

How we measure route optimisation results

The Route4Green method - version 1.0, September 2026

A Route4Green document. Route4Green is a product of SmartWay Informatics JSC. May be quoted with attribution. Contact: contact@route4green.com - route4green.com

1. Why a consistent method is needed

Any route optimisation software can produce a percentage. The questions worth asking are what that figure is divided by, what it is compared with, and inside which scope it was measured. A 50% reduction in trips means nothing if the two plans being compared carried two different volumes of cargo.

This document describes how Route4Green measures results in every Pilot and in everything it publishes. We publish the method so that a customer's analyst can re-check every figure, and so that our own figures stay comparable over time.

2. Three comparison lanes

Every claim about results must say which two of these three lanes it compares:

Lane	What it is	Data source
Baseline plan	The route plan the business uses today, for example fixed routes	Baseline route data supplied by the customer
Optimised plan	The plan the system produces for the same orders	Output of the optimisation run
Actually driven	The distance and time the vehicles really covered	Odometer or vehicle tracking device

Plan against plan is a valid measurement, but it is not field evidence. The minimum evidence for any field claim is at least one live shift, with real trucks, with odometer readings recorded.

Baseline distance must also be called what it is. Planned distance on fixed routes usually carries a margin, so part of a reduction against planned distance may come from the margin itself rather than from driving less.

3. Normalising by volume

A business's current routes often carry cargo for points outside the scope of a trial. The two sides of the comparison then serve two different volumes, and every raw figure is skewed in the same direction.

Our order of preference:

1. If the customer can supply weight and distance per stop, the out-of-scope share is removed and raw figures can be published.

2. If not, compare only against baseline routes that serve in-scope points alone.
3. If neither is possible, every metric is normalised by volume, the conversion factor is printed in the table, and raw figures are never used as a headline.

The default denominator is tonnes of cargo. Where the business runs on orders or stops, the denominator is orders or stops.

Worked example: the Pilot with VNPost in Ho Chi Minh City, July 2026

	Fixed-route plan	Optimised plan
Cargo, 5 day total	299,508 kg	186,122 kg
Trips	259	119
Planned distance	8,030 km	3,932 km
Trips per tonne	0.865	0.639
Km per tonne	26.81	21.13
Cargo per route	1,157 kg	1,564 kg

The optimised plan covered only 62.1% of the baseline volume, because the fixed routes also carried cargo for out-of-scope points. Computed raw, this reads as 54% fewer trips and 51% fewer kilometres. Divided by the tonnes of cargo in each plan, the result is 26% fewer trips per tonne, 21% fewer kilometres per tonne, and 35% more cargo per route. Only these three normalised figures are used as headlines. This is plan against plan, and the baseline distance is planned distance.

4. The metric set, and when a metric is not reported

Metric	How it is computed	Not reported when
Trips	Count of vehicle routes, per day and per tonne	Volumes differ and only the raw figure is offered
Distance	Total route km	The baseline km is not labelled as planned or odometer
Cargo per route	Total kg divided by routes	It is being called capacity utilisation
Capacity utilisation	Peak load between two stops divided by vehicle capacity	Per-leg load is not available
Working hours	Driving time plus handling time, the same model on both sides	One side only has paid shift hours
Cost	The same cost components on both sides	The components differ
Emissions	Normalised km difference times a factor per vehicle class, factor printed alongside	The factor has no source
On-time windows	Stops served inside their window divided by stops with a window	Arrival times are not available
Rejected records	Rejected divided by received, by reason and by day	Always reported
Scale per run	Orders, stops and kg per optimisation run	Always reported

A metric whose input data is missing is reported as not measured. We do not estimate in its place.

5. Seven honesty rules

1. Every percentage carries its denominator and conversion factor, in the same cell or the same note.
2. Total kg divided by routes is called cargo per route. It counts deliveries and pickups together, so it can exceed vehicle capacity, and it is not capacity utilisation.
3. Two time models are never mixed. One side's paid shift hours cannot be compared with the other side's computed operating time.
4. Cost has the same components on both sides, or it is left out.
5. Emissions, when reported, are computed from normalised km, with a sourced factor printed beside the figure.
6. No plan is called feasible before peak load has been checked leg by leg.
7. Figures that were computed but do not qualify for publication stay in the report appendix. They are not deleted.

6. Why we publish no emissions figure yet

The name Route4Green is a commitment to measurement discipline, not a slogan. Fewer trips and fewer kilometres per tonne of cargo are operational quantities a customer can verify with their own data. An emissions figure is only worth something when it travels with its scope, its method and a sourced factor for each vehicle class and fuel.

Today we publish no emissions figure of our own. When we do, it will be computed from normalised distance, under rule 5 above, and presented together with the factor and the factor's source.

7. What a measurement does not conclude

- Results measured on a limited period of operating data are not a promise of savings in live operation.
- A two to four week measurement is not a commitment on service level, availability or processing speed.
- Results for one kind of transport are not extrapolated to another.