency, for the key parameters in a reclamation security regime. The moderate approach is intended to strike a reasonable balance between parties divergent views and still enable a robust, cost-effective regime. The least stringent approach and most stringent approach are intended to be potential bookends for a reclamation security regime.

192. The table below is intended to inform the government of the various potential parameters and the range of options for each of these parameters that should be considered in the creation of a reclamation security regime in Alberta for generation facilities. It is not intended to be an exhaustive list nor are the ranges intended to be fixed. When designing a security regime, the lower the risk is considered that proponents will not meet their reclamation obligations, the less stringent the requirements should be, and vice versa. Establishing a security regime involves a complex balancing of interests.

Parameter	Least stringent approach	Moderate approach	Most stringent approach
Enabling legislation	Owner obligated to demonstrate security amount is in place 20 years after commercial operation date.	Enable legislation for mandatory reclamation security regime. To be administered by the government or an independent agency.	Enable legislation for mandatory reclamation security regime. To be administered by the government or an independent agency.
Compliance	Provide cost estimates and evidence of security to a government department or independent agency. No defined penalties for non-compliance.	Compliance and penalties defined by government department or independent agency. Government department or independent agency to have audit authority.	Compliance and penalties defined by government department or independent agency. Government department or independent agency to have audit authority.
Security amount and timing	Based on private lease agreements. Dependent on proponent obligation.	A percentage (0% to 50%) of the estimated security amount to be in place at the start of operation. 50% of the estimated security amount to be in place by year 10 of operation.	A percentage (50% to 100%) of estimated security amount to be in place at the start of operation. Full security amount to be in place by year 10 of operation.

Parameter	Least stringent approach	Moderate approach	Most stringent approach
		Full security amount to be in place by year 20 of operation.	
Beneficiary	Landowner, through lease agreements.	Government agency	Government agency
Exemption	Based on private lease agreements.	If reclamation cost estimate is less than $500,000 to $1,000,000	If reclamation cost estimate is less than $100,000 to $500,000
Salvage value	100% of estimated salvage value to be included in cost estimate.	50% of estimated salvage value to be included in cost estimate.	No salvage value to be included in cost estimate.
Security types	All types acceptable.	Acceptable security types defined by government department or independent agency. Actual security required; parental guarantee not acceptable.	Acceptable security types defined by government department or independent agency. Actual security required; parental guarantee not acceptable
Frequency of cost estimate updates	At year 20 of operation.	First cost estimate provided at approval application. Cost estimate updated at year 10 of operation and every five years thereafter.	First cost estimate provided at approval application. Cost estimate updated every five years of operation.
Cost estimates	Conducted by proponent. Based on C&R Directive.	Conducted by independent third-party expert. Based on C&R Directive.	Conducted by independent third-party expert. Based on C&R Directive.
Time trigger to initiate reclamation process	Up to the discretion of proponent.	Reclamation must be initiated within 12 months following inactivity of power production (e.g., annual power production in the last calendar year is less than 10% of prior	Reclamation must be initiated within six months following inactivity of power production (e.g., annual power production in the last calendar year is less than 25% of

Parameter	Least stringent approach	Moderate approach	Most stringent approach
		three-year average production). Exceptions can be granted with future approval to rebuild or repower.	prior three-year average production). Exceptions can be granted with future approval to rebuild or repower.
Benchmarks	No actuals required to be submitted.	Actual costs submitted on a per megawatt basis (costs and salvage).	Actual costs submitted in detailed template by cost category (e.g., above ground, below ground, reclaim land, salvage, other).
Landowner protection	No requirement to use licensed land agents. Proponents to fund legal counsel to represent hosting landowners in lease negotiations. Attestation from hosting landowners that reclamation and security requirements are acceptable.	Requirement to use licensed land agents.	Requirement to use licensed land agents.
Existing power plants	Nothing required. Rely on existing private lease agreements, corporate responsibility, and existing legislation.	Attestation from hosting landowners that reclamation is adequately addressed. Attestation from proponents that minimum security requirements are in place. Any required amounts above are adjusted for evidence from proponents of security requirements already in place.	A percentage of security amount to be provided by year 10 of operation. Transition period allowed where power plant is past or near year 10 of operation. Full security amount to be provided by year 20 of operation. Any required amounts above are adjusted for evidence from proponents of security requirements already in place.

AUC Commitment: The Commission will review Rule 007 requirements regarding proponent commitments in relation to reclamation and security funding obligations.

193. The Commission recognizes that, should the government implement a new security regime, it will take some time given the numerous factors that go into designing a program. Until then, government could consider providing policy guidance to the AUC. Within the interim information requirements, the Commission expanded on the information required from proponents to demonstrate the proponent has taken reasonable steps to ensure that sufficient funds are available to reclaim their proposed project at end of life. Until the government determines its approach on this matter, the Commission will review these interim information requirements for potential enhancements to ensure the Commission is able to make a reasonable assessment on the adequacy of a proponent's commitments.

8 Pristine viewscapes

Considerations of the impact of power plant development on Alberta's pristine viewscapes.

8.1 Context

Observation: There is no universal definition of a pristine viewscape.

194. Many parties suggested that the term pristine viewscape refers to areas that are untouched, unobstructed, natural, pure, or without development. Other parties suggested that the term should be construed more broadly, to include areas that may contain some development but are nevertheless enjoyed for their aesthetic value, such as pastoral and agricultural settings.

195. The Commission received substantial feedback that the personal value of a viewscape would vary depending on an individual viewer's perception, and that attempting to define or delineate commonly held criteria of a pristine viewscape would be challenging. For this reason, many parties cautioned that the Commission should focus not on identifying specific pristine viewscapes, but on understanding the nature of viewscape impacts caused by power plant development more generally.

196. First Nations and Métis communities shared the importance of landscapes that are completely natural and free of signs of development for carrying out cultural, spiritual and ceremonial practices. They emphasized the importance of consultation and respect for Indigenous knowledge to identify culturally significant and sacred land, and to understand potential impacts of power plant development. First Nations and Métis communities also raised concerns that power plant development might adversely impact the ability to develop Indigenous tourism, especially in remote areas.

197. On a personal level, parties expressed that visual impacts of power plant development can have varied effects. For example, while some people may regard turbines as providing a positive visual signifier of progress on climate change, others may find their presence in a previously undeveloped viewscape to be upsetting.

198. Numerous landowners and rural residents suggested that a power plant's development has the potential to change viewscapes in rural, agricultural and non-industrial settings into something more industrial. Many submissions commenting on this change focused on the size of

power plant infrastructure relative to other types of development typical in rural and agricultural areas. For example, parties commented on the height of wind turbines, the footprint of solar panel installations, and the large cooling facilities and emissions visible from natural gas generation facilities. Landowners and rural residents expressed differing levels of acceptance for the visual impacts from this infrastructure. While the Commission received feedback focusing on the specific characteristics of power plant facilities, parties also frequently stressed that viewscape impacts are not unique to power plant developments and that other industries also impact viewscapes to varying degrees.

199. The Commission agrees with parties who suggested that it is very difficult to define pristine viewscape in a manner that satisfies all stakeholders, and that doing so may not be desirable because the value of a viewscape is subjective. While the absence of any human-made elements or disturbances may render a viewscape pristine, this does not necessarily mean that the viewscape is particularly scenic or valued. Conversely, there are circumstances where a view that contains existing development may be of greater value to Albertans than a pristine view.

Observation: Individuals value viewscapes uniquely, from their own personal perspective. The impact from power plant development on viewscapes can occur at the general public level, the community level and the individual level.

200. Viewscape impacts at the individual level are the localized impacts from a power plant development to viewscapes, as experienced by an individual when viewed from their nearby private residence or land. While a power plant development may change the viewscape from an individual's property, a person's perception of the change may also vary depending on that person's preferences. For that reason, impacts at the individual level are personal and therefore highly variable. Some submissions, including those from First Nations and Métis communities, raised that viewscape changes have the potential to impact an individual's mental health, especially where an individual places high value on a particular viewscape.

201. As it relates to private property, viewscape impacts at the individual level could result in a real or perceived loss of property value. As part of the inquiry, the Commission retained an expert to provide a review and discussion of the impact of power plant development on Alberta's pristine viewscapes.[54] The expert attempted to assess the impact by conducting a literature review of property value related studies to determine if there was any measurable change in property values due to changes in viewscape. The bulk of the existing studies focused on wind power plants. Overall, the expert found that there was a lack of consensus with respect to how power plant development impacts property values: some studies found a statistically significant and negative impact; other studies found no material impact.

202. The expert noted that within the studies, the approach most frequently used to estimate the effect of a power plant development on property values does not evaluate exclusively the impact due to viewscape changes, since property value can also be affected by other real or perceived impacts that cannot be isolated from just the viewscape. As a result, it is difficult to isolate viewscape impacts from any property value impact analysis. Further, the actual impact to

[54] Report titled Impact of Power Plant Development on Viewscapes – A Literature Review, authored by Nichols Applied Management Inc. for the Alberta Utilities Commission. Available at Exhibit 28501-X0058.

property value in a given situation would be highly fact-sensitive and dependent on factors such as the particular needs and interests of the purchaser.

203. Some landowners suggested that if power plant development results in a negative property value impact, affected landowners (e.g., neighbouring landowners) should receive some form of compensation. Compensation for property value impacts is beyond the scope of this inquiry and outside of the Commission's authority; however, the Commission is aware of some proponents offering neighbourhood agreements or community benefit funds.

204. Viewscape impacts at the community level are the impacts created by a power plant to residents within a community area or neighbourhood in proximity to a power plant development. While similar to impacts at the individual level, impacts at the community level may feel less personal since the presence of a power plant may be at a greater distance from a residence or property, or may be viewed less frequently. The literature review noted above found that the type of electric generation development may influence how viewscape changes are perceived at the community level. In the Commission's experience, a community's relationship with a power plant proponent may also influence how viewscape changes are perceived at the community level.

205. Viewscape impacts at the general public level are the impacts associated with changes to scenic viewscapes that are frequented by members of the public, or that members of the public may travel to experience. This could include viewscapes with particular aesthetic, cultural, historical or recreational significance. Many parties suggested that viewscape impacts at the general public level could have cascading effects, since people may be less likely to travel to the areas if there is a power plant development within the viewscape. This could result in losses, such as cultural and economic loss, due to decreased tourism, recreation, and local business.

AUC Commitment: The Commission will enhance the existing visual impact assessment requirements within Rule 007 to include a more structured visual impact assessment methodology within the AUC application review process.

206. The Renewable Generators Alliance submitted an expert report on viewscape impacts that recommended utilizing a transparent, repeatable and structured visual impact assessment methodology to assess visual impacts within the current AUC project review process.[55] It noted that such a methodology has been applied in other jurisdictions for 10 to 15 years, including in countries within the United Kingdom and Europe.

207. The Commission considers that the addition of visual impact assessment requirements to Rule 007 will allow the Commission to more robustly assess viewscape concerns on a project-by-project basis, as one of the factors used to determine whether the project is in the public interest. The Commission heard throughout the inquiry that defining a pristine viewscape is difficult and subjective. While the lack of human-made elements may make a view pristine, this would not necessarily also make the view scenic or valued. Conversely, it is possible for a view that is disturbed by existing development to be of greater value to the public than a pristine view. As a result, for the purpose of its discussion of visual impact assessments, the Commission will use the term "valued viewscape" rather than pristine viewscape. The Commission expects

[55] Report titled Viewscape Impacts, authored by Green Cat Renewables Canada Corporation for the Renewable Generators Alliance. Available at Exhibit 28501-X0419.

that the more structured visual impact assessment methodology will incorporate the following key requirements:

- A visibility assessment zone, which establishes an area surrounding the proposed development within which the proponent will need to assess the impact to valued viewscapes that are found within that zone. The size of the zone would be based upon the height of the proposed infrastructure and surrounding topography, with higher infrastructure having a larger zone of visibility to assess.

- The type of valued viewscapes that will need to be assessed include, at a minimum, the following:
    - nationally and provincially designated parks
    - culturally significant or historic places
    - recreational and tourist sites

- A consistent method to assess the severity of impact to any valued viewscapes within the visibility assessment zone. This method could include ranking the relative value of the viewscape and ranking the magnitude of change to the viewscape.

- Accurate and standard visualizations, to be submitted to assist in assessing visual impacts for valued viewscapes with high severity impact.

208. The visual impact assessment will assist in determining whether any additional mitigation is required, as well as identify the degree of unmitigated viewscape impacts, for the Commission's consideration.

8.2 Options

Option: Provide guidance on valued viewscapes.

209. The Commission is receptive to feedback from the government on what types of viewscapes, beyond those identified above, should be treated as valued viewscapes and incorporated into a visual impact assessment methodology. The government could consider providing guidance on what types of valued viewscapes should be assessed by the Commission when considering an application. The government could provide such guidance formally through policy or legislative amendments, or through participation in the upcoming consultation on changes to Rule 007.

210. In addition, regional planning could be used to identify valued viewscapes, the importance of these valued viewscapes, and specific restrictions on how and/or whether these specific viewscapes can be impacted.

Option: Define "no-go" restricted viewscape zones.

211. Some parties suggested that in order to preserve pristine viewscapes, "no-go" zones should be established where power plant development would be completely restricted from

development. Areas parties suggested for "no-go" zones included national parks, the eastern slope areas, areas with high levels of domestic and international tourism, areas with unique cultural and natural heritage, and areas that have development restrictions identified in regional plans.

212. The Commission accepts that some individuals or groups of individuals may find certain areas within Alberta provide such significant visual value to themselves and on behalf of all Albertans, they would recommend that the viewscape be protected from visual obstructions. The Commission notes that consistent feedback by parties was that it was very difficult to define a pristine viewscape acceptable to all parties. The Commission considers that the identification and delineation of these areas, if any, should be by the government. Based on the feedback from parties, the Commission suggests that should the government find it in the public interest to pursue "no-go" restricted viewscape zones, any prohibition on development intended to achieve viewscape preservation be industry agnostic, and apply equally to all forms of development within the restricted zone, not just electricity generation.

9 Conclusion

213. This report provides the Commission's observations and considerations for options on the Module A inquiry topics, based on the submissions before it in the inquiry. The report is intended to assist the government with its policy development, and inform further study or consultation it may undertake. Input from the responsible ministries will be important as the government proceeds with any policy development. The Commission values the contributions of all participants to the inquiry. The report was made stronger because of their engagement and insights.

214. In the Commission's view, all Albertans benefit from electricity development that is responsible, orderly and efficient. The Commission will act swiftly to implement the changes to its own practices that were identified throughout the inquiry process, and expects that this will result in a more robust review process. Further engagement with proponents and stakeholders will occur through the Commission's upcoming rule reviews. The Commission also looks forward to continuing to build its relationships with First Nations and Métis communities in Alberta.

Alberta Utilities Commission

Renée Marx
Panel Chair

Cairns Price
Commission Member

Dennis Frehlich
Acting Commission Member

Appendix 1 – Order-in-Council 2023-171

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(consists of 3 pages)

Appendix 2 – Comment matrix for inquiry submissions

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Number	Issue/question	Please provide your view and your supporting rationale
1	**Reclamation security**	
1.1	Should Alberta impose mandatory reclamation security requirements on all types of power plants?	
1.2	Do private contracts between project owners and landowners provide a sufficient level of reclamation security? Should private contracts between project owners and landowners regarding reclamation security be standardized?	
1.3	If new security requirements are imposed, should they only apply on a go-forward basis to new projects, or should they also apply to existing and approved projects?	
1.4	What type of security should be required (e.g., cash, letter of credit, surety bond, insurance, etc.)?	
1.5	How should the amount of security be determined?	
1.6	When in the project lifespan should the security be required?	
1.7	Should the security be independently reviewed and updated during the life of a project to ensure it is adequate, and if so, how often should that be done?	
1.8	How should the power plant owner demonstrate security is in place?	
1.9	How should the security be structured to address the risk of bankruptcy or default by the power plant owner?	
1.10	Who should hold and have oversight of the reclamation security program and the disbursement of funds in the event of a default (e.g., Alberta government, municipality, landowner, AUC, other)?	

Number	Issue/question	Please provide your view and your supporting rationale
1.11	Are there Alberta reclamation security programs in place for other sectors that could be adopted for power plants?	
1.12	Are there other jurisdictions that have reclamation security in place for power plants that should be considered in Alberta?	
2	**Development on agricultural and environmental land**	
2.1	Are there certain categories of agricultural land or environmentally sensitive lands where power plant development should not be permitted?	
2.2	Are there land or soil classifications/classes where power plant development should not be permitted?	
2.3	Should certain lands be set aside in Alberta for only agriculture uses now and in the future? If so, how should these lands be identified?	
2.4	Should there be a streamlined and/or prioritized approval process for power plant development on certain types of lands, provided there are no outstanding concerns related to reclamation security, viewscapes, valued environmental features, compliance with existing rules, etc.? For example: a) Lands owned or controlled by a government or government agency (provincial or municipal). b) Land zoned by a municipality for commercial or industrial development. c) Land already disturbed or with development already in place.	
2.5	What municipal planning information should the AUC review when considering a power plant development?	
2.6	For power plants that do not align with approved municipal land use plans or zoning, how should	

Number	Issue/question	Please provide your view and your supporting rationale
	the AUC consider this within its public interest determination?	
2.7	The AUC requires power plant developers to provide a summary of their consultation with local jurisdictions (e.g., municipal districts, counties). Should the requirement to consult with local jurisdictions be enhanced, and if so, how?	
3	**Development on provincial Crown land**	
3.1	Should there be development of power plants on Crown land? Should there be limitations or special constraints on the amount or types of Crown land available for development?	
3.2	What considerations should factor into the Commission's public interest determination? For example, how should impacts to existing Crown leaseholders, permit holders, or license holders etc. (e.g., grazing leaseholders, timber permit holders) be considered? How should impacts to recreational users be considered?	
4	**Pristine viewscapes**	
4.1	How should a "pristine viewscape" be defined?	
4.2	What criteria, if any, should be used to assess the impact of a power plant development on a "pristine viewscape"?	
4.3	How should the impact on viewscapes be balanced against other impacts (positive and negative) when assessing the public interest of a power plant? Does the response differ depending on the type or characteristics of the viewscape?	
4.4	Do wind and solar power plants have the same impact on viewscapes? How do they compare to the impact on viewscapes from non-renewable power plants?	

Appendix 3 – Rule 007 interim information requirements

(return to text)

Agricultural land

1. Using the current version of the Agricultural Regions of Alberta Soil Inventory Database (AGRASID), please describe the agricultural capability of soils intersecting the project footprint as provided in the spring-seeded small grains ("SSSGRAIN") attribute of the Land Suitability Rating System ("Land Suitability Ratings") table. SSSGRAIN provides the Land Suitability Rating System (LSRS) classification for spring-seeded small grains for the related AGRASID soil polygons. Provide a table showing the amount of area for each LSRS class impacted by the project in hectares (e.g., 2.01 hectares of Class 2A).

2. From the Agricultural Regions of Alberta Soil Inventory Database (AGRASID), please describe all soil series within the project area and report all potential material impacts to:
   - Soil quality (i.e., compaction, rutting, salinity, sodicity, fertility, contamination, clubroot)
   - Soil quantity (i.e., wind erosion, water erosion)
   - Hydrology (i.e., topography, soil drainage, depth to groundwater)

   Describe how these material impacts to soil quality, quantity and hydrology will be adequately mitigated during construction, operation and reclamation.

3. Describe all earthworks (e.g., stripping and grading) planned for the project, including the following information:
   - Methodology to anchor structures (e.g., screw piles, concrete footings, etc.).
   - The extent of stripping and grading, with an estimate of the area of agricultural land impacted.
   - Description of how these activities have been reduced in both extent and intensity (as practical) to protect the quality, quantity and hydrology of impacted soils.
   - Description of how and where stripped soils will be stockpiled and what steps will be taken to preserve the quality and quantity of stockpiled soils prior to replacement on site.
   - Description of how soils will be replaced on site to preserve the quality, quantity and hydrology of the disturbed soils.

4. Describe the potential for co-locating agricultural activities (e.g., grazing, haying, crops, apiculture) into the project design. If co-locating agricultural activities is not feasible, please explain why.

5. List the qualifications of the agrologist(s) who prepared or reviewed the responses regarding agricultural land.

Municipal land use

1. Confirm whether the proposed power plant complies with the applicable municipal planning documents including municipal development plans, area structure plans, land-use bylaws and other municipal bylaws.

2. Identify any instances where the proposed power plant does not comply with applicable municipal planning documents and provide a justification for any non-compliance.

3. Describe how the applicant engaged with potentially affected municipalities to modify the proposed power plant or to mitigate any of its potential adverse impacts to the municipality, prior to filing the application.

Viewscapes

List and describe pristine viewscapes (including national parks, provincial parks, culturally significant areas, and areas used for recreation and tourism) on which the project will be imposed. Describe mitigation measures available to minimize impacts from the project on these viewscapes.

Reclamation security

Describe the reclamation security program for the proposed power plant, including details on:

- The standard to which the project site will be reclaimed to upon decommissioning.
- How the amount of the reclamation security will be calculated.
- The frequency with which the reclamation security amount will be updated or re-assessed.
- When the reclamation security will be in place to be drawn upon, if needed.
- What form the reclamation security will take (e.g., letter of credit, surety bond, other).
- The security beneficiaries to whom the reclamation security will be committed.
- How the beneficiary can access the security and any constraints on such access.

Appendix 4 – Detailed submissions by topic

(return to text)

This appendix contains a more detailed overview of submissions received by the Commission, organized by topic. This appendix is not intended to provide a comprehensive list of all submissions made during the inquiry. Rather, it identifies key themes that emerged throughout Module A and expands on comments made within the report.

As noted in the report, the Commission received hundreds of written and oral submissions during Module A of the inquiry. The full record of Module A, including all written submissions and a transcription of all oral submissions, is available to the public on the AUC's eFiling System under Proceeding 28501.

Role of municipalities in power plant review

Municipal participation in AUC proceedings

- Municipalities emphasized the desire for increased participation in the AUC's application review process of generation projects and advocated for eligibility to recover the costs of their participation.

- Municipalities suggested that the AUC consider adopting a presumption that local municipalities are "directly affected" by a local power plant application and are presumptively entitled to intervene in the Commission's proceeding.

- Municipalities supported amendments to Rule 007 to permit increased municipal involvement in the AUC's renewable energy project review process.

Compliance with land-use planning policies and regulations

- Municipalities emphasized the need for AUC consideration of the municipal planning framework in place, specifically municipal development plans (MDP), intermunicipal development plans (IDP) and land-use bylaws (LUB), in addition to any non-statutory plans that provide guidance on land use.

- Municipalities considered that as part of the AUC's application review process, proponents should be required to explain how a proposed project aligns with applicable LUBs, MDPs and IDPs and provide written confirmation of such alignment from the municipality.

- Some municipalities proposed that proponents should be required to obtain a municipal "letter of concurrence" or non-objection letter demonstrating that applied-for projects comply with municipal plans. Others proposed that a municipal referral letter should be required from proponents similar to the AEPA renewable energy referral report process indicating that a proponent has satisfied municipal requirements at the time an AUC application is made.

- Some municipalities considered that municipal planning approval should be a pre-requisite of the AUC considering an application or condition of an AUC approval.

- Where an AUC decision is contrary to a municipal planning decision, statutory plan or stated interests, municipalities emphasized that clear rationale should be provided.

- In general, municipalities supported provincial regional plans as a primary tool for resolving land-use issues and identifying suitable areas for power plant development.

Jurisdictional concerns

- Some municipalities expressed concern with the province having the final say on what happens with land in their municipal boundaries without due consideration of the municipality.

- Certain municipalities suggested that amendments to Section 619 of the MGA are needed to provide authority to municipalities to deny power plant projects.

- Others, including the Rural Municipalities of Alberta (RMA) and the Association of Alberta Municipalities (AAM) were not in favour of municipalities having final decision-making authority over approving power generation projects within their municipalities.

Amendments to the AUC's consultation and notification requirements

- Some municipalities suggested that proponents should be required to obtain a non-objection letter from the municipality confirming it is satisfied with the applicant's pre-application consultation program.

- Municipalities supported amendments to the Rule 007 participant involvement program requirements to require proponents to demonstrate how a project location and design has been adjusted, if necessary, to accommodate municipal feedback.

- In general, municipalities supported a requirement for them to provide a summary of their consultation with proponents for review by the AUC to allow the AUC to verify both parties' account of the consultation work.

- Municipalities suggested that proponents should be required to provide documentation detailing their engagement methods and demonstrate municipal support in their applications.

Agricultural and environmental land

Alberta's agricultural land inventory

- The Tannas Conservation Services Ltd. report estimated 33 per cent of the Alberta land base is used for agriculture (21 million hectares) with cultivated land accounting for 12.9 million hectares and 8.1 million hectares for grazing. The report added that in 2021, the total farmland decreased from 21 million hectares to 19.9 million hectares.

- Dr. Urquhart presented similar numbers, stating that in 2020 Alberta had 20,990,373 hectares of agricultural land.

- The Conservation Solutions Lab report indicated that, based on the Alberta Biodiversity Monitoring Institute's (ABMI) Human Footprint Inventory for 2021, there was 13,664,828 hectares of active farmland representing a net increase of active farmland compared to 2019 figures. The report noted that between 2019 and 2021, all economic regions in Alberta, except Calgary, saw an increase in the quantity of agricultural land.

- Serecon Inc. stated that according to Statistics Canada 2021's Census of Agriculture, Alberta has approximately 46.4 million acres of agricultural land as of 2021. This land encompasses cropland, tame pasture and native pasture.

Breakdown of land quantity for each soil classification

- The DNV report on agricultural land utilization stated that the CLI database showed approximately five million hectares of class 1 and 2 agricultural land and 20 million hectares of class 3 and 4 agricultural land.

- Matrix Solutions Inc. explained that the LSRS database categorizes agricultural land within the White Area of Alberta. Matrix Solutions Inc. indicated that based on the LSRS database the total white area of Alberta is approximately 26 million hectares, of which there is 6.9 million hectares of class 1 and 2 land and 11 million hectares of class 3 and 4 land.

- Tannas Conservation Services Ltd. noted that not all class 2 and 3 land is available for farming. Rather, 18 per cent of prime agricultural land is either under non-agricultural use (including parks, urban areas, Crown ownership) or undeveloped.

- The Agricultural Regions of Alberta Soil Inventory Database (2023) provides the following breakdown of soil classes in the province.

LSRS class	Area (hectares)
1	19,199
2	6,886,187
3	6,015,872
4	5,010,193
5	3,700,457
6	1,797,623
7	1,650,137
Not rated	703,942

- Matrix Solutions Inc. indicated that the reported areas of LSRS class 1 soil is incorrect as the province lacks sufficient heat units for that classification.

Land usage of renewable energy projects

- The Tannas Conservation Services Ltd. report indicated that solar generation required approximately two to four hectares of land per megawatt. Wind generation projects were reported to require less land per megawatt based on their operational footprint; however, it was emphasized that the impact of high-grade gravel access roads to each turbine must be considered.

- Dr. Urquhart submitted that between 2011 and 2020 Alberta lost 52,000 hectares of LSRS class 2 agricultural land, none of which was attributed to solar generation projects. Based on solar generation projects that began operating in 2022 and were approved before August 2023, he estimated Alberta's total solar generation footprint to be 111,000 hectares.

- The DNV report evaluated the footprint of wind and solar generation projects in Alberta based on the projects depicted on the Commission's "AUC Wind and Solar Interactive Map," as of October 2022 and CLI data. It found that the current solar generation footprint (in-service, approved and applied for) is 24,379 hectares, of which 4,628 hectares are located on CLI class 1 and 2 land and 10,672 hectares are sited on CLI class 3 and 4 land. For wind generation projects, it found the total footprint to be 281,516 hectares, of which 13,296 hectares are on CLI class 1 and 2 land and 253,356 hectares are on CLI class 3 and 4 land.

- The Pembina Institute referenced the Alberta Biodiversity Monitoring Institute, which stated the current land use footprint for solar and wind generation projects is 3,248 hectares. In comparison, the footprint of conventional oil and gas wells was stated to be 406,643 hectares.

- The Conservation Solutions Lab report indicated that between 2019 and 2021, solar generation facilities were responsible for the conversion of 833.12 hectares of agricultural land while wind generation was responsible for 204.83 hectares. In total, between 2019 and 2021, 7,492.2 hectares of agricultural land was reportedly converted to other uses.

- The Conservation Solutions Lab reported that in the Lethbridge-Medicine Hat region, solar generation development was responsible for 45 per cent of the total agricultural land loss between 2019 and 2021.

Breakdown of land occupied by renewable projects by soil class

- Dr. Urquhart estimated that when looking at solar generation projects operating or approved as of August 2023, these generation projects are sited on 13,000 hectares of LSRS class 2 land, 16,000 hectares of class 3 land, 24,000 hectares of class 4 land, 29,000 hectares of class 5 land, 12,000 hectares of class 6 land and 18,000 hectares of class 7 land.

- DNV did a similar exercise for projects operating, approved or applied for as of October 2022. It found that solar projects occupied 4,628 hectares of CLI class 1 and 2 land, 10,672 hectares of CLI class 3 and 4 land and 9,014 hectares of other land. Wind projects were found to occupy 13,296 hectares of CLI class 1 and 2 land, 253,356 hectares of CLI class 3 and 4 land, and 14,864 hectares of other land.

- The Conservation Solutions Lab reported that between 2019 and 2021 solar generation project were not sited on any LSRS class 1 and 2 land, converted 194 hectares of class 3 land and 593 hectares of class 4 to 7 land. Wind generation projects were reported to have converted 63 hectares of class 1 and 2 land, 23 hectares of class 3 land and 119 hectares of class 4 to 7 land.

Land required to accommodate future generation

- A document from the University of Calgary: School of Public Policy looked at the impact of the additional solar generation required to meet net-zero by 2035 under a renewable generation intensive scenario. It determined that the additional 3,900 MW of solar generation, using existing technology, would result in a footprint of 15,400 hectares of land. This equates to 0.08 per cent of Alberta's agricultural land base.

- The DNV report estimated "AESO 2030 Long-term Outlook" targets and applied the hectare per megawatt requirements of current generation projects to project future land requirements. It estimated 6,800 MW of wind generation and 4,600 MW of solar generation would be required. This would require 271,687 hectares of total project area for the wind generation projects and 13,430 hectares for the solar generation projects.

- The Pembina Institute referenced the AESO's modelling estimate, and noted that under the highest quantity of land use by both wind and solar, these projects would require 15,378 hectares of land, or 1/26th of the current oil and gas well footprint.

Conversion of agricultural land for other uses

- Dr. Urquhart indicated that between 2011 and 2020 over 65,000 hectares of agricultural land was lost to urban expansion and rural residential subdivision.

- The Pembina Institute stated that according to the Government of Alberta's *Annual report land use changes in Alberta*, since 2010 urban residential development converted 43,997 hectares of agricultural land and rural residential development converted 28,965 hectares.

- The Conservation Solutions Lab indicated that between 2019 and 2021, the largest driver of agricultural land loss was the expansion of pipelines and industrial sites, which replaced 1,859 hectares and 1,607 hectares, respectively. It was reported that between 2019 and 2021, 7,492.2 hectares of agricultural land was converted to other uses. Industrial sites, mine sites and urban and residential areas all primarily expanded into LSRS class 1 and 2 land over the 2019-2021 period (1,428.9 hectares in total).

First Nations and Métis communities' concerns

- First Nations and Métis communities emphasized the need to clarify the terminology used in this topic, such as the definition of "environmental land."

- The communities expressed the importance of Indigenous monitors being present throughout the life of a project, as locals have significant knowledge about land impacts.

- First Nations and Métis communities supported the use of previously disturbed land for new power plant projects, rather than siting those projects on undisturbed land or further encroaching on traditional territory.

- Communities suggested that they would benefit from better access to information about areas within the province where power plant development is contemplated.

- Prioritization of human and environmental safety was emphasized, including the protection and avoidance of wetlands, old growth forests, and culturally sensitive areas.

Crown land

Use of Crown land for power plant development

- Submissions from proponents and organizations were generally supportive of the ability to develop renewable energy projects on Crown land. Submissions from the members of the public were more varied. Members of the public who were unsupportive or hesitant of development on Crown land were primarily concerned with environmental impacts, as well as the potential for development to adversely affect existing Crown land users including recreational users.

- Many First Nations and Métis participants stressed that they support the development of renewable power plants and increasing access to electricity, but not at a cost to land, wildlife and constitutional rights.

- First Nations and Métis communities stated that access to Crown land is critical for the exercise of Section 35 rights and traditional practices. They emphasized that potential impacts to First Nations and Métis communities should be a primary consideration in assessing whether to make Crown land available for development, and that proponents and the government should work with Elders and Indigenous knowledge holders to better understand the potential impacts of a project on Crown land.

- First Nations and Métis communities also emphasized the importance of considering the cumulative effects of development on the ability to exercise constitutional rights. These parties suggested that cumulative effects assessments should be mandatory, as current environmental assessments tend to be site-specific and do not adequately consider broader environmental impacts.

- Managing cumulative effects requires land-use planning, and should involve the completion of regional plans. It could also involve tools such as land offsets to reduce the total amount of land impacted by development and consideration of a "no net loss of land" goal.

- First Nations and Métis communities stressed the importance of clear and transparent communication regarding the scope and location of a proposed project so they can better understand the potential impacts.

Legacy Environmental Ltd. Crown land report[56]

- The Renewable Generators Alliance retained Legacy Environmental Ltd. to prepare a report on Crown land and impact assessment streamlining (the Crown land report). The Crown land report recommended that the government allow the development of renewable power plants on Crown land, and identify limitations or constraints on the amount and types of Crown land available for such development.

[56] Expert Report on Crown Lands and Impact Assessment Streamlining, authored by Legacy Environmental Ltd. for the Renewable Generators Alliance. Available at Exhibit 28501-X0418.

- The Crown land report discussed two separate processes that would be engaged when developing renewable power plants on Crown land: the process to obtain approval for a project (permitting process) and the process to obtain a disposition authorizing the use of Crown land.

- With respect to the project permitting process, the Crown land report explained that Alberta currently uses a direct to permitting approach for projects on private land. Some other provinces rely on a two-step approach where a utility-scale project must first achieve a higher-level environmental certification before an application for permits is allowed.

- With respect to the land disposition process, Alberta's current process shares similarities with those used elsewhere. However, Alberta does not employ a staged approach to land tenure, unlike British Columbia, Ontario and Nova Scotia.

- Under a staged approach, a licence is first issued to investigate the potential for renewable energy with no guarantee of approval. In the second step, following the completion of a robust assessment process to examine the interactions of the proposed project with environmental and social values and other users, a licence of occupation with conditions of approval is issued.

- In most provinces where renewable energy developments are permitted on Crown land, the favoured approach is to make all Crown land available for consideration, but only grant a land disposition where it can be demonstrated that the land use is appropriate. Parks and protected areas, research locations, areas with community infrastructure and recreation areas are not suitable. Land with existing uses, including agriculture, may be suitable for co-use if there is compatibility.

- Nova Scotia grants itself the ability to conduct suitability analyses for the purpose of designating or zoning areas appropriate for renewable energy developments, and issuing a tender for the use of such land.

Reclamation security

Need for mandatory reclamation security for power plants

- Submissions from the members of the public and municipalities were strongly in favour of mandatory reclamation security requirements. These parties emphasized potential harm to the environment and public interest if land is not fully reclaimed by a proponent.

- First Nations and Métis communities also suggested that strong reclamation security requirements should already be in place to provide assurance that reclamation activities will be conducted. These communities expressed a desire to be involved in the development of reclamation plans for power plants so they can more effectively use their traditional knowledge of the project area.

- To substantiate the need for mandatory reclamation security, landowners and municipalities pointed to oil and gas reclamation liability, including the high number of orphan wells throughout the province. Parties in favour of a mandatory reclamation security regime suggested that the regime for the oil and gas sector is inadequate and has been designed with minimizing cost to industry as a primary consideration. These parties believed that the province should learn from its experience in the oil and gas sector and implement a mandatory security requirement for power plants.

- Martin Olszynski, an associate professor at University of Calgary Faculty of Law submitted a paper that discusses the current regime for oil and gas reclamation security. Using the learnings from the oil and gas sector, M. Olszynski recommended that a reclamation security regime must be transparent, sufficiently constrained by legislation, fair to the generation sector, and must maintain the regulatory agency's independence, credibility and trust.

- The RMA submitted that private lease agreements between hosting landowners and proponents do not provide sufficient transparency related to reclamation requirements and security amounts. All proponents should have some level of accountability to a regulatory body that can ensure that the land will be reclaimed in a safe and fair manner. The RMA suggested that the province should establish standardized reclamation requirements and determine reclamation security amounts for each project. The RMA submitted that private contracts should only be allowed to address reclamation requirements beyond what is standardized at the provincial level.

- Landowners generally took the view that mandatory reclamation security requirements for power plants are needed. They noted that the high cost to reclaim abandoned oil and gas wells in Alberta is well documented. Based on the siting of utility-scale generation, particularly the increasing number of wind and solar power plants, rural landowners are disproportionately affected when proponents fail to properly conduct and pay for reclamation. Having a security regime in place is necessary to guarantee that there will be sufficient funds to restore the land to equivalent land capability.

- Proponents and industry generally considered that reclamation security is adequately addressed through lease agreements between a project proponent and the hosting landowner. Any additional mandatory security requirement would be detrimental to

project economics and may pose a barrier to future investment in generation in Alberta. Some proponents supported the development of model security provisions as a tool for providing consistent, industry-wide lease standards to alleviate concerns raised by municipalities and landowners.

- Should the government determine that mandatory reclamation security is required, proponents submitted that any security regime should take into consideration existing contractual reclamation security commitments between a proponent and a hosting landowner. Additionally, any security amounts should be determined on a project-by-project basis taking into consideration the size and type of power plant.

- The Pembina Institute stated that standardized reclamation security provisions for private lease agreements with a transparency requirement for these security provisions would be useful to protect the hosting landowner and provide assurance to the public that there are clear security requirements in place for a power plant. The Pembina Institute noted that non-extractive industries (such as renewable generation) are rarely subject to mandatory reclamation security programs. This is because the total land area required for renewable generation, the associated environmental impacts, and the cost of reclamation are significantly less than in the other industries where Alberta has imposed mandatory security requirements (such as coal and oilsands mining, quarry activities, and gravel operations). The Pembina Institute stated that a reclamation security regime for renewable power plants should be less onerous than the regime in place for those extractive industries. Otherwise, it would unfairly disadvantage renewable electricity.

- Power Advisory LLC was retained by the Renewable Generators Alliance to prepare a report on reclamation security requirements for power plants. Power Advisory stated that the opportunity to repower a wind or solar power plant differs from oil and gas, pipeline or mining project sites. In those industries, a site cannot be repurposed for the original use when facilities reach their end of life as the resource has been depleted. Wind and solar energy is not finite and does not deplete. The ability to repower or rebuild a power plant, particularly a renewable power plant, with new equipment and technology, and the high net salvage value of the equipment, results in a lower risk of abandonment.

- Some proponents submitted that the same reclamation security requirements should not be applied to all types of power plants. Aura Power Renewables Ltd. stated that the reclamation risk associated with solar power plants is considerably lower compared to both other industries (e.g., oil and gas) and wind power plants. There is a low risk of soil contamination for solar projects and the reclamation of soils and vegetation following the removal of solar panels is relatively simple and less costly. Since solar panels sit on piles, there is relatively little ground infrastructure, and this infrastructure can be removed at its end of life with minimal disturbance to the environment.

- Capital Power Corporation submitted that imposing mandatory reclamation security requirements for wind and solar power plants is reasonable considering the rapid growth of these developments in recent years and the concerns that have been raised by landowners and municipalities. In Capital Power's view, mandatory reclamation security does not need to be applied to non-renewable power plants given the smaller land footprint of those

facilities compared to wind and solar developments, and because there have not historically been concerns over reclamation of non-renewable power plants in the province.

Design of security requirements (timing, amount, form of the security)

- The main parameters for the design of a reclamation security regime include the timing, amount and form of the security.

- Landowners and municipalities strongly preferred that reclamation security be required at the application process or start of construction. Putting security forward at an early stage reduces the risk of funds not being available for reclamation work. Some of these parties suggested that the required security amount should be equivalent to the estimated cost of reclamation and should be reviewed often (annually or every five years). Landowners typically consider that cash or cash assets are the most secure form of security and result in the lowest risk to the hosting landowner and general public.

- Proponents generally considered that, if required, reclamation security should be posted later in the project life. Proponents cautioned that requiring reclamation security to be funded early in a project's life could pose an onerous barrier to investment in the generation industry. The Pembina Institute stated solar and wind projects tend to have high up-front capital costs with low operating costs once the project is in-service.

- The Commission retained Dr. Colin Mackie to prepare a report on the design of reclamation security requirements. Dr. Mackie's report suggested that the best option for a reclamation security regime would involve an initial bank guarantee in conjunction with cash contributions, to be accumulated in an escrow account from the start of operation to year nine of operation until a target sum had been reached. The target sum would reflect the estimated cost of the regulator performing the approved reclamation plan in the event of proponent bankruptcy. Dr. Mackie recommended the net salvage value of retired equipment be used as a "security discount" when calculating the estimated reclamation cost for a project, and that up to 50 per cent of the estimated salvage value could be applied to reduce the amount of security required. The reduction of the salvage value by 50 per cent would leave sufficient headroom for any reduction to the actual salvage value that a proponent is able to realize at the project end of life.

- Dr. Mackie's report recommended against reliance on any financial instrument based on the financial strength of a proponent, such as self-bonding and parental company guarantees.

- Aura Power submitted that Dr. Mackie's recommended approach is more stringent than that used in most other jurisdictions for renewable projects, and relies on considerations informed by the oil and gas industry, which has a different risk profile. In this regard, Aura Power noted Dr. Mackie's recommended approach is also more stringent than the reclamation security regime currently applied to oil and gas developments in Alberta.

- The Renewable Generators Alliance and RMA retained DNV to prepare a report on end of life and decommissioning requirements. The DNV report noted that some jurisdictions in North America require proponents to commit to providing reclamation security at the approval stage, while the actual security amount can be put into place at a later date. This

approach allows project capital expenditure to be partially amortized before the financial obligation to provide reclamation security comes into effect. DNV is not aware of any wind or solar projects that have been abandoned in North America.

- Throughout the inquiry, parties discussed the merits of different types of security instruments. The commonly discussed security instruments, and some of their primary characteristics are identified below:

    - Cash and cash assets
        - Considered the firmest form of security.
        - Cash is available for reclamation activities even in the event of insolvency.
        - If required up front, increases the capital cost of development.
        - Could be a barrier to investment.

    - Surety bonds
        - Legally binding contracts between three parties: principal (project proponent), surety (government or financial institution) and third party (hosting landowner) which protects the hosting landowner from being responsible for reclamation costs.
        - Protects hosting landowner in event of proponent insolvency.
        - Must be issued by a qualified provider.

    - Letter of credit
        - Issued by a bank as an assurance to a beneficiary (hosting landowner) that payment will be provided to the hosting landowner should the proponent fail to perform reclamation activities.
        - Include triggers that would permit the hosting landowner to draw on the letter of credit if proponent defaults on reclamation work.

    - Reclamation trust
        - Funds to be used for reclamation are transferred to a trust that is held and administered by a financial institution.
        - Hosting landowner able to draw funds if project owner does not perform reclamation work.

    - Parental guarantee
        - Parent company of the proponent demonstrates financial solvency and agrees to pay reclamation costs.
        - Reduces upfront capital cost for proponents.
        - Introduces risk, as performance is dependent on financial strength of parent company.

- The majority of landowners felt that security should be held by a government or independent agency, such as AEPA, the AUC or the municipality. Some landowners suggested that the hosting landowner should hold the security, so that they have access to the funds if required to reclaim their own land. Other landowners suggested that a hosting landowner would not necessarily have the expertise to manage the security funds or conduct the reclamation work in the case of project abandonment or proponent insolvency.

- First Nations and Métis communities expressed a strong preference for the reclamation security to be calculated and held by a third party (i.e., the AUC or the government), independent of the proponent. These parties emphasized that reclamation process should be transparent so there is assurance to the public that the reclamation work will be completed.

- There were mixed views from municipalities about who should hold the security. The majority of municipalities, including Lethbridge County, Rocky View County, Sturgeon County, Camrose County, and Foothills County, stated that the government or the AUC should hold the security. Some municipalities noted that they do not have the staff or expertise to manage the reclamation security mechanism.

- Cypress County suggested that security should be held by the municipality or a provincial regulatory agency. Cypress County stated that municipalities would have the organizational knowledge and project retention over the lifespan of the project. A municipality could access the funds if enforcement under a land-use bylaw were required to reclaim a project.

- The Municipal District of Pincher Creek No. 9 emphasized that reclamation security must be held by a third party, distinct from the proponent, such as the Alberta Government or an individual municipality to ensure that the funds would be safe.

- The AAM considered that the security should be paid to AEPA or the AUC and be held in trust pending the successful decommissioning and reclamation of a project site and the issuance of a reclamation certificate by AEPA.

Reliance on salvage values

- For wind power plants, Power Advisory stated that the majority of project components are valuable recyclable metals and considered salvageable materials. The Power Advisory report referenced a 2017 report on power plants in the United States, which estimated that salvage value could offset 50 per cent or more of the decommissioning costs. Power Advisory acknowledged that blade components which are made of composites can be more challenging to repurpose or recycle due to a lack of recycling facilities. Future advancements in recycling capability may provide additional salvage value.

- For solar power plants, Power Advisory stated that the metal components in the racks and wiring are readily recyclable. The solar panels may be reused, refurbished, or recycled. Power Advisory noted that there is a growing industry for recycling solar panels in the

United States, including technology allows for the extraction of 95 per cent of the value through recycling of silver, silicon, copper, aluminum, and glass.

- The DNV report stated that decommissioning cost estimates can vary significantly depending on whether salvage value of the equipment is included. The scrap metal markets can be highly volatile and crane rental costs vary greatly across locations; these two factors can have a large impact on reclamation cost estimates which in turn effects the amount of reclamation security that a proponent has to put forward.

- A group consisting of surface rights associations, identified as Responsible Energy Development Advocates (REDA), noted that there are currently no recycling facilities in Alberta capable of recycling some components from renewable power plants.[57] Therefore, in its view, salvage value of these components should not be included in estimating reclamation costs.

[57] Transcript, Volume 5, December 12, 2023, PDF page 53.

Pristine viewscapes

Defining "pristine viewscapes"

- The majority of parties suggested that pristine viewscapes are areas that are untouched, unobstructed, natural, pure, or without development. Many proponents and municipalities suggested that pristine viewscape is a subjective term, with some municipalities explaining that natural views and views of certain construction, like a city's skyline, are already protected.

- First Nations and Métis communities emphasized the need for the government to clarify the definition of pristine viewscape as that definition varies depending on the location, community and individual. They both shared the importance of landscapes that are completely natural and free of signs of development for carrying out cultural, spiritual and ceremonial practices.

Viewscape considerations related to power plant development

- Nichols Applied Management Inc. completed a literature review and concluded that quantifying the impacts of power plant development on viewscapes is a complex endeavour and that viewscapes are considered non-market goods for which market data and information are not readily available.

- Nichols Applied Management Inc. added that economic valuation of non-market goods like viewscapes is typically undertaken through revealed preference methods or stated preference methods. Nichols Applied Management Inc. explained that the revealed preference method involves examining nearby property transactions to infer a value for a non-market good related to the transaction but not explicitly traded.[58] It explained that the stated preference method involves asking people about their preferences through things like surveys, in which respondents state their willingness to pay for a non-market asset or to avoid a negative externality.

- Nichols Applied Management Inc. found that there could be a zero to -14 per cent property value impact as a result of a nearby power project. It noted that a property value impact could depend on a number of factors, including the type of power plant being considered and its distance to the property.

- Green Cat Renewables Canada Corporation prepared a report for the Renewable Generators Alliance. It submitted that, while the lack of human-made elements may make a view pristine, this would not necessarily also make the view scenic or valued. It added that the reverse of this is also true, as it is possible for a view that is disturbed by existing development to be of greater value to the public than a pristine view. To encompass the many viewscapes of concern in Alberta, Green Cat Renewables proposed to refer to these as valued viewscapes, rather than pristine viewscapes.

- Green Cat Renewables disagreed with the focus in the Nichols Applied Management Inc. report on the monetary value that private citizens prescribe to specific views because in

[58] The revealed preference method is often referred to as a hedonic analysis of nearby property values.

that situation, an AUC decision on a project would likely be made based on the impact of a small number of individuals, while the public interest is widely ignored.

- Green Cat Renewables suggested that a visual impact assessment is the only objective and impartial way to assess visual effects of a development. It recommended that the AUC adopt a methodology for a visual impact assessment that includes identification of viewscapes and zones of theoretical visibility (including a baseline analysis and use of software to help determine theoretical visibility), and assessment of viewscapes (including ranking viewscape sensitivity (i.e., how valued the view is) and the magnitude of change). From there, values can be compared to help determine the overall effect on a particular viewscape.

- Green Cat Renewables added that visualizations, with carefully chosen viewpoints, are a useful tool to supplement a visual impact assessment. However, it explained that visualizations are not required from every viewpoint to effectively assess potential impacts and instead a small number of representative viewpoints should be relied on, depending on the technology being presented.

- Most parties acknowledged that wind and solar power plants have unique considerations because they may have a larger physical presence (horizontally and/or vertically) when compared to their non-renewable counterparts. However, some parties noted that they appreciate a view with wind or solar power plants, and suggested that gas-fired power plants are also large and have cooling facilities that have emissions that block viewscapes on cooler days.

- Some parties, including many landowners and several municipalities, suggested that there should be consideration of unique viewscapes, a location's sightlines, distances to a project, tourism and recreation in the area, historical sites, natural landscapes, culturally significant areas, impact to nearby property values, regional plans and maximum heights for structures in the municipality's land-use bylaw.

- Conversely, some proponents suggested that all assessments of viewscapes are subjective and of limited use. These parties, including ATCO Renewables Ltd., suggested that views are not owned and the subjectivity associated with viewscapes relating to power plant development has the potential to create dangerous precedents for other economic development in the province.

- ATCO Renewables submitted that residential, commercial and industrial developments across Alberta can currently be built without undue consideration of visual impacts if the developments align with the local municipal land-use bylaws and are within the public interest. It added that stakeholders in all aspects of the economy could potentially stall economic development if they were perceived to have rights that may be impacted on the basis of viewscape impacts.

- Another proponent, Capital Power Corporation, agreed with ATCO Renewables and suggested that a flexible and context-specific approach should be applied. Capital Power emphasized the importance of mitigation measures rather than attempting to define or preserve something as subjective as pristine viewscapes. However, Capital Power also suggested that proponents could benefit from additional guidance as to when proactive

mitigation of viewscape concerns may be warranted in connection with power plants, best practices for such mitigation and the nature of the evidence that would best inform the Commission's public interest decision-making on these matters.

- Many parties suggested that stakeholder concerns regarding viewscapes should be considered by the AUC on a case-by-case basis along with all other potential impacts of the project.

- Some parties proposed that "no-go" zones be established where no power plant development can occur. For example, a landowner in the Riplinger Wind Concerned Citizens Group suggested that in areas with high-value viewscapes, the intrinsic and economic values of those viewscapes must be prioritized and that there are some areas where these types of projects will never belong.

- Some parties suggested "no-go" zones as national parks, and the eastern slope areas, areas with high levels of domestic and international tourism, areas with unique cultural and natural heritage, and areas that have development restrictions identified in regional plans.

- Conversely, other parties, including the Polluter Pay Federation, stated that the impact of a proposed project on viewscapes should not be an overriding factor or a factor on which higher importance is placed compared to other important factors such as environmental impacts. The Polluter Pay Federation supported the idea of a proponent mitigating landowner losses as a result of renewable power plant siting and viewscape impacts, but noted that the AUC has no compensation mandate or authority to do so.

- The Pembina Institute considered that regional plans should be the primary tool for addressing impacts to pristine viewscapes by wind developments and welcomed any regional planning effort to clarify the importance of specific viewscapes and to provide clear rules for all types of developments as to how and whether those viewscapes can be affected.

- Regarding the impact of power plant development on Alberta's pristine viewscapes, some First Nations and Métis communities advocated for the inclusion of visual impact assessments in project assessments. Other communities expressed the importance of "clean, pure, sacred, and untouched" landscapes for cultural practices, as these practices require a landscape that is "natural" and free from signs of development.

- First Nations and Métis communities emphasized the importance of protecting land with spiritual significance and explained that changes to viewscapes can negatively impact mental health as well as the Indigenous tourism industry.