



# RAILVEYOR OPEX SAVINGS WHITEPAPER

OPERATIONAL SITE WORKBOOK ANALYSIS



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# OPERATIONAL SITE WORKBOOK ANALYSIS

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Analysis of Railveyor operating performance indicates a materially lower haulage operating cost relative to conventional truck haulage.

Based on the 2025 operating model and an annual throughput assumption of **823,000 tonnes**, Railveyor annual operating cost is estimated at approximately **\$629,607** under an actual attributable cost basis, or **\$695,307** under a more conservative fully allocated cost basis.

This equates to an operating cost of approximately **\$0.77/t to \$0.84/t**, compared with an estimated truck haulage cost of **\$4.00/t**.

On this basis, Railveyor delivers an estimated operating saving of **\$3.16/t to \$3.23/t**, representing annual avoided haulage cost of approximately **\$2.6M to \$2.66M** at current throughput levels.

Using historical throughput achieved between **2023 and 2025 (601k, 830k and 811k tonnes)**, cumulative avoided haulage cost relative to trucking is estimated at approximately **\$7.25M** under the attributable cost case.

These results demonstrate that Railveyor can provide a structurally lower-cost haulage solution while maintaining strong economic benefit across both actual and conservative cost allocation scenarios.

Results are based on current operating assumptions, observed labour allocation, and benchmark truck haulage cost assumptions contained in the operating model.

# METHODOLOGY USED

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This analysis applies the cost model structure embedded in the existing operating model and does not introduce an external alternative costing framework.

**Railveyor operating expenditure (OPEX) is derived from five primary cost categories captured in the model:**

- labour
- power consumption
- equipment consumed
- remote software support
- on-site technical support

Truck haulage OPEX is based on the benchmark model contained within the financial analysis, using a **30-tonne underground haul truck** reference case. The truck cost base was originally scaled from a Vale S.A. Sudbury underground operating cost assumption and adjusted for local operating conditions in country of customer. This produces a benchmark truck haulage cost of **\$4.00/t**.

Railveyor savings are calculated as the difference between truck haulage OPEX and Railveyor OPEX, multiplied by the applicable annual tonnage scenario.

The methodology is intended to preserve consistency with actual operating data and existing site assumptions, while enabling direct comparison between Railveyor and conventional truck haulage.

# Key Assumptions Carried Forward From the Operating Financial Model

Assumption	Value	Comment
Railveyor annual tonnes used in main OPEX model	823,000 t	Basis used to calculate 2025 Railveyor OPEX per tonne.
Railveyor annual cost – attributable basis	\$629,607	Based on Actual time attributable to Railveyor
Railveyor annual cost – fully allocated basis	\$695,307	Based on full labour charge allocation
Truck OPEX benchmark	\$4.00/t	Derived from fleet hourly cost, cycle time, and site adjustment factor.
Truck capacity basis	220 tph, 20 h/day, 363 d/year	Throughput basis used in truck comparison model
Truck fleet size	7 trucks	Six operating-equivalent plus one spare assumptions.
Power tariff	\$0.04/kWh	Industrial tariff used in power model

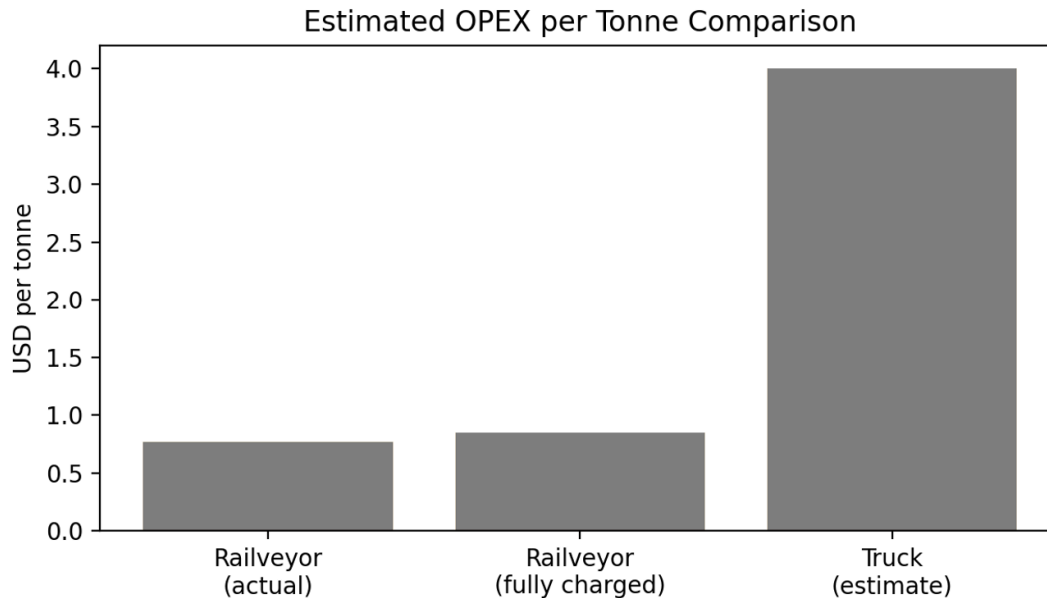


Figure 1. Estimated OPEX per tonne from the operating model assumptions.

# 2025 Result Under Model Assumptions

Metric	Actual attributable case	Fully charged case
Annual Railveyor OPEX	\$629,607	\$695,307
Railveyor OPEX per tonne	\$0.77/t	\$0.84/t
Truck OPEX per tonne	\$4.00/t	\$4.00/t
Savings per tonne vs trucks	\$3.23/t	\$3.16/t
Annual savings at 823,000 t	\$2,662,393	\$2,596,693

The actual-attributable case is considered the more representative of incremental Railveyor operating cost, as it excludes labour allocation not directly associated with active Railveyor work. The fully allocated case provides a conservative upper-bound comparison.

## Estimated Avoided Cost from Railveyor-Hauled Tonnes

Historical operating data for 2023–2025 indicates Railveyor has already generated significant avoided haulage cost relative to truck haulage under the model assumptions.

Year	Railveyor tonnes	Savings per tonne vs trucks	Estimated savings
2023	601,000	\$3.23/t	\$1,944,226
2024	830,000	\$3.23/t	\$2,685,037
2025	811,000	\$3.23/t	\$2,623,573
Total	2,242,000		\$7,252,836

# Estimated Savings From Railveyor-Hauled Tonnes

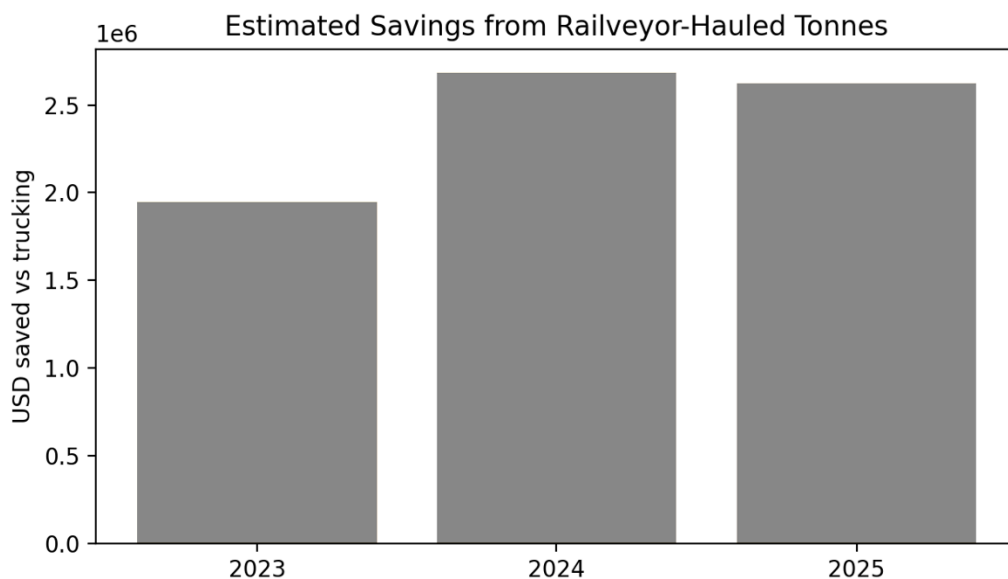


Figure 2. Estimated avoided haulage cost using Railveyor tonnage and truck benchmark assumptions.

## Railveyor Cost Build-Up

Cost category	Annual cost	Share of attributable OPEX
Labour (actual attributable)	\$263,700	41.9%
Power	\$56,985	9.1%
Equipment consumed	\$186,696	29.7%
Remote software support	\$37,027	5.9%
On-site support	\$85,200	13.5%
Total	\$629,607	100.0%

Labour represents the largest cost component, followed by equipment replacement and consumables. Power remains comparatively modest, which is consistent with an electrified haulage system where mechanical wear and labour deployment dominate operating expenditure.



## IMPORTANT LIMITATIONS AND INTERPRETATION NOTES

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- Truck haulage cost remains a modelled benchmark rather than a measured site-specific operating cost. The benchmark is derived from a Vale S.A. Sudbury underground reference case and adjusted for country of site operating conditions.
- Multiple 2025 throughput references exist within the model (823,000 t, 814,000 t, and 811,000 t). The analysis uses **823,000 t** as the primary denominator because it is the model's principal OPEX basis. Alternative throughput values slightly increase unit cost but do not materially change conclusions.
- Certain equipment replacement assumptions remain estimated and may require further validation.
- Feeder and rockbreaker maintenance are excluded from Railveyor OPEX where these systems are considered common to either haulage scenario.
- The analysis is limited to operating expenditure and excludes:
  - Truck capital
  - Truck rebuild
  - Oventilation implications
  - Mine development impacts

These exclusions may further strengthen Railveyor's comparative economic position over life of mine.

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## CONCLUSION

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Under the model assumptions applied, Railveyor delivers a materially lower operating cost than a conventional truck haulage alternative.

Railveyor operating cost is estimated at **\$0.77/t to \$0.84/t**, compared with truck haulage at **\$4.00/t**, implying a unit saving of **\$3.16/t to \$3.23/t**.

At the current throughput basis, this translates to annual avoided haulage cost of approximately **\$2.6M to \$2.66M**.

Across tonnes already transported between **2023 and 2025**, cumulative avoided haulage cost is estimated at approximately **\$7.25M**.

The analysis therefore provides a credible quantitative basis for concluding that Railveyor has generated sustained multi-million-dollar operating savings relative to truck haulage under the operating assumptions applied.

These results reinforce Railveyor's position as a structurally lower-cost electrified haulage solution capable of delivering measurable economic benefit in underground mining applications.

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