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## executive summary

Alberta's reclamation rules for renewable energy projects create a more costly reclamation security system than in all 27 other jurisdictions included in a scan done by the Business Renewables Centre-Canada.

Requiring reclamation security before a project's end of life aims to lower the risk of unaddressed liabilities by ensuring funds are available for reclamation of a property where a project exists, should the operator become insolvent. Mandatory reclamation security has been a policy decision under consideration in Alberta since the Alberta Utilities Commission's (AUC) inquiry into the ongoing economic, orderly and efficient development of electricity generation in August 2023. Within Module A of the inquiry, the AUC commissioned and released two expert reports that detailed reclamation security design elements from 27 jurisdictions.

BRC-Canada compared the reclamation security rules of these jurisdictions in the AUC's expert reports with Alberta's new reclamation security regulations for renewable energy projects. The comparison focuses on several key design elements, including which renewable energy projects require mandatory security, how the amount of security is determined, the schedule upon which the security is required to be provided by, and the inclusion of salvage value in the calculations to best reflect the net costs of reclamation. Salvage value is the estimated value of metals, concrete or other components of wind and solar structures that could be recovered and sold when they are torn down and reclaimed.

The findings show that Alberta's reclamation security rules deviate from the systems in jurisdictions detailed by the AUC inquiry expert reports, and the rules result in the most costly reclamation security system compared to those included in our analysis.

Notably, Alberta's rules have the highest percentage of security required upfront and do not subtract salvage value from gross decommissioning cost in determining the security amount. These elements are significant departures from comparable systems in other jurisdictions and significantly increase capital costs for new projects. This runs counter to the Government of Alberta's efforts to promote the province as a business-friendly jurisdiction.

## introduction

In August 2023, the Minister of Affordability and Utilities directed the AUC to explore the implementation of mandatory reclamation security requirements for renewable energy power plants within Module A of the inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta.

Following the lifting of the moratorium in February 2024, a key change to reclamation security was the requirement for renewable energy developers to ensure reclamation costs were covered by posting bonds or providing other forms of security. Security amounts and standards would be determined by the Ministry of Environment and Protected Areas, in consultation with the Ministry of Affordability and Utilities.

On December 6, 2024, the provincial government announced amendments to mandate renewable energy developers to provide security directly to registered landowners under a surface lease or, failing that, to post security directly with the Government of Alberta. The details of these changes were to be formalized in an updated code of practice.

On June 4, 2025, the new Code of Practice for Solar and Wind Renewable Energy Operations was released.

#### **AUGUST 2023**

Direction for AUC to explore implementation of mandatory reclamation security requirements for renewable energy power plants

#### **FEBRUARY 2024**

Lifting of moratorium on renewable energy project approvals

#### **DECEMBER 2024**

Announcement of amendments requiring renewable energy developers to provide security directly to landowners

#### **JUNE 2025**

New code of practice released

### The Alberta model

**Schedule 1** in the Code of Practice provides details on the security estimate required by renewable energy developers. It specifies that developers must submit a security estimate prepared by a qualified third party. This estimate must cover:

- all reclamation and decommissioning activities
- all necessary regulatory assessments to obtain a reclamation certificate, and
- one year of crop or grazing loss related to reclamation activities.

The security estimate must also identify portions of the project where security is not provided under a surface lease with the landowner.

Security for these portions must be provided to the government as follows:

- 30% of the total estimated reclamation costs up front, and
- 60% of the most recent estimated reclamation costs on the 15th anniversary of operation.

Salvage value is not considered when calculating the required security amount. This means that the security payments required are calculated based on the total reclamation estimate.

The Code of Practice also provides information for existing projects. Existing projects, meaning those that were issued approval from the AUC prior to January 1, 2025, have to provide 15% of the total estimated reclamation costs.



**FIGURE 1.** The Alberta model contains several requirements that put the design on the higher-cost end of the possible spectrum.

### **Jurisdictional comparison**

The following analysis is based on the "Reclamation Security Requirement Jurisdictional Comparison" done by BRC-Canada for the submission to Module A of the AUC inquiry in 2023 (pg. 27 in **BRC-Canada AUC Module A Submission**). The details were derived from the two expert reports (by Colin Mackie and Ecoventure) commissioned and released by the AUC during the inquiry.

The reclamation security requirements of 27 jurisdictions across North America, Australia and Europe were analyzed and compared to the security requirements recently released for Alberta. This analysis focused on key elements of reclamation security systems that together dictate the stringency of the system and impact on renewable energy projects.

- 1. Acceptable forms of security
- 2. Security amount determination
- 3. Security timing
- 4. Salvage value incorporation

The four key elements considered are described on the next page. Jurisdictions balance stringency and costs across the four elements to ensure that future liabilities and prioritized risks are adequately managed without overburdening regulatory requirements that unnecessarily hamper project development.

#### **KEY CONSIDERATIONS**

- Three of the 27 jurisdictions studied Saskatchewan, New Jersey and Wyoming do not require any form of financial security for any renewable energy project.
- The analysis in this document focuses on the remaining 24 jurisdictions that have some form of reclamation security requirements.
- Thirteen of the 24 jurisdictions (54%) require financial security only for select projects and are not mandated for all renewable energy projects. Financial security is needed when the deciding party, typically the regulator or a local planning authority, decides the project requires it.
- Eleven jurisdictions (46%) require some level of financial security for all projects.

### Key elements of reclamation security systems

#### Acceptable forms of security:

The different financial instruments allowed under regulatory frameworks to satisfy reclamation security requirements for renewable energy projects.

Different forms of security or financial instruments vary in terms of accessibility, risk of non-payment and opportunity cost for the developer. The more options that are allowed, the more flexibility there is for developers to meet the security requirements in a way that minimizes impact on project viability.

#### Security amount determination:

The amount of security required for a project to meet reclamation obligations.

The analysis distinguishes between two common approaches to determining security amounts:

1. Jurisdictions that evaluate each project individually to determine the required security amount based on the unique risks of the project, rather than applying a standardized formula. These systems are more difficult to compare as they rely on individual project assessments.

2. Jurisdictions that utilize a predefined formula to calculate security amounts based on estimated decommissioning costs or project size.

#### **Security timing:**

The schedule by which the security needs to be provided.

This is typically in relation to when a project begins operating and can feature several milestones in the operation time period of a project.

#### Salvage value incorporation:

The estimated value of the project components at the end of its useful life.

It plays a vital role in estimating reclamation security since the true cost of reclamation would be the net decommissioning costs after salvage value is subtracted from it. Incorporating this value into the security calculation better reflects true reclamation costs and avoids overestimating, which creates unnecessary financial burden on developers.

The report by Colin Mackie emphasizes the significance of salvage value for energy developers, noting that it helps offset reclamation security costs. It highlights that allowing up to 50% of the estimated salvage value to reduce security obligations would be a transparent, low-risk measure. The report mentions this approach would encourage investment in Alberta while ensuring adequate safeguards remain in place.

#### ACCEPTABLE FORMS OF SECURITY

No jurisdiction reviewed recognizes cash as the only acceptable form of financial security. All 24 jurisdictions accept several forms of security if financial security is required. Around 75% of jurisdictions accept bonds (performance or surety bonds), making it one of the most common forms of security accepted.

Jurisdictions with the most stringent rules on acceptable forms of security only allow a few different forms, including cash, irrevocable letters of credit and surety bonds.

Jurisdictions with more flexibility within this category extend the allowed formats to a list that includes letters of guarantee, trust funds, security agreements, escrow accounts, insurance and promissory notes. Some jurisdictions, like Tennessee, even allow for a combination of different forms. Twelve of the 24 jurisdictions (50%) allow flexibility for alternative arrangements deemed permissible by the regulating body, local government or in the case of Texas, the landowner. This flexibility allows project stakeholders to develop solutions that act in the best interests of all parties, including the regulating body, without forcing compliance to a specific format.

Each developer has a unique financial picture and a different optimal way to provide reclamation security in a way that guards against liabilities while mitigating impact on commercial interests. Different formats might be preferred by individual developers as they seek to maximize the utility of their credit, cash or investment opportunity.

#### In relation to Alberta

While the Code of Practice does not specify the form of security, the **Conservation and Reclamation Regulation** outlines that security may take various forms as determined by the director, including cash, cheques, government-guaranteed bonds, term deposits, irrevocable letters of credit, and performance or surety bonds, among others. This seems to be in alignment with other jurisdictions.

#### SECURITY AMOUNT DETERMINATION

Twelve of the 24 jurisdictions (50%) do not have a fixed security structure, which means an independent assessment on a case-by-case basis is required to obtain a relevant security amount. The assessment looks at project-specific risks (for example, unique environmental risks) that are posed on the impacted land. The assessment is generally performed by someone deemed appropriate by the regulator, like a licensed engineer. In some cases, it's the environmental protection agency of the jurisdiction, like in New South Wales, Australia. In Victoria, Australia, the security is entirely determined by the minister.

The jurisdictions that have reclamation security requirements for only select renewable energy projects (54% of jurisdictions that have any reclamation security requirements) tend to have a case-by-case assessment to determine security for projects.

**Eight out of the 24 jurisdictions (33%) have a predefined formula to calculate the financial security amount.** Most of these are based on estimated decommissioning costs net of salvage value, but some jurisdictions use other variables to determine reclamation costs: France calculates security based on total installed capacity alongside component costs, and regulations for projects on U.S. federal land define flat rates per acre of land impacted.

In Canada, only the Municipality of the County of Colchester, Nova Scotia, uses a pre-defined formula to estimate security amount. They calculate security as 125% of the estimated present-day decommissioning less the present-day salvage value.

#### In relation to Alberta

Alberta's model falls under the category of jurisdictions that have a predefined formula to determine financial security amount. **Two jurisdictions have a security structure similar to Alberta – Tennessee and Illinois.** For example, in Tennessee, they have a gradual payment structure with 5% of the decommissioning cost to be submitted upfront, followed by 50% of the cost on the 10th anniversary of the project's commencement and, finally, 100% on the 15th anniversary. Illinois requires 10% of the estimated costs on or before the first year of operations followed by 50% and 100% in years six and year 11. Key points of difference between Alberta's model and these existing systems are the amount required upfront, as well as the lack of salvage value subtraction from the gross decommissioning costs, as further discussed in the next sections.

#### SECURITY TIMING

Among jurisdictions that require financial security, a quarter allow gradual financial assurance structures, meaning the total security is not required all at once, but rather can be provided in increments across several years.

On the higher end of the range, these pre-defined formulas require 100% of the decommissioning costs after 11 years (Illinois) or 15 years (Tennessee) of operations. On the lower end, the amount required is just 5% of decommissioning costs, as seen in North Dakota.

**Companies were required to provide upfront financial assurance in 25% of the jurisdictions.** However, these jurisdictions offer some form of leeway. For example, for regions in the U.S. Outer Continental Shelf, the security is variable and determined by the Bureau of Ocean Energy Management and if it is not a high-risk project, the industrywide minimum security requirement is only \$100,000.

Another example is from New South Wales, Australia. They require upfront financial assurance, but if the company demonstrates financial hardship, gradual payment is accepted by the department.

For jurisdictions with formulas based on the decommissioning cost of the project, the amount required within the first year of operations ranges from 5 to 10% of decommissioning costs.

#### In relation to Alberta

No other jurisdiction has an upfront security requirement as high as 30% of the reclamation estimate, as Alberta does. Similarly structured security regulations require no more than 10% up front. And those other jurisdictions use the net commissioning cost with salvage value subtracted, making the upfront costs in Alberta significantly higher than comparable systems.



#### SALVAGE VALUE INCORPORATION

Not all jurisdictions mention if salvage value is considered when estimating the decommissioning cost. **Nine jurisdictions specifically mention that they considered salvage value while estimating the cost.** For example, in Texas, they calculate security by taking the decommissioning value less the salvage value, and then subtract the value of the portion of land that was pledged to secure outstanding debt. The majority of jurisdictions (75%) with formula-based security determinations subtract salvage value from the gross decommissioning cost. This reflects a broad recognition that the gross decommissioning cost is an overestimate of the actual cost requirements at the end of project life.

#### In relation to Alberta

Alberta's reclamation security rules omit the subtraction of salvage value from the gross decommissioning cost in the calculation of total reclamation security. **This results in more costly security requirements compared to the majority of other jurisdictions with formula-based approaches.** 

When salvage value is not considered and upfront financial assurance is also requested, security is mandated on a case-by-case basis, as seen in Queensland, Australia. In fact, the system in Queensland also includes various discounts for the renewable energy developer if certain criteria are met, including if the project has lower environmental risks and if the developer has good financial standing.



## conclusion

Following the provincial government's announcement in December 2024, the Code of Practice for Solar and Wind Energy Operations was released in June 2025, outlining the reclamation security requirements for renewable energy projects.

When comparing Alberta's reclamation security requirements to those of other jurisdictions in North America, Europe and Australia, it becomes clear that Alberta's requirements are significantly more costly. The following highlights show how Alberta's approach stands out:

- There are still some jurisdictions with no security requirements whatsoever. We have excluded these from our analysis.
- Fifty-four per cent of jurisdictions with security requirements have reclamation security requirements only for certain renewable energy projects and do not mandatorily request security from all solar and wind projects. Alberta would fall under the 46% of jurisdictions that mandatorily require some level of reclamation security for all projects.
- There is an even split of jurisdictions that request upfront and gradual security assurance. In cases where upfront payments are required, additional parameters often exist to support developers in meeting financial assurance obligations. While Alberta adopts a gradual payment structure, **it mandates an upfront payment of 30% of the security estimate, which is significantly higher than any other jurisdiction reviewed.**
- Seventy-five per cent of all jurisdictions that employ a predefined formula for calculating security amounts subtract salvage value from the gross decommissioning cost. In comparison, Alberta's system is costlier as it excludes this subtraction of salvage value.



**FIGURE 2.** The range of designs within each category seen in other jurisdictions, on a spectrum ranging from lowest cost design to highest cost design. Designs from Alberta's model are plotted along each spectrum.

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