

Research on application of the enterprise management accounting reporting system under the sustainable development theory - A case of Baosteel

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Abstract. Sustainable development can transform the profit goal of an enterprise into the goal of maximization of its economic, environmental and social benefits, and the combination of sustainable development theory with management accounting can further promote the realization of the goal. In this paper, the enterprise management accounting reporting system under the sustainable development theory is established from the three dimensions of economy, environment and society, and Baosteel is taken as the subject for elaborating the governance framework and stakeholders of sustainable development, and analyzing the goal of the management accounting reporting system, as well as the contents about economy, environment and society in the management accounting report. Therefore, this paper has a practical guiding significance to the value-added efficiency and sustainable development of the enterprises adopting the management accounting report.

Keywords. Sustainable development, management accounting report, environmental benefits, social benefits.

1. Introduction

Traditional financial report cannot meet the developmental requirements of modern enterprises. Management accounting plays an increasingly obvious role in the development of enterprises, and management accounting report is the core of management accounting, which can provide an accurate and detailed basis for making decisions on enterprise management and cost control. The management accounting report can provide data for operation through predictive parsing and decision-making analysis, and play an important role in decision-making, effective control and value creation of enterprises. The development of an enterprise may be affected by external factors such as energy, resources, environment and social development. The management accounting reporting system under the sustainable development theory gives consideration to multiple factors such as economic development, environmental protection and social benefits, and effectively integrates the sustainable development theory and management accounting reporting system. Enterprises should lay emphasis on environmental benefits and social benefits during operation, and the sustainable development strategy can help them to enhance the core competitiveness, and achieve stable economic growth and increment of value. Therefore, in this paper, the management accounting reporting system involving three dimensions of economy, environment and society is established through combining the sustainable development theory with the management accounting report. Taking Baosteel as an example, the goal of sustainable development and management strategy is elaborated, and the composition of the management accounting reporting system under the sustainable development theory is analyzed, so as to provide a practical guiding significance to the improvement of economic benefits and the operation and management level.

2. Enterprise management accounting reporting system under the sustainable development theory

(1) Report regarding economic benefits

The goal of management accounting reporting in terms of economic benefits under the sustainable development theory is to continuously improve the enterprise value, and provide a decision-making basis for improving market competitiveness, optimizing resource allocation and reasonably allocating cost. Management accounting reporting in terms of economic benefits is the core of management accounting reporting, which involves the macro-environment information of enterprise development, and provides a decision-making basis for determining the future development goal, product positioning and development direction. The system consists of two parts, namely the business strategy analysis report and financial budget analysis report. Business strategy analysis report covers macro policies, industry comparison, business conditions and conditions of competitors, while financial budget analysis report covers the cost management report and financial budget report.

(i) Business strategy analysis report. Business strategy analysis report mainly analyzes the positions of enterprises in the industry and the whole macro environment, and their changes, as well as the impact of business environment on the normal operation, so as to analyze and avoid adverse factors and potential risks of enterprise development, and adjust the business strategy with the change of the business environment.

(a) Macro policies. The national policies are generally prepared and issued after industrial development, which, therefore, cannot provide macro guidance for operating decisions of enterprises. The enterprises should understand the national macroeconomic laws and direction. For example, heavy polluting enterprises and energy enterprises greatly affected by macro policies should change their development modes under the background of sustainable development, and pay attention to the trend of national policies for industrial transformation and investment decision-making.

(b) Industry comparison. Industry comparison can provide a decision-making basis for enterprise decision planning and adjustment of industrial distribution. The enterprises should focus on data communication in a timely manner, and

compare with other enterprises in the same industry. Such data contain financial indexes (such as operating profit ratio, asset-liability ratio and net profit ratio) and non-financial indexes (such as pollutant emission). The leaning of and reference to the management experience and core competitive products of successful enterprises can provide effective data for performance evaluation.

(c) Enterprise business conditions. Normal production and operation of an enterprise form the basis for an enterprise to realize value creation and technological innovation, and the full understanding of its operating status can provide a strong reference for the management layer develop a long-term development plan. Enterprise business condition report is composed of text and statements, in which, the business conditions are mainly analyzed from the perspectives of operation conditions and market conditions. Operation conditions mainly include the completion of output value, inventory and supply of raw materials, while market conditions mainly include the timely tracking and updating of customer demand, customer classification management, customer credit and sales status.

(d) Facts about the competitors. The understanding of the strength and weakness of the competitors is conducive to the development orientation of the enterprise. Through analyzing the core products of the competitors in the same industry and what is missing in the market, filling the gap by research & development and technological innovation, and forming a new profit growth point, the enterprise can take a leading position in the market in the case that it cannot imitate the core technologies and products. The fact of competitors can mainly be analyzed from the following three aspects: 1. The competitors' business conditions, involving investment projects, investment direction and goal customers. The enterprise can identify the strength and weakness of the competitors based on the segment market, as well as their new development directions and profit growth points. 2. Management conditions of the competitors, involving their organizational structure, board composition and governance philosophy. 3. Financial conditions of the competitors. Through conducting the benchmarking financial report analysis with strong competitors, the enterprise can find its weakness in financial management, and then improve the operation and management level.

(ii) Financial budget analysis report. Financial budget analysis report, consisting of the cost control report and financial budget report, is prepared with the overall development goal of the enterprise as the basic starting point and business conditions of the previous year as the basis, in combination with business conditions of the year, budget goal and the changes in internal and external environment. In the process of preparation, the goal is subdivided, and assigned to the related departments for controlling. Later, the budget should be submitted to the person in charge for review and approval, so as to determine the expense and cost planning of the next year and the specific implementation methods. Finally, the enterprise budget analysis report is prepared in the form of statement disclosure.

(a) Cost control report. The enterprise should introduce the concept of cost control, perform in-depth analysis on the relationship between the costs of production activities and selective analysis on production and operation, so as to calculate the most reasonable cost control interval, develop the optimal control scheme of cost consumption, and determine the volume of business and quota standard. The volume of business is closely associated with the production capacity and sales capacity, and the quota standard refers to the sum of labor, materials, machinery and other costs consumed per unit of production. The enterprise should establish the measures for the management of fixed budgets, and each department should determine its own budget regarding the volume of business, so as to calculate the budget of each business, which can reduce the production cost and realize the strategic goal of long-term sustainable development.

(b) Financial budget report. Financial budget involves cost and expense budget and asset and liability budget, in which, the cost and expense budget should list the expensed and capitalized expenditures related to the enterprise development safety and environment. The expensed expenditures include the expenditures of environmental protection research and development, purchase of environmental protection materials, education of employees and pollution discharge, while the capitalized expenditures include the expenditures for research and development and purchase of environmental protection equipment. The asset and liability budget involves the enterprise's assets, liabilities and owners' equity, in which, the assets include current assets and non-current assets, and the liabilities include environmental liabilities and environmental compensation payable.

(2) Report regarding environmental benefits

(i) Environmental protection report. Environmental protection report involves budget for the investment of special funds for energy conservation and environmental protection, budget for testing and maintenance of environmental protection facilities, comprehensive waste utilization report and non-monetary environmental cost report. The budget for the investment of special funds for energy conservation and environmental protection mainly determines the difference between the budget and the actual amount of the year, and it covers waste control, ecological construction and energy conservation. The budget for testing and maintenance of environmental protection facilities refers to the difference between the budget and the actual amount of online operation and monitoring equipment maintenance. The comprehensive waste utilization report refers to the difference between the actual cost and budget for comprehensive utilization of solid waste, industrial wastewater, and domestic sewage.

(ii) Investment decision and budget report for environmental protection. From the perspective of sustainable development, the enterprise should perform a comprehensive analysis on environment, society and finance when evaluating its decision on investment. The use of environmental protection facilities in new or renovation projects can effectively reduce energy consumption, carbon emission and environmental pollution. In order to reduce the impact on environment, the enterprise should build environmental protection facilities, some of which are mandated by the state, such as those for flue gas emission, dust removal, and sulfur removal, and some are constructed for reducing energy and resource consumption, such as reclaimed water recycling and reuse of waste.

(3) Report regarding social benefits

(i) Social responsibility budget report. The rational social responsibility budget can promote the sustainable development, and assist in cost control and accounting. The enterprise should include economic development and social responsibility into the strategic planning, and integrate safety production, employee rights and interests, environmental improvement and health investment into the management accounting report. The enterprise social responsibility budget report involves safety production budget, employee investment budget and social charity budget, in which, safety production budget covers the cost-based expenditures such as safety equipment testing and maintenance expenses, the capitalized expenditures such as one-time safety fixed asset purchase and safety project investment, and the expenditures for purchase of low-value consumable goods. Employee investment budget covers the investment in working environment, education, welfare, safety protection and health. Social charity budget covers public welfare and donation. In terms of the three types of budget, the enterprise should prepare a form to list the budget of the year, the actual amount of the year and the difference in between.

(ii) Investment decision and budget report for safety facilities. In order to prevent and control the safety accidents in the process of production, the enterprise should construct safety facilities, to eliminate any potential safety hazard. In addition, the enterprise should comprehensively consider the economic benefits and image brought by the investment in safety facilities, and should also determine the budget for safety facilities according to the influencing factors such as safety production and accident medical expenses.

3. Application of the management accounting reporting system under the sustainable development theory

(1) Enterprise profile

Baoshan Iron & Steel Co., Ltd. (hereinafter referred to as “Baosteel”) was founded in February 2000, and listed on Shanghai Stock Exchange in December of the same year. In February 2017, Baosteel merged Wuhan Iron & Steel by absorption, and owned such main manufacturing bases as Shanghai Baoshan, Wuhan Qingshan, Zhanjiang Dongshan and Nanjing Meishan. Baosteel sticks to the development path of “innovation, coordination, green, openness and inclusiveness”, and the strategy of quality development, green transformation and intelligent upgrade. Baosteel adheres to the philosophy of environmental management, and strengthens the efforts in energy-conservation and environmental protection, ecological environment and sustainable development, to accelerate the construction of green urban steel mills, and harmoniously integrate the four bases into the city, thus realizing the vision of becoming a leader in global steel industry and the best practitioners of environmental friendliness, and achieving common and sustainable development between the employees and the enterprise.

(2) Baosteel sustainable development governance framework and stakeholders

(i) Sustainable development governance framework. For continuously improving the governance structure and the level of sustainable development management, Baosteel has established a three-layer ESG governance structure. The first layer is the Board of Directors, which mainly reviews and approves ESG development strategic objectives; reviews ESG-related risks and importance; supervises and reviews ESG-related policies, management, performance and progress of the relevant objectives; reviews and approves the public disclosure about ESG issues; and reviews major ESG-related negative events. The second layer is the Strategy, Risk and ESG Committee, which is responsible for multiple tasks, such as ensuring that the company’s position and performance on global ESG issues are in line with the times and international standards; putting forward update suggestions on ESG-related policies; performing research, analysis and risk assessment on ESG-related issues; proposing the system, strategy and objectives of ESG; organizing and coordinating the supervision and inspection of ESG-related policies, management, performance and progress; providing the corresponding suggestions; and reviewing and submitting ESG reports to the Board of Directors. The third layer is ESG working group, which is responsible for specific tasks, such as preparing the policies and action plans on ESG issues in line with ESG strategies and objectives; managing ESG-related risks and issues during daily operation; communicating with the relevant departments and subsidiaries; promoting the implementation of ESG-related issues; and collecting, sorting and preparing public disclosure on ESG-related issues.

(ii) Stakeholders of sustainable development. Baosteel can create values for all stakeholders, and actively assume social responsibilities under the goal of sustainable development. In addition, it also actively communicates with the stakeholders based on a regular communication mechanism, to collect and sort out various suggestions and appeals, and identify major concerns. The government departments and regulatory agencies mainly concern about the environmental management system, the use of new energy, the treatment of three wastes, the research and development of environmental protection technologies, carbon emission reduction and the utilization rate of energy and resources. The employees mainly concern about their rights and benefits, talent training and retention, occupational health and safety, as well as promotion and development. The customers mainly concern about product quality and safety, green product development, green factory, technology and innovation, intellectual property protection, privacy and information security. The shareholders and investors mainly concern about the ESG management system, corporate governance, risks and opportunities, business ethics, economic performance and financial performance. The suppliers and service providers mainly concern about supply chain cooperation, supply chain ESG management, supply chain ethics and compliance management and access and evaluation of suppliers. The industry partners and research institutions mainly concern about intelligent manufacturing, industry development and win-win. Communities and NGOs mainly concern about charity, and community participation and integration. The media mainly concern about Baosteel’s information disclosure.

(3) Baosteel sustainable development goal system

In 2020, Baosteel achieved its core business goal and its business performance exceeded what scheduled, with the business income of RMB 284.44 billion, total profit of RMB 16.02 billion. It sold 45.975 million tons of billet steel with the gross profit rate of 12.1%, in which, the sales volume of competitive products was 10.68 million tons. While referring to domestic and foreign outstanding iron and steel enterprises, it tried to explore the potential of cost reduction based on the optimization of main technical indicators, the improvement of manufacturing efficiency and the reduction of comprehensive financial cost. As a result, Baosteel achieved cost reduction of RMB 3.8 billion in 2020.

Baosteel, under the sustainable development goal system, prepared the Baosteel Medium and Long-term Development Program (2002-2027) following the principle of feasibility, criticality and stability, so as to ensure the path and measures for the realization of new planning goals, strengthen the management system centered on value flow, and implement multi-base intelligent decision-making and operation to improve the technical capacity and manufacturing capacity of the four production bases of Baosteel. The management personnel should continuously update and improve the goal system, and perform systematic planning from the three dimensions of economy, environment and society, so as to maximize the comprehensive benefits. In accordance with the planning requirements and in combination with the business policies and goals, Baosteel should achieve the following goals of sustainable development:

(i) Economic development goal. Economic development goal of Baosteel mainly involves innovation, cost control, efficiency and management. In 2020, the four major production bases of Baosteel launched more than 90 intelligent manufacturing projects, reduced 62 production and operation rooms, and released 600 workers from strenuous manual labor. Furthermore, it also applied multiple achievements in scientific research, such as intelligent manufacturing operation and maintenance diagnosis of equipment, intelligent scheduling of production plans and automatic quality determination and tracing. Baosteel would perform special management and control of sales management costs, focus on improving the energy efficiency and efficiency, explore the value growth points, and prepare a three-year logistics cost improvement plan to reduce the logistics cost, thus implementing comprehensive cost reform, and achieving collaborative manufacturing with high quality, high efficiency and low cost. Baosteel would also promote the construction of the big data center, break through Intelligent Manufacturing 2.0, perform cross-industry, cross-base, cross-space integration, and achieve steady development with one headquarters and multiple bases. It would also accelerate the sharing and disposal of idle assets, strengthen the control of investment sources, improve the efficiency of utilizing assets, and increase the capital usage efficiency based on the limit of inventory and accounts receivable and inventory.

(ii) Environmental development goal. Baosteel attaches great importance to the cultivation of innovation capability, and the development and application of advanced manufacturing and energy conservation and environmental protection technologies, as well as continuous implementation of the high-quality product development strategy characterized by technological precedence. Environmental indicators have been continuously improved, based on which, Baosteel would fully meet the requirements of carbon neutrality and carbon peaking, integrate into the national strategy, optimize the industrial and energy structure, promote the development of key core technologies, and focus on the rapid development of high-end manufacturing industries such as high-speed rail, marine equipment and new energy vehicles. Furthermore, it would also continuously pursue the economic benefits based on high-end product structure. Baosteel issued the *Implementation Plan of Baosteel's Management Improvement Actions Referring to World-Class Management*, so as to improve manufacturing efficiency by improving the usage efficiency of blast furnace, hot delivery and hot charging rate, iron-to-steel ratio and rolling speed. Through developing and implementing annual carbon peaking and carbon neutrality tasks, Baosteel intends to meet the requirements of ultra-low emission transformation of the four production bases according to the requirements for Class A enterprises, so as to realize zero waste water discharge and solid waste treatment in the plant, thus improving the greening level of the plant, and creating a green and ecological steel plant. In 2021, Baosteel intends to prepare RMB 22.92 billion for fixed asset investment, mainly for the renovation and optimization of the four bases. It would also invest a certain amount of fund for product structure adjustment, ultra-low emission transformation and intelligent manufacturing.

(iii) Social development goal. Baosteel intends to achieve safety production and common development between the employees and the enterprise. Baosteel would strengthen the concept of safety management production, develop and implement the safety production system, prevent major safety risks, and further improve its major risk monitoring index system. It would also strengthen the communication and sharing of talents among the four major bases, build an echelon of technical talents, cultivate young backbone talents with multi-base management mindset, enhance the sense of responsibility and belonging of employees, and realize the common development between employees and the enterprise.

(4) Contents of the management accounting reporting system under the sustainable development theory

The management accounting report is a tool for effective communication between departments at all levels. As a type of internal document, it can help the managers at all levels to effectively make effective decisions and performance appraisals. Baosteel has established an enterprise development goal system from the economic, environmental and social dimensions. In the economic dimension, it aims at rationalizing financial arrangements and realizing fine control of cost; in the environmental dimension, it aims at achieving energy and resource conservation, carbon neutrality and ecological protection; while in the social dimension, it aims at ensuring the employees' rights and compensation, talent development, health and safety, employee care, precise poverty alleviation and better communities. Under the sustainable development theory, Baosteel has established the management accounting report by integrating financial

and non-financial information, so as to provide a basis for the managers to make correct decisions, and ensure that the investment and business activities can achieve joint sustainable development of economy, environment and society.

(i) Management accounting report regarding economic benefits.

(a) Business strategy report. Baosteel's business strategy report analyzes macro policies, industry conditions, the business conditions of Baosteel and its competitors. In the general environment of political, economic and social environmental development, the management accounting report can analyze and disclose the impact of internal and external environment on its development, thus forming a business strategy report.

① Business analysis report. Baosteel's business situations can be analyzed from the aspects of production and market. In terms of production, the analysis mainly involves the achievement of output value. Baosteel's products mainly include cold-rolled carbon steel plates and coils, hot-rolled carbon steel plates and coils, steel tube products and long steel products, as well as high-end products such as thin but high-efficiency silicon steel and cold-rolled ultra-high strength steel plates. The classification of the types and quantity of products of the four production bases can provide a basis for the next-stage planning, further increasing the market share of Baosteel. In terms of market, Baosteel focuses on customer management and product sales, in which customer management mainly involves customer demand and grading management, as well as the establishment of a customer credit report, including customer's name, credit situation, credit utilization rate, accounts receivable and overdue days; while product sales are divided into domestic sales and exports. In 2020, Baosteel sold 45.975 million tons of commercial billets, realizing total revenue of RMB 284.44 billion. The products were exported to more than 70 countries and regions, including Japan, South Korea, Europe and the United States. In 2020, it exported 3,133,000 tons of steel products. The comparison of the changes in quantity and amount between the past two years based on the statistical tables of sales volume and export volume by region and product type can provide reference for the production schedule of the next stage.

② Competitor analysis report. In 2020, Baosteel continued to deepen reform, accelerate the implementation of reform, and carry out a comprehensive benchmarking work. The overall improvement of the enterprise's efficiency, effectiveness and vitality and the significant strengthening of its core competitiveness further enhanced Baosteel's leading position in the field of carbon steel plates. Baosteel's core competitiveness is reflected in the manufacturing capability, user service, cost control, brand building and sustainable development. The competitor analysis report is presented in text, which can be used to understand the management mode, business philosophy and operation status of the competitors such as Ansteel, Shougang, and Btsteel; analyze their product strengths, investment directions and major customers; master their strengths and weaknesses; and improve the core competitiveness of Baosteel based on market segments.

③ Industry status analysis report. Baosteel strengthens its multi-base manufacturing management model, refers to the management of industry leaders, continuously deepens its competitive strength, and insists on its five major capabilities of cost control, technological innovation, intelligent manufacturing, service first, and urban steel plant. It would actively promote the management model integrating research and development, procurement and marketing, thus striving to achieve the goal of becoming the most competitive steel company in the world. In 2020, the aggregate market value, business income and net margin of Baosteel ranked the first in the industry; the P/E ratio and price-to-sales ratio ranked the eighth, and the ROE and net margin ranked the twenty-eighth.

④ Macro policy analysis report. Baosteel should master the direction of the national macro policies, especially the policies on energy and resources, for making decisions on industrial transformation, environmental protection equipment upgrade, investment production and product positioning. The report, presented in text, can provide guidance for investment expansion and investment decisions based on the policy forms, macroeconomic environment and industry development trends.

(b) Budget analysis report.

① Cost management report. Baosteel has developed a cost consumption control plan to refine the management of production costs and comprehensively optimize the workflow. In 2021, Baosteel plans to make its operating performance rank the first in China, reach the annual per capita steel output of 1,500t, and reduce the cost by RMB 720 million; in addition, it also intends to realize Intelligent Manufacturing 2.0, and achieve the nodal targets of major projects. It plans to produce 45.49 million tons of iron and 51.13 million tons of steel, and sell 49.44 million tons of billets. Furthermore, it intends to achieve the business income of RMB 289.6 billion with the operating cost of RMB 255.9 billion. Baosteel would subdivide the production procedures according to the production chain, determine the operation centers, and control the cost of each center. Then, it would analyze and evaluate each operation center, to identify the weaknesses in cost control and correct them, so as to achieve sustainable development of Baosteel.

② Financial budget report. Baosteel's financial budget report consists of the cost budget report and asset and liability budget report, in which, the former report lists the cost-based and capitalized expenditures involving safety and environment, while the latter one lists the R&D costs, depreciation, fixed assets and amortized expenses involving safety and environment. The report can provide complete and detailed for the managers to make decisions, and can also provide a basis for Baosteel to determine production arrangement and investment direction, and carry out the performance evaluation.

(ii) Management accounting report regarding environmental benefits. Baosteel has prepared the management accounting report regarding environmental benefits based on the sustainable development theory, in which, energy conservation and ecological protection are added. The report takes these two items as the entry points of sustainable development of Baosteel, and presents them in two parts: the energy conservation and environmental protection report,

and environmental protection facilities investment decision and budget report.

(a) Energy conservation and environmental protection report. Baosteel’s energy conservation and environmental protection report involves environmental equipment monitoring and maintenance budget, energy saving and environmental protection special fund input budget, non-monetary environmental cost report and water resources management. In terms of environmental equipment monitoring and maintenance budget, the equipment pricing is determined by the local environmental protection bureaus of Baosteel’s four production bases. They mainly calculate the budget of the year for the testing equipment and online operation and maintenance equipment according to the frequency of testing and maintenance, the number of equipment and the unit price of equipment. Furthermore, the budget is compared with the actual cost for the year, to determine the variation.

Special projects involving energy conservation and environmental protection cover the control of three wastes, ecological construction, and energy conservation and environmental protection, in which, the control of three wastes mainly refers to the control of solid waste, waste gas and waste water; energy conservation and environmental protection mainly refers to environmental research and development, carbon management and ecological protection. Ecological construction involves the monitoring of the ecological environment around the plant, and active protection of biodiversity, for example, Qingshan Base continues to carry out comprehensive treatment of plant appearance, Baoshan Base reservoir carries out wetland protection work and constructs Baoshan Base Zoo, forming a harmonious unity between green steel and ecological environment. Energy conservation and environmental protection measures mainly include recovery of waste heat from sintering flue gas, gas-steam combined cycle power generation technology, coke dry quenching, coke oven coal wetting and blast furnace waste pressure power generation technologies. Budget form of special funds for energy conservation and environmental protection involves annual budget, actual amount and amount of change, which can be used to compare and measure the amount for the treatment of three wastes, ecological construction, and energy conservation and environment protection.

In the non-monetary environmental cost report, the emission standards and actual emission concentrations of nitrogen oxides, carbon monoxide, sulfides and soot produced by the production equipment of Baosteel are provided, which are used to determine whether the emission standards meet the requirements of environmental protection. Water resources management consists of water resources protection, water resources consumption and comprehensive utilization of wastewater. In terms of water resources management, Baosteel pays attention to the quality and availability of new water resources in each base. In addition, it also explores the best use of water resources, and evaluates its own responsibility for water resources management, so as to ensure the stability and safety of water use. Baoshan Base ensures its production and living water by constructing a reservoir, which can also provide guarantee for the surrounding municipal water. Scientific assessment of water sources management can ensure the safety of water use in the region. In terms of the consumption of water resources, Baosteel has combined zero wastewater discharge with water saving during production, and implemented water saving and wastewater discharge reduction, and gradient utilization. Furthermore, it has adopted interception measures for domestic and production sewage, and made use of water-saving equipment and processes to reduce water extraction and consumption, and controls total water consumption and intensity. In 2020, the water consumption in four major bases of Baosteel was 2.9m³/t (crude steel), and the annual new water consumption reached 150 million m³. In terms of comprehensive utilization of wastewater, Baosteel has carried out special treatment of zero discharge of wastewater, and performed unified management of water treatment systems of the four bases based on the Water Treatment Business Entrusted Management Agreement with Baowu Water Services, so as to reduce the production operation and maintenance costs.

(c) Investment decision and budget report for environmental protection facilities. Upon making an investment decision, Baosteel would give priority to the projects that can bring added values. The environmental investment decision and budget should consider expensed and capitalized expenditures, in which, the expensed expenditure covers the expenses for environmental labor, sewage discharge, environmental monitoring, depreciation of environmental facilities, solid waste treatment, transportation of hazardous substances, environmental research and development, and investment in newly built, renovated and expanded projects; while the capitalized expenditure covers the investment in environmental protection technology improvement and that in supporting environmental protection projects. The data with respect to Baosteel’s decision on the investment in environmental protection facilities include the project name, location, progress, effectiveness, source of funding, amount of investment and disbursement.

Table 1. Details of capitalized investment of Baosteel in 2020

Environmental protection investment	Investment amount/100 million yuan
Atmospheric pollution treatment investment	27.5
Sewage discharge and treatment investment	1.5
Waste recycling investment	5.3
Environmental protection R&D investment	0.2
Maintenance engineering investment	0.4
Others	0.5
Total	35.4

Baosteel has issued the *Outline of Overall Planning for Baosteel’s Urban Steel Plant (2019-2024)*. On the one hand, Baosteel would continue to promote the construction of green plants, upgrade the level of energy conservation and environment protection, and improve the level of energy conservation and enterprise management; on the other hand, it

would give full play to the role of process equipment during the transformation of energy resources, form the shared value, and promote the construction of urban circular economy. In 2020, Baosteel completed capitalized investment of RMB 3.54 billion, and expensed investment of RMB 6.24 billion, in which, the capitalized investment is shown in Table 1.

(iii) Management accounting report regarding social benefits.

(a) Social responsibility budget report. At the end of 2020, Baosteel had 47,710 employees. In view of the large number of employees, Baosteel has also actively assumed social responsibilities in the aspects of employees, health and safety, and social welfare.

In terms of employees, Baosteel has always focused on employee rights, compensation and benefits, and career planning. In terms of employee rights and benefits, and compensation, Baosteel has established a labor union to build harmonious labor relations, and protect the rights and interests of employees. It has issued the *Measures for the Management of Employee Complaints and Appeals*, to strengthen democratic communication and open complaint channels. Furthermore, it has also established a salary system that is fair internally and competitive externally, determined a salary management standard system and an incentive mechanism, to encourage employees and enterprises to realize mutual development. The social security coverage rate has reached 100%. In terms of career planning, Baosteel has conducted job qualification counseling and evaluation through setting career development levels and establishing three occupational categories of skilled personnel, technical personnel and management personnel, so as to help the employees achieve career development. As for staff training, it has established a staff training system to train employees in the aspects of professional skills, creative ability and management ability. Baosteel has also prepared the *Management Measures for Employees' Spare-time Independent Learning and Training* to standardize the support and reward system for independent learning, such as carrying out intelligent manufacturing training and preparing a cross-base rotation exercise plan.

In terms of health and safety, Baosteel has attached importance to occupational health and safety management system, health and safety training and drills. The occupational health and safety management system is a basis for reducing the safety risks of employees. Therefore, it is necessary to develop standardized management measures for occupational health and safety of all employees, clarify the supply and use of personal protective equipment, and perform physical examination for those exposed to occupational disease hazards. The health and safety training and drills should be performed to strengthen the awareness and skills of prevention, carry out safety hazard investigation, treatment and rectification, and strengthen on-site supervision and management of labor protection. In 2020, Baosteel invested a total of RMB 640 million for safety production, and the coverage rate of safety training reached 100%.

The social welfare involves precise poverty alleviation and building of a beautiful community. In 2020, Baosteel donated a total of RMB 73.338 million to poverty-stricken areas, and sent a management team to work in such areas, helping to develop the economy and improve the living conditions. In conclusion, it invested the poverty alleviation fund of RMB 66.64 million in 69 poverty alleviation projects. For example, it helped a targeted poverty-stricken county in Yunnan to get rid of poverty, and donated funds for poor students in Ninger County. For building a beautiful community, Baosteel has prepared special budget fund for helping the local community to improve the living and education environment, and construct infrastructure. It has also carried out public welfare activities such as green guardianship and love donation, and actively assumed the social responsibility. Such as plant-department joint working in a community, donations to the residents in need, protection of shoreline of the Yangtze River, and cleaning up of the dock environment.

Baosteel's social responsibility budget report involves the contents about the employees, health and safety, and public welfare. It lists various items, such as the precise investment in poverty alleviation and the investment in work environment improvement. The specific amount should be filled according to the budget and actual amount of the year, and the difference should be calculated.

(b) Investment decision and budget report for safety facilities. Baosteel would perform investment in safety equipment each year, to prevent and control safety accidents, and eliminate safety hazards during production. It would also make a comprehensive decision on the budget for safety equipment through taking into account of the corporate image of Baosteel and the economic benefits. In 2020, Baosteel vigorously improved the management of fire protection facilities and equipment, prepared and implemented the fire protection function testing and monitoring plan, regularly held special promotion meetings for fire protection, and organized fire emergency drills, so as to improve the emergency response capability, firefighting awareness and skills of the employees. Furthermore, it also revised and improved the emergency evacuation route. The investment budget for security equipment was divided into the investment in new projects and renewal, for each item, Baosteel presented the total investment, the actual amount for the current year, the budget for the current year and the cumulative investment of the previous year, and calculated the difference.

4. Conclusion and insight

The management accounting reporting system under the sustainable development theory has been an inherent demand for the development of modern enterprises, and it is of vital practical significance to analyze and improve the management accounting reporting system from three dimensions. By analyzing the implementation of Baosteel's management accounting under the sustainable development theory, it can be find that Baosteel implements economic management through refined cost management and rational financial arrangement, and takes energy conservation and

ecological protection as the main entry points for the management accounting report regarding environment. In addition, in terms of social development, Baosteel attaches great importance to the management of employees' rights and benefits, compensation and benefits, career planning, health and safety, and social welfare. Each dimension can be subdivided in the form of reports and statements, finally forming Baosteel's management accounting reporting system under the sustainable development theory, which turns the goal of profit maximization to the maximization of comprehensive goal, and makes Baosteel focus on energy conservation, R&D innovation, quality efficiency, environmental friendliness and social responsibility, thus providing accurate information for the managers to make business decisions. At the same time, Baosteel has verified and evaluated the performance formulation and completion under the three dimensions of economy, environment and society, so as to maximize the overall goal. The management accounting report under the sustainable development theory can effectively improve the enterprise value. In order to ensure the smooth implementation of the management accounting report, it is necessary to establish a modern information platform and implement the effective protection system.

(1) Improvement of the enterprise value

Baosteel, with sustainable development as the basis for value creation of management accounting, has established a new people-oriented model of energy conservation and environment protection, and safety production, for realizing the efficient use of resources and energy. The state encourages enterprises to reduce energy consumption and pollutant emission, supports the activities for public good, and implements the preferential policies such as tax reduction and exemption and low-carbon subsidies for the enterprises with the sustainable concept. The enterprises implementing sustainable development can take into full account of the changes in the internal and external environment, which is conducive to their long-term development, and can provide more development opportunities for them as compared with the competitors. The sustainable development of enterprises fits into the background of global sustainable development, and it can help to shape a good corporate image and improve the market competitiveness.

(2) Establishment of a modern information platform

Many contents in the management accounting report are presented in statements, and the effective statistics on various types of information requires modern information platforms and information systems, for data entry, transmission, preservation, sharing and correction. Therefore, Baosteel has introduced the ERP system to classify and summarize the data in the management accounting report, so as to provide technical support for analyzing and grasping the accounting information, thus improving the execution accuracy and timeliness of the management accounting report.

(3) Establishment of an effective protection system

The effective implementation of management accounting under the sustainable development theory requires each enterprise to establish an effective protection system. Baosteel has established a medium and long-term development plan, adjusted its organizational structure, and introduced professional talents to adapt to the changes in the management accounting system. For example, Baosteel has established a social responsibility-related committee and a remuneration and appraisal committee, to examine the fulfillment of social responsibility and the protection of employees' rights and interests. It has also established a safety inspection bureau to monitor production safety, and ensure the consistency between the contents in the management accounting report under the sustainable development theory and the strategic objectives of the enterprise, thus achieving sustainable development.

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