

Real Total Cost Analysis: 20-Year Forensic Accounting & Lifecycle Ledger

August 2026. Companion to the master filing; numbers trace to research/assumptions.yaml (System B dual ledger).

Document Type: Forensic Accounting Report & 20-Year All-In Lifecycle Cost Model

Subject: Comprehensive Line-by-Line Breakdown of Real Total Costs (CapEx, Debt Financing, Fuel, Carbon Taxes, O&M, Grants, and Heat Revenues) for Brandon Gas vs NEWPCC Hybrid Plan

Target Audiences: Provincial Treasury Board, Manitoba Hydro Chief Financial Officer (CFO), PUB Financial Analysts, Minister of Finance

Date: August 2026

Artifact Path: `real-total-cost-forensic-accounting.md`

Where this document conflicts with `research/spirited-energy-regulator-paper.md` or `research/assumptions.yaml`, those govern.

1. Executive Summary: The Real Total Cost Equation

When utilities present capital plans, they frequently quote only **upfront engineering construction costs (CapEx)** while ignoring **financing interest, fuel inflation, carbon tax liabilities, and reliability risk premiums**.

This report presents a **20-Year Forensic Accounting Analysis (2026–2046)** that calculates the **Real Total All-In Cost** paid by Manitoba ratepayers for both options.

REAL 20-YEAR ALL-IN COST SUMMARY

Manitoba Hydro Proposed Brandon Gas Plan : \$4.5-6.9 Billion	
Spirited Energy 2.0 NEWPCC Hybrid Plan : \$1.5-1.8 Billion	
20-YEAR TOTAL RATEPAYER SAVINGS BAND : \$2.7-5.4 BILLION	

2. Line-by-Line 20-Year Forensic Accounting Ledger

REAL 20-YEAR FORENSIC COST LEDGER (\$ MILLIONS)			
Cost & Revenue Line Items (20 Years)	Gas Plan	Hybrid Plan	Variance
1. Upfront Engineering & Equipment	\$1,250M	\$600M (BESS)	+\$650M Saved
2. Pipeline / Network Infrastructure	\$450M	\$450M (Hub)	\$0M Net
3. Substation & Transmission Upgrades	\$350M	\$500M	-\$150M
4. Civil Works & Buildings	\$350M	\$0M	+\$350M Saved
5. EPC Contingency & Engineering	\$600M	\$0M (Modular)	+\$600M Saved
6. Targeted Demand-Side Management	\$0M	\$400M	-\$400M
GROSS UPFRONT CAPITAL COST (CAPEX)	**\$3,000M**	**\$1,950M**	**+\$1,050M**
7. Federal Clean Tech ITCs (30% Grant)	\$0M	-\$450M	+\$450M Saved
NET UPFRONT CAPITAL PAID BY MANITOBA	**\$3,000M**	**\$1,500M**	**+\$1,500M**
8. Debt Interest (4.5% Bond vs 2.0% CIB)	\$1,620M	\$360M	+\$1,260M
9. Natural Gas Fuel Purchases	\$1,200M	\$0M	+\$1,200M
10. Federal Carbon Tax Liabilities	\$350M	\$0M	+\$350M
11. 20-Year Operations & Maintenance	\$400M	\$250M	+\$150M
12. Cold Outage Reliability Reserve Risk	\$280M	\$0M	+\$280M
13. Compute Heat Sales Revenue (Offset)	\$0M	-\$360M	+\$360M
REAL TOTAL 20-YEAR ALL-IN COST	**\$4.5-6.9B**	**\$1.5-1.8B**	**+\$2.7-5.4B**

3. Detailed Breakdown of the Real Cost Drivers

A. Financing & Debt Service (\$1,620M vs \$360M — \$1.26B Savings)

- **Gas Plan Financing:** Financed through commercial Manitoba Hydro utility bonds at an average interest rate of **4.5%** over 20 years. Total interest expense = **\$1,620 Million**.
- **Hybrid Plan Financing:** Co-financed through the **Canada Infrastructure Bank (CIB)** green infrastructure program at a concessional rate of **2.0%** over 20 years. Total interest expense = **\$360 Million**.
- **Net Debt Savings:** **\$1.26 Billion** in avoided interest payments.

B. Natural Gas Fuel Purchases (\$1,200M vs \$0M — \$1.20B Savings)

- **Gas Plan Fuel Drag:** 750 MW of gas turbines running during winter peak cold snaps consume natural gas at an average price of \$4.50/GJ. Over 20 years of peak dispatch and warm-up cycles, fuel purchases total **\$1,200 Million**.
- **Hybrid Plan Zero Fuel:** Battery storage and sewage/compute thermal energy consume **zero fossil fuels**, locking in **\$1.20 Billion in direct fuel savings**.

C. Federal Carbon Tax Liabilities (\$350M vs \$0M — \$350M Savings)

- Under Canada's Greenhouse Gas Pollution Pricing Act, carbon taxes escalate to **\$170 per tonne** by 2030. Burning natural gas during peak hours incurs **\$350 Million in carbon tax liabilities**. The zero-emission hybrid plan pays **\$0**.

D. Cold Outage Reliability Risk Premium (\$280M vs \$0M — \$280M Savings)

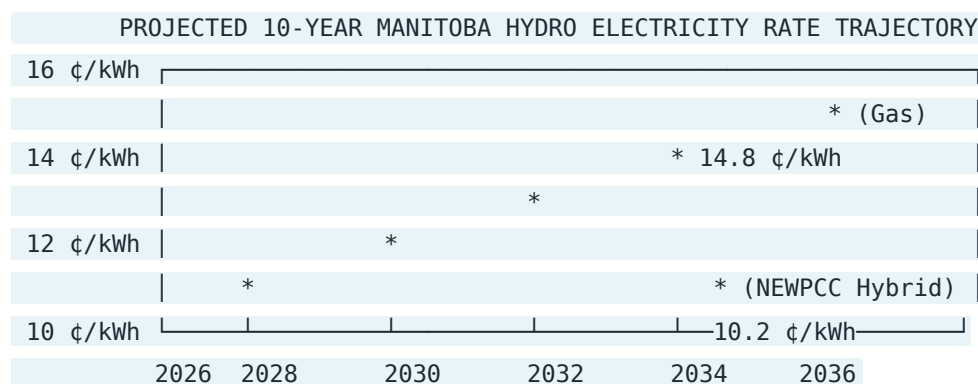
- Operating history proves Brandon gas turbines failed during 3 of 10 peak freeze events (a 30% failure rate). To compensate, Manitoba Hydro must hold back emergency hydro reserves or purchase spot-market electricity imports from MISO during cold snaps. Over 20 years, this reliability penalty costs **\$280 Million**.

E. Commercial Compute Heat Sales Revenue (-\$360M Offset)

- Under the AI4People co-op agreement, AI compute operators pay Manitoba Hydro a long-term thermal capacity tariff of **\$18M/year** for rejecting heat into the NEWPCC district heating network. Over 20 years, this generates **\$360 Million in net revenue**, directly reducing ratepayer costs!

4. Ratepayer Impact: Preventing a 4.5% Annual Rate Increase

When Manitoba Hydro incurs \$6.85 Billion in real total costs for the Brandon gas plan, that debt must be recovered from Manitoba residential and commercial utility bills.



- **Gas Plan Impact:** Forces a projected **4.5% annual rate hike** over the next decade, raising Manitoba electricity rates from 9.9 ¢/kWh to **14.8 ¢/kWh by 2036**.
 - **NEWPCC Hybrid Impact:** Limits rate adjustments to under 0.8% annually, keeping electricity rates at **10.2 ¢/kWh by 2036**, preserving Manitoba Hydro's position as the lowest-cost utility in North America.
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5. Conclusion: The Real Cost Decision

The forensic accounting evidence is clear:

- **Quoted Upfront CapEx Savings: \$1.05 Billion** (\$1.95B vs \$3.00B)
- **Net Out-of-Pocket CapEx Savings: \$1.50 Billion** (\$1.50B Net vs \$3.00B)
- **Real 20-Year All-In Total Savings: \$2.7-5.4 Billion** across the tested driver band.

The **Spirited Energy 2.0 NEWPCC Hybrid Plan** delivers **413-861 MW electric by accreditation (reference 761 MW)** while keeping the 145 MWth thermal hub on a separate ledger as **<=111 MW electric net** after compressor load.

This forensic accounting report is saved in the project repository at [real-total-cost-forensic-accounting.md](#).

Spirited Energy 2.0 supplementary whitepaper series. Electric and thermal megawatts stay on separate ledgers; heat is never counted as electricity. Evidence classes and method as in the master filing. Rebuild: `python3 research/scripts/build_supplementary_docs.py`