

InTenZ Metallurgical Melting & Smelting Infrastructure

Energy Intensity Linear Regression Audit — 4-Inch Multi-Burner Aluminum Furnace



1. Metallurgical Infrastructure Framework

Details the statistical energy intensity evaluation of the InTenZ gas architecture integrated onto a brand-new high-capacity metallurgical melting line.

- **Burner Array Specs:** Configured with 4-inch main burner networks (DN100 equivalents) and 1-inch auxiliary pilot flame sustainers (DN25 equivalents).



2. Statistical Energy Intensity & Linear Regression Matrix

Linear mathematical modeling equations reveal a steep efficiency curve shift from baseline ($y = -0.92x$) to optimized performance ($y = -1.00x$).

Operational Metric	Pre-Treatment Linear Baseline Curve	InTenZ™ Performance Curve	Net Technical Outcome / Savings
Systemic Energy Intensity	$y = -0.92x + 138.48$	$y = -1.00x + 136.48$	10.0% Mean Systemic Savings. Verified stable 10.0% energy intensity compression across smelting runs.

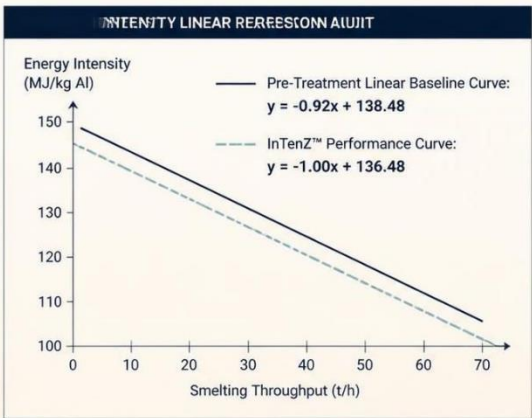
InTenZ Industrial Fluid & Gas Systems — Performance Report

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10.0%
Mean Systemic Savings

Verified stable 10.0% energy intensity compression across smelting runs.



SYSTEMIC ENERGY INTENSITY

Baseline
(Pre-Treatment)



Optimized
(InTenZ™)



Inline physical gas conditioning delivers an additional 10% operating margin bump even on newly commissioned lines.



Burner Array Specs:
4-inch main burner networks (DN100 equivalents) and 1-inch auxiliary pilot flame sustainers (DN25 equivalents).

3. US Smelting Regulatory Alignment

- **Clean Air Act Title V Limits:** Shrinking aggregate thermal intensity preserves air operating permits by reducing criteria pollutant volumes.

4. B2B Commercial Value Proposition

- **State-of-the-Art Optimization:** Proves that inline physical gas conditioning delivers an additional 10% operating margin bump even on newly commissioned lines.

Technical Notes & Asset Protection: This document summarizes real-world operational performance data compiled and verified by independent technical field engineers. All underlying asset identifiers have been anonymized to protect proprietary operating metrics under standard compliance guidelines.