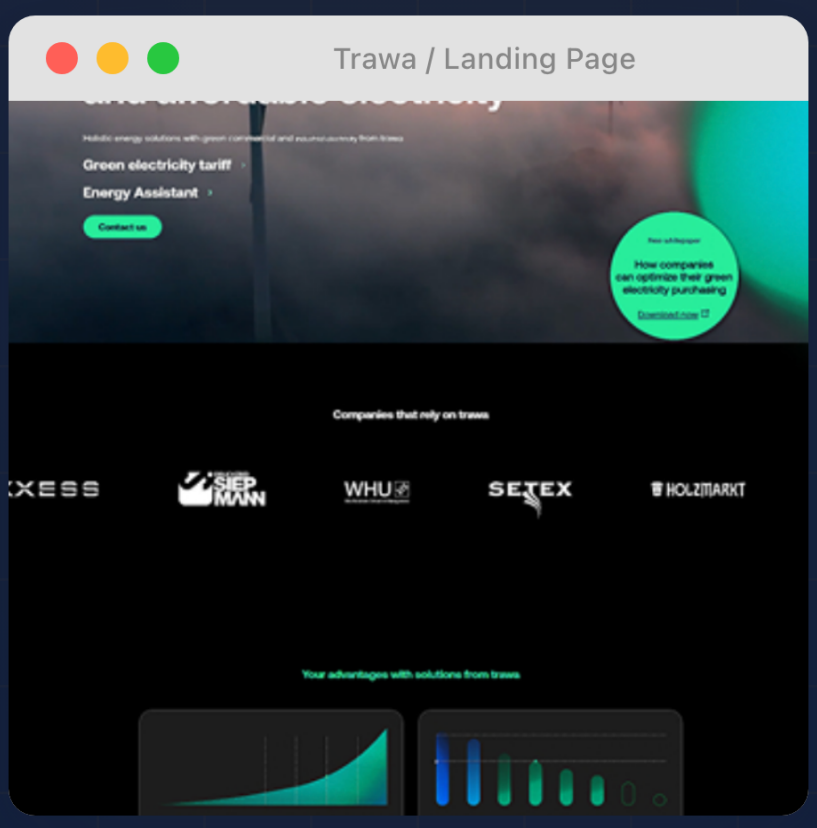
DIVESCALE CASE STUDY · 2026

React | Node.js | AWS IoT

ENERGY MANAGEMENT PLATFORM

Trawa

Intelligent energy procurement and consumption analytics for businesses. Transparent pricing, real-time monitoring, and cost optimization without capital expenditure.



CLIENT
Energy Technology Company

DOMAIN
Energy Management / Procurement

100% Green Energy

CHAPTER 01 · THE PROBLEM

The Energy Procurement Gap

Businesses with significant electricity consumption face a structural disadvantage. Energy markets are opaque, prices fluctuate without warning, and procurement expertise is concentrated in large corporations with dedicated teams. Small and mid-sized companies pay inflated rates, lack visibility into their consumption patterns, and miss opportunities to optimize costs through timing, storage, and direct producer agreements.

1

Unpredictable Costs

Energy prices swing without transparency. Companies sign contracts blindly, then face bills that deviate significantly from forecasts.

2

No Consumption Insight

Without systematic monitoring, peak loads go unnoticed, waste accumulates, and there is no basis for data-driven decisions.

3

Complex Procurement

Direct access to renewable producers and power purchase agreements requires specialized teams that most companies cannot afford.

30%
Potential annual savings

60 min
Until final offer

0 EUR
Capital expenditure

CHAPTER 02

The Platform In Detail

Divescale built Trawa as a unified energy management platform that closes the gap between electricity markets and business operations. It combines procurement, analytics, storage, and intelligent control in one system.

- Procure
- Analyze
- Store
- Control

REACT · NODE.JS · TYPESCRIPT · PYTHON · AWS IOT · MQTT · D3 · POSTGRESQL / TIMESCALEDB · DOCKER

FEATURE 01 · PROCUREMENT

Green Energy Procurement

Before Trawa, businesses purchased electricity through intermediaries with opaque pricing and no guarantee of origin. Direct access to renewable producers was reserved for large corporations with specialized procurement teams.

BEFORE

Businesses purchased electricity through intermediaries with opaque pricing and no guarantee of origin.

PAIN

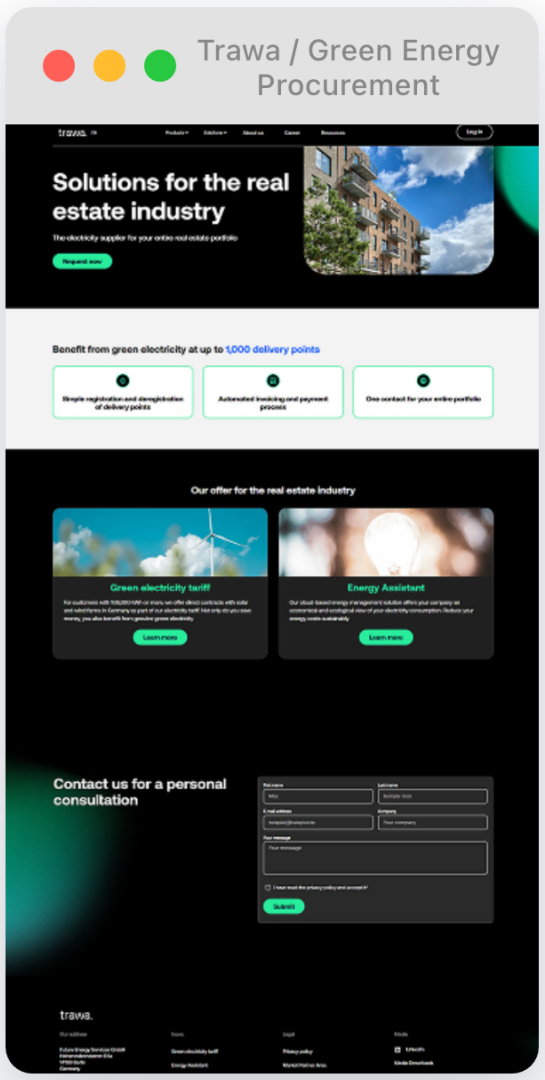
Direct access to renewable producers was reserved for large corporations with specialized procurement teams.

SOLUTION

Trawa provides 100% certified green electricity with transparent pricing and direct producer access via PPAs.

OUTCOME

Stable prices, sustainable supply, and a 60-minute path from initial conversation to final offer.



FEATURE 02 · ANALYTICS

Consumption Analytics

Companies received monthly bills with aggregate totals but no breakdown by time, location, or usage type. Peak loads went unnoticed, waste accumulated, and there was no basis for forecasting or optimization.

BEFORE

Monthly bills with aggregate totals but no breakdown by time, location, or usage type.

PAIN

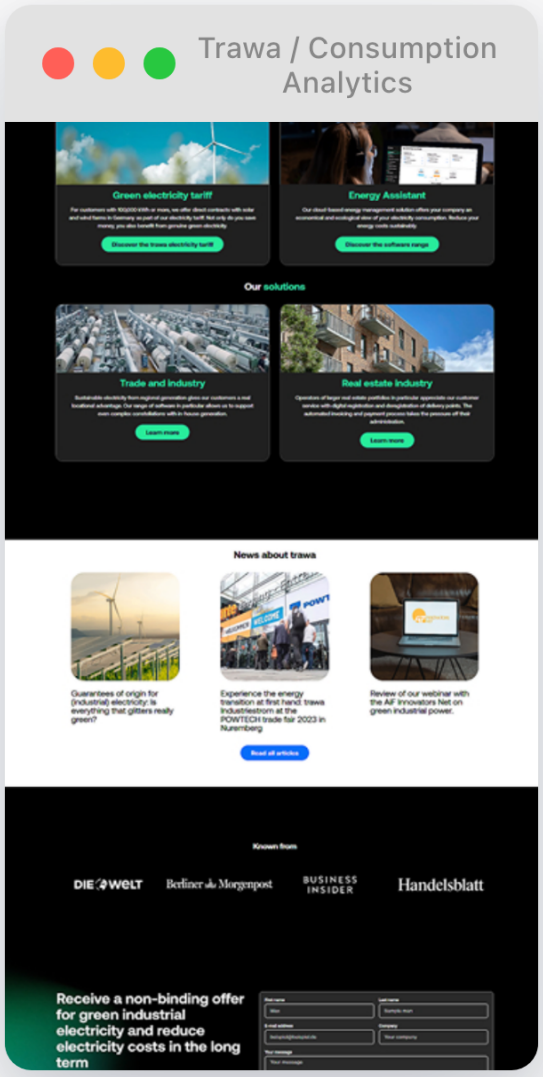
Peak loads went unnoticed, waste accumulated, and there was no basis for forecasting.

SOLUTION

Real-time dashboards with intelligent analysis, automated reports, and consumption forecasting.

OUTCOME

Data-driven decisions replace guesswork. Peak load avoidance and automated reporting reduce manual overhead.



FEATURE 03 · STORAGE

Battery Storage Solutions

Surplus energy was fed back to the grid at unfavorable rates. Peak demand triggered expensive grid fees. Self-consumption remained low because there was no mechanism to store and redistribute power internally.

BEFORE

Surplus energy was fed back to the grid at unfavorable rates. Peak demand triggered expensive grid fees.

PAIN

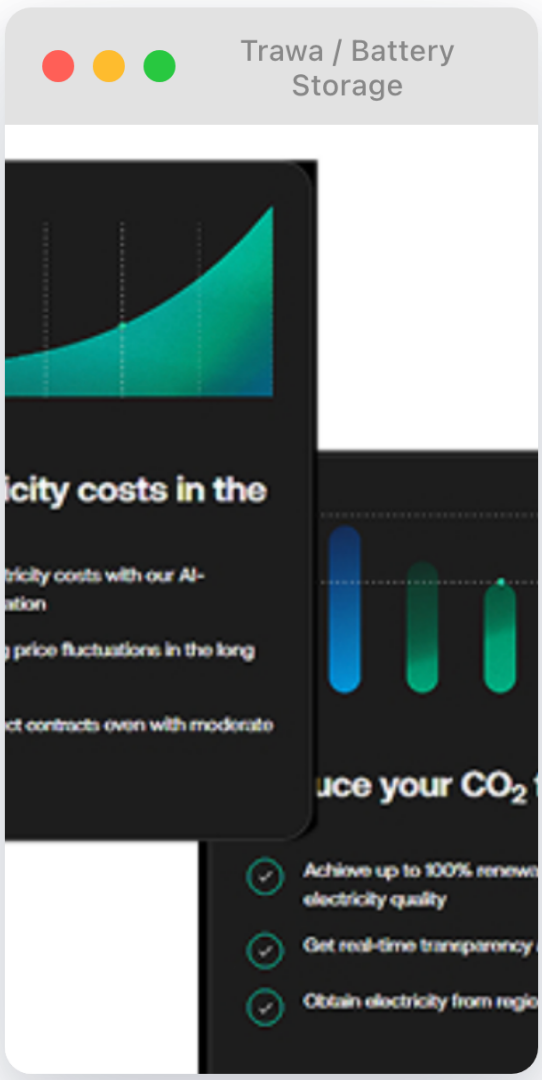
Self-consumption remained low because there was no mechanism to store and redistribute power internally.

SOLUTION

Integrated battery storage stores surplus energy, flattens peak loads, and reduces grid fees.

OUTCOME

Maximized self-consumption, increased independence from the grid, and lower total cost of ownership.



FEATURE 04 · CONTROL

Intelligent Asset Control

CHP units, batteries, charging stations, and cooling systems operated independently. Each device made local decisions without awareness of the broader energy demand or grid situation. The result was suboptimal load distribution and missed arbitrage opportunities.

BEFORE

CHP units, batteries, charging stations, and cooling systems operated independently with local decisions.

PAIN

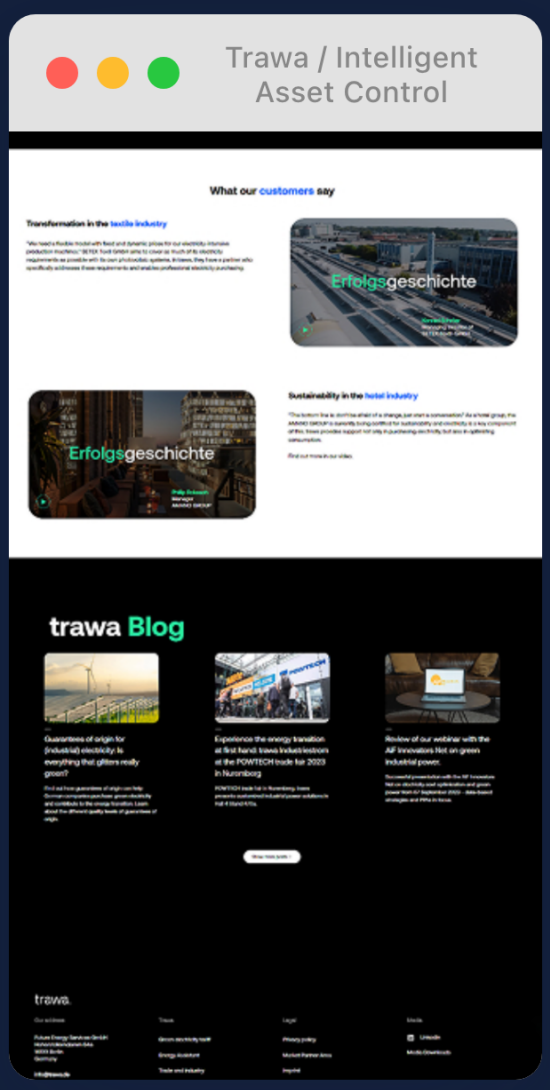
Suboptimal load distribution and missed arbitrage opportunities because assets ignored the broader grid.

SOLUTION

Real-time coordination of all assets based on energy demand, grid signals, and price forecasts.

OUTCOME

Assets operate as a unified fleet. Load shifting, peak shaving, and price arbitrage become automatic.



Measurable Operational Change

Trawa delivers quantifiable outcomes across cost, speed, and sustainability.
The metrics below reflect verified customer results and platform benchmarks.

COST REDUCTION
10-30%
Average electricity savings

VERIFIED CASE
23%
Jakob Gerhardt (6 months)

SPEED TO OFFER
60 min
After 2 conversations

METRIC	BEFORE	AFTER	IMPROVEMENT
Annual electricity cost (typical)	**Baseline**	**Optimized mix**	**>10% savings**
Annual electricity cost (industry 250K+ kWh)	**Standard rates**	**PPA-optimized**	**Up to 30%**
Verified customer (Jakob Gerhardt)	**Baseline**	**6 months**	**23% lower costs**
Time to final offer	**2-4 weeks**	**60 min**	**After 2 conversations**
Capital expenditure	**Upfront investment**	**0 EUR**	**No additional effort**
Battery arbitrage (10 kWh)	**No storage**	**Dynamic tariff**	**~€620/year**
Per kWh usable capacity	**No value**	**Arbitrage return**	**~€62/year**
C&I storage payback	**5-7 years typical**	**3-5 years**	**0 EUR capex**
Market fluctuation protection	**No protection**	**80%**	**Without dedicated team**
Green energy share	**Unverified**	**100%**	**Certified**

TECHNOLOGY

Stack and Architecture

A modern stack built for real-time data ingestion, time-series analytics, and scalable energy orchestration. Every component is selected for operational maturity and low-latency performance.

- React
- Node.js
- TypeScript
- Python
- AWS IoT
- MQTT
- D3 / Chart.js
- PostgreSQL
- TimescaleDB
- Docker

BUSINESS IMPACT

Energy Cost Is Not Fixed.

Trawa turns energy from an opaque, unmanaged expense into a transparent, optimized operating lever. Businesses gain control over procurement, consumption, storage, and asset coordination without capital investment.

23%	60 min	100%	0€
COST REDUCTION	TIME TO OFFER	GREEN ENERGY	CAPITAL EXPENDITURE