

Fact Sheet

Sustainable Fuel Attribution Methods Book & Claim vs. Mass Balancing vs. Direct Fueling

Referring to sustainable fuel attribution methods in transport decarbonization, Book & Claim, Mass Balancing, and Direct Fueling do not represent a strict hierarchical relationship. Instead, they are better understood as complementary building blocks or attribution systems used to manage and verify the use of sustainable fuels or energy carriers – each with its own trade-offs and applications.

Book & Claim:

Carriers and Logistics Service Providers (LSPs) purchase certificates representing sustainable fuel production without physically using the fuel. Companies can market sustainable investments in their fleet and transport structure and offer their customers – those shipping products – new auditable green freight services. The approach is not constrained to a confined supply infrastructure or even national borders.



Mass Balancing:

Sustainable and conventional fuels are mixed in the existing infrastructure of a clearly defined supply chain. Documentation tracks the proportion of sustainable fuel, allowing companies to claim corresponding emissions reduction.



Direct Fueling:

Trucks, ships or planes are physically fueled with sustainable fuel. This provides the most transparent and verifiable emissions reduction but requires dedicated infrastructure and faces availability challenges. (Sometimes alternative terms are used like Direct Charging or Physical Allocation.)



	Market-based measures		
Attribution Allocation	virtual	virtual / physical	physical
Physical Fuel Use	✗	—	✓
Additionality / Double-counting risk	✗	—	✓
3 rd Party Trust	Verification/POS	Verification/Documentation	Verification/Measurement
Implementation ease	✓	—	↑
Infrastructure needs	✓	—	↑
Cost	✓	—	↑



enables immediate action with minimal disruption

offers a practical transition approach

represents the ultimate goal for complete decarbonization

How can shipzero support?

shipzero supports all approaches with its validated management system and aims to provide the tooling to comply with the strictest requirements towards reliable – transparently documented and singular accounted for – sustainable interventions.

Our team brings together experts in product & data management, logistics and sustainability. shipzero's platform and methodology is accredited and certified by the Smart Freight Centre as conforming with standard ISO 14083:2023, and in accordance with GLEC Framework V3. It is also certified by GutCert as conforming with the GHG Protocol Standard and ISO 14083:2023 for the calculation of corporate carbon footprints.

Begin your carbon reduction journey with shipzero: [Request expert talk](#)

