Building materials / QM-02

Energy consumption and cost per tonne

Measure gas, electricity and downtime by kiln, mill and shift to make the cost per tonne visible.

The market sets the price. The plant sets the cost.

In a market where capacity exceeds demand, a plant cannot control its selling price. What remains in its hands is the gas, electricity and downtime spent per tonne. These cannot be managed without measurement.

Conceptual architecture. No operating results are shown.

01 Measurement	Gas meters · Electricity meters · Production volume
02 Linking	Kiln and mill · Shift · Product type
03 Analysis	m³/t and kWh/t · Downtime · Best shift
04 Management	Cost dashboard · Audit recommendations · Monthly report

At a glance

46% — According to Anhor.uz, cement capacity utilisation did not exceed this level in 2024. [1]

34 — Large enterprises that have undergone an energy audit; they account for roughly 65% of the sector's electricity consumption. [2]

7% / 4% — Interest compensation on loans for replacing energy-intensive kilns and mills (UZS / foreign currency). [2]

November 2026

01 Evidence and context

Who it is for

CEO	Cost per tonne and profitability.
Chief Engineer	Kiln and mill operating modes.
Chief Power Engineer	Gas and electricity consumption.
CFO	Energy costs and loans.

Facts and global practice

Anhor.uz (Uzpromstroymateriallar)

Design capacity of cement plants is 40.5 million t; output in 2024 was 17.9 million t; capacity utilisation did not exceed 46%. [1]

Anhor.uz

The exchange price fell to approximately $47 per tonne in January 2026. [1]

Modernisation programme

Energy audits have been carried out at 34 large enterprises, saving 240 million kWh last year; audits are planned at another 38 enterprises. [2]

Presidential decree

From 2026, UZS 100 billion will be allocated annually for AI, digital systems, automation and energy audits in building materials production. [3]

Ministry of Energy

In winter 2025–2026, the gas shortfall reached approximately 6 million m³ per day. [4]

Ministry of Energy

A brick plant was disconnected from gas during the winter restriction period; a criminal case was opened over illegal reconnection. [5]

Energy costs and supply risks persist. Meanwhile, the state is funding energy audits and digitalisation — a good time to introduce a measurement system.

02 Where the losses occur

Single plant meter

Gas and electricity are a single figure for the whole plant, not broken down by area.

Shifts are invisible

The same product consumes different amounts on different shifts, and the cause is not identified.

Downtime is not accounted for

Fuel consumed when a kiln stops and is restarted is not counted separately.

The audit stays on paper

Whether energy audit recommendations are implemented and deliver results is not tracked.

How the loss is calculated

Specific consumption	(actual m³/t – best-shift m³/t) × tonnes × gas price per m³
Downtime	downtime hours × hourly output (t/h) × margin per tonne
Electricity	(actual kWh/t – norm kWh/t) × tonnes × tariff per kWh
Restarts	number of restarts × consumption per restart

Illustrative calculations; establish the baseline, units and rates during the site assessment. Avoid counting the same loss twice.

03 Solution architecture

Consumption for every tonne

Data is collected automatically from meters and linked to production volume. The result: cost per tonne by kiln, mill and shift.

01 Measurement

Gas meters · Electricity meters · Production volume

02 Linking

Kiln and mill · Shift · Product type

03 Analysis

m³/t and kWh/t · Downtime · Best shift

04 Management

Cost dashboard · Audit recommendations · Monthly report

Modules

Meter data collection	Existing and new meters (via a partner)	Engineering capability
Cost dashboard	By shift, day and tonne	Engineering capability
Tracking energy audit recommendations	Action, deadline, result	Engineering capability
1C integration	Production and cost data	Commercially available

Each module has a readiness status. Third-party results are not a forecast for your site.

04 Implementation and measurement

01 Energy audit

Meters, production areas and available data are reviewed.

Output: measurement map.

02 Pilot on one line

One kiln or mill for 60 days.

Output: consumption by shift.

03 Scale-up

All production areas.

Output: plant-wide cost per tonne.

04 Subscription

Monthly report, recommendation tracking.

Output: consumption trend.

What is measured

Gas consumption	m³ per tonne, by kiln	Meter
Electricity consumption	kWh per tonne, by area	Meter
Downtime	Hours and cause	Log
Cost per tonne	Energy component, UZS/t	System, 1C
Audit actions	Completed / planned	System

What is needed to start

- Chief Power Engineer or responsible person
- List of meters
- Energy audit report (if available)
- Production report

05 Readiness checklist and next step

01 Is gas consumption measured separately for each kiln?	Yes / No / Unknown
02 Is electricity consumption visible by production area?	Yes / No / Unknown
03 Is consumption per tonne calculated every shift?	Yes / No / Unknown
04 Are the best and worst shifts known?	Yes / No / Unknown
05 Is downtime recorded with its cause?	Yes / No / Unknown
06 Is restart consumption calculated?	Yes / No / Unknown
07 Is implementation of energy audit recommendations tracked?	Yes / No / Unknown
08 Is cost per tonne visible without waiting for month-end?	Yes / No / Unknown
09 Has it been calculated in advance which line would stop under a gas restriction?	Yes / No / Unknown
10 Is there a person responsible for energy?	Yes / No / Unknown

What we do not promise

- Exact timeline and price without an audit
- Exchange rules and government decisions
- Repair of plant equipment
- Unmeasured results or savings
- Gas supply
- Energy tariff

Energy audit

We review meters and production data and show where cost per tonne can be measured.

- Measurement map
- Pilot plan for one line
- Implementation fee and monthly subscription

Scope, price and schedule are agreed after reviewing the site and its data.

06 Sources and scope

[1] Anhor.uz, «Xitoy sement buumi: soha inqiroz yoqasida» (China's cement boom: the sector on the brink of crisis; based on Uzpromstroymateriallar and statistics data), 04.02.2026.

nhor.uz

[2] Meeting on the modernisation programme for building materials enterprises. anhor.uz, 2026.

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[3] Presidential decree on developing the building materials industry (PQ-365). spot.uz, 03.12.2025; buxgalter.uz.

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[4] Ministry of Energy data: winter 2025–2026 gas restrictions. spot.uz, 26.02.2026.

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[5] Ministry of Energy statement: illegal gas connection by a brick plant. anhor.uz.

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