

WHITE PAPER

The Importance of Supply Chain Due Diligence in the Cement Sector

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As the most widely used construction material, concrete is indispensable to the construction of many things that make up modern society, from highways, buildings and bridges to dams, power plants, and water and sewage pipes. The material is so ubiquitous because it is durable, fire and water-resistant, and cheap to produce. It can be formed into almost any shape when newly mixed and achieves high strength for a long time once it sets. Cement is part of the future of development and urbanisation.

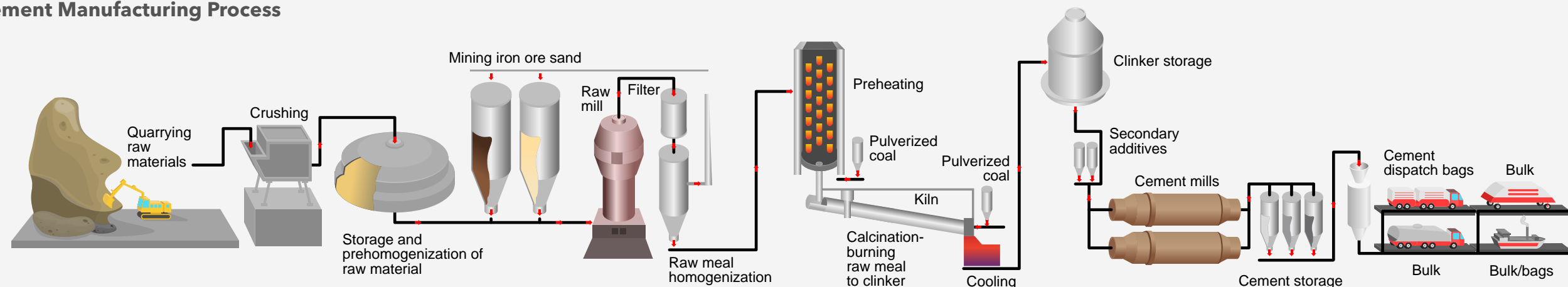
Thus, it is critical for the industry to reduce its carbon emissions. Cement is made by fusing limestone and clay in temperatures up to 1450°C. The process produces grey, rock-like balls called clinker (which is then ground into cement) in chemical reactions that emit large amounts of carbon dioxide. The production of clinker accounts for about 90% of the CO₂ emissions of cement production.

Globally, the industry registers the highest emissions per revenue dollar among similar, hard-to-abate sectors, producing 6.9kg

of CO₂ per dollar compared to 1.4kg for iron and steel and 0.8kg for oil and gas. A surge in cement production in recent decades has contributed to the sector's high emissions. In 2020, production totalled an estimated 4.1 billion metric tons, triple that for 1995, although in recent years, demand has remained relatively stable. Five countries account for nearly three-quarters of the world's cement production, led by China with a 52% share, followed by India, Vietnam, the United States, and Indonesia. Most of the increased production has been driven by China's industrialisation and

infrastructure build-up, but as demand drops there, future increases are expected to come from India, Southeast Asia, and Sub-Saharan Africa. Pressure on the industry to decarbonise has intensified as concern grows over climate change and countries race to meet obligations under the Paris Agreement. If cement manufacturers are to meet the rising demand for low-carbon materials, they must step up the adoption of circular business models and clean energy, redesign their products, better utilise waste streams, and reallocate capital flows to finance the transition to green production.

The Cement Manufacturing Process



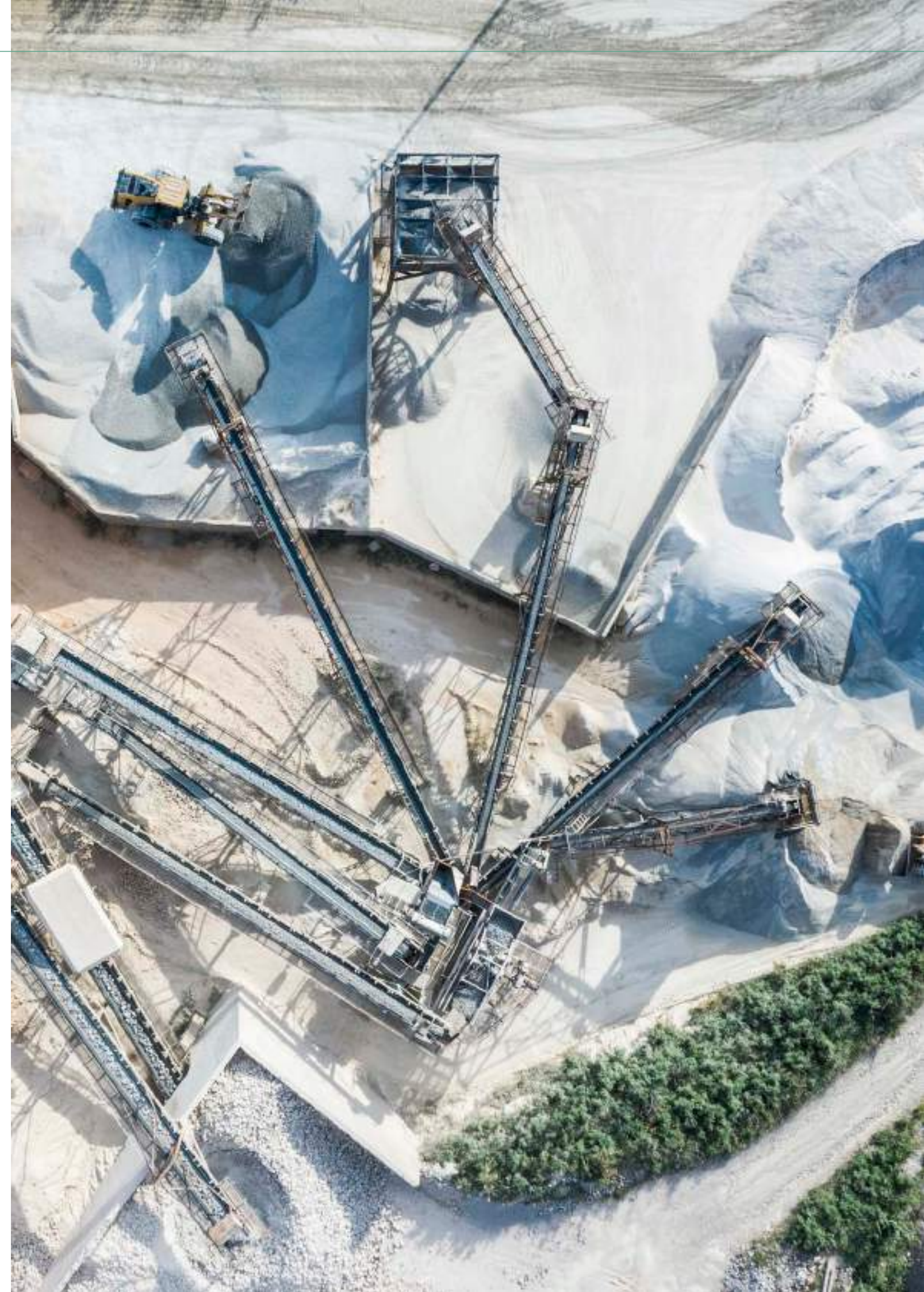
Sustainability and Cement

The cement industry has demonstrated a significant reduction in emissions over the years, but this progress has recently plateaued. Despite this, major industry associations, recognising the urgency for climate action, have set ambitious targets to achieve net-zero carbon emissions by 2050. Innovation has been a key driver in reducing the industry's environmental impact. Incremental changes, such as improving energy efficiency and utilising waste as fuel, have yielded tangible results. Furthermore, the substitution of clinker with industrial byproducts like fly ash and blast furnace slag has paved the way for the development of “green cement”—a more sustainable alternative. However, the production of green cement is not without its challenges, as technical, economic, and regulatory barriers remain formidable.

Manufacturers are also exploring emerging technologies like carbon capture, utilisation and storage (CCUS) to further mitigate emissions. CCUS has the potential to revolutionise the industry by capturing

CO2 emissions and either storing them or repurposing them for various applications. However, wider adoption of CCUS hinges on resolving technical and economic hurdles, as the technology is still in its nascent stages.

Leading the charge towards decarbonisation, the Global Cement and Concrete Association (GCCA) has published comprehensive [sustainability guidelines](#) and an ambitious roadmap for the industry. This roadmap sets a target to reduce emissions in the concrete manufacturing value chain by 26% by 2030, with the ultimate goal of achieving net-zero emissions by 2050. Achieving these goals will necessitate a transformative shift across the entire supply chain, encompassing changes in government policies, industry practices, and consumer behaviour. The transition to a net-zero future presents both opportunities and challenges for cement manufacturers, requiring a concerted effort from all stakeholders to drive innovation and ensure a sustainable future for the industry.



Supply Chain Due Diligence and Cement

The cement sector, while crucial for global infrastructure, faces intense scrutiny for its environmental and social impact. As concerns over climate change, human rights abuses, and unethical business practices escalate, supply chain due diligence has become increasingly important for cement companies. Although only a small percentage of its total emissions, the cement industry supply chain still equates to an estimated 4 billion tonnes of CO2 a year making it worth the attention. This environmental impact stems from various stages of the supply chains, encompassing raw material

extraction and processing, transportation and energy consumption – all areas that are known to have significant risks.

Supply chain due diligence in this context is a rigorous process of identifying, assessing, and mitigating risks tied to Environmental, Social, and Governance (ESG) factors within a company's entire supplier network. This entails evaluating suppliers, subcontractors, and partners to ensure their adherence to ethical and sustainable practices, safeguarding both the planet and its people.

Real-World Example

LafargeHolcim, one of the world's leading cement companies, has implemented a comprehensive human rights due diligence program. This program involves assessing and mitigating risks related to forced labour, child labour, and other human rights abuses in their supply chain. By conducting regular audits and engaging with suppliers, LafargeHolcim aims to ensure that its operations adhere to international human rights standards.

Why is Supply Chain Due Diligence Critical for the Cement Sector?

Supply Chain Due diligence is important for the cement sector due to several factors:

- **Regulatory Compliance:** Increasingly stringent regulations, such as the European Union's Corporate Sustainability Due Diligence Directive ([CSDDD](#)), [Canada's Bill S211](#) and [India's BRSR Core](#), mandate companies to identify and address adverse impacts in their supply chains.
- **Risk Mitigation:** Periodic due diligence helps companies proactively identify hotspots in their value chain and mitigate risks related to environmental damage, human rights abuses, workforce health

and safety, corruption and other ESG issues.

- **Reputation Management:** Companies with robust practices are better positioned to protect their reputation and maintain the trust of stakeholders.
- **Investor Expectations:** Investors are increasingly prioritising ESG considerations, and companies with strong due diligence programs are more attractive to responsible investors.
- **Market Access:** Some markets require or favour companies that demonstrate responsible sourcing and supply chain practices.

Real-World Example

The French cement group Vicat in 2021 was criticised for sourcing coal from mines linked to deforestation and human rights abuses in Indonesia.

Business Implication:

The allegations led to reputational damage and NGO boycott campaigns. The company experienced mounting pressure from investors to divest.

Real-World Example

In 2016, HeidelbergCement was accused of using conflict minerals (Tin Ore) sourced from the Democratic Republic of Congo.

Business Implication:

The allegations led to reputational damage, potential legal liabilities and widespread consumer boycotts and leadership changes. The company faced criticism from investors and human rights organisations, impacting its brand image and potentially hindering future business opportunities.

What does Supply Chain Due Diligence Entail in the Cement Sector?

Supply chain due diligence in the cement sector encompasses a comprehensive approach to identifying, assessing, and mitigating environmental, social, and governance (ESG) risks throughout the entire value chain. This involves:

- **Risk Assessment:** A thorough evaluation of ESG risks, including child and forced labour, unsafe working conditions, environmental pollution, and corruption. This assessment should extend beyond direct suppliers to include sub-contractors and other partners.
- **Supplier Engagement:** Proactive communication with suppliers to establish clear expectations regarding ESG performance. This includes conducting due diligence on suppliers, monitoring their performance, and establishing milestone-based roadmaps for improvement. The goal is to foster a culture of continuous improvement and empower suppliers to become champions of ESG practices, extending these standards to their own sub-contractors.
- **Grievance Mechanisms:** Implementing accessible and effective mechanisms for stakeholders, including employees, communities, and NGOs, to raise concerns about ESG issues in the supply chain. These mechanisms should ensure confidentiality, protect whistleblowers, and facilitate prompt investigation and resolution.
- **Remediation:** Taking decisive action to address identified ESG risks. This may involve terminating contracts with non-compliant suppliers or working collaboratively with them to implement corrective actions and achieve compliance.
- **Transparency and Reporting:** Publicly disclosing accurate and relevant information about the company's supply chain due diligence efforts, progress, and challenges. This fosters accountability, builds trust with stakeholders, and contributes to industry-wide improvement.



Obligations and Responsibilities for Cement Companies

Real-World Example

Workers of Ambuja cement in 2021 at a limestone mine in India went on strike over alleged exploitation and poor working conditions.

Business Implication:

The allegations led to production disruptions, delays in meeting orders and potential financial losses.

Real-World Example

In 2020, several workers were injured in an explosion at a Cemex plant in Mexico. The incident was attributed to inadequate safety training and supervision.

Business Implication:

Legal liabilities, compensation payouts, increased insurance premiums, loss of skilled labour and reputational damage.

Cement companies have a legal and ethical responsibility to conduct rigorous and detailed due diligence across their value chain. This includes:

- **Regulatory Compliance:** Adhering to national and international laws relevant to supply chain due diligence, such as the UK Modern Slavery Act and the EU Conflict Minerals Regulation.
- **Respect for Human Rights:** Cement companies must actively ensure that human rights are respected at every stage of their supply chain. This entails aligning their practices with the UN Guiding Principles on Business and Human Rights and implementing robust mechanisms to identify and address any potential human rights violations.

- **Environmental Stewardship:** Minimising the environmental impact of their operations and sourcing practices is an important responsibility. This involves adopting sustainable practices, reducing greenhouse gas emissions, promoting resource efficiency, and actively working to minimise waste and pollution throughout their value chain.

A robust due diligence program implemented across the value chain provides cement companies with a significant competitive advantage. Prioritising sustainability is essential for long-term profitability, and a compliant organisation can effectively mitigate risks, minimise disruptions, and strengthen its brand reputation and stakeholder relationships.

Real-World Example

CEMEX, a global building materials company, has implemented a comprehensive program called “Supply Chain Safety Management” to enhance safety standards throughout its supply chain.

Positive Outcome:

CEMEX has reported a significant reduction in accidents and incidents among its suppliers, demonstrating the positive impact of its due diligence efforts. The company actively monitors and evaluates supplier performance on safety metrics, providing training and support where needed.

Getting Started on your Due Diligence Journey Challenges and Opportunities

- **Develop a Comprehensive Policy:** Establish a clear and detailed due diligence policy that articulates your company’s dedication to responsible sourcing and ethical practices. This policy should serve as the foundation for all subsequent due diligence activities.
- **Engage with Suppliers:** Foster open communication and collaboration with suppliers to address identified risks and encourage them to adopt more sustainable practices. This may involve providing training, sharing best practices, or offering financial incentives.
- **Conduct Risk Assessments:** Identify and assess potential environmental, social, and governance (ESG) risks within your supply chain. Prioritise these risks based on their potential impact and likelihood of occurrence.
- **Implement Monitoring and Reporting:** Track ESG performance regularly throughout your supply chain. Utilise key performance indicators (KPIs) and establish a transparent reporting system to share progress with stakeholders and identify areas for improvement.

Challenges of Effective Supply Chain Due Diligence in the Cement Sector

Implementing supply chain due diligence in the cement sector presents a complex and multifaceted challenge, extending beyond issues typically encountered across various industries. The intricacies inherent to this sector, coupled with heightened regulatory scrutiny, amplify these challenges.

- **Complex and Opaque Supply Chains:** The cement supply chain is often characterised by numerous tiers and a lack of transparency, making it extremely difficult to trace materials and identify potential risks throughout the process.
- **Specialised Data Collection:** Due diligence in this sector requires specialised data beyond standard operational metrics. This data, encompassing everything from carbon emissions to labour practices, can be scattered across various formats, making collection and organisation a formidable task.
- **Data Veracity and Accuracy:** In a highly regulated sector, the stakes for data accuracy are incredibly high. While AI-generated or web-scraped data might offer cost-effective solutions, they often lack the rigorous verification essential for regulatory compliance and maintaining stakeholder trust. Ensuring the authenticity and reliability of data sources becomes paramount.
- **Transparency Barriers:** Lack of transparency, particularly when dealing with suppliers in regions with weak or non-existent regulatory frameworks, remains a critical issue. This opacity can severely hinder the accurate assessment and mitigation of risks throughout the supply chain.
- **Limited Capacity:** Both buyers and suppliers within the cement sector may lack the capacity to effectively manage complex data streams. This is especially pronounced for smaller cement companies and suppliers (contractors, sub-contractors), where resource constraints can impede comprehensive due diligence processes.
- **Cost of Compliance:** Compliance with due diligence requirements can be financially burdensome, particularly for small and medium-sized enterprises (SMEs). The costs associated with due diligence processes, supplier audits, and risk mitigation measures can rapidly accumulate, posing a significant barrier for smaller players in the sector.

Conclusion

The landscape of Supply Chain Due Diligence is complex, and the stakes are especially high in the cement sector. However, the cost of non-compliance can be far greater than just legal repercussions; it can significantly harm a company's reputation. While the journey toward comprehensive due diligence and sustainability may be fraught with challenges, the benefits of improved risk management, operational efficiency, and stakeholder engagement are undeniable.

Companies must adopt a comprehensive, risk-based approach that goes beyond mere compliance. This involves not only implementing stringent due diligence measures but also continually refining these processes in response to evolving risks and regulations. Given the sector-specific challenges, companies should consider seeking external expertise to ensure that their due diligence processes are both robust and compliant.



About Achilles

Achilles provides the serious analysis and expert supply chain insight necessary to comply with ESG regulations, meet stakeholder requirements and achieve ambitious ethical and sustainability goals.

We work with market-leading financial, industrial, commercial and governmental organisations requiring the serious, detailed analysis and expert insight necessary to deliver exceptional levels of environmental, social and governance reporting confidence. We support the world's biggest companies to create and maintain ethical, sustainable and transparent supply chains.

With a global footprint, operating from 18 locations worldwide, Achilles is at the forefront of the battle against climate change, a champion for social justice and human rights, and an expert in health, safety, and risk management.

How Achilles Elevates Your Supply Chain Due Diligence

Achilles functions as an extension of organisations needing all-encompassing supply chain due diligence solutions and in-depth data insights vital for international legislative compliance. But we go beyond compliance; our sustainability services and supplier development programs are geared to improve your supply chain performance.

Our services include:

- **Supply Chain Evaluation:** Our comprehensive data collection covers supplier documentation, publicly available and historical online information, and investigative reports from NGOs and charities. Notably, our Transparency questionnaire incorporates insights from our extensive global audit program and firsthand accounts from workers in relevant industries and regions, offering you a thorough view of your supply chain risks.
- **Risk Assessment:** Our detailed supply chain evaluation facilitates a broad scoping exercise to uncover hidden risks within your supply chain. This

multi-disciplinary approach is essential for effective due diligence and for demonstrating to authorities that you've adequately mitigated these risks.

- **Due Diligence:** Our audit teams, strategically located globally, conduct thousands of desktop and on-site audits annually. They scrutinise documentation, physically inspect workplaces, and confidentially interview individuals who might be subjected to unethical employment practices or human rights violations.
- **Remediation and Reporting:** We are committed to the ongoing improvement of global supply chains. Our tracking of audit findings and remedial actions, backed by our team of data scientists, provides you with comprehensive supply chain data suitable for inclusion in annual reports.

To discover how Achilles can assist you in meeting your supply chain due diligence requirements, feel free to [contact us](#).



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