

X-LNG CASE STUDY · AUG 2024

Roadmaps to Net Zero

-23%

fleet CO2 vs manual scheduling, with a CO2 objective

40 vessels · 200 cargoes **6 months** · identical inputs **3 cases** · manual, AI, AI + CO2

Three levels of the same book

— Identical inputs, only the way the schedule is computed differs

1

Manual

Industry-standard spreadsheet scheduling. All contractual obligations met, but only a feasible solution, not an optimal one.

2

AI-optimised

Profit-based ADP and schedule optimisation: routing, speed, bunker and idle time decided together.

3

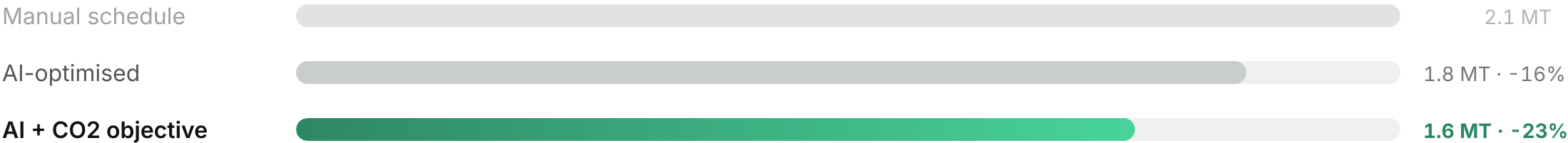
AI + CO2 objective

Profit maximised and emissions minimised in the same objective function.

CO2 steps down twice

— Optimisation cuts about 16%; the CO2 objective takes a further 11%

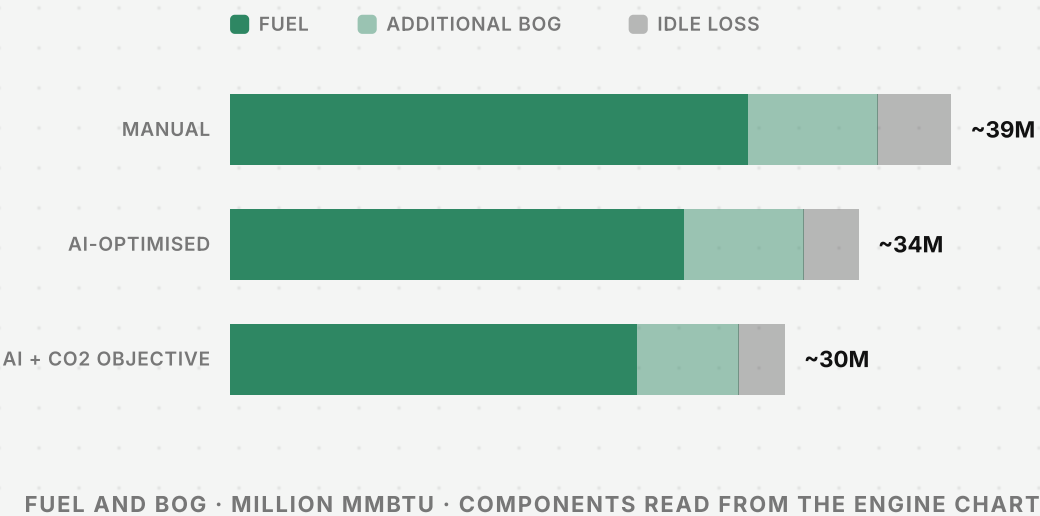
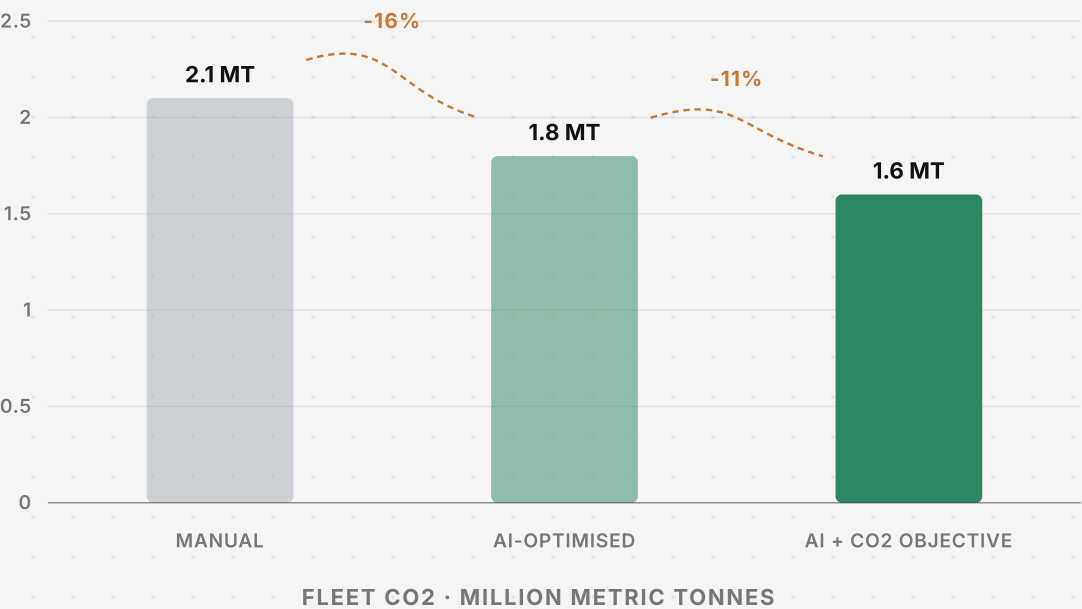
FLEET CO2 · MILLION TONNES PER 6 MONTHS · 40 VESSELS



Fuel and BOG consumption falls from ~39M to ~34M to ~30M MMBtu across the three cases.

Straight from the engine

Emissions stepping down twice, and the consumption stack that drives them



From one book to the world fleet

What the six-month saving becomes at scale

01

Twenty million tonnes a year

— Annualised and extrapolated to the global fleet of about 800 carriers

475K T

CO2 saved in 6 months, 40 vessels

~1M T

per year, 40 vessels

20M T

per year, global fleet

~800M

tree equivalent, illustrative

The best case saves roughly **475,000 tonnes of CO2 in six months** on 40 vessels, with every contractual obligation still fulfilled and profit maximised in the same run.

The fleet-scale number is an extrapolation: it assumes the global fleet of about 800 carriers schedules the same way.

THE VERDICT

**The same book, scheduled better, burns less:
minus 23% CO2 against the spreadsheet.**

Routing, speed and idle time decided together cut fuel, boil-off and idle loss at once, and the CO2 objective sharpens the schedule further while profit stays maximised.

Takeaways

— What cleaner scheduling buys



Optimisation alone cuts 16%

Less fuel burn, boil-off and idle loss, because routing, speed and idle time are decided together rather than cargo by cargo.



The CO2 objective takes a further 11%

23% total against the spreadsheet, with all contractual obligations fulfilled and profit maximised in the same run.



The fleet-scale number is an extrapolation

475,000 tonnes in six months annualises to roughly one million; twenty million a year assumes all ~800 carriers schedule the same way.

Modelled with X-LNG

— Whole-portfolio optimisation for LNG books

1

Your world goes in

Contracts, vessels, charter rates, prices, spot assumptions and constraints, the full book, not a slice.

2

One optimal plan comes out

Feasible, P&L-maximising and constraint-compliant, re-solved for every scenario in minutes.

3

Every number checks out

Each result can be recalculated by hand, transparency your risk committee can audit.

See what cleaner scheduling saves your fleet

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