# Effects of policies and regulations on the renewable energy sector in QC and AB, Canada

# Introduction

Canada is globally recognized for its vast natural resources and commitment to renewable energy, ranking as the third-largest hydroelectricity generator in the world, and with the eighth largest wind power installed capacity (WWEA, 2024). But beneath this national reputation lies a complex, province-driven energy landscape shaped by distinct market models and regulatory approaches. This is particularly evident in Quebec (QC) and Alberta (AB) — two provinces with remarkably distinct contexts that reflect on different renewable energy trajectories.

This article explores how policy frameworks, environmental regulations, and public concerns have influenced renewable energy development in Quebec and Alberta, offering lessons for navigating the energy transition on a broader perspective.

# Canada's Renewable Energy Landscape

Canada's electricity grid is among the cleanest in the world, with about 60% of its electricity generation stemming from hydroelectric power (GoC, 2023). Wind and solar capacity have also grown steadily, increasing their share from 1.5% in 2010 to 7% in 2021 (CER, 2023). However, this clean energy expansion is anything but uniform across provinces.

While Quebec leans heavily on hydroelectric generation, producing over 98% of its electricity from renewable sources, Alberta remains predominantly reliant on thermal generation, with only 26% of its power coming from renewables (CER, 2023). This contrast raises questions about the roles of natural resource availability, policies and regulations and public participation in shaping energy systems.

# **Renewable Energy Development in Alberta**

Alberta's renewable energy growth story is anchored in its deregulated electricity market. Unlike provinces with vertically integrated public utilities, Alberta's open market system encourages private investment and competition. The province's policies — including the *Renewable Electricity Act* (2016), which sets a target of 30% renewable generation by 2030 — created an investment-friendly environment that fueled rapid growth from 2020 to 2023.

However, this momentum faced a significant hurdle in 2023 when the Alberta Utilities Commission (AUC) implemented a seven-month pause on new renewable energy project approvals (GoA, 2023). The pause introduced new interim requirements for environmental assessments, mandating additional studies and restrictions particularly around wildlife, habitat conservation, and land use conflicts (AUC 2023, 2024) — stricter in some respects than other resource extraction activities in Alberta that have a significantly greater impact on land use and reclamation (Pembina, 2024).

This temporary halt exposed a complex dynamics at the heart of Alberta's strategy. Its clean energy policies have somewhat favored a transition to renewables although still having natural gas playing a central role, and its environmental assessments regulations were, before 2023, relatively flexible

and less stringent. These recent changes in its regulatory pathway have created uncertainty for developers, reflecting broader struggles between the use of abundant non-renewable resources and climate change pressures and concerns.

### **Renewable Energy Development in Quebec**

In contrast, Quebec has been a leader in renewable energy generation for several decades through its state-owned utility, Hydro-Quebec. With hydroelectricity serving as the cornerstone of its energy system, Quebec's market model is regulated, driven by Electricity Supply Plans updated every three years (Hydro-Quebec, 2022).

Policies like Quebec's "2030 Plan for a Green Economy " set clear goals for expanding renewable capacity, reducing greenhouse gas (GHG) emissions, and electrifying transport and industry sectors (GoC, 2020). Despite these ambitions, however, project development has progressed at a slower pace compared to Alberta.

One major reason lies in Quebec's stringent environmental assessment (EIA) framework. Projects generating 10 MW or more from wind or solar are subject to an approval procedure under the *Environment Quality Act* (GoC, 2023). Several regulations related to this *Act* have been updated in the last years to strengthen the protection of biodiversity, wetlands and water bodies, and to take into account project-related GHG emissions within the EIA procedure. Public consultations are also required to facilitate projects' social acceptability. The result is a lengthy review cycle that can stretch up to three years, deterring fast-tracked development even in a policy-friendly environment.

This regulatory caution, while ensuring environmental stewardship, underscores the trade-off between policy intent and project realization — a paradox that may be echoed across different jurisdictions and even countries.

# **Public Perception and Participation**

Both provinces grapple with distinct public concerns that influence renewable energy projects.

In Alberta, public engagement processes such as the Participant Involvement Program (PIP) are designed to address public concerns, particularly with agricultural stakeholders and municipalities. A history shaped by oil and gas extraction has bred cautiousness and even skepticism, with some communities expressing resistance to renewables despite the province's policy goals. The recent pause on new renewable energy project approvals came along an inquiry conducted by AUC to address some of these issues.

In Quebec, the Bureau d'audiences publiques sur l'environnement (BAPE) informs and consults the public and investigates on the projects' environmental impacts in order to advise the authorities on their approval. Its mandate may include public hearings, consultation or mediation. For most wind energy projects, public hearings have been requested. The expectation for broad social acceptability makes community engagement a vital — and sometimes challenging — element of project development.

### Lessons from the AB and QC complex contexts

Despite their differences, Alberta and Quebec both illustrate how policy, regulation, and public perception weave a complex and sometimes contradictory tapestry for renewable energy development.

This complex reality involves a number of factors, sometimes pointing to different directions, influencing the growth of the renewable energy sector. In both provinces, however, it is evident that EIA regulations have a remarkable influence in renewable energy projects development, either catalyzing or restraining the effects of clean energy or energy transition policies.

In this context, it is also worth mentioning another factor that adds to this whole complexity: the market models:

- In **Alberta**, the **deregulated model** has encouraged investment and accelerated project approvals supported by simpler and less stringent environmental assessment processes.
- In **Quebec**, the **regulated model** offers predictability and strong environmental oversight but at the cost of slower project rollout and reduced investor agility.

This complexity highlights the importance of balancing clean energy ambitions with environmental integrity and social license. As Canada pursues its federal climate commitments — including the 2030 Emissions Reduction Plan and the Clean Electricity Strategy (GoC, 2022, 2024) — both Alberta and Quebec offer valuable lessons in how provincial models can either amplify or constrain national targets.

# **Navigating Complexity**

For environmental consultants and EIA practitioners, the complexity involving policy objectives, regulatory practice and public concerns in Alberta and Quebec offers both a challenge and an opportunity. As the renewable energy sector grows, EIA professionals must develop the ability to recognize and unravel this complex web of intersecting factors, which demands strategic thinking, proactive engagement, and a nuanced understanding of local dynamics.

On the other hand, new opportunities arise in these complex contexts, enabling EIA practitioners and environmental consultants to play a significant role by:

- Balancing conflicting and shifting interests from diverse stakeholders, including developers, regulators and communities.
- Contributing to reducing biases in analyses and decisions in an also complex and polarized political context.
- Taking advantage of opportunities for influencing policy-making, not only through the regular election process but also engaging in public consultations on new policies, regulations, directives and guidelines related to environmental assessments and project approvals.
- Increasingly engaging with the regulators to navigate the regulatory gray zones.

Recognizing these opportunities reinforces the value that EIA practitioners bring not only to individual projects but to the broader conversation around responsible renewable energy development.

# Conclusion

The stories of Alberta and Quebec reveal that the path to renewable energy growth is not determined by resources alone but by the policies, regulations, and public engagement practices that govern their use. Policymakers, EIA practitioners, regulators, developers and communities alike must recognize the underlying complexities and navigate them through collaboration, transparency, and adaptive governance and management.

Canada's future as a leader in renewable energy will depend not only on its abundant natural resources but on its ability to create regulatory environments that support the industry growth while safeguarding ecosystems and communities.

# References

- Alberta Utilities Commission (AUC) (2023). Bulletin 2023-05: Interim information requirements for power plant applications during the pause on approvals for renewable electricity generation projects. Retrieved from: <u>https://media.auc.ab.ca/prd-wp-uploads/News/2023/Bulletin%202023-05.pdf</u>
- Alberta Utilities Commission (AUC) (2024). *Bulletin 2024-08: Update on interim information requirements for power plant applications*. Retrieved from: <u>https://media.auc.ab.ca/prd-consultation/sites/2/2024/05/Bulletin-2024-08.pdf</u>
- Canada Energy Regulator (2023). *Provincial and Territorial Energy Profiles Canada*. Government of Canada. Retrieved from: <u>https://www.cer-rec.gc.ca/en/data-analysis/energy-</u> markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profilescanada.html
- Canada Energy Regulator (2023). *Alberta: Canada's Renewable Power Landscape 2023 Energy Market Analysis.* Government of Canada. Retrieved from: <u>https://www.cer-rec.gc.ca/en/data-analysis/energy-commodities/electricity/report/canadas-renewable-power/provinces/renewable-power-canada-alberta.html</u>
- Government of Alberta (2016). *Renewable Electricity Act. Statutes of Alberta, 2016 Chapter R-16.5.* Alberta King's Printer. Retrieved from: <u>Alberta King's Printer:</u>
- Government of Alberta (2023). Alberta Regulation 108/2023 *Renewable electricity generation projects moratorium on approvals*. Alberta King's Printer. Retrieved from: https://www.canlii.org/en/ab/laws/regu/alta-reg-108-2023/latest/alta-reg-108-2023.html
- Government of Canada (2022). *Emissions Reduction Plan*. Environment and Climate Change Canada. Retrieved from: 2030 emissions reduction plan : Canada's next steps to clean air and a strong economy.: En4-460/2022E-PDF Government of Canada Publications Canada.ca

Government of Canada (2023). Canada's Energy Fact Book 2023-2024. Natural Resources Canada.

- Government of Canada (2024). *Clean Electricity Regulations*. Environment and Climate Change Canada. Retrieved from: <u>Canada Gazette</u>, <u>Part 2</u>, <u>Volume 158</u>, <u>Number 26</u>: <u>Clean Electricity</u> <u>Regulations</u>
- Government of Quebec (2018). *Regulation respecting the environmental impact assessment and review of certain projects, CQLR c Q-2, r 23.1.* LegisQuébec. Retrieved from: https://www.legisquebec.gouv.qc.ca/en/document/cr/Q-2,%20r.%2023.1%20/
- Government of Quebec. (2020) *Plan for a Green Economy 2030*. Retrieved from: https://www.quebec.ca/en/government/policies-orientations/plan-green-economy
- Government of Quebec. (2023). *Environment Quality Act, CQLR c Q-2*. LegisQuébec. Retrieved from: https://www.legisquebec.gouv.qc.ca/en/document/cs/Q-2
- Hydro-Québec. (2022) Hydro-Québec *Supply plan 2023–2032*. Retrieved from: https://www.hydroquebec.com/electricity-purchases-quebec/supply-plan.html
- Pembina Institute. (2024). *Is Alberta's renewable energy industry being treated fairly?* Pembina Institute. Retrieved from: <u>https://www.pembina.org/reports/2024-02-15-is-albertas-renewable-energy-industry-being-treated-fairly.pdf</u>
- World Wind Energy Association (WWEA) (2024). World Wind Energy Report 2023. WWEA. Retrieved from: https://wwindea.org/ss-uploads/media/2024/12/1733138465-eddec6e3-1aec-41d4-922f-d651ade895b6.pdf