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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 32151.5-2026

Replacing GB/T 32151.5-2015

Requirements for greenhouse gas emission accounting and reporting - Part 5: Iron and steel production enterprises

温室气体排放核算与报告要求 第5部分：钢铁生产企业

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1 Scope

GB/T 32151.5-2026 is the Chinese national standard covering the greenhouse gas inventory of a steelworks - the coke and coal into the blast furnace, the limestone calcined, the electricity and the process gases used and exported, on the single largest industrial emitter in China. The GB/T 32151 series is the basis of China's corporate greenhouse gas reporting and, through it, of the national emissions trading scheme. Steel accounts for around a sixth of China's emissions, and the sector has now entered the national trading scheme. The standard fixes the boundary, the emission sources, the activity data and factors, the calculation and the report. It replaces GB/T 32151.5-2015 and has been in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 32151.5-2015. The document is under the responsibility of the Ministry of Ecology and Environment. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the accounting boundaries for greenhouse gas emissions from steel production enterprises at the enterprise level, and the accounting standards for enterprise-level reporting. The calculation steps and accounting methods, the scope and accounting methods of process-level accounting reports, data quality management, report content and format, etc. This document applies to the accounting and reporting of

greenhouse gas emissions by steel production enterprises. Steel production enterprises shall follow the methods provided in this document. Calculate greenhouse gas emissions and prepare corporate greenhouse gas emission reports. For example, steel production enterprises may have emissions beyond steel product manufacturing. If other products are manufactured and greenhouse gas emissions are generated, the greenhouse gas emissions accounting and reporting requirements for enterprises in the relevant industry should be followed. Calculate and compile a report.

4 Enterprise-level accounting boundaries

4.1 General Rules The reporting entity should be a corporate entity or an independently accounting unit deemed as a legal entity, and should account for and report the greenhouse gases generated by its production system. Emissions. The accounting boundary includes the main production system, auxiliary production systems, and ancillary production systems that directly serve production, among which auxiliary... The production system includes power, electricity, water supply, testing, machine repair, warehousing, and transportation. The auxiliary production system includes the production command system (factory headquarters) and the factory... Departments and units within the district that provide services for production (such as staff canteens, workshop bathrooms, health stations, etc.). Figure 1 shows a schematic diagram of the greenhouse gas emission accounting boundary for steel production enterprises.

4.2 Scope of Enterprise-Level Accounting and Reporting

4.2.1 Emissions from fossil fuel combustion Carbon dioxide emissions from the combustion of fossil fuels consumed by steel production enterprises include stationary source emissions (such as coke ovens, sintering machines, blast furnaces, etc.). Emissions from stationary combustion equipment such as industrial boilers, and from mobile sources within the plant used for production (such as in-plant transport vehicles and handling equipment). For fossil fuels (such as coke) purchased by the company, only the greenhouse gas emissions generated by burning these fossil fuels within the company are calculated.

4.2.2 Process Emissions Steel production enterprises often encounter problems in sintering, ironmaking, and steelmaking processes due to the use of other purchased carbon-containing raw materials (such as electrodes, pig iron, ferroalloys, and direct reduction agents). Carbon dioxide emissions from the decomposition and oxidation of iron and carbonate fluxes.

4.2.3 Emissions from purchased electricity and heat Carbon dioxide emissions from the purchase of electricity and heat by enterprises.

4.2.4 Emissions generated from the output of electricity and heat Carbon dioxide emissions corresponding to the electricity and heat output by enterprises.

4.2.5 Emissions Implicit in Carbon Sequestration Products During the steel production process, a small portion of carbon is solidified in pig iron, crude steel, and other export products; another small portion is solidified in by-product coal gas. The carbon dioxide emissions from carbon-fixed products such as methanol produced from raw materials should be deducted.

5 Enterprise-level accounting steps and methods

5.1 Accounting Steps The workflow for reporting entities to conduct corporate greenhouse gas emissions accounting and reporting includes the following steps.

a) Identify emission sources;

b) Collect activity data;

c) Selecting and acquiring emission factor data;

d) Calculate the emissions from fossil fuel combustion, process emissions, emissions from purchased and exported electricity and heat, and carbon sequestration, respectively. The product's implicit emissions;

e) Compile reports on the greenhouse gas emissions of enterprises.

5.2 Accounting Method

5.2.1 General Rules The total carbon dioxide emissions from steel production enterprises equal the total emissions from the combustion of all fossil fuels, process emissions, and enterprise emissions within the accounting boundary. The sum of carbon dioxide emissions from the purchase of electricity and heat by the enterprise, while deducting the carbon dioxide emissions implied by carbon sequestration products and the emissions from output. The carbon dioxide emissions corresponding to the electricity and heat generated are calculated according to formula (1). E< sub>enterprise< /sub> = E< sub>combustion< /sub> = E< sub>process< /sub> = E< sub>purchased electricity< /sub> = E< sub>purchased heat< /sub> - R< sub>carbon fixation< /sub> - E< sub>output electricity< /sub> - E< sub>output heat< /sub> (1) In the formula. Company E - Total carbon dioxide emissions, expressed in tons of carbon dioxide equivalent (tCO2e); E< sub>combustion< /sub>

--- the total greenhouse gas emissions from the combustion of fossil fuels, expressed in tons of carbon dioxide equivalent (tCO< sub>2e< /sub>). E-process - Total greenhouse gas emissions from the process, expressed in tons of carbon dioxide equivalent (tCO2e); E - Purchased electricity - Carbon dioxide emissions from purchased electricity, expressed in tons of carbon dioxide equivalent (tCO2e); E - Purchased heat - Carbon dioxide emissions from purchased heat, expressed in tons of carbon dioxide equivalent (tCO2e); R-carbon sequestration - the emissions implied by a company's carbon sequestration products,

expressed in tons of carbon dioxide equivalent (tCO2e); E - Output electricity - The carbon dioxide emissions generated by the output electricity, expressed in tons of carbon dioxide equivalent (tCO2e); E - Heat output - Carbon dioxide emissions generated by the output heat, expressed in tons of carbon dioxide equivalent (tCO2e).

5.2.2 Emissions from fossil fuel combustion

5.2.2.1 Calculation Formula Carbon dioxide emissions from fossil fuel combustion are the amount of oxygen produced by the combustion of various fossil fuels during the accounting and reporting year for steel companies. The total carbon emissions are calculated according to formula (2).

5.2.2.2 Activity Data and Sources 5.2.2.2.1 General Rules Fossil fuel combustion activity data is the product of the consumption of various fuels and the average lower heating value during the accounting and reporting year, calculated according to... Calculate using equation (3). 5.2.2.2.2 Fossil fuel consumption The amount is determined based on the purchase volume, sales volume, inventory changes, and other consumption (excluding steel production) of various fuels during the accounting and reporting period. Each party determines its own consumption. Fuel purchases and sales should prioritize data from metering instruments; when metering data is unavailable, procurement data should be used instead. Data on settlement documents such as sales orders or bills of lading, and changes in inventory are determined using readings from measuring tools or other compliant methods. (This is related to steel production.) Other consumption besides production is obtained from the enterprise's energy balance sheet and calculated using formula (4). 5.2.2.2.3 Lower heating value The determination of the lower heating value of fuel should be entrusted to a qualified professional institution for testing, or it can be carried out using the method provided in the settlement voucher with the relevant party. Detected values. If actual measurement is used, the lower heating value of fossil fuels should be tested according to GB/T 213, GB/T 384, and GB/T 22723.For solids For fossil fuels, relevant data on the base received should be collected. Specifically, for coal, inspections should be conducted at least once a month or upon each batch of fuel arriving at the plant. The lower heating value of a fuel type is determined by a weighted average of the amount of fuel delivered to the plant or the monthly consumption; for oil products, this can be determined at the time of each batch of fuel delivery or... Tests are conducted quarterly, and the arithmetic average is taken as the lower heating value of the oil product; for gaseous fuels such as natural gas, the lower heating value can be determined after each batch of fuel enters the system. The factory conducts tests every hour or every six months, and takes the arithmetic mean as the lower heating value. For enterprises that do not have the conditions to conduct actual measurements, refer to the recommended values for the lower heating value of common fossil fuels in Table A.1 of Appendix A.

5.2.2.3 Emission Factor Data Acquisition The carbon dioxide emission factor of fossil fuel combustion is calculated according to formula (5).