
DENOMINATOR

CBAM Compliance Guide 2026

Everything industrial producers need to know about the EU Carbon Border Adjustment Mechanism -- from regulatory timeline to product-level compliance.

Jan 2026

CBAM definitive phase begins

\$118B+

Total addressable compliance market

6 Sectors

Cement, iron/steel, aluminium, fertilisers, electricity, hydrogen

20+ Frameworks Covered by Denominator's platform

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The AI-Industrial Trust Layer for Carbon Compliance

SECTION 0

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SECTION 1

What Is CBAM?

The Carbon Border Adjustment Mechanism (CBAM) is the European Union's landmark regulation designed to prevent carbon leakage -- the risk that EU climate policy drives production (and its associated emissions) to countries with less stringent carbon pricing.

CBAM places a carbon price on imported goods equivalent to the price paid by EU producers under the EU Emissions Trading System (EU ETS). Importers must purchase CBAM certificates corresponding to the embedded emissions of goods they bring into the EU.

Key insight: CBAM shifts the compliance burden upstream to non-EU producers who must provide verified emissions data for every shipment.

Why CBAM Matters for Producers

- Creates a de facto global carbon price for EU-bound trade
- Requires product-level (not facility-level) emissions data
- Demands third-party verification of embedded emissions
- Affects pricing, market access, and competitive positioning
- Non-compliance means loss of EU market access

SECTION 2

Regulatory Timeline

Transitional Phase (Oct 2023 - Dec 2025)

- Importers report embedded emissions quarterly
- No financial obligations -- reporting only
- Default values allowed where actual data unavailable
- EU collects data to calibrate definitive methodology

Definitive Phase (Jan 2026 onwards)

- CBAM certificates must be purchased for embedded emissions
- Certificate price linked to EU ETS weekly average price
- Actual emissions data required (default values phased out)
- Third-party verification mandatory for emissions declarations
- EU ETS free allowances phased out in parallel (2026-2034)

Deadline alert: The definitive phase begins January 2026. Producers must have verified product-level emissions data ready NOW.

SECTION 3

Covered Sectors & Products

CBAM initially covers six carbon-intensive sectors. These were selected because they face the highest risk of carbon leakage and represent a significant share of EU industrial emissions.

Cement

- Products: Clinker, Portland cement, aluminous cement

Iron & Steel

- Products: Pig iron, crude steel, ferro-alloys, iron products, steel products

Aluminium

- Products: Unwrought aluminium, aluminium bars/rods/profiles, aluminium wire, foil, tubes/pipes

Fertilisers

- Products: Ammonia, nitric acid, urea, mixed fertilisers, ammonium nitrate

Electricity

- Products: Electrical energy imports

Hydrogen

- Products: Hydrogen in gaseous and liquid form

Scope expansion expected: The EU has signalled future expansion to cover organic chemicals, polymers, and potentially other industrial goods.

SECTION 4

Compliance Requirements

Under the definitive phase, both EU importers and non-EU producers face specific compliance obligations.

For Non-EU Producers (Exporters)

- Calculate embedded direct emissions (Scope 1) per product unit
- Calculate embedded indirect emissions (Scope 2 from electricity) where applicable
- Provide emissions data per installation and per product type
- Submit to third-party verification by an accredited verifier
- Maintain records and audit trail for at least 4 years

For EU Importers

- Register as authorised CBAM declarant
- Submit annual CBAM declaration by 31 May each year
- Purchase CBAM certificates matching embedded emissions
- Surrender certificates to national authority annually
- Deduct any carbon price already paid in country of origin

Verification Requirements

- Verification must follow CDR 2023/1185 methodology
- Accredited verifiers must verify at "reasonable assurance" level
- Verification covers emissions data, calculation methods, and data management

SECTION 5

Product-Level Carbon Intensity

CBAM represents a fundamental shift from facility-level to product-level emissions accounting. This is the most technically demanding aspect of compliance for most producers.

What Product-Level CI Means

- Emissions attributed to each specific product, not averaged across a facility
- Allocation rules for co-products, by-products, and waste streams
- Mass balance, energy balance, or economic allocation methods
- Boundary conditions: cradle-to-gate for direct and indirect emissions

Calculation Methodology

- Identify all emission sources within the installation boundary
- Quantify direct emissions (combustion, process, fugitive)
- Quantify indirect emissions from electricity consumption
- Allocate emissions to specific products using defined methods
- Express as tonnes CO₂e per tonne of product

This is where most producers struggle: translating facility-level data into product-level carbon intensity requires real-time data integration, complex allocation logic, and continuous monitoring -- not spreadsheets.

SECTION 6

Data Requirements & MRV

Monitoring, Reporting, and Verification (MRV) is the backbone of CBAM compliance. Producers need robust systems that generate verifiable, auditable emissions data.

Data Sources Required

- Fuel consumption data (natural gas, diesel, coal, etc.)
- Electricity consumption with grid emission factors
- Process emissions (e.g., calcination in cement, anode consumption in aluminium)
- Production volumes per product type
- Heat and steam flows (imported and exported)
- Continuous Emissions Monitoring Systems (CEMS) where applicable

MRV Best Practices

- Automated data collection from SCADA, ERP, and IoT sensors
- Real-time emissions calculation, not retrospective annual estimates
- Immutable audit trail -- every data point traceable to source
- Blockchain-anchored evidence for tamper-proof verification
- Pre-configured compliance templates for CDR 2023/1185

Key MRV Capabilities for CBAM

- Continuous emissions monitoring (not annual averages)
- Product-level allocation with full audit trail
- Automated anomaly detection and data quality checks
- Verifier-ready report generation
- Immutable blockchain anchoring of all evidence

SECTION 7

The Denominator Approach

Denominator is the AI-native infrastructure layer for industrial carbon compliance. Our platform connects directly to your operational data and delivers continuous, product-level carbon intensity with full MRV and certification orchestration.

Platform Capabilities

- Product-Level CI Engine -- real-time carbon intensity per product, batch, and cargo
- Event-Driven MRV -- continuous monitoring and verification, not periodic reporting
- AI Agents -- autonomous compliance agents that work 24/7 across your stack
- Blockchain Trust Layer -- immutable, tamper-proof audit trail for every data point
- Certification Orchestration -- 20+ frameworks from a single data pipeline

Industries We Serve

- Oil & Gas -- methane monitoring, LNG cargo traceability, refinery CI
- Petrochemicals -- embedded carbon in chemicals, polymers, fertilisers
- Mining & Building Products -- low-carbon metals certification, CBAM for steel/cement
- Data Centers -- energy consumption, PUE, 24/7 carbon-free energy matching

Why Denominator

- 90% reduction in compliance cost vs. traditional consulting
- Sub-second calculation latency for real-time decisions
- 85% logic reuse across frameworks -- new regulations map in days
- Live deployments with major energy producers and mining companies

SECTION 8

Getting Started

The CBAM definitive phase is imminent. Here is a practical roadmap for producers to achieve compliance readiness.

Step 1: Assess Your Exposure

- Identify which products you export to the EU
- Map those products to CBAM-covered CN codes
- Quantify your EU-bound trade volumes

Step 2: Audit Your Data

- Inventory all emissions data sources (SCADA, ERP, meters, CEMS)
- Identify gaps between available data and CBAM requirements
- Assess data quality, frequency, and auditability

Step 3: Implement MRV Infrastructure

- Connect operational data to an automated emissions calculation engine
- Configure product-level allocation methodology
- Establish continuous monitoring (not annual snapshots)

Step 4: Verify and Certify

- Engage accredited verifier for third-party assurance
- Generate CDR 2023/1185 compliant reports
- Submit verified data to EU importers

Ready to start? Contact us at svenja@denominator.tech or visit denominator.tech/contact to book a pilot consultation.

Denominator -- The AI-Industrial Trust Layer

- Product-level carbon intensity in real time
- 20+ compliance frameworks from one data pipeline
- AI agents that work 24/7 on your compliance stack

