JK Cement: an AWE evidence assessment

FY 2025–26 annual report | Research cut-off: 30 September 2026

Assessment status: completed desk review; overall AWE score withheld. This is an assessment of disclosed environmental performance within the report's stated boundary. It is not a plant inspection, a regulatory clearance, or a measurement of attributable community harm.

1. What the evidence says

JK Cement reports substantial environmental initiatives, but the latest year does not show improvement across all outcomes. Gross Scope 1 and 2 emissions rose 20.4%, while their reported production intensity worsened 1.8%. Water consumption rose 11.9%, although groundwater extraction fell 18.3%. Waste generation fell 8.2%, but the disclosed recovery and disposal figures need reconciliation before a circularity score can be awarded.

The defensible conclusion is **mixed environmental performance, with important unresolved measurement questions**. Neither "environmental leader" nor "environmental destroyer" follows from this annual report alone. AWE should make the improvement and the remaining burden visible together.

The existing local AWE prototype contains a hard-coded JK Cement performance score of **74.2**, alongside hard-coded pillar and confidence values. Those values are not a calculation from this report and must not be represented as the result of this assessment. This review does not modify the website or prototype.

This review produced **47 evidence observations, 18 issue records and 39 PDF-to-exchange-XML numeric comparisons**. Of those comparisons, 34 matched exactly; five involved water totals or waste precision. Matching issuer submissions improves transcription confidence; it does not independently establish environmental truth.

2. Source, period and boundary

The supplied file is the company's FY 2025–26 integrated annual report. A fresh download from JK Cement's official annual-report page was byte-for-byte identical: 19,674,707 bytes; SHA-256 cf73bf50131fbe6014edad43532e3933ee616d671d85f93bac687d08adbda0d9.

The report contains 245 PDF spreads. Page references below are **printed report pages**, not the PDF viewer's page counter. For example, printed pages 230–231 appear on PDF page 117.

The environmental and social reporting boundary comprises **13 established manufacturing units**, with explicit exclusions for Ampavalli Integrated Unit, Choudwar Grinding Unit and Buxar Grinding Unit. The first two were merged during the year; Buxar was commissioned in January 2026. The financial and environmental boundaries therefore cannot be assumed identical. Thirteen out of sixteen sites is a site count, not 81.25% environmental coverage. Excluded units' production, emissions and withdrawals are needed to calculate meaningful coverage. [Printed pp. 2–3, 204, 249]

The assessment uses 1 April 2025–31 March 2026 and the prior-year figures presented in the same report. Historical comparability remains provisional: the report discusses financial recasting and an expanded target boundary. A financial restatement does not automatically restate every ESG metric on the same basis.

3. The research SOP, and what was actually done

Stage	Required procedure	Status in this review
1. Freeze the question	Identify legal entity, period, consolidation boundary and assessment purpose.	Completed; restricted 13-unit environmental boundary recorded.
2. Authenticate sources	Retain original files, URLs, dates, hashes and version history.	Official PDF matched upload; official NSE XML matched retained filing.
3. Define the metric dictionary	Fix units, numerator, denominator, direction and exclusions before scoring.	Key definitions checked; flaws in existing AWE dictionary identified.
4. Extract evidence	Record facts with precise page locations and preserve original precision.	47 observations recorded; narrative claims separated from measurements.
5. Reconcile internally	Recalculate totals, ratios, intensities, balances and year-on-year changes.	Completed for selected material metrics; unresolved differences logged.
6. Triangulate submissions	Compare annual report, BRSR/XML and other primary disclosures.	39 numeric comparisons completed. These remain issuer-origin evidence.
7. Map assurance	Read the signed opinion, KPI schedule, boundary, level and exclusions.	Signed TÜV India statement visually reviewed, printed pp. 245–253.
8. Verify externally	Inspect permits, regulator records, meter/lab evidence, energy instruments and basin data.	Not completed; specific evidence requests listed below.
9. Calculate and challenge	Apply a frozen methodology; test comparability, missingness and sensitivity.	Target diagnostics calculated; full composite fails publication gates.
10. Review and publish	Independent reviewer checks calculations; obtain factual responses; publish sources and revisions.	Research package ready for review; no issuer response or independent second review obtained.

These steps are sequential gates. A researcher should not fill an evidence gap with a favourable narrative, and should not turn an unresolved discrepancy into a finding of misconduct.

4. What the researcher records

Each evidence row needs: observation ID; legal entity; pillar; metric; reporting period; original value and unit; prior-year value; physical denominator; organisational and site boundary; source URL and file hash; printed and PDF page; relevant footnote; extraction method; assurance scope; verification status; calculation; open issue; reviewer and revision date.

The accompanying register captures the values, units, boundaries, page locations, source hash, XML concept where available and comparison notes. The issue register records questions separately. A production AWE database should additionally make assurance status, reviewer identity and resolution history mandatory structured fields.

Keep three distinct records: **what the company declares**, **what the researcher calculates**, and **what independent evidence establishes**. A reported ratio should never be silently overwritten by a reconstructed ratio. Both belong in the record until the difference is resolved.

5. Results: Air, Water and Earth

Air: absolute burden and efficiency both matter

Indicator	FY 2025–26	FY 2024–25	Change / interpretation
Gross Scope 1	12,725,657 tCO2e	10,472,587 tCO2e	+21.5%
Scope 2, BRSR basis	392,400 tCO2e	420,227 tCO2e	−6.6%
Gross Scope 1 + 2, calculated	13,118,057 tCO2e	10,892,814 tCO2e	+20.4%
Combined physical intensity	575 kgCO2e/t cementitious	565 kgCO2e/t	+1.8%; worse
Total energy	55,303,031 GJ	45,663,365 GJ	+21.1%
Energy intensity	2.42 GJ/t	2.37 GJ/t	+2.1%; worse
NOx	13,305 t	11,182 t	+19.0%
Particulate matter	872 t	778 t	+12.1%
SO2	1,138 t	1,583 t	−28.1%

Sources: printed pp. 229–231. Cementitious production rose from 19.28 to 22.82 million tonnes (+18.4%, p. 156). Production growth helps contextualise emissions growth, but does not make the additional emissions disappear. A full attribution of growth to production, mix, acquisitions or efficiency requires a consistent-boundary bridge.

Scope 3 rose from 1,452,883 to 2,319,387 tCO2e (+59.6%, p. 237). Confirm category coverage and calculation changes before treating this entirely as operational deterioration.

Two important definition checks prevent a misleading score:

- The 528 kg/t “net direct” CO2 figure excludes items included in the gross combined metric. It must not be compared with a gross Scope 1+2 target as if they were identical. [p. 157]

- Location-based Scope 2 is separately disclosed as 552,686 tCO2, versus 392,400 in BRSR. The difference is 160,286 tonnes. Obtain an accounting bridge; do not assume the smaller value is market-based merely because it is smaller. [pp. 124, 231]

The reported 51.8% green-power mix includes waste-heat recovery. It is not the share of all energy supplied by solar and wind. Company-labelled renewable energy in the energy table is approximately 5.39% of total energy, and that classification itself includes waste-heat recovery. The electricity-only table gives approximately 57.79%, so a full electricity balance is needed to bridge it to 51.8%. [pp. 122, 156, 229]

Water: progress in one source does not establish basin benefit

Indicator	FY 2025–26	FY 2024–25	Change / interpretation
Withdrawal	3,873,116 kL	3,251,598 kL	+19.1%
Consumption	3,235,683 kL	2,891,949 kL	+11.9%
Groundwater withdrawal	862,481 kL	1,055,735 kL	−18.3%
Reported water intensity	0.14 kL/t	0.17 kL/t	Reported improvement needs denominator reconciliation
Recycled/reused water	326 ML	410 ML	−20.5%

Indicator	FY 2025–26	FY 2024–25	Change / interpretation
Reported water positivity	4.9 times	4.7 times	Claim recorded; independent calculation not reproduced

Sources: printed pp. 158, 230. Approximately 55.8% of reported withdrawals occur at the three locations the company identifies as water-stressed. This is based on disclosed site withdrawals, not an independently verified basin assessment. [pp. 235–237]

The most consequential issue is the prior-year intensity denominator. Dividing 2,891,949 kL by the disclosed 19.28 million tonnes gives approximately **0.150**, rather than 0.17. Current-year arithmetic gives 0.142, consistent with rounded 0.14. Using those disclosed volumes suggests approximately **5.5%** improvement, compared with **17.6%** implied by the reported rounded intensities. Neither is adopted as the verified trend until the exact denominator and boundary are reconciled. [pp. 156, 230]

The current-year withdrawal less consumption less discharge leaves a 199,784 kL residual. Request storage changes and accounting definitions before interpreting it. Tiny withdrawal discrepancies of 1 kL currently and 18 kL previously are also logged; they do not warrant an invented performance penalty.

The report describes 437,649 kL of discharge as excess fresh mine-pit seepage/rainwater, while claiming zero liquid discharge for plant wastewater. Those are different flows. This is not, by itself, evidence of untreated industrial effluent or a contradiction. Water-quality tests and applicable discharge conditions are required to assess environmental consequences. [pp. 158, 230–231]

Water positivity needs location, seasonality, recharge method, additionality and uncertainty. A recharge claim elsewhere cannot automatically offset extraction in a stressed aquifer. The assurer specifically recommends independent external assurance of the water-positivity calculation. Consequently, 4.9 times is not admitted as a verified environmental benefit in this assessment. [p. 251]

Earth: distinguish material substitution, waste flows and restoration

Reported waste generation fell from 10,540 to 9,678 tonnes. However, 10,014 tonnes are reported recovered: a naive recovery/generation ratio is **103.47%**. This may reflect stock changes or different flow boundaries. It is not a valid basis for awarding a capped 100% recovery score. Further, 7.76 tonnes appear as non-hazardous disposal in one table and “other recovery” in another. Dashes in disposal fields cannot automatically be read as zero. [pp. 159, 232–233]

The disclosed clinker factor of 65.35% is consistent with **clinker consumed / cement produced**: 14,515,633 / 22,210,000 = 65.36%. Using clinker produced instead gives 68.12%, answering a different question. This is a concrete correction needed in the existing AWE indicator dictionary. [pp. 131, 156]

Fly ash plus slag inputs total approximately 4.38 million tonnes. These represent material substitution; they are not equivalent to the company’s own waste recovery. Alternative fuels received for co-processing must likewise remain separate from own-waste generation. Limestone consumption rose approximately 20.1%, from 18.28 to 21.96 million tonnes. [pp. 156, 238]

Cumulative tree counts, a biodiversity park and land holdings are activity or area disclosures. They do not establish survival, ecological condition, avoided habitat loss or net restoration. A complete comparable disturbed-versus-restored-area outcome series was not located in the environmental sections reviewed. No “nature-positive” score is awarded from these claims alone.

6. What assurance does—and does not—establish

TÜV India's signed statement is dated 22 June 2026. It provides **reasonable assurance for specified BRSR Core attributes** and **limited assurance for selected GRI disclosures**. The schedule includes core GHG, energy, water and waste measures, with selected material, Scope 3 and biodiversity disclosures under the GRI engagement. [pp. 245–253]

This provides substantially stronger evidence than an unsupported marketing statement. It does not mean every statement in the annual report was independently verified. The engagement excludes forward-looking information and does not endorse the effectiveness of strategy or product claims. The cited 5% materiality threshold is not "95% accuracy" or a statistical confidence interval.

Local air-pollutant assurance needs a schedule clarification: the signed selected-GRI schedule does not explicitly list GRI 305-7, although the XML section indicates limited assurance. Do not assume universal coverage. Site-visit and remote-review lists also overlap; they should not be added as unique sites.

This review authenticated the publisher's document and inspected the assurance statement. It did not contact the assurer, authenticate the signature independently, inspect original meter data or reproduce the assurer's sampling.

7. How scoring should work

First, gate the inputs

Every metric receives an admissibility status: usable within a declared boundary; conditional pending reconciliation; company claim only; or unavailable. Missing data is not zero performance. It is also not permission to redistribute weights silently to the company's strongest available metrics.

Before a public score, AWE must freeze a versioned cement methodology: indicator definitions, mandatory indicators, weights, sector benchmarks, trajectory rules, target evaluation and missing-data treatment. Benchmarks must use comparable cement products and boundaries. Avoid selecting a method after seeing which one produces an attractive company score.

The current AWE framework proposes Air 45%, Water 25%, Earth 30%, and within pillars 40% level, 25% trajectory, 20% targets and 15% operations. These are **draft choices**, not a calibrated or validated scoring system. Peer percentiles, exact indicator weights and some scoring bands remain underspecified.

Once those choices are fixed, a possible calculation is:

$$\text{Pillar} = 0.40 \times \text{Level} + 0.25 \times \text{Trajectory} + 0.20 \times \text{Target} + 0.15 \times \text{Operations}$$

$$\text{AWE performance} = 0.45 \times \text{Air} + 0.25 \times \text{Water} + 0.30 \times \text{Earth}$$

Each component needs its own predetermined rule. For a lower-is-better indicator, one transparent rule could map a published good benchmark to 100 and a poor benchmark to zero, with linear interpolation and clipping. The benchmark values must be defensible and published before use. Sector climate pathways should guide cement climate evaluation; a generic cross-sector annual percentage should not be applied indiscriminately.

Air should retain climate and local pollutants as distinct subcomponents. Water should incorporate basin stress and quality, not just litres per tonne. Earth should separately measure virgin-material dependence, waste fate and ecological condition. If AWE wants to claim physical environmental value rather than relative corporate performance, it additionally needs explicit counterfactuals, attribution and valuation assumptions. This annual report does not supply them.

A worked calculation: company-target schedule progress

To demonstrate transparent arithmetic, this review calculates an **exploratory target-schedule diagnostic**, not an overall AWE score. It assumes linear progress from FY 2020 to FY 2030, making expected FY 2026

progress 6/10, or 60%. This convention is an analyst assumption, not proof that the company committed to a linear annual trajectory.

Progress = (current − baseline) / (target − baseline)

Diagnostic points = 100 × min(1, max(0, progress / 0.60))

For thermal substitution: (11.97 − 6) / (35 − 6) = 20.59% of the intended change; 20.59% / 60% × 100 = **34.3 points**. That means behind the assumed straight-line schedule, not 34.3% environmentally responsible.

Target metric	FY 2020 baseline	FY 2026	FY 2030 target	Diagnostic points	Treatment
Gross combined GHG intensity, kg/t	680	575	532	100.0	Conditional on accounting/boundary bridge
Green-power share, %	19	51.8	75	97.6	Conditional on electricity balance
Thermal substitution, %	6	11.97	35	34.3	Declared KPI; thermal balance not reproduced
Water positivity, times	3	4.9	5	Not admitted	Arithmetic alone gives 100; verification gate fails

Source: company target table, printed p. 8. A 100-point target diagnostic means at or ahead of this assumed schedule. It does not mean zero impact, an ambitious enough target, climate alignment or independently verified environmental improvement. The combined GHG target diagnostic can be 100 while current-year emissions intensity worsens: long-term progress and latest-year trajectory answer different questions.

These rows are not averaged. They omit local pollution, basin effects, biodiversity and other material outcomes, and some remain conditional.

The actual score decision

Overall AWE performance: withheld. Confidence percentage: not assigned. Weighted coverage: not yet determinable.

This is not a score of zero. It means the evidence and draft methodology do not support a defensible single number. The blocking conditions are uncalibrated benchmarks and indicator rules, incomplete entity coverage, and unresolved inputs that affect water, energy, emissions accounting and waste recovery.

Performance, evidence confidence and coverage should be published separately. Assurance supports evidence quality; it should not add environmental performance points. Confidence should initially be expressed through evidence categories and unresolved issues. A numerical probability requires empirical calibration. Weighted coverage requires fixed metric weights and quantified reporting boundaries, not simply counting populated cells.

8. Verification needed before publication

1. **Boundary bridge:** facility list, exact operating dates, production and environmental totals for the three excluded units, plus consistent prior-year and baseline boundaries.

2. **Carbon and power bridge:** both Scope 2 methods where applicable; electricity purchases, captive generation, exports, certificates, factors and the green-power denominator. Verify the company-specific target validation record directly rather than inferring it from the report.

3. **Water bridge:** exact intensity denominators, source totals by facility, stock/storage adjustments, mine-water flows, consumption definitions and stressed-basin mapping. Resolve Gotan third-party water exceeding the company total.

4. **Water-positivity substantiation:** project-level recharge models, hydrology, seasonality, additionality, maintenance, uncertainty and independent assurance.

5. **Waste bridge:** opening/closing stocks, received waste, transfers, manifests, final treatment destinations and the 7.76-tonne classification difference.

6. **Pollution and compliance verification:** plant-specific consent conditions, regulator monitoring and notices, continuous monitoring records, laboratory reports and relevant adjudicated findings. The issuer's statement of no noncompliance is not an independent clearance. No complete regulator or enforcement search was performed here.

7. **Ecological outcomes:** disturbed and restored area by site, habitat baseline, survival and condition monitoring, with dates and independent review.

8. **Publication review:** a second researcher checks source mapping and formulas; the company receives precise factual questions and a response deadline; unresolved differences remain visible in the published assessment. No questions have been sent externally by this review.

9. Research package and sources

The accompanying workbook contains the evidence register, issue register, PDF/XML comparisons, target formulas and calculated results. The CSV provides reusable evidence rows. Reproducible calculations are retained in the project's research directory. Spreadsheet formulas recalculate when opened in a compatible spreadsheet application; the calculated-results sheet also preserves numeric outputs.

- Primary supplied source: JK Cement FY 2025–26 annual report, authenticated against the official publication.

- Official report: https://www.jkcement.com/wp-content/uploads/2026/06/JK-Cement-AR-2025-2026.pdf

- Annual-report index: https://www.jkcement.com/annual-report/

- NSE BRSR XML: https://nsearchives.nseindia.com/corporate/xbrl/BRSR_532644_296202615025_BRSR_WebXMLFile_20260629_163634111.xml

- Facility compliance publication index, located but not comprehensively verified: https://www.jkcement.com/environmental-compliance/

- Accounting reference for Scope 2 distinctions: https://ghgprotocol.org/scope-2-guidance

- Sector pathway reference, not verification of JK Cement's specific validation: https://sciencebasedtargets.org/sectors/cement

Method version: AWE-JK-DESK-2026-09-30; exploratory target-diagnostic v0.1. Company statements, researcher calculations and verification gaps remain distinct throughout. No causal public-health estimates, monetary environmental valuations or net-positive claims are established by this desk review.