

Telecom Diesel Deliveries in Nigeria: Reconcile the Litres Before Sign-off

A delivery note and a rising tank level can disagree without proving a shortage. Build a time-bounded fuel balance and a traceable review record for Nigerian telecom sites.

PRODUCT KNOWLEDGE

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Match the delivery note to tank readings and fuel movements before sign-off.

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Fuel receipt reconciliation
Approx. 9 minute read

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Which quantity should a telecom diesel delivery check verify?

A telecom diesel delivery check should verify the fuel received across the agreed receiving boundary during a defined period. Compare the supplier's delivery quantity with the change in stored fuel, adjusted for consumption and other recorded movements during that same period. A signed delivery note alone does not measure the receipt, and the tank's net rise is not necessarily the delivered volume.

Consider a delivery note showing 600 litres while the tank record rises by only 588 litres. The missing 12 litres may be an operating movement within the measurement window, a measurement problem or an unresolved discrepancy. The subtraction does not identify the cause. A useful **diesel delivery reconciliation** preserves those possibilities until the evidence separates them.

This distinction matters to Nigeria's tower-energy procurement. In its first-quarter 2026 financial statements, page 39 , IHS identifies power as its largest operating expense and

discusses diesel's impact on Nigerian operations. It also describes diesel-linked indexation in renewed MTN Nigeria contracts. That commercial price mechanism does not, by itself, establish how many litres entered a particular tank.

The method below is a proposed delivery-control workflow for site and procurement teams, not an IHS procedure or a Nigerian statutory form. Keep four fields separate: quantity ordered, quantity declared delivered, quantity supported by receipt measurements and quantity approved for payment. Their values may eventually agree, but none should overwrite the others.

Editorial illustration of a telecom diesel delivery evidence review in Nigeria.

Fix the observation window before comparing records

Choose an opening observation immediately before the delivery operation and a closing observation after the level has settled sufficiently for the approved measurement method. Preserve both timestamps and the intervening trend. Do not impose an arbitrary settling time on every tank: the installed sensor, vessel and operating conditions determine when a usable reading is available.

Then draw the **receiving boundary**. A bulk tank supplying a separate day tank has a different balance from a combined bulk-tank-and-day-tank inventory. For the bulk tank alone, fuel transferred to the day tank is an outgoing movement. For a boundary containing both tanks, that transfer is internal; engine consumption is the outgoing movement. Counting both would understate the receipt.

List every pipe or transfer that can cross the selected boundary. Generator supply and return lines need a net-flow treatment: supply flow alone can include fuel that returns rather than burns. A maintenance drain, transfer to another vessel or second delivery must also have a quantity and event record. If these movements cannot be reconstructed, mark the receipt estimate provisional.

Use the original field-event times, not the times a delayed upload reached the server. Record the time zone or UTC convention on the delivery ticket, controller export and review sheet. A photograph of a display may corroborate a reading, but a cropped image without tank identity or time cannot establish which delivery it belongs to.

Fuel handling must follow the site's approved safety method and authorized personnel requirements. Do not interrupt a critical power source, open a fuel system or improvise a manual measurement merely to make the paperwork easier. This article addresses records and reconciliation, not refuelling instructions.

A 600-litre receipt that initially looks 12 litres short

The following teaching example assumes one tank feeding a generator directly, all return fuel included in the net-consumption measurement, no other transfers and no unrecorded loss. All quantities use a consistent volume basis. The observations are hypothetical, not records from a Nigerian customer site.

Record within one window	Example value	Role in the review
Supplier's delivery note	600 L	Declared delivery, retained separately
Opening tank inventory	420 L	Inventory before the operation
Closing tank inventory	1,008 L	Settled inventory at the window end
Net engine consumption	12 L	Independently supported outflow during the window
Other transfers in or out	0 L	Explicitly checked, not assumed from a blank field

Inferred delivery = closing inventory – opening inventory + net consumption + other transfers out – other transfers in

Inferred delivery = 1,008 – 420 + 12 + 0 – 0 = 600 L

Delivery residual = declared delivery – inferred delivery = 600 – 600 = 0 L

The unadjusted tank rise is 588 L. Adding the independently evidenced 12 L consumed during the same window explains the apparent difference. Do not obtain that consumption value by subtracting the tank rise from the delivery note; that circular calculation would force agreement and prove nothing.

A zero calculated residual means the central values reconcile under these assumptions. It does not eliminate measurement uncertainty, verify fuel quality or prove that the measuring devices were correct. Keep the raw evidence and the applicable decision rule alongside the arithmetic.

Now change only the declared delivery to 650 L. The inferred receipt remains 600 L, leaving a positive 50 L residual for review. That identifies a disagreement, not its cause. Before a commercial adjustment, examine measurement validity, the ticket, timestamps and unrecorded movements. Never turn the residual column into an automatic theft label.

Can generator runtime prove the litres delivered?

Generator runtime cannot independently prove a delivery quantity. Runtime can help estimate fuel consumed inside the receipt window when a defensible consumption model is available, but hours alone do not establish litres. Use measured net fuel consumption where the project provides a suitable measurement system; otherwise retain the model's assumptions and uncertainty.

The value of **generator runtime records** is their ability to explain what happened between the opening and closing inventory observations. Preserve start and stop events, generator identity and available load evidence. A total for the entire day cannot be inserted unchanged into a shorter delivery window.

A manufacturer's fuel curve must match the installed generator and relevant operating conditions. Battery charging, changing radio demand and auxiliary loads can alter generator loading. Do not assign one litres-per-hour value to every tower in Nigeria, or assume a rating-plate power value is the actual electrical load.

When the only available consumption figure is an estimate, label the inferred receipt accordingly. A run contact establishes a state; a cumulative energy meter establishes electrical output; neither is a fuel meter. Keep the distinction visible to the person authorizing the delivery closeout.

The broader telecom site monitoring system guide covers field-to-NOC data architecture. Here, the requirement is narrower: retain the particular observations needed to reconstruct this receipt without substituting unrelated daily averages.

Check the measurement basis before setting a tolerance

A level sensor reading in millimetres is not yet an inventory in litres. The April 2025 OIML Bulletin article on static liquid quantity measurement explains why tank measurement has to be considered as a complete system rather than as a level gauge alone. Tank calibration, conversion and temperature effects can contribute to the uncertainty of the resulting quantity.

For this receipt check, obtain the installed tank's conversion table and the measurement-system evidence relevant to its operating range. Confirm that both inventory observations and the supplier quantity use compatible volume bases. A temperature-corrected delivery quantity and an uncorrected tank quantity should not be treated as directly interchangeable.

The resulting **measurement uncertainty** belongs in the decision rule agreed for the installed arrangement. Display resolution or a sensor's headline accuracy is not an

allowable commercial discrepancy. The OIML article discusses Dutch legal provisions; those percentages are not Nigerian acceptance limits and are not adopted here.

Separate a measurement-quality failure from a volume disagreement. A saturated point, missing raw reading or unexplained conversion-table change calls the calculation's inputs into question. Increasing the acceptance tolerance would not repair that missing evidence. Retain the original values and request a valid check through the approved site process.

When should a delivery variance remain unresolved?

A delivery variance should remain unresolved when the records do not support a comparable, time-bounded quantity or when a valid residual falls outside the agreed decision rule. Preserve the disputed quantity and evidence rather than forcing the receipt to equal the invoice. Measurement consistency and commercial payment approval are separate decisions.

Reconciled against the agreed evidence

The tank and delivery identities match, the observations are valid, movements are accounted for and the residual satisfies the documented rule. Record who reviewed the result and the basis for acceptance. Retain the original declared and inferred quantities even if the commercial document uses a rounded value.

Provisional because evidence is incomplete

A late controller upload, missing closing observation or consumption estimate awaiting review prevents firm quantity confirmation. State exactly what is missing, who must supply it and the review deadline. Whether any payment proceeds is governed by the contract; this engineering status should not silently make that decision.

Open discrepancy requiring investigation

The records are sufficiently valid to show a disagreement that needs explanation. First compare the source documents and measurement configuration, then route any required site check to an authorized team. If a leak or other safety hazard is suspected, follow the safety response immediately; do not wait for accounting closure.

Use the established remote tower incident and dispatch workflow for the investigation. A receipt exception should reference that work order without duplicating its alarm priorities or claiming that a fuel-level anomaly proves misconduct.

Keep the delivery packet small enough to use and complete enough to audit

Make one delivery identifier connect the commercial ticket, site evidence and reviewer outcome. Preserve originals when a supplier issues a corrected note; record the correction as a new version with a reason. Otherwise a later reviewer cannot distinguish a genuine correction from an overwritten disagreement.

- Commercial record: supplier, delivery identifier, site and receiving tank, declared quantity and stated volume basis.
- Observations: opening and closing values, original timestamps, units, sensor identity, raw trend and applicable tank-conversion version.
- Movement evidence: net consumption source, generator events, other transfers and explicit no-transfer confirmation where applicable.
- Measurement basis: relevant calibration evidence, operating-range limitations and the agreed comparison rule.
- Review: calculation, residual, evidence status, reviewer, unresolved item owner and linked correction or investigation record.

The record should be retrievable by delivery and tank, not only by the date an invoice reached finance. This also prevents one ticket being matched to two receipts or one delivery being split across reporting periods without an explanation.

After receipts and consumption records are reliable, they can support a separate diesel-reduction and hybrid-power assessment . Delivery reconciliation alone establishes neither a savings baseline nor tenant-level energy allocation. Those decisions require their own boundaries.

Bring the fuel evidence boundary into the site integration review

For a telecom energy integration discussion, send Huijue the tank arrangement, generator supply and return layout, available measurement interfaces, a redacted sample delivery record and the required NOC export fields. Use them to identify which receipt observations can be supported by the proposed project equipment and which remain with the fuel supplier or operator.

Share the site integration inputs

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