

DP Fuel Optimization for PSV Fleets

How measured fuel visibility helps operators manage DP fuel burn without compromising safety, redundancy, or mission readiness.

Executive Summary

Dynamic positioning is one of the most fuel-intensive operating modes for platform supply vessels.

A PSV may appear stationary during DP, but it is actively using power to maintain position and heading against wind, current, waves, and operational demand.

Fuel burn during DP is driven by station keeping, thruster activity, generator configuration, redundancy requirements, vessel load, and field conditions.

That makes DP fuel optimization different from voyage optimization.

The objective is not to reduce power blindly. It is to understand whether fuel burn matched the DP requirement and whether the vessel was configured appropriately for the operation.

Key Findings

- DP fuel optimization depends on operating context, not distance traveled.
- Thruster demand, generator configuration, redundancy, and field conditions can significantly affect fuel burn.
- Fuel-per-mile metrics do not apply during DP operations.
- PSV fleets need fuel data tied to DP activity, vessel mode, equipment use, and environmental conditions.
- Fleet optimization requires consistent measurement across vessels and operating modes.
- Vessel performance analytics help operators identify avoidable fuel burn without compromising safety or readiness.

Operational Problem

PSVs often spend significant time in DP while supporting offshore assets.

During these periods, the vessel may be holding position, supporting cargo operations, waiting on crane availability, responding to weather, or maintaining readiness for client instructions.

A daily fuel total rarely explains this activity.

It may show high consumption, but not whether that consumption was driven by thruster demand, generator lineup, redundancy requirements, weather, current, cargo activity, or waiting time.

Without that context, operators can misread DP fuel burn.

They may miss efficiency opportunities or question consumption that was necessary for safe station keeping.

Why It Matters Offshore

DP operations carry a different risk profile than transit or standby.

Fuel efficiency cannot be separated from safety, redundancy, and position-keeping requirements. A PSV must maintain enough power and system availability to support the operation safely.

The goal is not to run less power at all costs.

The goal is to understand whether the vessel's power configuration matched the operating condition.

Across a PSV fleet, unnecessary high-power configuration, inefficient generator loading, or extended DP waiting time can increase fuel consumption, engine hours, maintenance exposure, and emissions.

For operators, the value is in identifying where fuel burn can improve without compromising the DP operation.

DP Fuel Burn Is Not Voyage Fuel Burn

Voyage-based fuel optimization usually evaluates how efficiently a vessel moves from one point to another.

DP operations are different.

During DP, the vessel may consume significant fuel while covering little or no distance. Fuel burn may rise because of weather, current, thruster demand, generator configuration, cargo operations, or redundancy requirements.

That means DP fuel performance cannot be judged by distance-based metrics.

A high fuel burn rate may be justified during one DP condition and worth investigating during another.

Operators need to know what the vessel was doing, what equipment was running, and what conditions were affecting the operation.

That context is what makes DP fuel optimization practical.

What We've Seen Offshore

DP fuel issues often appear as patterns, not single events.

A vessel may remain in a higher generator configuration after weather improves. A PSV may stay in DP while waiting on deck readiness or platform crane availability. Thruster demand may change quickly even though the vessel appears stationary.

Common PSV patterns include:

- DP fuel burn is often reviewed after the operation is complete.
- Generator lineup may remain conservative after conditions change.
- Waiting time in DP can become a major fuel driver.
- Thruster demand may not be visible in daily fuel totals.
- Weather and current can make vessel-to-vessel comparisons misleading.
- Cargo operations can extend DP time beyond the original plan.
- Shore teams may see consumption without seeing the DP condition behind it.

The issue is not that DP consumes fuel.

The issue is knowing whether the fuel burn matched the DP requirement.

Fleet Optimization for PSV Operations

DP fuel optimization becomes more useful when it is evaluated across a fleet.

One vessel may consistently operate with a higher generator configuration. Another may show longer DP waiting periods. A group of vessels may show different fuel profiles during similar jobs or field conditions.

Those patterns are difficult to see from isolated daily reports.

Fleet optimization requires consistent data across vessels, operating modes, and job types. That allows operators to compare similar conditions more fairly and identify where performance differs.

The goal is not to rank vessels without context.

The goal is to understand which practices, configurations, or operating conditions are driving fuel burn across the fleet.

When DP activity is measured consistently, operators can identify trends, set better expectations, and support more informed fleet decisions.

Vessel Performance Analytics in DP Operations

Vessel performance analytics help operators turn DP fuel data into operational insight.

A fuel total alone does not explain whether consumption was expected. Analytics become useful when fuel burn is connected to vessel activity, equipment use, operating mode, and field conditions.

For DP operations, useful questions include:

- What generator configuration was used?
- How long did the vessel remain in DP?
- Was the vessel waiting, loading, maneuvering, or actively supporting the job?
- Did weather or current affect thruster demand?
- Was fuel burn consistent with similar DP events?
- Was there an opportunity to reduce waste without affecting safety or redundancy?

This type of analysis helps separate necessary fuel consumption from avoidable fuel burn.

It also helps vessel teams and shore teams discuss DP performance with better context.

Operational Takeaways

DP fuel optimization is about understanding fuel use in context.

During DP, fuel burn should be evaluated against operating conditions, power demand, vessel activity, and redundancy requirements — not distance traveled.

With better visibility into generator configuration, thruster demand, waiting time, and vessel mode, operators can identify avoidable fuel consumption while maintaining safety and operational readiness.

Fleet optimization helps operators compare similar DP operations across vessels.

Vessel performance analytics help explain why fuel was consumed and where improvement may be possible.

The result is better fuel performance, stronger operational awareness, and more informed fleet decisions.

Fueltrax Note

Fueltrax supports DP fuel optimization by helping PSV operators connect measured fuel consumption to vessel activity, operating mode, equipment use, transfers, and inventory changes.

For fleet optimization and vessel performance analytics, Fueltrax helps operators identify fuel patterns across DP, transit, standby, maneuvering, and cargo operations.

Fueltrax is the only EFMS approved by all major oil companies, supporting offshore operators that need trusted fuel visibility across safety-critical DP operations and demanding fleet environments.

Contact the Fueltrax team at info@fueltrax.com to learn more