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EQUIPMENT SELECTION

Mobile Crusher Fuel Consumption: Benchmark Your Fleet Against Industry Standards

Compare your mobile crusher fuel consumption to industry benchmarks. Track fuel efficiency, identify waste, and reduce operating costs.

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Fuel consumption benchmarking transforms diesel costs from an uncontrolled expense into a managed operating parameter. By establishing baseline consumption, tracking performance over time, and comparing against fleet and industry standards, plant managers can identify inefficiencies, justify improvements, and reduce costs by 10-25%. This guide provides the framework for systematic fuel performance monitoring and optimization.

Establishing Fuel Consumption Metrics

Primary Metrics

METRIC	CALCULATION	USE
Litres per operating hour (L/hr)	Fuel used ÷ engine hours	Equipment efficiency baseline
Litres per tonne (L/t)	Fuel used ÷ tonnes processed	Production efficiency
Cost per tonne (₹/t)	Fuel cost ÷ tonnes processed	Financial impact
Idle percentage (%)	Idle hours ÷ total hours	Operational efficiency

Industry Benchmarks

EQUIPMENT TYPE	L/HR RANGE	L/TONNE RANGE	BEST PRACTICE TARGET
Mobile Jaw Crusher (medium)	28-45	0.15-0.25	<0.18
Mobile Cone Crusher	35-55	0.18-0.28	<0.22
Mobile Impact Crusher	40-65	0.20-0.32	<0.25
Mobile Screen	12-22	0.04-0.08	<0.06
Track-mounted plant (complete)	80-150	0.35-0.55	<0.45

Data Collection Protocol

Manual Tracking

1. Record fuel additions (date, time, litres, hour meter)
2. Record production (tonnes per shift from weighbridge or belt scale)
3. Calculate metrics weekly
4. Plot trends monthly

Automated Tracking

- Fuel flow meters at tank or machine
- Telematics systems with fuel level monitoring
- Integration with production data systems
- Automatic reporting and alerting

Data Recording Template

DATE	START HOURS	END HOURS	FUEL ADDED (L)	TONNES PROCESSED	L/ HR	L/ TONNE
Example	1000	1010	350	1800	35	0.19

Performance Analysis

Trend Analysis

- Plot L/tonne weekly for 3+ months
- Identify baseline (average of best 50% of weeks)
- Flag weeks exceeding baseline by >15%
- Investigate causes of deviations

Deviation Investigation

DEVIATION PATTERN	PROBABLE CAUSE	INVESTIGATION
Sudden increase	Maintenance issue, operator change	Check air filter, interview operators
Gradual increase	Component wear, parameter drift	Review maintenance records, check settings
High L/hr, normal L/t	High production efficiency	Positive—document practices
Normal L/hr, high L/t	Low production rate	Investigate feeding, downtime

DEVIATION PATTERN	PROBABLE CAUSE	INVESTIGATION
High idle percentage	Operational inefficiency	Review shift coordination

Fleet Comparison

Comparing Similar Equipment

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Variance Analysis:
- Equipment A: 0.18 L/tonne (baseline)
- Equipment B: 0.22 L/tonne
- Difference: 22% higher consumption

Investigation focus:
- Operator practices
- Maintenance condition
- Application differences
- Feed material variation
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Actionable Comparisons

COMPARISON FINDING	ACTION	EXPECTED IMPROVEMENT
Best operator 15% below average	Training program from best practices	5-10% fleet improvement
Older equipment 20% higher	Targeted maintenance/overhaul	10-15% reduction
Site A consistently better	Study site practices	Replicate improvements

Improvement Tracking

Measuring Improvement Impact

1. Establish baseline (4+ weeks data)
2. Implement improvement
3. Measure post-implementation (4+ weeks)

4. Calculate difference and validate statistically
5. Document and share results

Example ROI Calculation

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Improvement: Air filter maintenance program

Baseline: 0.22 L/tonne
After: 0.19 L/tonne
Improvement: 13.6%

Annual production: 500,000 tonnes
Fuel savings: 15,000 litres
Cost savings: ₹13.5 lakhs at ₹90/L

Program cost: ₹50,000
ROI: 27x return on investment
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Reporting Framework

Weekly Report

- Total fuel consumed
- Total tonnes processed
- L/tonne for week
- Comparison to baseline
- Notable events affecting consumption

Monthly Report

- Trend chart (L/tonne over 12 weeks)
- Fleet comparison table
- Cost analysis
- Improvement initiatives status
- Recommendations

Conclusion

Fuel benchmarking converts diesel from an uncontrolled cost into a managed parameter. Establish metrics, collect data consistently, analyze trends, and compare across fleet and industry standards. The plants that benchmark fuel consumption systematically identify 10-25% savings opportunities and track improvement initiatives to verified results. What gets measured gets managed—and fuel deserves management attention given its impact on operating costs.

Topics: #Fuel Efficiency #Mobile Crusher #Operating Costs

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