

Reexamining Rates for Remote Renewable Energy

How integrating energy justice in power purchase agreements can accelerate an Indigenous-led clean energy transition

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Summary

- We consider how the concepts of fairness, equity, justice, and reconciliation should be included in setting rates for power purchase agreements (PPAs), primarily through an interrogation of the Bonbright principles and the application of energy justice.
- Utilities that service remote communities often offer low PPA rates that hardly meet the avoided cost of diesel. This creates unfair and inadequate economic conditions for Indigenous-owned renewable energy projects and hinders diesel reduction efforts.
- The mandate of the regulator and the business model of the utility were not created to consider energy justice, reconciliation, or climate change mitigation. This disincentivizes and often prevents utilities from offering higher rates for PPAs.
- Governments can direct utility regulators and utilities to apply an energy justice lens to their operations to justify investments that support reconciliation and climate action, such as offering PPA rates higher than the avoided cost of diesel to Indigenous-owned projects.

Principles of customer rate-setting

Utility regulators have a mandate to ensure that the utility provides safe, affordable, and reliable power at non-discriminatory rates to customers.¹ These mandates are founded upon the Bonbright principles, which set out the practical and ethical considerations of rate-setting

¹ Dave Lovekin, Barend Dronkers, and Ben Thibault, *Power Purchase Policies for Remote Indigenous Communities in Canada* (Pembina Institute, 2016). <https://www.pembina.org/reports/power-purchase-policies-for-remote-indigenous-communities.pdf>

for natural monopolies such as utilities.² This seminal work, published in 1961, has largely shaped regulator practices since then, but the regulatory and technical environment in which utilities operate now is significantly different from that of the 1960s, where large, centralized generation was dominant. Today distributed energy, such as small renewable energy installations, has significantly changed the economic and technical challenges faced by utilities.³ This evolution, in addition to an understanding for the need to reduce GHG emissions to mitigate the impacts of climate change and pursuing reconciliation with Indigenous Peoples are in the public interest, means that the implementation of the Bonbright principles must be re-evaluated to meet the needs of the modern energy system.

The Bonbright principles are generally interpreted as follows: the utility must make enough revenue to cover costs; those costs should be stable and fairly distributed among customers; and the utility should strive for optimal efficiency in the generation, transmission, and consumption of electricity.^{4,5} Bonbright developed these principles to effectively align the utility's business practices with the public interest in the absence of market competition. These principles have significantly shaped utility ratemaking, where regulators evaluate whether utilities' balance of costs and revenues are appropriate for the public interest.

In practice, the 'public interest' set out in the Bonbright principles boils down to whatever keeps customer rates lowest across the board while maintaining reliable service, with little regard for the unequal burden of past energy developments, socioeconomic disparity, or climate objectives such as GHG emission mitigation.⁶ These practices are encouraged by regulator mandates that prioritize purely technical and economic evaluations for their decision-making framework and rate-setting formulas. The outcome is that regulators, and by extension utilities, are not empowered to facilitate the energy transition or reconciliation through additional spending or investment.⁷ This creates conflicting priorities between regulatory actors and government commitments towards reconciliation, climate action, and clean energy.

² James C. Bonbright, *Principles of Public Utility Rates* (Columbia University Press, 1961).

<https://www.raponline.org/wp-content/uploads/2016/05/powellgoldstein-bonbright-principlesofpublicutilityrates-1960-10-10.pdf>

³ Karl R. Rábago and Radina Valova, "Revisiting Bonbright's Principles of Public Utility Rates in a DER World," *The Electricity Journal* 31, no. 8 (October 2018). <https://doi.org/10.1016/j.tej.2018.09.004>

⁴ Bonbright, *Principles of Public Utility Rates*.

⁵ Rábago and Valova, "Revisiting Bonbright's Principles of Public Utility Rates in a DER World."

⁶ Gabriel Chan and Alexandra B Klass, "Regulating For Energy Justice," *New York University Law Review* 97, no. 1426 (November 2022).

⁷ Chan and Klass, "Regulating For Energy Justice."

Energy justice and remote Indigenous communities

The concept of energy justice challenges the ways utilities and regulators apply the Bonbright principles to set rates for customers, especially in relation to Indigenous communities. Energy justice acknowledges that the harmful effects of energy development are largely borne by economically and socially marginalized groups, and it seeks pathways for addressing and remediating injustices. Fights for energy justice in relation to Indigenous Peoples in Canada and utilities have typically taken place in the courts for the non-consensual siting of energy or resource projects on Indigenous lands and the associated effects, such as displacing entire communities, disrupting hunting and harvesting areas, and destroying culturally significant sites.⁸ These legal battles often end in grievance settlements, where the court requires the utility compensate the Indigenous group and/or imposes more oversight on the utility's operation, like enforcing free, prior and informed consent; mandating impact benefit agreements; or more recently, requiring consultation and collaboration with Indigenous Peoples.⁹ Energy *injustice* occurs throughout energy systems, including the planning, siting, pricing, and consumption of energy.¹⁰ Energy injustice also exists at the consumer level where the high burden of energy costs contributes to energy poverty in Indigenous and other marginalized communities.¹¹

One example of this kind of energy injustice is the persistence of using diesel fuel to power remote Indigenous communities despite community preferences for renewable energy and government commitments to reduce diesel consumption in remote areas. This injustice occurs due to a systemic interplay of financial, economic, regulatory, and technical factors, but the practical barrier often comes in the form of low power purchase agreement rates. Power purchase agreements (PPAs) are contractual agreements between a power producer, such as a renewable energy project owner, and an energy buyer, such as a utility. PPA rates define a set purchase price for the energy produced by the project for a set amount of time (Figure 1).

⁸ Margot Hurlbert and Jeremy Rayner, "Reconciling Power, Relations, and Processes: The Role of Recognition in the Achievement of Energy Justice for Aboriginal People," *Applied Energy* 228 (October 2018). <https://doi.org/10.1016/j.apenergy.2018.06.054>

⁹ Giuseppe Amatulli, "What a Landmark Court Victory for B.C. First Nation Means for Indigenous Rights and Resource Development," *The Conversation*, August 8, 2021. <http://theconversation.com/what-a-landmark-court-victory-for-b-c-first-nation-means-for-indigenous-rights-and-resource-development-164892>

¹⁰ Kirsten Jenkins et al., "Energy Justice: A Conceptual Review," *Energy Research & Social Science* 11 (2016). <https://doi.org/10.1016/j.erss.2015.10.004>

¹¹ Dylan Heerema, "How a Justice-Based Approach to Home Retrofits Can Help End Energy Poverty," *Ecotrust Canada*, October 22, 2020. <https://ecotrust.ca/priorities/energy/how-a-justice-based-approach-to-home-retrofits-can-help-end-energy-poverty/>

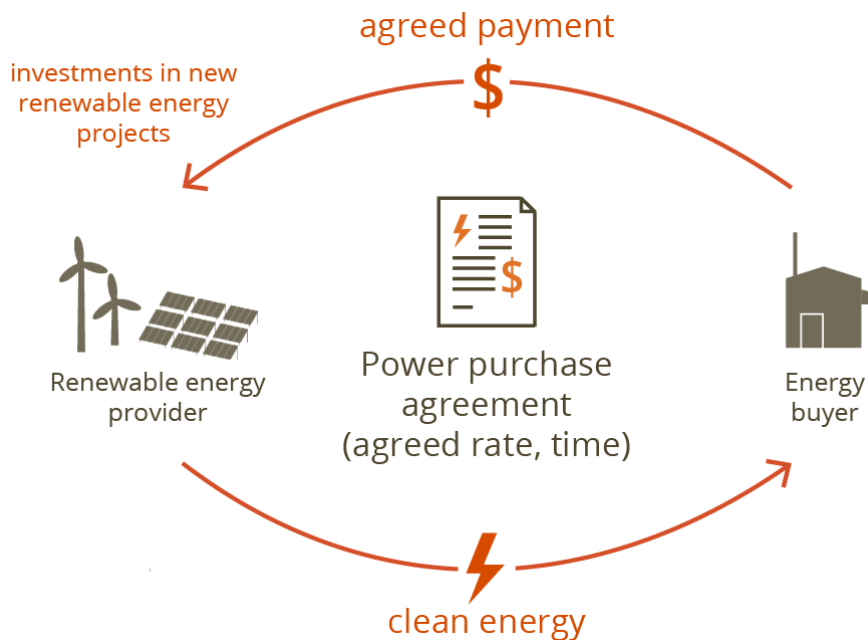


Figure 1. Power purchase agreement configuration

In the case of remote renewable energy development, the provider is often an Indigenous Nation or corporation, and the buyer is often the provincial utility.

For remote Indigenous communities, renewable energy development can be a pathway towards economic development, climate action, energy security, and diesel reduction. Yet financial risk can hinder the ability of remote Indigenous communities to pursue their renewable energy aspirations. Indigenous communities and businesses often do not have the same access to capital, credit, finance, and insurance as corporate renewable energy developers or utilities.¹² Because PPAs ensure a steady stream of revenue for projects when they are complete, they are the main vehicle for reducing the financial risk associated with renewable energy development and can be leveraged as collateral for financing large projects.

True cost of diesel

PPA rates are negotiated between the renewable energy developer and the utility on a project-by-project basis. In diesel-dependent remote communities, PPA rates are most often set at or below the *avoided cost* of diesel, a term referring to the cost of purchasing and transporting

¹² The National Aboriginal Economic Development Board, *Recommendations Report on Improving Access to Capital for Indigenous Peoples in Canada* (2017). <http://www.naedb-cndea.com/en/recommendations-report-on-improving-access-to-capital-for-indigenous-peoples-in-canada/>

diesel that would otherwise be required to meet the community’s energy demand if not for the renewable energy project (Figure 2).

Costs of diesel

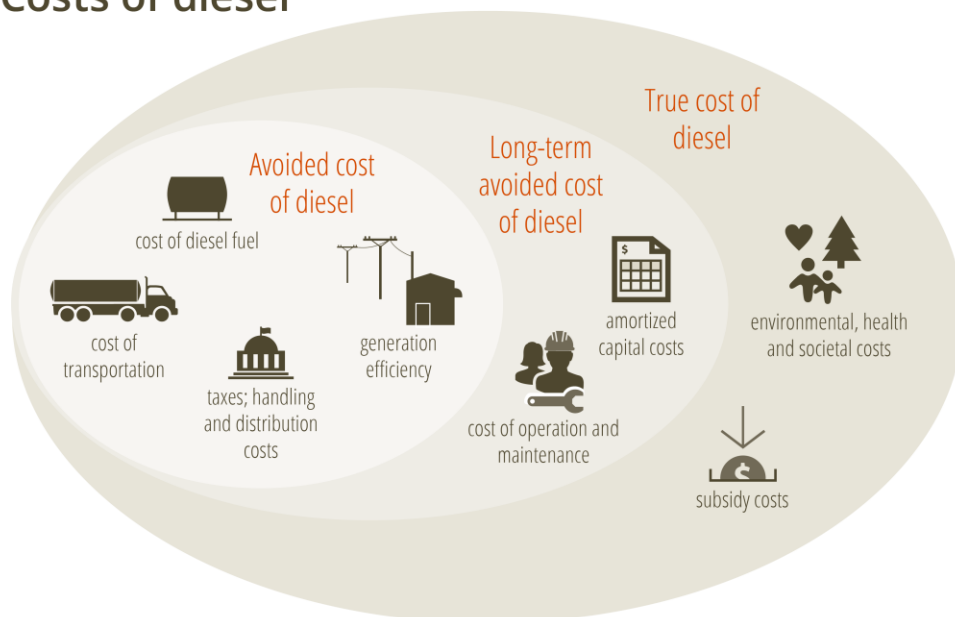


Figure 2. True cost of diesel electricity

Setting PPA rates at the avoided cost does not reflect the true cost of diesel electricity generation, as it does not include capital investments, the cost of operations and maintenance for diesel generation infrastructure, diesel subsidies, or the societal and environmental costs of diesel reliance. In the remote community context, this becomes a major roadblock for moving renewable energy projects forward and reducing the reliance on diesel. When the rates the utility offers are too low, project financing becomes a significant hurdle and projects do not move forward.

Why are PPA rates low?

The regulator plays a central role in keeping PPA rates low. The energy regulator’s responsibility is to make sure a utility does not abuse its monopoly power to act outside the public’s interest. Energy regulators ensure that the utility’s operations, capital investments, and customer rates for electricity are fair and appropriate, which, in practice, usually translates to keeping overall customer rates as low as possible.¹⁵ PPAs are usually only required to be

¹⁵ Chan and Klass, “Regulating For Energy Justice.”

evaluated by the regulator if they affect overall customer rates. This is why utilities limit their PPA rates be equal to or lower than the avoided cost of diesel, hence not changing existing utility costs (Figure 3). Utilities are subject to a complex ratemaking and regulatory planning process and are generally averse to any changes that could affect their expenses and their customer rates.

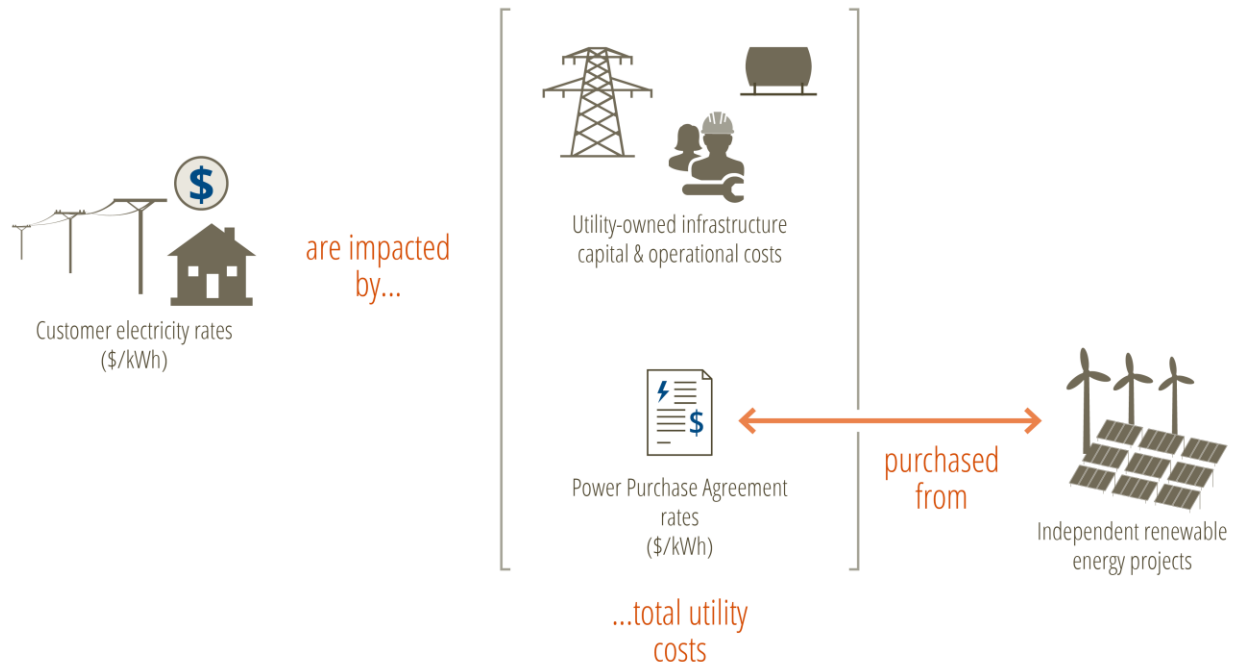


Figure 3. Relationship between PPA rates and customer electricity rates

Both utilities and regulators are incentivized to ensure that any changes to a utility’s operations, such as introducing PPA payments to a remote Indigenous renewable energy project, do not result in any increases to the utility’s cost of service. This rate-setting process overlooks the possible avoided diesel infrastructure operations and maintenance costs in well-designed high penetration renewable energy systems, diesel subsidies, other social and environmental impacts, and community preferences for energy.¹⁴ When the utility regulator adopts a purely economic approach to deciding whether the rate-setting process is fair and in the public interest it results in a reductive evaluation that favors the diesel status quo and hinders progress on Indigenous-led energy development. However, regulators are not empowered to prioritize social and economic implications under their current mandate.

Legislative and regulatory reform can prompt regulators and utilities to consider energy justice as a core tenet of the public interest, and a necessity in achieving the climate, energy, and

¹⁴ Dave Lovekin, *Diesel Subsidies - Simplified, Part I* (Pembina Institute, 2021). <https://www.pembina.org/pub/diesel-subsidies-simplified-part-i>

reconciliation objectives of federal, provincial, and territorial governments. One way this can be operationalized is through the design and delivery of a higher-than-avoided-cost-of-diesel PPA rate which better acknowledges the full value of renewable energy projects in remote communities.

Regardless of future regulatory and legislative action, utilities should also consider how they can respond to the Truth and Reconciliation Commission's call to action #92, which calls upon corporations to ensure that "Aboriginal communities gain long-term sustainable benefits from economic development projects."¹⁵ In the context of renewable energy, this entails utilities and developers building trust-based relationships with Indigenous communities, confronting and correcting legacies of harm and distrust between Indigenous proponents and utilities, and offering fair and inclusive rates in PPAs to Indigenous-owned and -led projects.¹⁶ These efforts to provide fair and inclusive rates as well as honour and support community preferences for energy serve as important pathways to reconciling harm.

Conclusions and Recommendations

The energy sector's current interpretation of the public interest serves as an ongoing impediment to the accelerated uptake of clean energy in rural and remote Indigenous communities. Governments, regulators, and utilities all have a role to play in enacting a new regulatory paradigm that enables decision-making based on energy justice and equity while supporting the desires of Indigenous energy proponents in rural communities across Canada. In practice, this could mean setting a baseline for PPAs above the avoided cost of diesel with Indigenous proponents and ensuring the entire cost savings of reducing fuel and operating time on the diesel system is a factor in improving the business case and operating value for the renewable project.¹⁷

Achieving these fair and inclusive PPA rates in pursuit of energy justice for Indigenous communities can be made more possible through an embrace of a modern interpretation of the public interest. The following actions are critical steps to realizing these dual and highly interconnected opportunities:

1. Provincial and territorial governments should refine the mandates of regulatory bodies overseeing utilities to prioritize addressing climate change, advancing reconciliation, and promoting energy justice, along with providing secure and affordable energy, as primary components of the public interest.

¹⁵ Truth and Reconciliation Commission of Canada, *Truth And Reconciliation Commission Calls to Action* (2015).

¹⁶ Eryn Fitzgerald and Dave Lovekin, *Renewable Energy Partnerships and Project Economics* (Pembina Institute, 2018). <https://www.pembina.org/pub/renewable-energy-partnerships-and-project-economics>

¹⁷ Lovekin and Heerema, *The True Cost of Energy in Remote Communities*.

2. Utilities should fully commit to reconciliation by forming long-term, trust-based relationships with Indigenous communities, and work with them to advance the community's own energy priorities.
3. Utilities should offer PPA rates above the avoided cost of diesel for Indigenous-owned and -led renewable energy projects and advocate for legislative and policy reform to make that possible.

The Pembina Institute continues to advocate for fair and inclusive rates and to push governments, regulators, and utilities to account for the value of renewable energy in Indigenous-owned and -led projects through the FAIR Initiative.¹⁸

The Pembina Institute acknowledges that the work we steward and those we serve spans across many Nations. We respectfully acknowledge the space our organization is headquartered in as the traditional and ancestral territories of the Blackfoot Confederacy, comprised of the bands Siksika, Piikani, and Kainai, the Îyârhe Nakoda Nations, including the bands of Goodstoney, Chiniki, and Bearspaw, and the Tsuut'ina Dené. These Lands are also home to the Métis Nation of Alberta — Region 3 whose Peoples have deep relationships with the Land.

These acknowledgements are some of the beginning steps on a journey of several generations. We share them in the spirit of truth, justice, reconciliation, and to contribute to a more equitable and inclusive future for all of society.

¹⁸ Pembina Institute, "Fair and Inclusive Rates." <https://www.pembina.org/irc/fair>