

Update Energy Strategy to put New Brunswick First

Purpose

To evaluate New Brunswick's current energy strategy and recommend updates that prioritize sustainable, affordable, and reliable energy solutions for the province, informed by the latest research and best practices from similar jurisdictions.

Issue Summary

New Brunswick's energy strategy (Government of New Brunswick, 2023) relies on fossil fuels, nuclear power, and biomass, posing environmental and economic challenges. With rising electricity demand and population growth, the province must shift to wind, solar, and battery storage while phasing out high-emission sources.

Background and Challenges

Emission reductions and wildcard technologies

- New Brunswick has made significant strides in reducing greenhouse gas (GHG) emissions, achieving a 58% decrease in the electricity sector between 2005 and 2022. Despite these efforts, the oil and gas sector, primarily petroleum refining, remains a significant contributor to GHG emissions, accounting for 23% of the province's total emissions in 2022 (Government of Canada, 2024).
- Biomass energy production leads to deforestation and increased carbon emissions, undermining sustainability claims. Studies have shown that burning wood for energy releases more CO₂ per unit of energy than coal, and the regrowth of forests takes decades to offset these emissions.
- Large-scale hydrogen production for export requires massive amounts of renewable electricity, diverting energy from local use and driving up costs (CCNB, 2023).
- Nuclear energy investments have already placed NB Power in significant debt, with over \$5 billion in liabilities (NB Power, 2024). The cost of Small Modular Reactors (SMRs) remains highly uncertain, with no commercially viable projects proving their economic feasibility.

- Continuing to invest in fossil fuels, including natural gas, directly contradicts New Brunswick's climate commitments to reduce emissions. Labelling natural gas as a 'transition fuel' is a form of greenwashing, as studies confirm it still releases methane, a potent greenhouse gas (IPCC, 2023).

Population growth and increasing demand for electricity

- As of July 1, 2023, New Brunswick's population was 834,691, a 3.1% increase from the previous year. This was the highest population growth rate in the province's history. (GNB - The New Brunswick Economy: 2023 in Review, 2024)
 - New Brunswick's electricity demand is rising, driven by population growth, economic development, industrial expansion, and the growing shift toward electrification. This surge is particularly evident in sectors such as transportation and heating, which are increasingly transitioning to electric solutions. (GNB - Powering our Economy and the World with Clean Energy, 2024)
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Recommendations

1. **Abandon biomass use for electricity generation:** The Belledune biomass facility's operations should be discontinued due to its unsustainable contribution to deforestation and carbon emissions.
 - a. Biomass facilities such as Belledune increase deforestation, reduce biodiversity, and produce significant carbon emissions, undermining sustainability claims. The Belledune Biomass Electricity Report (2024) highlights that heavy reliance on wood-based biomass harms ecosystems and contributes to long-term emissions challenges.
2. **Stop Nuclear Investments:** Halt SMR development and avoid future investments in nuclear technologies, redirecting funds to wind and solar energy projects.
 - a. Point Lepreau Nuclear Generating Station has experienced repeated cost overruns (CBC, 2013) and maintenance challenges (CBC, 2024), casting doubt on the viability of additional nuclear projects. SMRs are unproven, with unresolved costs, waste disposal, and scalability issues. Comparatively, wind and solar have a levelized cost of electricity (LCOE) at least 50% lower than nuclear energy (Lazard, 2024).
3. **Ban Fracked Gas:** Enact legislation against fracked gas extraction and cancel Scoudouc 400 MW fossil reactor plans.
 - a. A moratorium on fracking is already in place in New Brunswick due to a lack of social license, reflecting public and Indigenous opposition to the practice.
 - b. Fracked gas extraction poses severe environmental and health risks, including groundwater contamination and methane emissions (CCNB, 2023). Building a

400 MW fossil reactor in Scoudouc directly contradicts New Brunswick's stated commitment to achieve net-zero emissions by 2050. Renewable alternatives are readily available and cost-competitive, with significantly lower lifecycle emissions.

4. **Focus Hydrogen Efforts Locally:** Reject hydrogen production for export to prioritize affordable electricity for New Brunswick residents and businesses.
 - a. Hydrogen production for export demands extensive renewable electricity, diverting critical resources from domestic use. Redirecting this energy toward local consumption reduces costs and bolsters energy equity. The International Energy Agency (IEA) emphasizes that hydrogen's role should be targeted to hard-to-decarbonize sectors, not large-scale exports (IEA, 2023).
5. **Accelerate Renewable Grid Development and bolder renewable targets:** Invest in additional transmission infrastructure and distributed energy systems (IESO, 2025) powered by wind, solar, and battery storage, which improve system reliability and community resilience.
 - a. **Wind Power:** New Brunswick's coastal regions and high-altitude areas provide ideal conditions for wind farms. A high target of 2,500 MW of new wind capacity by 2035 should be established to maximize this potential.
 - b. **Solar Power:** Solar installations, including rooftop systems, community projects, and utility-scale solar farms, should aim for a total capacity of 1,000 MW by 2035. Recent advancements and cost reductions in solar technology make this increasingly viable.
 - c. **Battery Storage:** Pairing wind and solar energy with large-scale battery storage, targeting 400 MW of capacity by 2035, will address intermittency issues and ensure a reliable energy supply.
6. **Set Up an Office of Renewable Energy:** Establish a dedicated office to oversee and expedite the transition to a net-zero grid. A centralized Office of Renewable Energy would streamline regulatory processes, coordinate investments, and support local communities in deploying renewable technologies.
 - a. Most renewable energy projects fail because they do not engage the community early enough or in a meaningful way (CCNB, 2022), leading to misunderstandings and opposition. We have created a Best Practices Guide for Community Engagement in Energy Projects (CCNB, 2023) to help communities, stakeholders, and project developers collaborate effectively.

To meet the growing energy demands of an increasing population, New Brunswick must build sufficient renewable capacity. While concerns about overbuilding renewables due to curtailment persist, coupling this capacity with robust transmission infrastructure running east to west and north to south can enable the province to sell excess clean electricity. This strategy not only generates revenue but also ensures energy resilience and positions New Brunswick as a key player in the regional energy market.

Analysis

Impact on Stakeholders and Rightsholders

Indigenous Communities: Many Indigenous communities in New Brunswick have expressed concerns over extractive energy projects, including fracking and biomass harvesting, due to environmental degradation and the violation of treaty rights. A shift to renewable energy could support Indigenous-led energy projects and economic participation.

Ratepayers and Households: Transitioning away from high-cost nuclear and fossil fuels to renewable sources would stabilize and reduce electricity costs in the long term, ensuring more affordable power for residents.

NB Power: Reducing reliance on high-debt nuclear projects and volatile fossil fuels would improve NB Power's financial position, allowing for strategic investments in renewables and storage solutions.

Forestry Sector: Ending biomass power generation could impact jobs in the forestry industry that depend on this market. However, investment in alternative economic opportunities, such as reforestation initiatives, could offset these losses.

Risks and Opportunities

Risks

- **Political Resistance:** Resistance from stakeholders invested in existing energy systems, including some government bodies and utilities, could slow policy changes.
- **Economic Transition Challenges:** Some industries, particularly those linked to fossil fuels, may face job losses or require retraining programs.
- **Infrastructure Costs:** Significant upfront investments in transmission and storage infrastructure will be required.

Opportunities

- **Job Creation:** Expanding the renewable energy sector could create thousands of new jobs in wind, solar, and battery storage development.
- **Energy Security:** A decentralized renewable energy grid improves energy security by reducing reliance on imported fuels.
- **Revenue Generation:** New Brunswick could sell surplus clean electricity to other jurisdictions, generating long-term economic benefits.

Current Status

- **NB Power Debt:** The utility remains burdened with over \$5 billion in debt, much of it tied to past nuclear investments. New Brunswick's auditor general says he is concerned about NB Power's ability to self-sustain its operations (Auditor General of New

Brunswick, 2023). To address financial shortfalls, NB Power has increased rates, including a 9.7% hike in each of the next two years, a total of 19.4%.

- **Renewable Energy Goals:** The province has announced plans to increase renewable energy capacity, but targets remain conservative compared to leading jurisdictions.
 - **Public Consultation:** There is growing public support for renewable energy, but formal policy shifts have been slow.
 - **Federal Policies:** Federal incentives for clean energy development and emissions reduction could support New Brunswick in accelerating its transition.
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Key Contacts

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