

Renewable Growth, System Resiliency and the Insurance Imperative in Canada

A strategic insurance perspective on Canada's clean energy transition

Canada's energy transition is accelerating. According to the Canadian Renewable Energy Association (CanRea), Canada ranks 9th globally for installed wind energy capacity, 20th for installed battery energy storage capacity and 24th for installed solar capacity. Wind, solar and energy storage now represent the fastest-growing sources of new electricity supply nationwide, with thousands of megawatts in advanced development and construction. This buildout is not only transforming generation capacity – it is fundamentally altering Canada's risk profile, capital allocation models, and infrastructure resiliency expectations.

From an insurance standpoint, renewable expansion is not simply an ESG narrative. It is a structural reallocation of risk. System reliability in high-renewable grids requires more than installed capacity. It requires redundancy, storage, transmission investment, firming resources, and operational flexibility. Each of these introduces new insurable exposures – and new underwriting scrutiny.

Insurance has therefore become a central pillar of renewable project bankability, grid resilience, and long-term energy affordability in Canada.

1. PROPERTY & EQUIPMENT BREAKDOWN: TECHNOLOGY-SPECIFIC RISK

- **Wind Risks:**
 - Blade failure and delamination
 - Gearbox and bearing breakdown
 - Cold-weather icing losses
- **Solar Risks:**
 - Hail damage
 - Snow load and structural stress
 - Inverter failure
- **Battery Energy Storage Risks:**
 - Thermal runaway and fire
 - Explosion risk
 - Environmental contamination

Projects that embed insurability at the design phase secure broader terms, lower deductibles, and stronger lender acceptance.

2. DELAY IN START-UP (DSU): REVENUE PROTECTION

DSU insurance provides revenue replacement in the event that a project under construction is damaged due to an insured property event. Commissioning delays arising from damage to or loss of the project during construction directly impact cash flow. DSU coverage is foundational to financing and typically required by lenders.

3. RENEWABLE RESILIENCY AND AGGREGATION RISK

Higher penetrations of wind and solar require storage assets, peaker backup, transmission expansion, and grid balancing resources. This creates concentration risk and systemic exposure. Insurers are modeling correlated climate events with greater precision, particularly in hail-prone and wind-exposed regions of Canada.

4. ENVIRONMENTAL LIABILITY & EMERGING TECHNOLOGIES

Emerging technologies introduce distinct liability exposures:

- Battery storage contamination and long-tail claims
- Carbon capture leakage and monitoring liability
- Hydrogen flammability and transportation risk

Coverage terms increasingly hinge on engineering controls, operational protocols, and regulatory compliance.

5. CLIMATE CHANGE AS RISK MULTIPLIER

Renewables mitigate climate change but also face increasing exposure to severe hail, wildfire, flood, and extreme cold events. Well-structured insurance programs are becoming strategic tools to manage volatility and capital preservation.



CONCLUSION

Canada's renewable expansion is reshaping the nation's risk architecture. Insurance is no longer peripheral – it is a structural enabler of capital deployment, system reliability, and long-term affordability.

If you have questions specific to your business, or would like additional information, please reach out to your Navacord Insurance Services Alberta Inc. Advisor.

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