

BUYER'S GUIDE • CARBON EMISSIONS

Comparing your options for freight emissions reporting.

Three tools can show a similar dashboard and still produce very different numbers. This guide compares Gnosis Carbon Emissions, SeaRoutes, and Project44 on what decides the number: the data and logic underneath the screen.

A fair comparison starts with where each product's numbers come from, then looks at where each fits.

COMPARED

Gnosis Carbon Emissions / SeaRoutes / Project44

MID 2026

What actually decides the number

An emissions tool gives you a number. Much of whether you can trust it, and act on it, comes down to where and with what logic that number comes from. Two products with similar dashboards can disagree by a wide margin because the data and logic feeding them are different.

Before comparing features, consider these two things:

1

Is the number built from your actual container movements, or from averages?

A figure derived from the true route, the real distance sailed, and the actual weight of each shipment reflects what you moved. A figure derived from zip-to-zip or lane averages reflects a model of a typical shipment.

2

Is the carbon data connected to your operational tracking data?

When emissions come from the same records that track your containers, one dataset can serve both audit-ready reporting and the decisions that follow it: lane planning, carrier comparison, mode choice.

What sits underneath each option

Gnosis Carbon Emissions

Calculated inside Container Lifecycle Management® (CLM) Platform from the container events already flowing through the platform: the true route, the actual distance, shipment-level weights, plus drayage and terminal-handling legs taken from executed moves. The data that tracks the container also produces its emissions data, so reporting and operations run off one source of truth. Coverage is ocean, North America rail, drayage, and terminal handling. It is sold with CLM.

SeaRoutes

An independent, CMA CGM-backed provider of carbon, routing, and vessel-tracking APIs, accredited by the Smart Freight Centre (GLEC) since 2021. Its strength is vessel-level modeling: given a ship's IMO number, engine, fuel, and AIS-observed speed, it estimates that specific voyage. When those primary inputs are missing, it falls back to trade-lane averages. Coverage spans sea, air, road, rail, and inland. You integrate the API and supply the data it runs on.

Project44

Emissions Monitoring, launched in 2024, sits inside the Movement visibility platform, built on Project44's ocean visibility and over-the-road network. It reports emissions across ocean, air, over-the-road, rail, and ports, using GLEC factors through accredited calculation partners, with actual-fuel telematics on road legs. Reporting is at shipment or leg level. If you already run Project44 for visibility, emissions is an add-on to that relationship.

Capability comparison

	GNOSIS CARBON	SEAROUTES	PROJECT44
Basis of the number	Actual container movements from the operational record: true route, distance, weight	Vessel model from IMO fuel and speed where you supply it; trade-lane average otherwise	Network visibility data; GLEC factors applied via partners
Ocean distance	Actual vessel tracks (AIS) where available; routed distance otherwise	Proprietary AIS routing, draft and zone aware	Ocean tracking heritage; distance method not publicly detailed
Emission factors	GLEC trade-lane averages by lane and equipment, applied to real distance and weight	Vessel-level from IMO fuel and speed where data exists; lane average otherwise	Carrier and lane level; actual-fuel telematics on road legs
Drayage and terminal legs	Computed from real executed container moves and terminal events	Inland legs inferred, not from executed moves	Strong over-the-road generally; drayage not called out as a leg
Granularity	Per container, with leg and node drill-down	Per shipment or leg, on request	Shipment or leg level
Update cadence	Recalculated daily as events land	On request via API	Period reporting
Tied to operational tracking data	Yes; the same platform tracks the container and computes its emissions	No; standalone API you feed	Within Project44 visibility, at reporting level
How it is delivered	Module inside your container platform; no separate system	API and dashboards you integrate and feed	Module inside Project44 visibility
Integration effort	None if you already run CLM	API build plus data feed; published per-call pricing tiers	None if you already run Project44 visibility
Methodology	GLEC v3 (nodes v3.2), ISO 14083-aligned, documented for audit	GLEC v3.2 and ISO 14083	GLEC Framework via partners
Third-party accreditation	Methodology-conformant; not separately accredited	Smart Freight Centre accredited since 2021	Held by the calculation partner, not the product
Reporting fit	GLEC and ISO export; CDP, CSRD, SBTi-compatible data	Accredited GLEC and ISO output	CSRD, IMO, and GHG Protocol cited

Why the data underneath decides the outcome.

Accuracy you can take into an audit.

Much of the error in a Scope 3 logistics number often comes from two assumptions: the distance and the weight. Zip-to-zip estimates ignore the true route and the stops along the way. Assumed container weights creates variance from the load that actually shipped. When the number is built from the real movement of each container, the true route, the actual distance, the actual weight, it is easier to defend when a Scope 3 consultant, an assurance provider, or an auditor examines it.

Teams that hand their logistics data to a consultant tend to care about exactly this: inputs that already meet GHG Protocol requirements, with a documented methodology, so the number can be verified rather than re-estimated.

Is vessel-level modeling more accurate?

On the ocean leg, given the ship's IMO number, fuel type, and load, yes. That precision is real, and worth naming plainly. Two things temper it in practice. First, vessel-level precision needs primary data many shippers do not have in hand; without knowing the exact fuel type burned and vessel load utilization per vessel move, vessel models typically fall back to trade-lane averages. Second, GLEC, CDP, and SBTi accept trade-lane default factors, so a lane-based number is widely accepted for reporting and audit.

The larger point: because much of Scope 3 error typically sits in distance and weight, a lane factor applied to the actual distance sailed and the actual weight moved can get you closer to reality, for every container rather than only the ones you hold fuel data for.

One dataset for reporting and for operating.

When carbon data is married to global container tracking data, the same source of truth can do two jobs. It produces audit-ready disclosure for CDP, CSRD, SB 253, and customer reporting. It can also support a step that reporting alone does not: comparing carriers on emitted CO2 per lane, planning lanes for lower emissions and cost, and seeing how routing and mode choices move the footprint. A number delivered through an API, or a report layered on a visibility network, is built for disclosure. Emissions that live in the operational record can also feed the next decision.

Regulation is raising the bar

Reporting pressure has been increasing. Large-company reporting regimes such as California SB 253 and the EU's CSRD are pushing companies toward defensible Scope 3 data, and that pressure has held through the ESG pullback of recent years. Buyers who must report, whether or not they have set reduction targets, need numbers they can stand behind. Data built from true movements helps you get there.

ONE CONTAINER'S JOURNEY, BY EMISSION LEG



Where each option fits best

No single tool wins every profile. Match the data foundation to what you need it to do.

Gnosis Carbon Emissions

BEST FIT

Ocean-heavy import programs that need Category 4 logistics emissions they can defend in an audit, built from real container movements, and want the same data to drive lane planning and carrier comparison. Strongest when you already run CLM, so the number needs no new integration and updates as your freight moves.

SeaRoutes

BEST FIT

Teams that can supply vessel-level primary data (IMO number, fuel type, load) and want the most precise ocean-leg estimate, teams that need a carbon API to build into their own systems, or procurement that requires first-party accredited output on a compliance checklist. On the ocean leg with full data, its estimate is more precise than a lane average.

Project44

BEST FIT

Shippers who move across many modes, including heavy truckload, air, and parcel, and want one reporting view across all of them, especially if they already run Project44 for visibility. Its over-the-road telematics give a real edge on road-leg accuracy.

Questions to ask any vendor.

Use these to compare tools on your own terms.

- | | | |
|---|--|--|
| 01 Where does the number come from? Ask whether it is built from your actual container movements and weights, or from zip-to-zip or lane averages. | 02 Is the carbon data connected to my operational tracking? Ask whether the same data can drive lane planning and carrier comparison, or only produce a report. | 03 Can I defend it in an audit? Ask for the documented methodology, whether inputs meet GHG Protocol requirements, the GLEC version and ISO 14083 status, and whether it is certified, accredited, or conformant. |
| 04 What is included? Ask whether drayage and terminal handling are in the number, or only the ocean leg. | 05 How current is it? Ask whether you see the number during the move or only in a period report after the fact. | 06 What does it take to run? Ask about integration effort and who supplies the data the tool depends on. |

NOTES AND SOURCES

This comparison reflects each product's public materials and documentation as of mid-2026. Competitor capabilities are described from their own published sources. Where a method is not publicly documented, this guide says so rather than assume.

SeaRoutes CO2 methodology and pricing: developer.searoutes.com, searoutes.com/co2-api, searoutes.com/pricing · SeaRoutes Smart Freight Centre accreditation: smartfreightcentre.org · Project44 Emissions Monitoring and sustainability: project44.com/platform/visibility/sustainability · Project44 Emissions Monitoring launch (Aug 2024): project44.com press releases · GLEC Framework and ISO 14083: Smart Freight Centre