FuelEU & IMO GFI:

Why Digital Tank-Based Fuel Accounting Is Now Essential

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TRUST-OCEAN

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From Tonnes to Intensity:

The Digital Shift in Fuel Accounting

Over the past few years, we've watched a quiet but fundamental shift on board: we're moving from counting tonnes by fuel type to proving the GHG intensity of the energy actually used. EU FuelEU Maritime and the IMO's forthcoming fuel-intensity standard (GFI) both ask for batch-level evidence, what was bunkered, how it was blended and which emission factors applied at the moment of use. To do this credibly, you need a digital tank book and clean traceability from BDN -> tank -> engine.

The policy turn: from fuels to energy used

FuelEU began in 2025 and tightens toward 2050. The IMO is building a global standard on the same principle: lower-intensity energy is rewarded only when there's traceable proof of use. That means the accounting object changes. It's no longer "MDO" or "HFO," but a batch with attributes origin, certificates, density, and LCV (lower calorific value) whose identity must survive transfers, blends, and consumption.

Why conventional reporting breaks under biofuel and blends

Daily/noon reports flatten the details regulators care about: blend shares, provenance, certificates, and the comingling that constantly reshapes tank composition. If you receive several HVO/MGO lots, the effective mix evolves with every receipt, transfer, and debit. Without a digital record of those transitions, intensity claims are hard to defend and you either default to conservative factors or risk penalties. The fix is tank-based, batch-aware accounting that preserves identity from BDN to engine.



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What a digital tank book provides

Think of the digital tank book as the vessel's single source of truth for fuel. It captures what arrived, where it sits, how it mixes, and how it's used over time, so batch identity isn't lost in "type totals." That continuity lets you prove the GHG intensity of energy used, voyage after voyage, without guesswork.

With a tank book, the story behind every tonne is reconstructable: BDN -> tank -> consumer. Comingling stops being a grey area; the system knows how the mix evolved and attributes energy and emissions accordingly. Audits move faster because evidence is already organized; ROB or biofuel-claim disputes de-escalate; and charter-party conversations rely on facts rather than spreadsheets.

Just as important, the tank book links compliance and operations. The same record that satisfies FuelEU and the IMO's GFI also improves day-to-day decisions: when numbers drift, you see it early; when documents arrive late (for example, a biofuel Proof of Sustainability, PoS), you update them, and the history recalculates with a clear trail. In short, a digital tank book turns tanks from black boxes into accountable assets.

Why this shift is durable

This isn't a passing fad. EU and IMO regulations will tighten over the coming years and converge on one idea: prove the well-to-wake intensity of the energy you used. Tank-based, batch-level accounting is regulation-agnostic and fuel-agnostic. It works for today's drop-in biofuel blends and will work for tomorrow's e-fuels, regardless of supplier changes or late documentation.

A single digital tank book becomes the reusable evidence base for FuelEU intensity, IMO GFI, MRV/ETS, and CII. Commercially, it reduces ROB disputes, speeds verification, supports charter-party clauses for verified low-carbon voyages, and underpins green-corridor commitments and sustainability-linked financing. Once you can trace a BDN batch through a tank to consumption, your evidence is portable, and your decarbonization claims are bankable.

How Trust-Ocean makes it practical

Trust-Ocean keeps this simple. The crew records every BDN for conventional fuels, biofuels, and blends in the Bunker Management dashboard. The next step is to assign each batch to virtual storage tanks that mirror the vessel's real tank plan and ROB. The system then tracks consumption by BDN batch and Tank ID, automatically updating ROB as fuel is used. If a manual sounding or bunker survey differs from the calculated ROB, an authorized correction can be posted with full traceability.

A frequent biofuel challenge is that the Proof of Sustainability (PoS) or specification often arrives after bunkering and can revise key values (e.g. LCV, or GHG intensity). Trust-Ocean lets users reopen the original BDN entry, update those fields, and have the platform recalculate everything retroactively, tank compositions, blend/mix ratios, and all downstream consumption allocations, while preserving a complete audit log. The outcome is clean, tank-based reporting that supports FuelEU and IMO GFI without reworking onboard routines.



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