

BUELE CAPITAL

BUSINESS & INVESTMENT S.A.S.

TIER 2

Load Profile & Energy Efficiency Assessment

Business optimization based on operational data

EL ELÉCTRICO

Industrial Electrical Financial Risk Analysis

Public anonymized case study

Prepared for demonstration purposes

1. Executive Summary

This TIER 2 sample demonstrates a professional remote electrical analysis based on operational data, equipment inventory and electricity bills. It evaluates load behavior, electrical efficiency and specific optimization opportunities in an industrial environment.

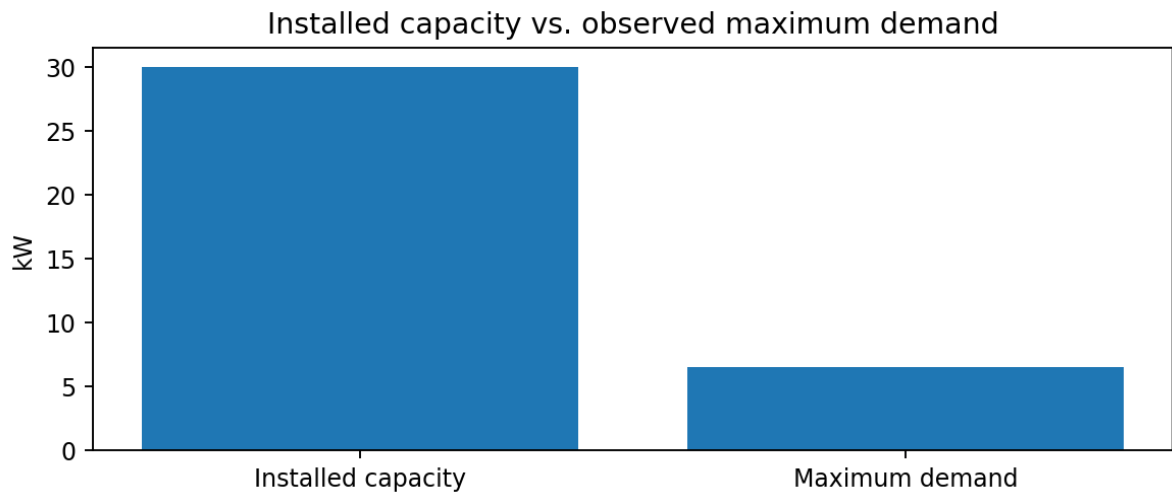
Key indicator	Observed value
Installed motor capacity	≈ 30 kW
Maximum demand recorded	≈ 6-7 kW
Estimated simultaneity factor	≈ 21%
Average power factor	≈ 0.91
Monthly electrical cost baseline	≈ \$135

Assessment at a glance

The facility appears reasonably optimized. TIER 2 therefore focuses on quantifying operational opportunities, improving monitoring discipline, preventing avoidable costs and establishing a structured implementation roadmap.

2. Equipment Inventory

Machine / Equipment	Rated Power
Torno Blanco	3 HP
Torno Pinacho	5 HP
Torno D500	10 HP
Torno Geminis	15 HP
Fresadora	5 HP
Small VFD Lathes (2)	1.5 HP each

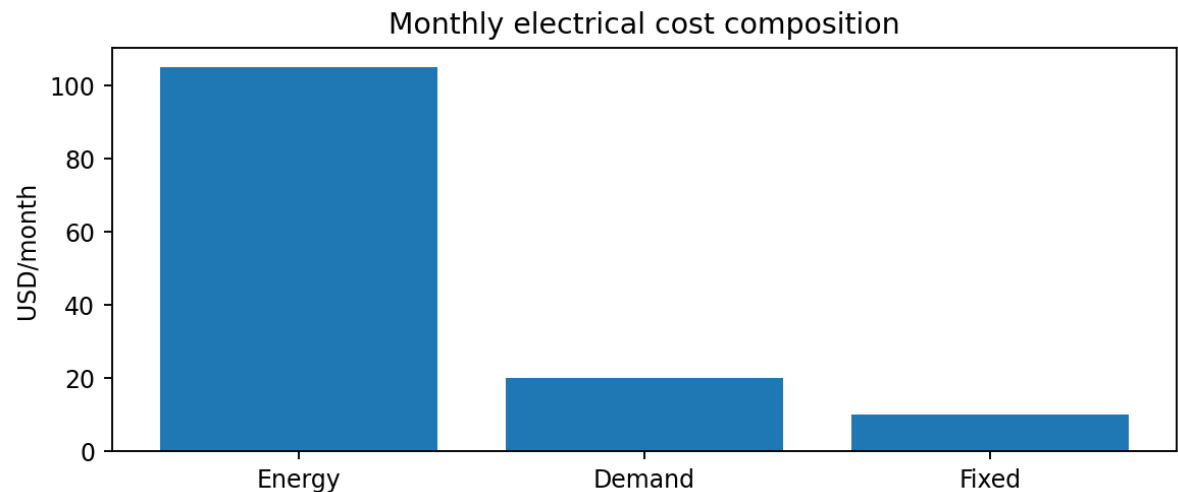


Installed capacity substantially exceeds observed maximum demand, consistent with sequential rather than simultaneous machine operation.

3. Load Profile & Energy Performance

Metric	Facility	Reference	Assessment
kWh per kW installed	20.5	15-30	Normal
Simultaneity factor	21%	15-30%	Typical for job-shop
Peak / average ratio	1.4x	1.3-1.8x	Well-balanced
Monthly variation	±8%	±10-15%	Very stable
Power factor	0.91	0.85-0.95	Good performance

4. Financial Analysis

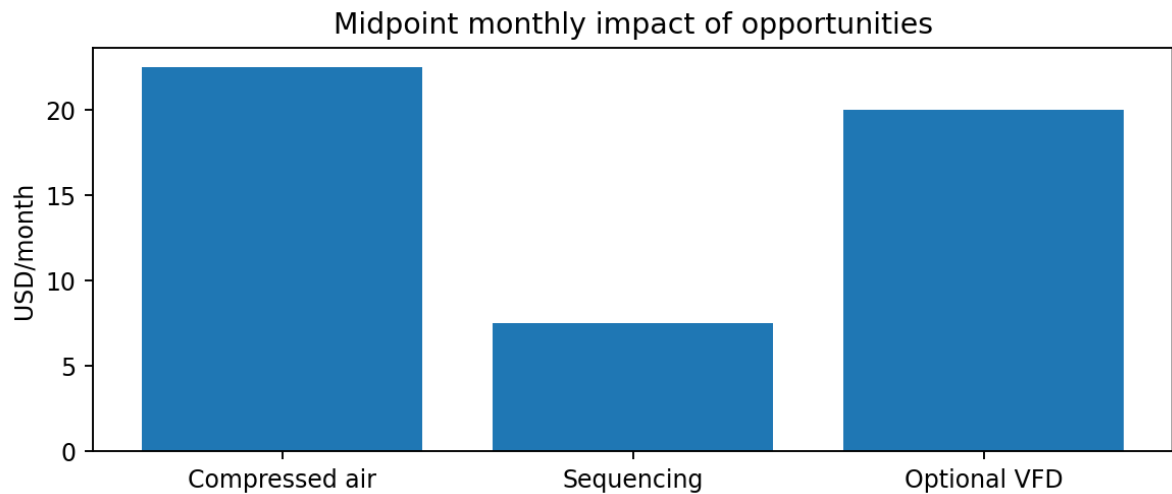


Component	Monthly	Annual	Share
Energy consumption	\$105	\$1,260	78%
Demand charges	\$20	\$240	15%
Fixed / services	\$10	\$120	7%
TOTAL	\$135	\$1,620	100%

Documented historical improvement

The case records automatic correction through a capacitor bank, eliminating recurring power-factor penalties previously estimated at \$18-22 per month. Current power factor is reported between 0.87 and 0.95.

5. Quantified Optimization Opportunities



Priority	Opportunity	Monthly impact	Investment
High	Compressed-air assessment	\$15-30*	\$0-50
High	PF monitoring	Preventive	\$0
Medium	Start sequencing	\$5-10	\$0
Low	VFD on large motor	\$15-25	\$800-1,200

* Conditional on detecting and repairing leaks

The analysis does not force a major intervention when the data do not justify one. Opportunities are prioritized by evidence, investment, impact and payback horizon.

6. Operational Logging & Monitoring

Data	Purpose	Frequency
Date and operator	Traceability	Daily
Machines used	Load profile	Daily
Operating hours	Utilization	Daily
Compressor runtime	Leak indicator	Daily
Electrical anomalies	Early detection	As observed
Protection trips	Safety / overload	As observed
Overheating	Maintenance	As observed

7. Recommended Roadmap

This week: implement operator logging, start-sequencing discipline and verify the capacitor bank.

30 days: monitor the compressor, review data, repair leaks if present and monitor PF.

3-6 months: analyze accumulated history and reassess opportunities.

6-12 months: reconsider a VFD if motor replacement, modernization or operational value justifies it.

8. Final Assessment

The workshop electrical system in this sample case appears stable and reasonably optimized. Based on the available data, no high-impact savings intervention was identified. The primary value of TIER 2 is the combination of quantified opportunities, operational monitoring, preventive risk reduction and a staged implementation plan.

Core value proposition

TIER 2 converts electricity bills, equipment information and operational observations into a structured technical-financial assessment: what the facility is doing, where realistic opportunities exist, what they may cost, what impact is expected and what should be monitored next.

This document is a consolidated sample. Figures and recommendations belong to the case shown and do not constitute guaranteed results for another facility.