

# LR Independent Review Statement

## Relating to the Protocol for Accounting and Reporting of Avoided GHG Emissions through the Value Chain of Cement and Cement-based Products and the Resulting Avoided GHG Emissions by CO<sub>2</sub> absorption of the cement produced for the fiscal year 2017

This Review Statement has been prepared for Taiheiyo Cement Corporation in accordance with our contract but is intended for the readers of this Report.

### Terms of engagement

Lloyd's Register Quality Assurance (LR) was commissioned by Taiheiyo Cement Corporation ("the Company") to provide independent review of the Protocol for accounting and reporting of avoided GHG emissions through the value chain of cement and cement-based products ("the Protocol") and the resulting avoided GHG emissions by CO<sub>2</sub> absorption of cement produced ("the Report") for the fiscal year 2017, that is, from 01 April 2017 to 31 March 2018. LR also referred to the following international standards and industry guidelines:

- GHG emissions reduction contribution quantification guideline (Ministry of Economy, Trade and Industry, Mar 2018)
- GHG Protocol - Product Life Cycle Accounting and Reporting Standard (WBCSD, 2011)
- Guidelines from the chemical industry for accounting for and reporting greenhouse gas (GHG) emissions avoided along the value chain based on comparative studies (WBCSD and ICCA, Oct 2013)
- Accounting and Reporting Protocol for Avoided Greenhouse Gas Emissions along the Value Chain of Cement-based Products (Lafarge Holcim, Jan 2016), and
- ISO14064-2:2006 Greenhouse gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements.

Our review engagement specifically covered the following:

- reviewing the Protocol and the CO<sub>2</sub> absorption methodology used and developed by the Company as shown in the Appendix, and
- evaluating the avoided GHG emissions for the fiscal year 2017 as calculated based on the Protocol.

LR's responsibility is only to the Company. LR disclaims any liability or responsibility to others as explained in the end footnote. The Company's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of the Company.

### LR's Opinion

Based on LR's approach nothing has come to our attention that would cause us to believe the Company has not, in all material respects:

- met the requirements of the Protocol and the Company's own CO<sub>2</sub> absorption methodology
- referred to above-listed international standards and industry guidelines, and been consistent with available scientific research used by the Company, and
- disclosed reliable data and information as no significant error was detected in the Report.

**Note:** The review engagement, unlike assurance engagements, is based upon the request of and our contract with the Company. In this engagement, there are no existing standards for evaluating the Protocol and the calculation methodology. Therefore, whether the use of the Protocol and the calculation methodology itself would provide an assurance on the accuracy of reported data was not assessed.

### LR's approach

The following tasks though were undertaken as part of the evidence gathering process for this review engagement:

- confirming that there were no significant errors, omissions or mis-statements in the Report
- interviewing with the key persons responsible for preparing the Protocol and the Report, and
- sampling datasets and tracing activity data back to aggregated levels.

### Observations

- LR observed that there were fluctuations in the calculation of avoided GHG emissions due to limited data collection and differences in assumptions made. The Company should evaluate these fluctuations and further assess the conservativeness of the methodology for avoided GHG emissions.
- The Report only applied the “calculation methodology for the CO<sub>2</sub> absorption of the cement” that was developed based on the Protocol. The Company should establish a new methodology for avoided GHG emissions using its own technology to further demonstrate the effectiveness of its future reports.

### LR's standards, competence and independence

LR implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021-1 Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part 1: Requirements that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LR ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This is the only work undertaken by LR for the Company and as such does not compromise our independence or impartiality.

Signed

Dated: 20 March 2019



Norihiko Kinoshita

LR Lead Verifier

On behalf of Lloyd's Register Quality Assurance Limited

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