



2016 ANNUAL SOCIAL RESPONSIBILITY REPORT



中船海洋与防务装备股份有限公司
CSSC OFFSHORE & MARINE ENGINEERING(GROUP)COMPANY LIMITED

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RESPONSIBILITY 2016

Key Performance



Total Assets

RMB46,269million



Operating Income

RMB23,350million



Total Profit

RMB119million



Value of Social Contribution Per Share

RMB1.878



Research and Development Expenses

RMB657million



Product Quality Assurance Expenses

RMB43,204,000



Comprehensive Energy Consumption Per RMB10,000 of Output Value

0.0395
ton of standard coal/RMB10,000



Environment Protection Expenses

RMB16,449,000



Number of Employees

21,025



Percentage of Female Employees

12.76%



Total Number of Suppliers

3,938



Total Charitable Donations

RMB2,150,000

MAJOR HONOURS

- Class A Information Disclosure on the Shanghai Stock Exchange for the Year 2015 (COMEC)
- Recognised as Credible Enterprise in Guangdong Province for 26 consecutive years (1990-2015) (COMEC)
- Low Carbon-Emission and Environment Protection Enterprise in South China with Highest Brand Value for the Year 2016 (COMEC)
- Top 100 Innovation Enterprise in Guangzhou for the Year 2016 (GSI)
- "Shipyard Workers" magazine won the "Outstanding Ship News Publication in the PRC" for the year 2015 (GSI)
- Prominent Enterprise in National Quality Management Group Activity (GSI)
- Award of Outstanding Contribution to the Development of High-tech Weapons and Equipment (Huangpu Wenchong)
- National High-Tech Enterprise (Huangpu Wenchong)
- Award of Innovation in the Integration of Informatization and Industrialization for the Year 2016 (Huangpu Wenchong)

LETTER TO STAKEHOLDERS

Dear stakeholders,

It is my pleasure to share with you our efforts and achievements in economic development, environmental improvement and social harmony in the past year.

In 2016, the recovery of the world economy was weak, and the situations of excessive global shipping capacity and shipbuilding capacity remained unchanged. The PRC shipbuilding industry faced the grim task of reducing production capacity. In the face of complex domestic and international economic situation and long-term in-depth adjustment to the ship and maritime engineering market, we stepped forward despite the difficulties and continued to fulfill our economic, environmental and social responsibilities in a responsible manner and pursue our mission as a state-owned shipbuilding military enterprise.

Over the past year, guided by the important speech instructions by General Secretary Xi Jinping, we firmly established five major development concepts of “Innovation, coordination, green, open and sharing” and stuck to our strategic objectives of “becoming a first-class enterprise in the global marine and heavy equipment market with leading technologies and prominent services and a building and supply facility for Chinese navy in South China”. We steadily pushed forward reform and strived to make our core shipping and marine business stronger while actively developing non-ship business by focusing on “cut overcapacity and excess inventory, deleverage, reduce costs, and strengthen points of weakness”. As a result, the Company has recorded strong results in various areas while maintaining stability and achieved a good start for the “13th Five-year” period.

We vigorously advanced various reforms, and fully grasped China’s Belt and Road Initiative. We strived to seize the development opportunities brought by China’s Belt and Road Initiative and the strategy of building a marine power. By adhering to the principle of improving quality and efficiency and focusing on the structural supply side reform, we recorded strong operational results in a challenging environment. Our operating income for the year was RMB23,350 million and total profit was RMB119 million, further accelerating China’s advance from a large shipbuilding country to a strong one. We adhered to our bottom line of quality and safety and strived to become the world’s leading high-quality ship builder. During the year, we incurred product quality and safety expenses of RMB43,204,000 and achieved our objective of “zero fatality”. We considered technological innovation as the No. 1 driving force to accelerate innovations and lead industry development. During the year, we incurred research and development expenses of RMB657 million and received 72 scientific and technological achievement awards. This has paved the way for pursuing the Chinese dream of developing global competitive advantages, building a strong marine power, and realizing the great rejuvenation of the Chinese nation.

We insisted on green development and reduced the impact on the ecological environment. Faced with increasingly serious environmental challenges, we have to immediately accelerate green development without delay. We continued to focus on environmental issues such as global

climate change and haze, gradually improved our environmental management system, implemented reasonable and effective management of environment protection and energy saving and emission reduction. We adhered to the concept of “green shipbuilding”, conducted research and development of key technologies for green environment-friendly ships, and successfully independently developed China’s first oil heating tank, which is environment-friendly and generate zero pollution. We fully followed various environment policies and requirements stipulated in national and international conventions and effectively controlled the emission of greenhouse gas. During the year, we reduced comprehensive energy consumption by approximately 3,100 tons of standard coal. While steadily developing core shipbuilding business, we actively developed environment protection business and received the award of Low Carbon-Emission and Environment Protection Enterprise in South China with Highest Brand Value for the Year 2016 jointly issued by the Low Carbon Industry and Technology Association of Guangdong and Guangzhou Urban Mineral Association.

We kept in mind our corporate citizenship to achieve social harmony and development. While in pursuit of our own development and growth, we did not forget to pass on CSSC’s gene for fulfilling social responsibility for over 100 years. We actively sought out a way to harmonious and mutual development with our stakeholders in order to together achieve growth and brilliant achievements. For staff development, we advocated the safety concept of “Life first” and spent RMB 42,887,000 in various labour protection products during the year. We emphasized on employee growth and arranged a total of 94,264.5 hours of training to 13,953 employees at all levels during the year. We were concerned about the living of employees with financial difficulties and distributed consolation money amounting to RMB1,098,100 to them during the year. For community building, we actively implemented the Central Party Committee’s and the central government’s poverty alleviation work requirements and vigorously promoted the “targeted poverty alleviation” public welfare activities in Heqing and Xuwen counties by donating targeted property alleviation fund of RMB1,680,000 to local people, which has enhanced the “hematopoiesis” function of local economy. We made use of our specialized advantages and actively participated in community volunteer services. We provided over 430 hours of volunteer services during the year and communicated positive energy and love to people and the society. For cooperation and win-win, we vigorously conducted responsible procurement to promote the healthy and sustainable development of the industrial chain and achieve mutual prosperity and progress.

With large enterprises come strong influence and heavy responsibilities. As an enterprise citizen, we strived to serve the purpose of national economic and social development and incorporated social responsibility into our corporate strategy, management and operation so as to contribute to the community with strong economic, environmental and social performance.

A forest which has successfully withstood the tests of wind and storm will be able to embrace the spring breeze. Looking forward to 2017, we wish to grow with your support, trust and monitoring and join hands with you to maximize the comprehensive economic, environmental and social performance and promote social harmony and sustainable development.



ABOUT US

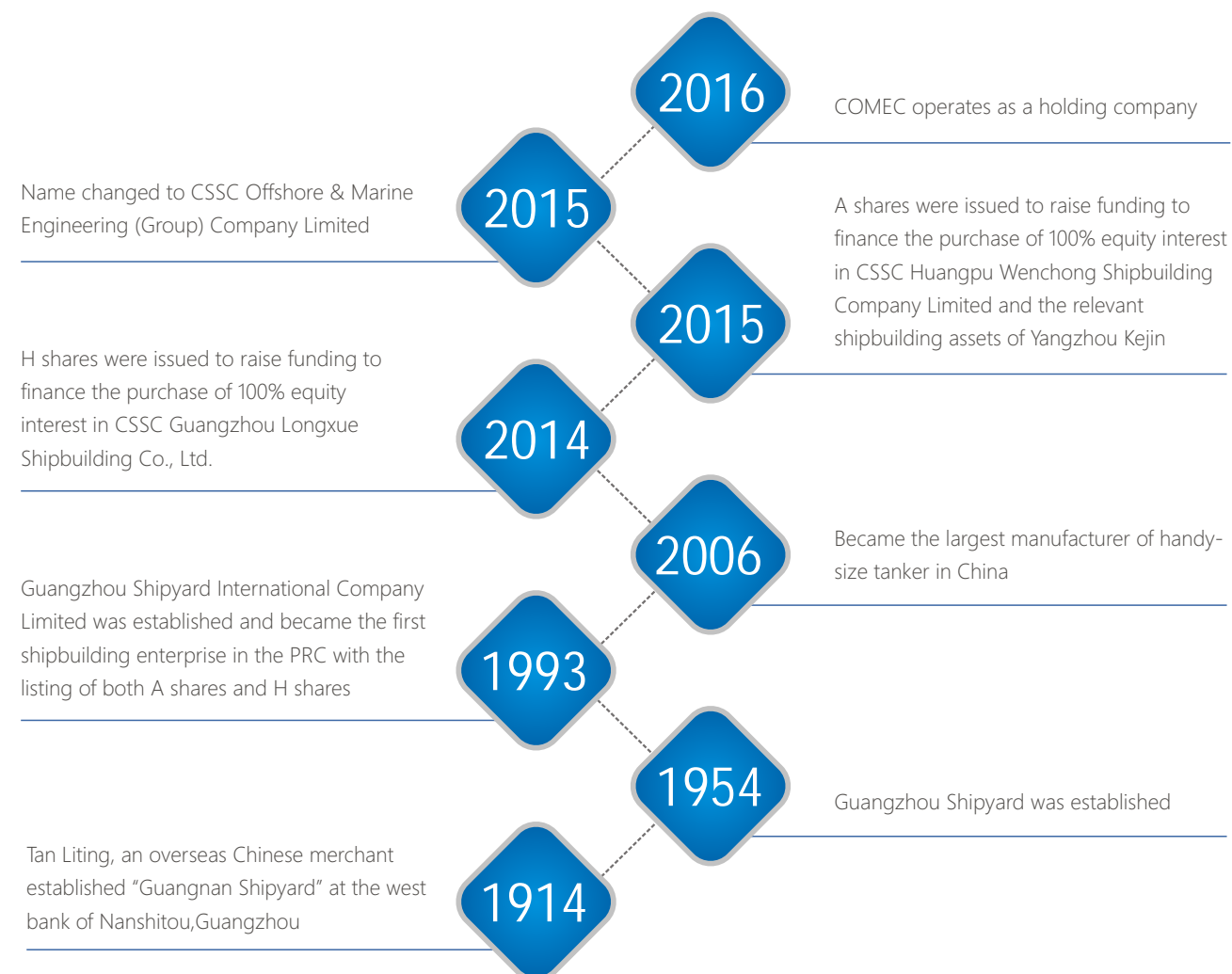
Corporate Profile

CSSC Offshore & Marine Engineering (Group) Company Limited ("COMEC") is a large key shipbuilding enterprise under China State Shipbuilding Corporation ("CSSC") and a holding platform company for capital operation of CSSC. The Company was formerly known as Guangzhou Shipyard International Company Limited. The Company became listed on Shanghai (stock code: 600685 for A shares) and Hong Kong (stock code: 00317 for H shares) in 1993, and was the first shipbuilding enterprise in the PRC with listing of both A+H shares.

In 2015, COMEC finished the consolidation of CSSC's high-quality shipbuilding assets in South China and realized the listing of domestic core military assets. It has become a large comprehensive marine and defence equipment enterprise group incorporating four sectors of maritime equipment being maritime defence equipment, maritime transport equipment, maritime development equipment and maritime expedition equipment.

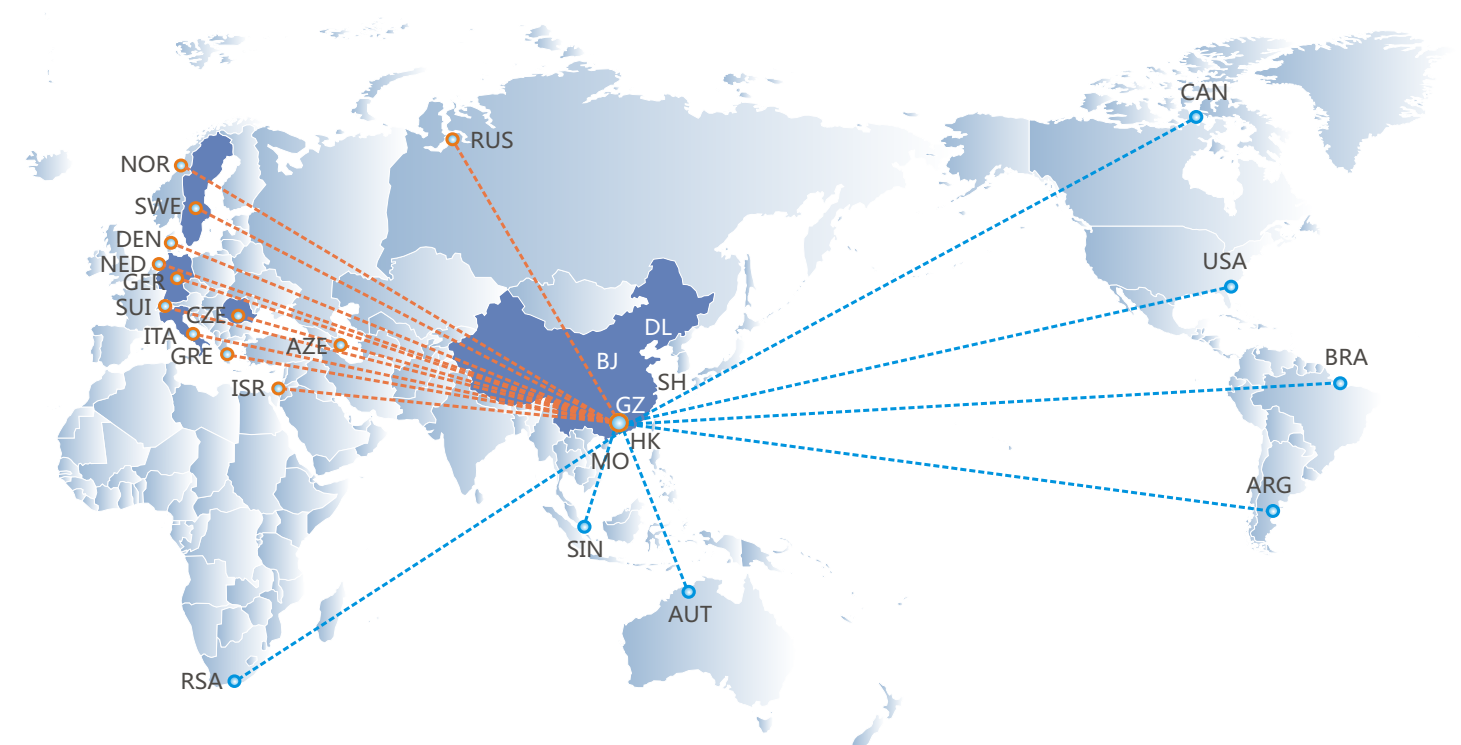
History

In over 100 years since the establishment of Guangnan Shipyard in 1914, COMEC experienced trials and hardships and moved forward. It built a strong foundation with the historical mission of making China become a strong marine power and manufacturing power, and has an important position in the modern industrial history and the shipbuilding industry in the PRC.



Geographic Coverage and Principal Products

With over 100 years of development, the Company's business now covers over 20 countries and regions on the six continents in the world. Its products include, among others, military ships, oil tankers, RO/RO passenger ships, semi-submersible ships, ore carriers, large steel structure and offshore platform products.



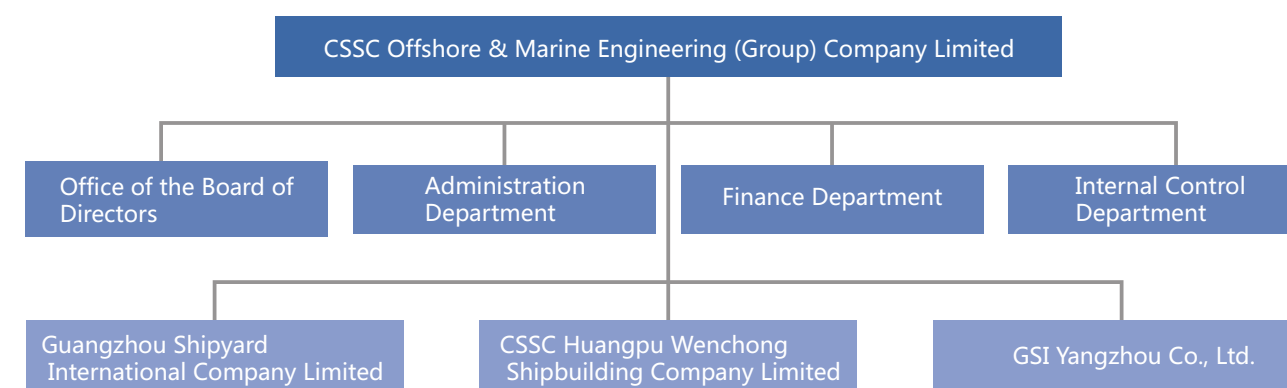
Geographic Coverage and Principal Products



CORPORATE GOVERNANCE

Organisational Structure

We always keep in mind our responsibility for all of our shareholders and have been in strict compliance with laws, regulations and the relevant requirements. In line with our production and operation, we continued to improved our corporate governance structure, expressly set out the responsibilities and authority in respect of decision-making, implementation and monitoring, and formed an operation mechanism whereby the decision-makers, the implementation staff and the monitoring staff are assigned different responsibilities to achieve an effective check and balance. We strived to promote the overall healthy and sustainable development of the Company through professional, standardized and transparent means.



Operation of the Board, the Supervisory Committee and General Meeting

Board of Directors

The Board of Directors of the Company comprises 11 directors. The Board of Directors fully represents the interests of shareholders and reports to shareholders at the general meeting. It formulates the Company's development strategies and monitors the operation and management and financial position of the Company in order to create long-term value for shareholders.



Name	Position
Han Guangde	Chairman
Chen Zhongqian	Vice Chairman
Chen Liping	Executive Director
Xiang Huiming	Executive Director
Chen Ji	Executive Director
Yang Li	Non-executive Director
Wang Guozhong	Non-executive Director
Song Dejin	Independent non-executive Director
Zhu Mingyou	Independent non-executive Director
Wang Yichu	Independent non-executive Director
Min Weiguo	Independent non-executive Director

Supervisory Committee

The Supervisory Committee of the Company comprises five Supervisors and operates in accordance with the laws, regulations and regulatory documents including the Company Law, *the Securities Law and the Corporate Governance Standards for Listed Companies*, as well as the requirements of *the Articles of Association and the Rules of Procedure of the Supervisory Committee* in order to actively safeguard the lawful interests of the Company and its shareholders.



Name	Position
Wu Guangjun	Chairman of the Supervisory Committee
Fu Xiaosi	External Supervisor
Zhu Zhengfu	External Supervisor
Chen Shaolong	Supervisor Representing Employees
Ding Qianfang	Supervisor Representing Employees

General Meeting

In accordance with the laws, regulations and regulatory documents including *the Company Law*, *the Articles of Association*, the listing rules for Shanghai and Hong Kong and *the Rules of Procedure of the General Meetings*, we continued to improve our corporate governance structure, set out clear procedures for convening, notice, holding, consideration, voting and disclosure for general meetings so that shareholders fully enjoy the right to know, the right to speak, the right to question and the right to vote.



Specialized Committees under the Board of Directors

There are four specialized committees under the Board of Directors, namely the Strategy Committee, the Nomination Committee, the Emolument and Examination Committee and the Audit Committee. The specialized committee meetings are held before Board meetings to pre-consider the matters to be considered at Board meetings and make recommendations for the reasonable decision-making of the Board of Directors and improve its efficiency. In 2016, the Company held four meetings of the Audit Committee, one meeting of the Emolument and Examination Committee, three meetings of the Nomination Committee and one meeting of the Strategy Committee, and gave full pay to the role of the specialized committees under the Board of Directors in relation to audit supervision, remuneration appraisal and personnel nomination responsibilities.

Development of the Board, the Supervisory Committee and General Meeting

The Board of Directors actively played its core role in the management of the Company's corporate strategies, risk management and control and material operational decisions. By holding the meeting of the Board, the Supervisory Committee and the general meetings and convening meetings of the specialized committees in due course, we improved the reasonableness of our operational decisions and the effectiveness of operation of the Company and fully safeguarded the lawful interests of shareholders. In 2016, the Company held eight Board meetings, at which 30 resolutions were passed, 3 general meetings, at which 11 resolutions were passed, and 6 meetings of the Supervisory Committee, at which 16 resolutions were passed, and issued 4 regular reports, 41 temporary announcements, 3 announcements of resolutions passed at general meetings to keep the shareholders informed of the production and operation of the Company.

Investor Relations Management

We attached great importance to communication with investors and continued to strengthen investor relations management and improve the understanding of the capital market and the military market in order to lay a solid foundation for the opening of a new era of capital operation.



The capital market business training

- Active cooperation with investors for research. The Company organized over 10 investor researches for funds, brokers and industry researchers, and arranged no less than 100 receptionists, which has improved the mutual understanding between the market and the Company, and expanded the influence of the capital market.
- Conducted series of seminars and training. The Company arranged Directors, Supervisors and senior management, totalling 20 persons, to participate in the training provided by various regulatory bodies and held three seminars in relation to the capital market business training for the year 2016, which has enhanced the business skills of Directors and helped to improve the corporate governance of the Company.



Won the award of "Top 30 Supervisory Committee of Listed Companies" at the selection of best practices of supervisory committees held by the China Association for Public Companies and the Shanghai Stock Exchange

RESPONSIBILITY MANAGEMENT

We enhanced responsibility management by establishing and improving the Company's organizational structure and management team to promote the smooth development of social responsibility work. We jointed hands with the stakeholders including our customers, shareholders, employees and community to promote the sustainable development of the Company and the society.

◎ Responsibility Culture

After hundreds of years of practice and accumulation, we formed a culture system of "serving country through marine and shipbuilding business" to full our responsibility in the era. As an entity with deep historical heritage, the Company has an advanced responsibility culture adapting to the reality, which will lead COMEC to embrace the ocean and head towards "deep blue" with a brand new gesture.

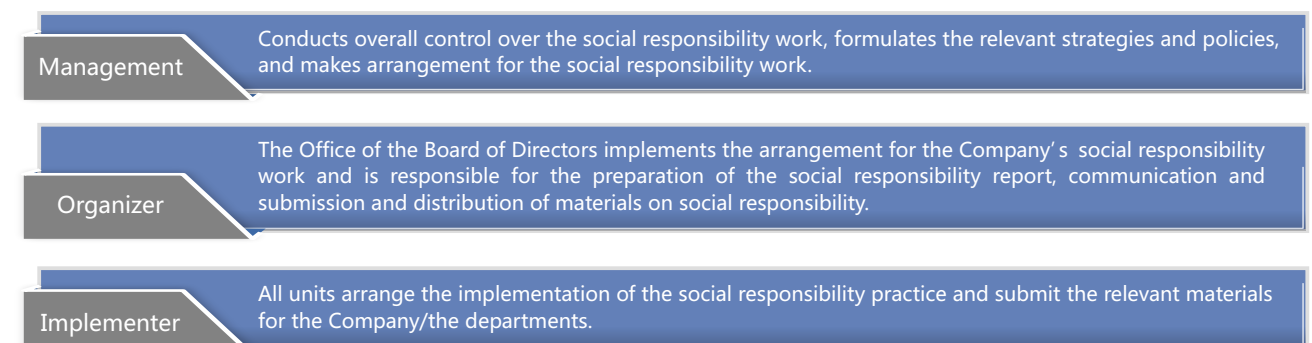


Responsibility: Serving country through marine and shipbuilding business



◎ Social Responsibility Organisation System

We set up a social responsibility work network with deep involvement by key management, coordination and cooperation between departments and implementation by subsidiaries of the Company, in order to facilitate the implementation of the requirements for social responsibility management at all departments and pave the way for systematic advance of the social responsibility work.



◎ Communication with Stakeholders

We placed stress on the establishment of a mechanism for regular communication and exchanges with the stakeholders. We strived to understand the expectations and demands of the stakeholders by way of communication and exchanges through various channels, levels and forms, which were used as important reference when formulating the Company's sustainable development strategies and actions plans and conducting responsibility practices and making information disclosure.

Stakeholders	Expectations and demands	Methods of communication and response	The Company's response and measures
Government	<ul style="list-style-type: none"> Serve national defence Technological innovations Asset appreciation Abide by the laws and regulations and pay tax in accordance with the law 	<ul style="list-style-type: none"> Improve corporate governance Accept regulatory review Regular reporting 	<ul style="list-style-type: none"> Regular reports Information submission Public information disclosure
Shareholders	<ul style="list-style-type: none"> Continuous stable returns Transparent information disclosure 	<ul style="list-style-type: none"> Regular report on operational information Improve daily management 	<ul style="list-style-type: none"> Receiving visiting investors Issue 2016 annual report
Customers	<ul style="list-style-type: none"> High-quality products and services Strictly comply with contracts Cooperation and Win-win 	<ul style="list-style-type: none"> Provides safe and reliable products Provides high-quality services Strengthen contract performance management 	<ul style="list-style-type: none"> Delivery ordered products on time Fulfill contractual obligations
Partners	<ul style="list-style-type: none"> Fulfill undertakings Fair, just and open Cooperation and Win-win Share experience 	<ul style="list-style-type: none"> Disclose procurement information Conduct strategic cooperation Negotiation and communication 	<ul style="list-style-type: none"> Signs strategic agreements Hold seminars Carry out technical exchanges
Employee	<ul style="list-style-type: none"> Basic rights and interests protection Employee health and safety Fair promotion and development Employee care 	<ul style="list-style-type: none"> Improve the compensation system Provide a safe and healthy working environment Provide fair promotion channels Strengthen staff training Carry out employee care 	<ul style="list-style-type: none"> Democratic life meeting Workers congress Employee physical examination Visit workers with financial difficulties
Environment	<ul style="list-style-type: none"> Energy conservation and emission reduction Waste disposal Reduce pollutant emissions Green office 	<ul style="list-style-type: none"> Strengthen environmental statistics and monitoring Green production Environmental protection training 	<ul style="list-style-type: none"> Research and develop green products Recycling resources Public disclosure of environmental information
Community and the public	<ul style="list-style-type: none"> Community development Poverty alleviation Community communication 	<ul style="list-style-type: none"> Donations and help Volunteer service activities 	<ul style="list-style-type: none"> Help poor villages Learn from Lei Feng activities Convenience service activities



ECONOMIC RESPONSIBILITY



Value of social
contribution per share
RMB
1.878

Completion
and delivery of
55
ships during the year

Total operating
income for the year
RMB
23,350
million

- Steady Business Growth
- Building High-quality Ships
- Production Safety Management
- Independent Technological Innovation
- Enhanced Operation and Management

Since the beginning of the 21st century, the ocean has once again caught the attention around the world. The implementation of China's major initiatives including "Ocean Power" and "Maritime Silk Road" has brought opportunities to shipbuilding enterprises and assigned them greater responsibility and mission. We are committed to promoting the transformation and upgrading of the shipbuilding industry and maximizing the values of shareholders through quality products, safe management, innovative technologies and sustainable management, and providing customers with more innovative, more intelligent, more secure marine products and maritime engineering equipment, so as to facilitate the sustainable development of the shipbuilding industry and help China develop into a strong shipbuilding power from a big one.

STEADY BUSINESS GROWTH

Based on our core shipbuilding business, we continued to expand into business such as maritime engineering equipment, electrical and mechanical engineering equipment and environment protection industries, in order to gradually establish our comprehensive presence in the maritime equipment industry and achieve our magnificent objectives of "becoming a first-class enterprise in the global marine and heavy equipment market with leading technologies and prominent services and a building and supply facility for Chinese navy in South China".

Shipbuilding business

Ship products are our core products. We actively developed business models and technological innovation to seize the market demand for energy-conserving and environment-friendly new ship models. We endeavoured to consolidate our position in the shipbuilding market by enhancing our capacity in respect of technological innovation, product management and quality control.

Maritime engineering equipment

We sought breakthroughs in the face of changing situations and vigorously developed maritime engineering equipment business. We strived to seize opportunities amid the significant decrease in market demand.

Non-ship business

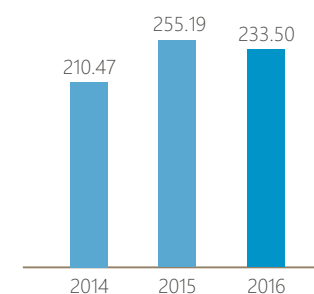
- Steel structure business: Completion of the building of the "City of Dreams" steel structure project in 2016;
- Environment protection business: By seizing the green development opportunities and leveraging our existing technologies, resources and brand advantages, we actively promoted our presence in environmental protection business including solid waste treatment.

Ship repair business

We actively responded to the competition from low ship prices through the dredger mass repair project, the maritime engineering living platform renovation project and the construction of luxury yachts. During the year, we received orders for repairing 121 ships.

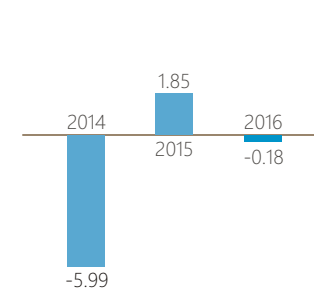
Total operating income

Unit: RMB100 million



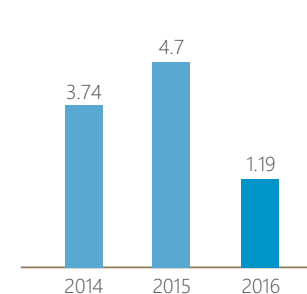
Operating profit

Unit: RMB100 million



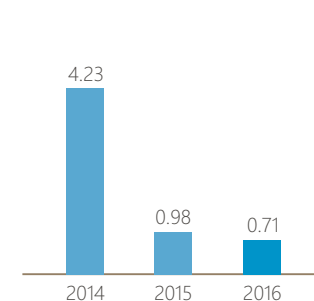
Total Profit

Unit: RMB100 million



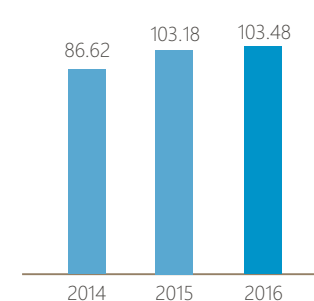
Net profit attributable to the Company

Unit: RMB100 million



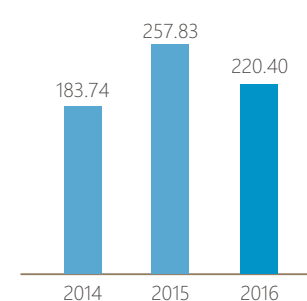
Equity attributable to owners of the Company

Unit: RMB100 million



Value of orders received

Unit: RMB100 million



Case Delivery of the first R-550D jack-up drilling platform in the world

On 16 December 2016, the first R-550D jack-up drilling platform in the world, built by Huangpu Wenchong, was delivered, which brought an additional high-performance platform to the world's oil industry and signalled that the PRC maritime engineering equipment industry has entered a new era of high-end manufacturing. The R-550D jack-up drilling platform has a working depth of 400 feet and drilling depth of 30,000 feet under water. Compared to similar platforms, it is featured by a wide range of operation, strong lifting capacity, variable load, good environmental adaptability and strong



performance and is more suitable for operation under severe wave conditions. In addition, as the only jack-up drilling platform in the PRC with core equipment localization rate of over 90%, the platform signalled a breakthrough in the degree of localization and became an important pillar for the implementation of China's strategy of "building a marine power and developing maritime engineering industry".

Won the "Leading the Future" Best Drilling Technology Award issued by World Oil

Case Commencement of construction of the world's first polar condensate tanker

On 21 November 2016, GSI commenced the construction of a polar condensate tanker for Greece-based Dynacom, which provided another new ship model in the polar ship area to the Company and consolidated its position as a leading polar icebreaker ship building enterprise in the world. The polar condensate tanker has the characteristics of both "icebreaker" and "oil tanker" and requires the perfect combination of technical advantages in ice-breaking and building oil tankers. Upon completion, such polar condensate tanker will be utilised in the largest liquefied natural gas in the world and promoted the development and utilisation of clean energy.



Design sketch of the 44,500 ton polar condensate tanker

Voices from stakeholder

"Arc7 ice level, advancement with pod, two-way ice-breaking and operable under minus 50 degrees celsius; these features are enough for the ship to be unique in the world."

--Representative of Dynacom, the ship owner from Greece

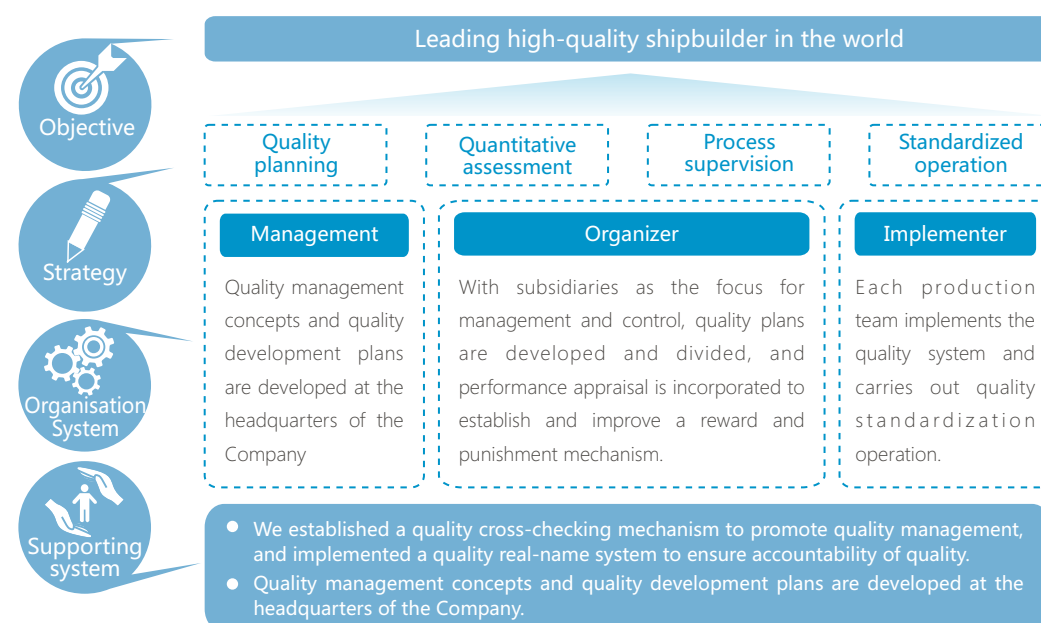
BUILDING HIGH-QUALITY SHIPS

Today's ship quality determines tomorrow's sailing safety. A shipbuilding project involves extensive and complex work and comprises many links including design, building and installation of supporting equipment. We always regard the ship quality as the lifeline of enterprise development. We continued to improve our quality management and control capability, deepened synergies and promoted innovations, in order to build high-quality ship products.

Quality management

We have assigned the quality responsibilities in the whole process of production and operation of the Company and established a multi-level quality management system from the headquarters to production teams, with all levels interrelated and each having its own focus, so that the quality management and control of the Company can shift to reasonable and systematic management.

Quality management system



Quality Control program

Quality control (QC) program is one of our good traditions and helps to create a healthy environment in which all employees focus on quality, pursue quality and advocate quality. In 2016, we continued to promote the quality improvement process and carried out quality improvement work well. We actively summarized quality issues, analysed the root of problems, and developed and implemented the relevant improvement measures

Quality training

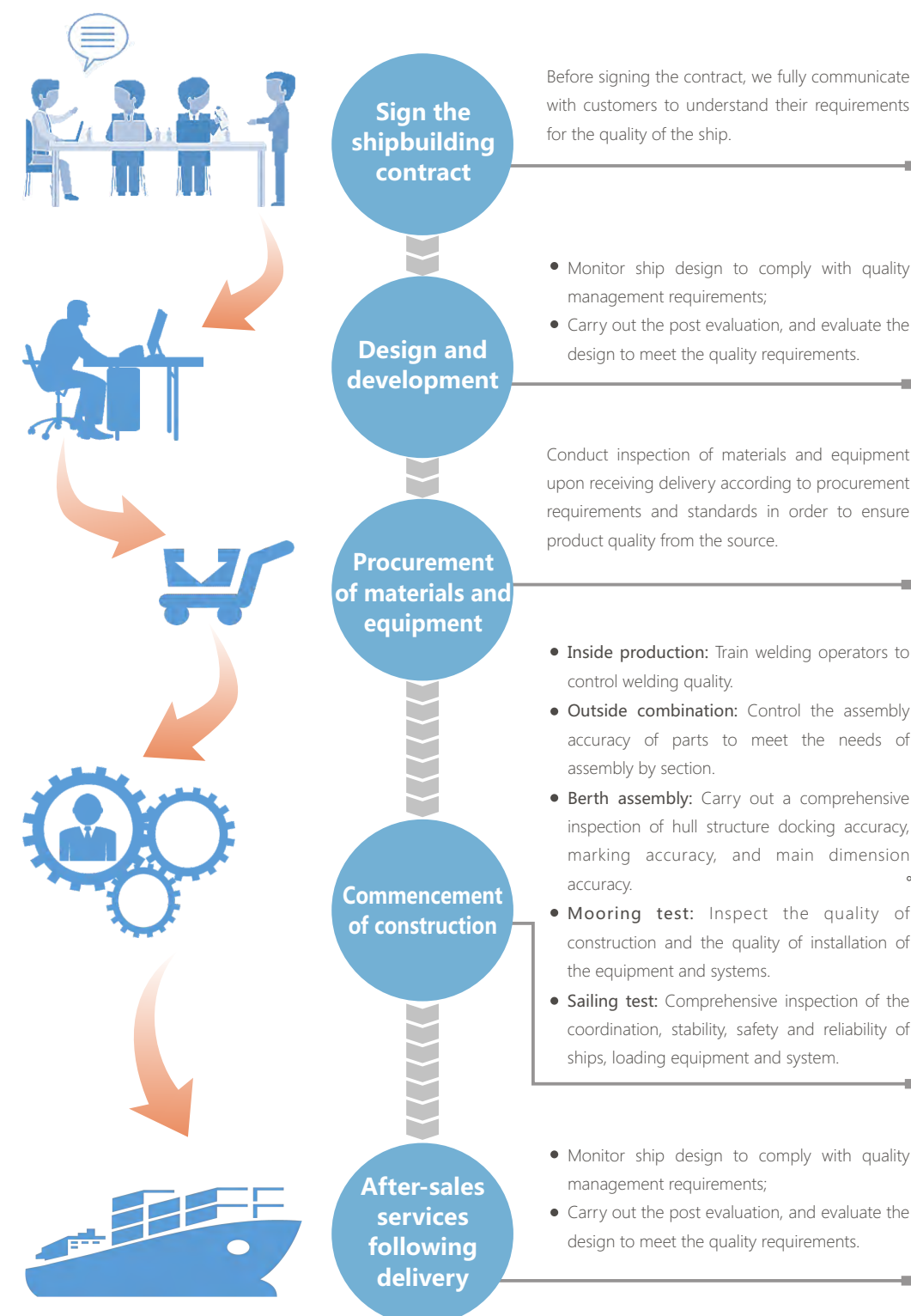
In order to enhance the ability of team members in the learning, application and innovation of quality awareness, tools and methods, we arranged quality inspectors and quality managers to participate in various quality training and conducted regular qualification assessment in order to improve the quality management ability of quality inspectors and quality managers.



"On-site quality issue analysis and solution" training

Whole Process Quality Supervision

From pieces of scattered steel and equipment to the ships sailing in rivers and oceans and serving economy, all of them require a series of processes from design, development, cutting, manufacturing, welding to assembly. We advocate a high-quality process and implement a quality supervision and inspection mechanism. Quality inspection must be carried out upon completion of each process and the next process shall not commence until the previous process has passed the quality inspection. We control quality in strict compliance with national quality system standard ISO19001 to ensure the quality of the production process.



First pass rate of process
96.70%

an increase of
1.02 percentage points year-on-year

First pass rate of parts procured from external suppliers
96.84%

First pass rate of hull welding X-ray film
94.24%

First pass rate at external delivery
96.63%

Product quality assurance expenses of RMB
43,204,000

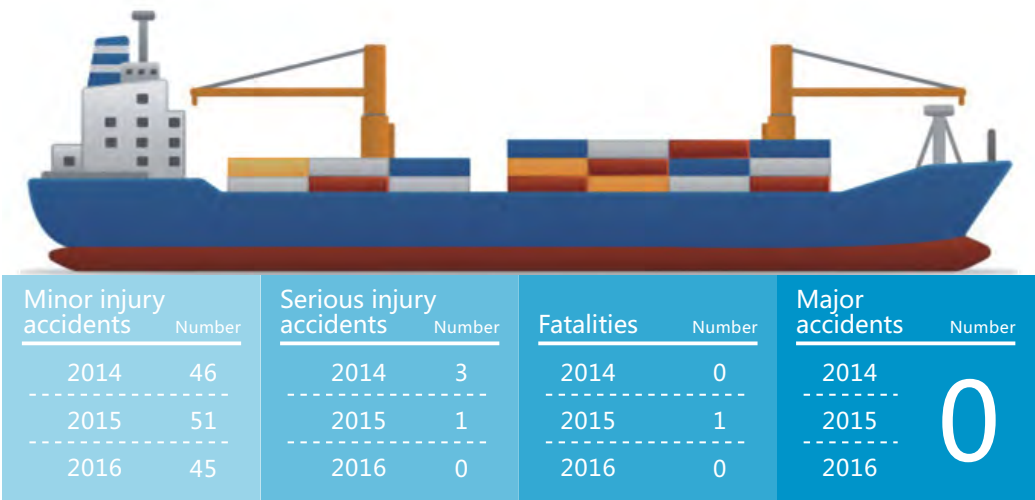
17
excellent quality management teams

11
excellent quality teams

14,493
persons participated in quality management training

PRODUCTION SAFETY MANAGEMENT

Work safety plays an important role in ensuring the healthy operation of enterprises. We adhered to the safety management concept of "safety first, prevention first, comprehensive treatment" and continued to improve safety management through assigning responsibilities at all levels to ensure all-around safety. In 2016, we met our objective of zero fatality; there were no major safety production accidents and the number of minor injury accidents reduced by 11.8% year-on-year.



Improve Safety Management

Following the Company's safety plans and objectives for the 13th Five-Year period, we further deepened our 6S management, strengthened on-site safety management and control, promoted production safety standardization, and strived to improve safety management to avoid production safety accidents.

Improve 6S

- Improve the 6S management system so that responsibilities and areas are more clear;
- Conduct special rectification of basic orders to avoid "black spots";
- Cross-examination of 6S work and monthly review;
- Carry out 6S inspection of ship products under construction and promote equipment protection.

Enhance on-site safety management and control

- Carry out on-site confirmation and on-site monitoring to ensure the safety and smooth operation of major dangerous operations;
- Conduct hazard identification and environmental investigation, strengthen workers' safety awareness and ability to identify dangerous sources, and improve production equipment and facilities and on-site working environment.

Production safety standardization

- Assess the suitability of the safety management system of the Company and improve its production safety rules and regulations;
- Comprehensively promote the standardization of safety production of military enterprises, and strengthen the implementation and learning of standards.

Safety Culture among All Employees

People are always the core factor that determines the level of safety management. We vigorously cultivated a safety culture among all employees, and made safety become a working habit of each employee through a series of publicity and education activities, so that each employee passes on that habit to everyone around and develop a strong safety "inertia".

Safety Training

By combining internal training and external combining, we adopted different training programs for safety managers at all levels and provided unique training such as "management's production safety management ability improvement" and "process technician safety training", in order to effectively regulate the safety behaviour of employees and improve their safety awareness.

Safety Publicity

We organised safety publicity in various forms including the "Safety is blessing" lecture and the "Ankang Cup" production safety knowledge contest in order to teach safety knowledge while playing and let staff keep in mind their safety responsibility and fulfil their responsibility.

Safety training expenses RMB

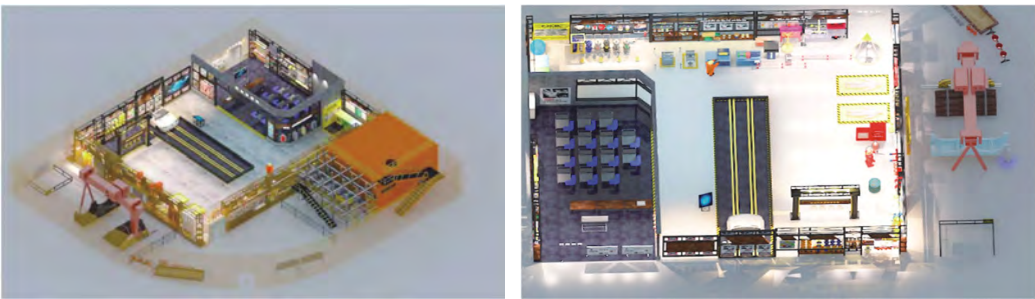
761,300

Production safety training provided

148 sessions

Case Plan for the construction of a safety education experience hall to improve the effectiveness of safety education

Traditional security education is mainly taught in class, lack of real experience, participation and interaction. In order to improve the effectiveness of safety education, GSI plans to build a safety education experience hall, where 15 experience zones will be set up, covering 63 experience items including safe electricity, emergency and first aid, fire safety and explosive devices to simulate safety scenarios in real lives in order to create a visual and interactive teaching model and improve the effectiveness of safety education.



Safety education experience hall design

Strengthen Emergency Drills

We have established a comprehensive coordination and interaction mechanism for emergency response, and carry out regular emergence drills with various sizes, in order to enhance our ability to cope with natural disasters and emergencies and ensure that any emergency will be handed with ease. In view of the challenging situations including frequent extreme weather, typhoon and flood, we have prepared an emergency drill plan by taking into account the characteristics of production and major risks of the Company. During the year, we conducted 42 emergency drills.



Emergency drills

Emergency supply expense RMB

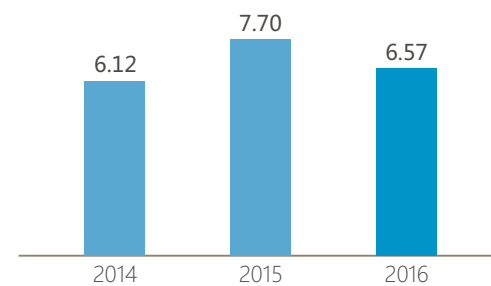
2,120,400

INDEPENDENT TECHNOLOGICAL INNOVATIONS

In the era of economic globalization, technological innovation is an important driving force for enterprise development. We continue to deepen the mechanism of technological innovation, strengthened capital and human resources protection, and focused on the promotion of application of technological results in order to provide strong support and protection for our innovations and development.

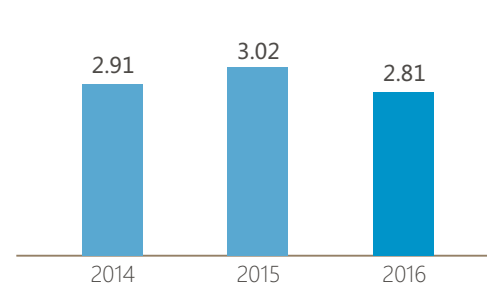
Research and development expense

Unit: RMB100 million



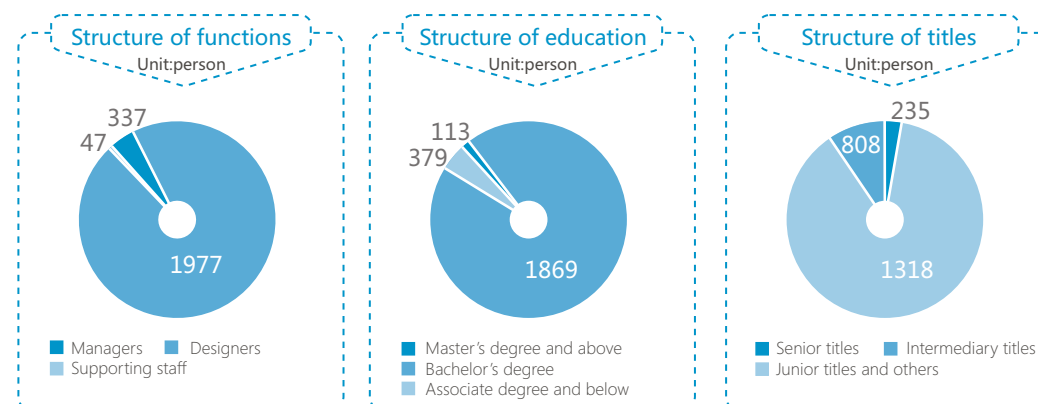
Research and development expense as a percentage of operating income

Unit: %



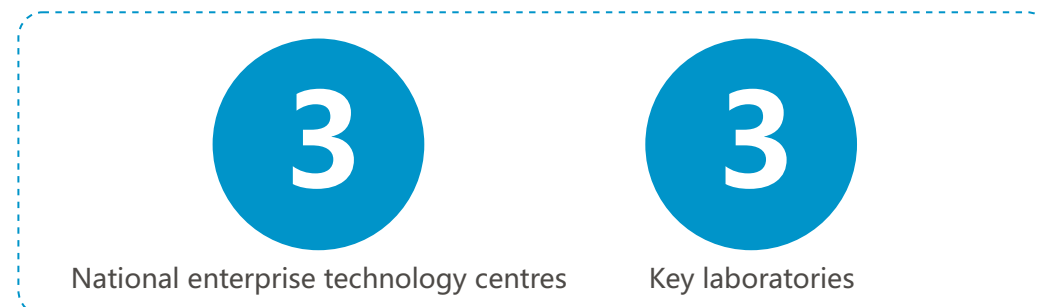
Research and Development Team

We attach great importance to the development of the development team and the building a reserve of multi-level talents. As at the end of 2016, we had a research and development team consisting of 2,361 members to provide talent support for technological innovations.



Research and Development Platform

We strive to build a multi-level platform for scientific and technological innovation and provide strong support for innovative research and development.

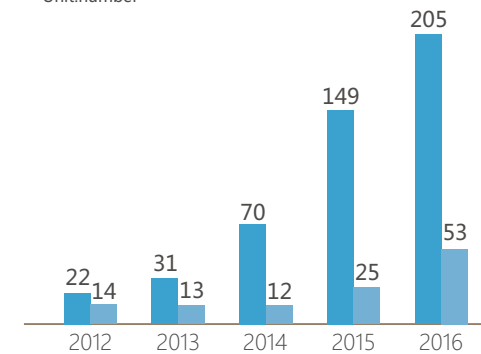


Technological Achievements

After years of technological innovations, the Company currently owns many intellectual property rights, effectively enhancing its competitiveness. As at the end of 2016, the Company had obtained 636 patents.

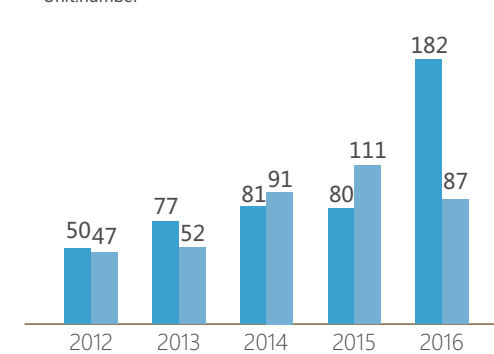
Application for and grant of invention patents

Unit: number



Application for and grant of utility model patents

Unit: number



Invention patents obtained during the year

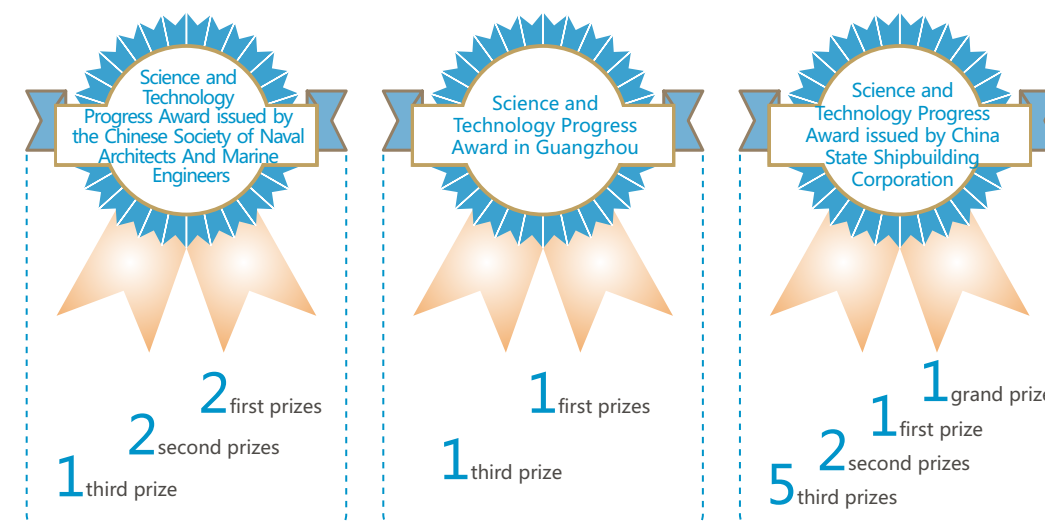
53

Utility model patents obtained during the year

87



Technical centre



Scientific and technological achievement awards obtained during the year

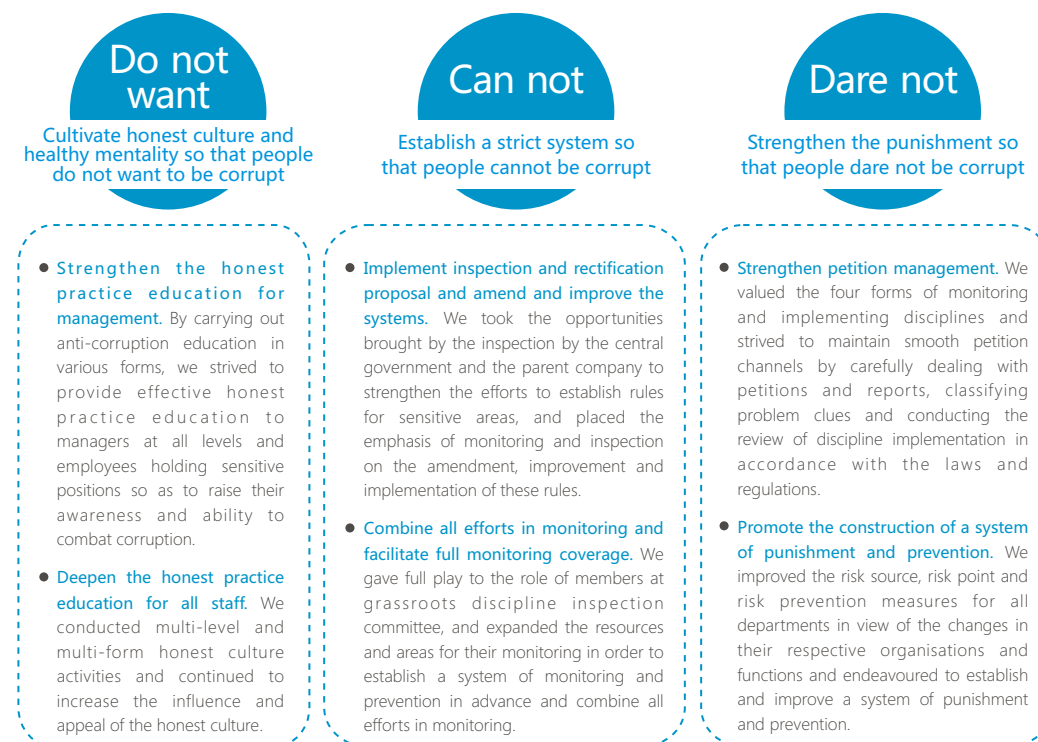
72

ENHANCED OPERATION AND MANAGEMENT

Amid complex and changing economic situations and excessive global shipping capacity and shipbuilding capacity, we continued to improve internal management, strictly implemented internal audit and anti-corruption work, and facilitated fine management, which has effectively kept business risk under control and improved the management and operational results.

Operation in Compliance with Laws and Regulations

Transparent operation in compliance with laws and regulations is an important prerequisite for an enterprise to maintain the vitality of development. We further promoted the honest and clean corporate governance and anti-corruption work and took the opportunities brought by the inspection by the central government to further facilitate operation in compliance with the law. We established a long-term mechanism to enhance the ability of anti-corruption and strived to create an honest and clean environment.

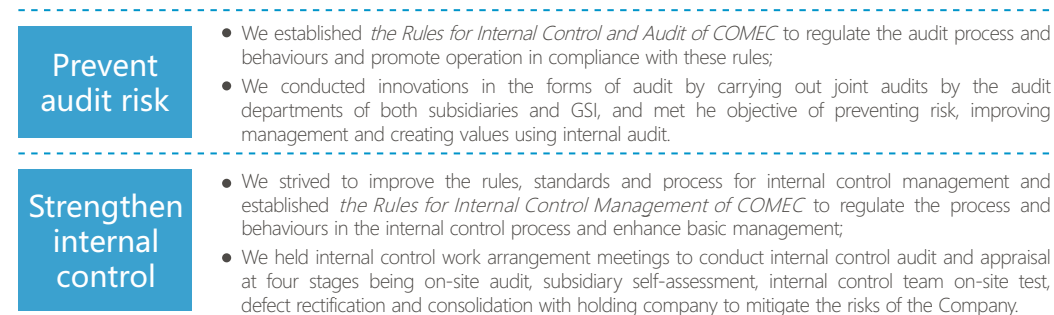


Legal review rate for contracts
100%

Legal review rate for regulations and rules
100%

Strengthen Risk Management and Control

We have established a systematic risk management and internal control system in view of the characteristics of operation of the Company to fully identify key risks in our operation and management, and implemented risk management in all areas of operation and management and all links in the business process in order to support the achievement of strategic objectives of the Company. As at the end of 2016, 16 subsidiaries of the Company had established an internal control system.

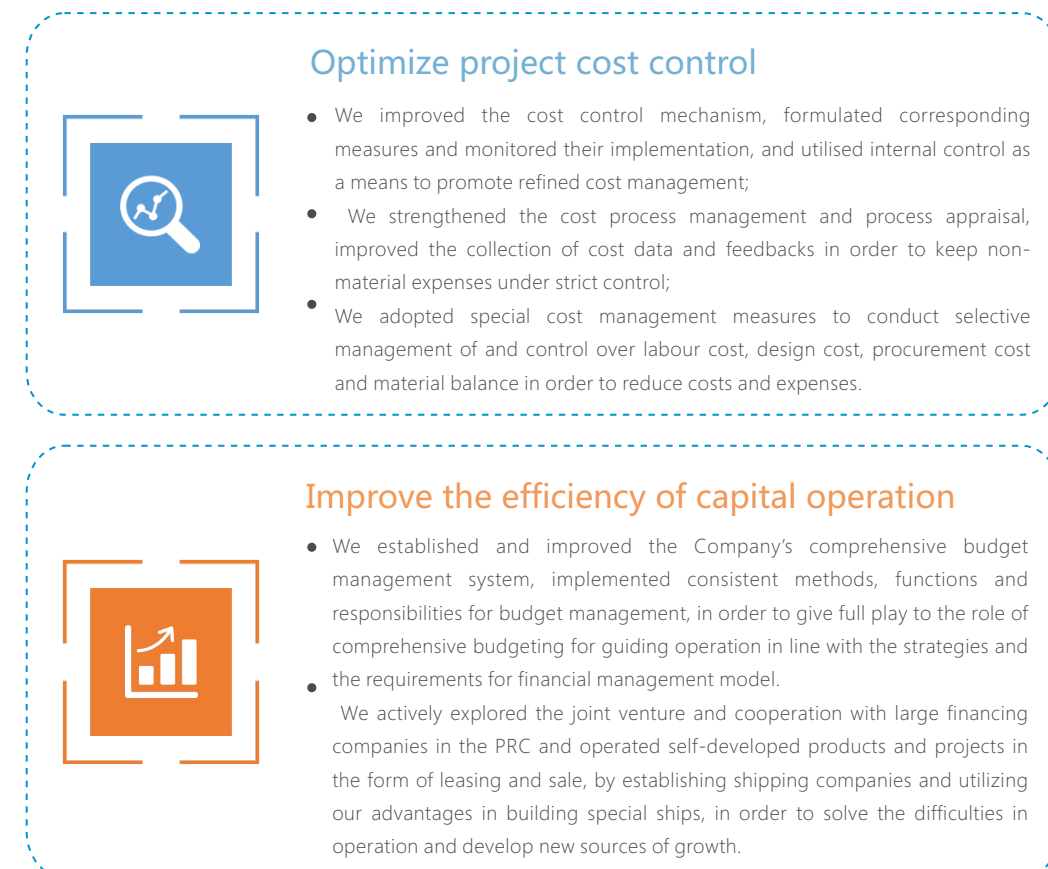


Improve Operational Efficiency

By in-depth analysis of the characteristics of the industry and enterprises, we conducted solid management innovations, steadily pushed forward cost reduction and performance improvement and information development, and sought refined management models to comprehensively enhance the operational efficiency at all links of the Company.

Reduce costs and improve performance

With the fundamental objective of improving production and performance in mind, we explored the potential for reduction and performance improvement in order to increase the profitability of the Company and cope with substantial adjustments and severe challenges in the market.



Informatization development

We continued to promote the integration of informatization and industrialization, and promoted the innovations and changes of the Company through informatization in order to assist in the day-to-day operation of the Company and improve its efficiency and performance and better serve its business growth

- We established a platform for the integration of informatization and industrialization**, extensively collected and utilized information resources, and continued to develop new abilities to improve the core values and form sustainable competitiveness of the Company.
- We adopted a unified ship design and management platform**, and conducted in-depth design and integrated application of BOM data and material management system to promote the transformation and upgrading of business model.
- We improved the relevant information regulations and rules**, in order to improve work efficiency, standardize work process and ensure the effective operation of the relevant business.
- We established an internal office system covering the whole company** to provide an effective channel for communication between employees.

Huangpu Wenchong received the **Award of Innovation in the Integration of Informatization and Industrialization** for the Year 2016



ENVIRONMENT RESPONSIBILITY



Environment
protection expenses
RMB
16,449,000

448
person-times
participated
in environmental
protection
training

Major environment
violations during
the year
0

🌱 Green Management 🌱 Green Research and Development 🌱 Green Production 🌱 Development of Environment Protection Business

Ecological civilization is a new stage in the development of human society, and also the duty and mission of an enterprise in this era. In strict compliance with the requirements of the international shipbuilding industry and under the guidance of low carbon-emission and green economy, we actively carried out environment management, strengthened the efforts in the research and development and promotion of green environment-friendly manufacturing technology, continued to enhance energy-conserving and emission-reduction work, and strived to promote the development of a resource-saving and environment-friendly enterprise and contribute to the development of a beautiful China.

GREEN MANAGEMENT

Comprehensive energy consumption Per RMB10,000 of output value (spot price)

0.0395

ton of standard coal /RMB10,000

Power consumption per RMB10,000 of output value (spot price)

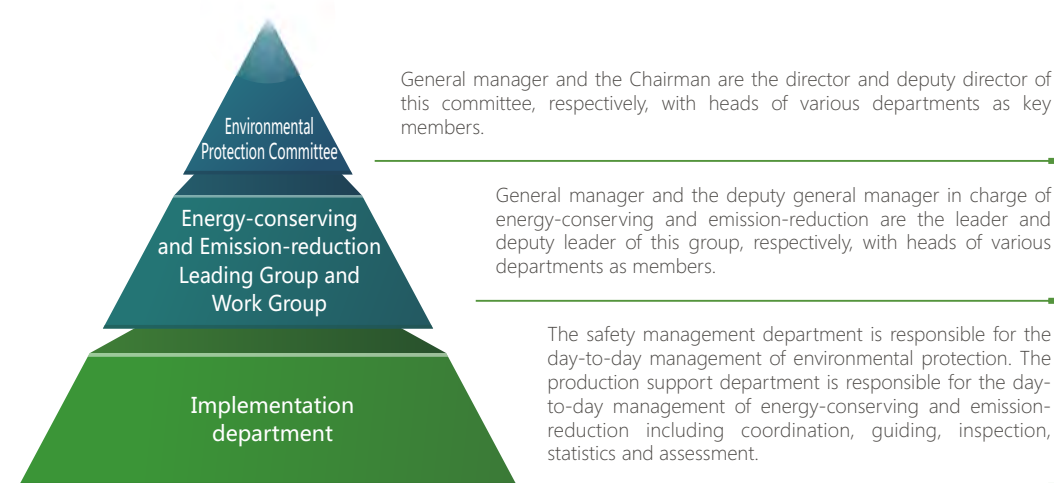
290.70

kWh/RMB10,000

By following the management philosophy of "green shipbuilding" and in strict compliance with the requirements of laws and regulations including *the Environmental Protection Law*, we continued to improve our environmental management system, strengthened the supervision and management of environmental issues, and earnestly implemented our environmental protection training system so that the concept of green and environmental protection is deeply rooted in people and realize the sustainable development of the economy, ecology and the society.

Environment Management System

To achieve the Company's objective of environment protection and energy-conserving and emission-reduction, we established and improved an environment management organizational system with interactions and communication between all levels from the management to the working groups and to the implementing level, in order to facilitate the reasonable management of our environment protection and energy-conserving and emission-reduction and realize green sustainable development of the Company.



Environmental Protection Training

We carried out extensive environmental protection training to popularize environmental science knowledge and improve the environmental awareness of all employees, so as to prevent and reduce the occurrence of various environmental accidents and develop the Company into an environment-friendly enterprise.

- We arranged special training for environmental protection equipment operators and managers on the subject of "improving the awareness of environmental protection equipment management, proper and skilful operation of environmental protection equipment and, eliminating malfunctions in a timely manner".
- We arranged training on standardized management of hazardous wastes provided to managers at the link of generation and storage of hazardous wastes.



Environmental protection training

Environmental protection training provided during the year

9 sessions

Environmental protection training provided per capita

3 hours

Participated in environmental protection training

448 person-times

GREEN RESEARCH AND DEVELOPMENT

We strengthened the research and development of key technologies for green environment-friendly ships to meet the needs of low carbon-emission and green economy, and incorporated energy-conserving and emission-reduction into our production process and workflow in order to lay a solid foundation for the development of a resource-saving and environment-friendly enterprise.

- Ship designs with low carbon-emission.** We conducted in-depth research of the impact of the new regulations on ship designs, strengthened the efforts to understand the TIERIII emission regulations, and adopted the selective catalytic reduction (SCR) and dual-fuel proposal to optimize ship and system configuration and reduce fuel consumption.
- Shipbuilding technologies to reduce emission.** We carried out over 100 projects in the research and development of technologies to reduce emissions, and successfully developed SOx and NOx control system integration, CO2 emission control system integration and HFCs emission control system integration technologies, which formed part of the core green environmental protection technologies of the Company.
- Green manufacturing processes.** We researched green environment-friendly manufacturing processes, testing technologies, welding technologies and green processing technologies such as noise and dust treatment in the manufacturing process, and extensively adopted green processes and technologies.

Won the **CSSC Science and Technology Progress First Prize** for the new generation of green environment-friendly LRII ship

Case Independent research and development of oil heating tank, which is green and environment-friendly and generates zero pollution

In respect of the main oil flushing process, we independently conducted the research of *an automatic monitoring, alarm and purification control system for main oil of ships*, which is the first research and development project in the PRC relating to flushing oil heating tank.

In 2015, we successfully developed the first generation of flushing oil electric heating tank; and in 2016, the second and third generations of electric heating tanks were put into production. By replacing the original boiler steam heating model, the electric heating tank can directly save resource cost



by RMB1,000,000 and labour cost by approximately RMB220,000. Compared to diesel and steam heating, it has higher energy efficiency and is green and environment-friendly with low carbon emission, fully realizing zero pollution.

In the future we will make persistent efforts and continue to improve the ship oil system piping process over the workflow, optimize tooling and further improve the effectiveness of equipment in order to generate higher economic and environmental benefits.

Polar shore-based facilities support ship

- Sewage and waste treatment measures are adopted to minimize direct emission
- No negative impact on the environment upon retirement



38,800DWT intelligent ship

Has intelligent abilities of perception, analysis, control and remote support and can significantly reduce resource consumption and save energy



North Africa RO/RO passenger ship

Low noise and vibration level; emission meets latest Tier III requirements; green and environment-friendly



GREEN PRODUCTION

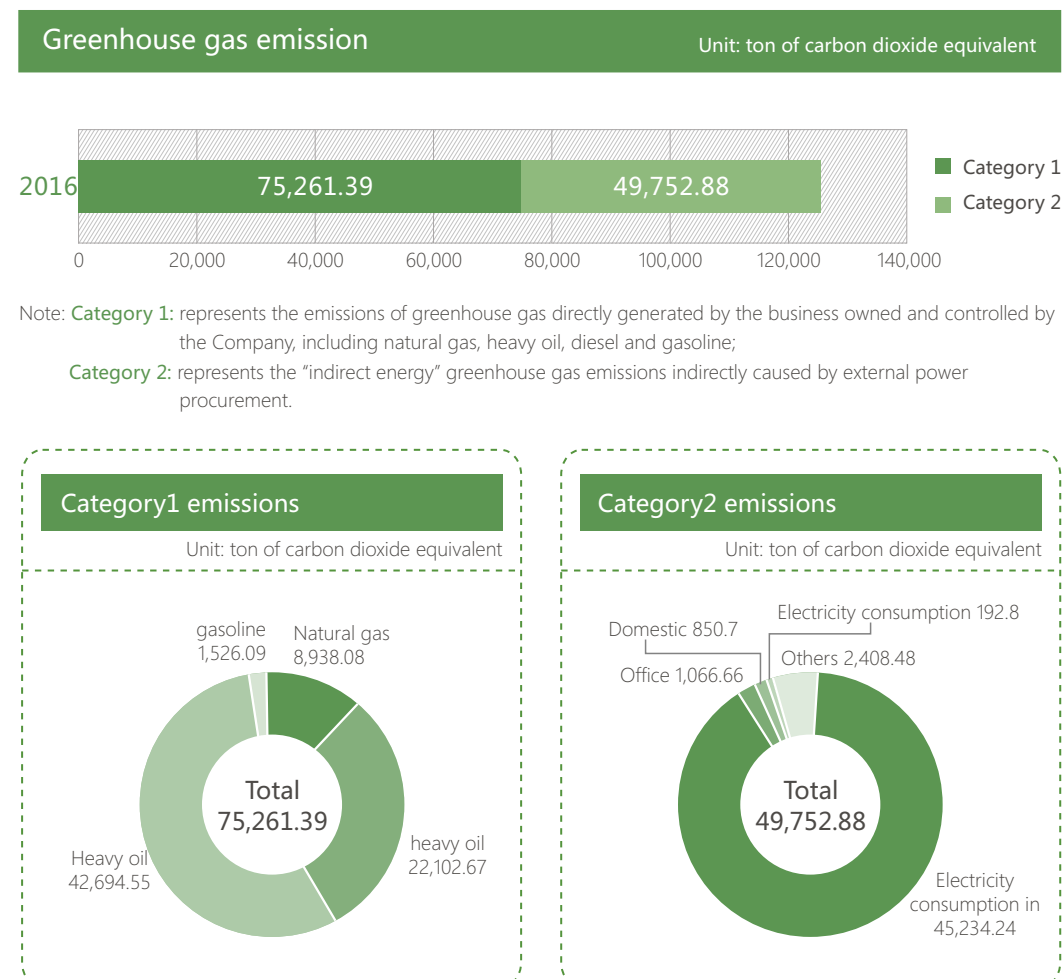
We incorporate the philosophy of green development into the entire production and operation process and strive to improve the green competitiveness and influence of the Company through reasonable utilisation of energy and strictly controlling pollution and emission.

Climate Change and Energy Management

The global climate change is an important issue that continues to be of concern to all countries in the world and also COMEC. Climate change and its impacts have become more and more intense. For instance, the rise of sea level, increase in temperature and the occurrence of extreme weather will all affect the development of the shipping industry. As such, the effective control of greenhouse gas emissions has become the top priority for shipbuilding enterprises. We pay close attention to the global climate change trend and the relevant international conventions, has established an energy saving management network and energy monitoring system to reduce greenhouse gas emissions, and aim to become a builder of more environment-friendly ships and reduce the impacts of the Company's production and operation on climates changes.

Greenhouse gas emission management

We have fully implemented various national and local requirements and classified the sources of greenhouse gas into two categories, namely category 1, which represents the emissions directly generated in the shipbuilding process of the Company, mainly greenhouse gas generated by fuel consumption, and category 2, which represents the emissions indirectly caused by power consumption.



Energy conservation and emission reduction management

We strive to improve energy efficiency, actively carry out energy-conserving technology transformation, promote the development of dynamic energy monitoring system, endeavour to lower energy consumption, and stick to the "green and low carbon-emission" concept in development. In 2016, we obtained energy management system certificates for all plants, which has comprehensively improved energy management.

Energy consumption



Application of clean energy

In order to reduce energy consumption, we installed distributed photovoltaic power generation systems on the roofs of seven workshops at Nansha Plant of GSI with reference to the information collected by the barometers and solar radiation intensity meters in Guangzhou for the last 20 years and in view of the building orientation of the structures of the Company. These systems have an installed area of approximately 210,000 square metres and installed capacity of 8.55MWp, which can effectively meet the power needs during the peak hours through seamless switch from/to municipal power supply with its 4 connected sub-systems.

Construction of a dynamic energy monitoring system

We set up an energy monitoring system and installed measuring instrument and control valves on equipment including air compressors, cold welding machines and water pumps, which has realized the monitoring of the flow rate and traffic of the main network and automated valve control, can visually presents the energy consumption of the equipment and assist in energy management and energy consumption management with data monitoring.

Energy-saving technological transformation

- Workshop ventilation system transformation:** Unpowered fans were adopted to replace 21 units of 3Kwh electric fans, reducing annual power consumption by 140,000 kWh, which amounts to a reduction of CO₂ emissions by 13.96 tons;
- LED lighting energy-saving transformation:** We actively promoted energy-saving LED lighting, and adopted 5,400 energy-saving lamps during the year, saving power consumption by 280,000 kWh, which amounts to a reduction of CO₂ emissions by 27.92 tons;
- Modification of time controller for air coolers:** In order to reduce unnecessary cooling, we installed 132 cold air time switches, saving annual power consumption by 920,000 Kwh, which amounts to a reduction of CO₂ emissions by 91.72 tons.



Distributed photovoltaic power generation system



Energy monitoring centre

Number of energy-conserving technological achievements during the year

20

Number of energy - saving technological transformation projects

8

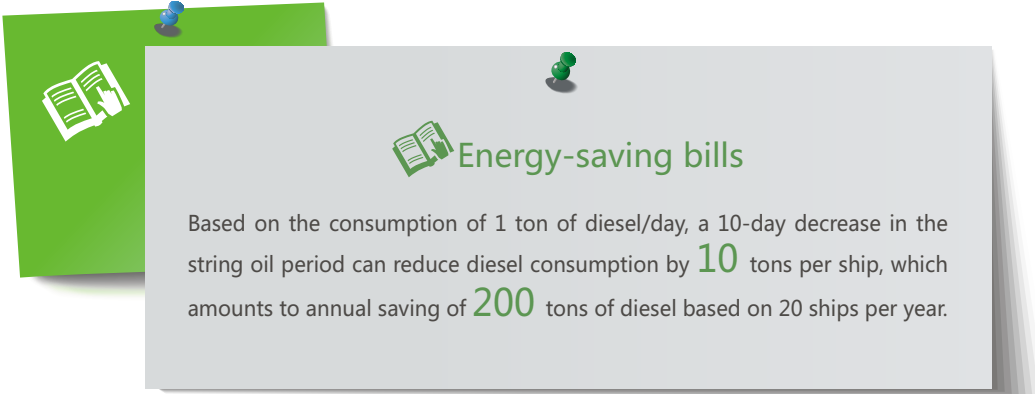
Annual saving of comprehensive energy consumption by approximately

3,100

tons of standard coal

Case
 Energy-saving transformation of lubrication magnetic tooling

Huangpu Wenchong changed its lubricating oil method for ship main engine by installing magnetic tooling unit modules with magnetic switches inside the string oil filter, and was able to reduce the pipeline washing cycle from 24 days to 13 days through a series of fast and convenient operation including absorbing iron particles in the oil with magnet, 10μ fine filtration and switching off the magnetism of magnet to remove slags. The significant decrease in oil cycle has reduced the working time of power generators and boilers on board during the string oil period and saved fuel consumption.



Exhaust Treatment

Total exhaust emission
277,837
 ten thousand of
 standard cubic metres
 a year-on-year
 decrease of
13.38%

Organic exhaust and metal oxide dust are generated during the production and manufacturing process. We value the management and treatment of exhaust, conduct regular maintenance of environmental protection equipment, and strengthen the inspection of equipment and records, in order to ensure that all exhaust emission indicators meet the required standards and minimize the impacts on environment.

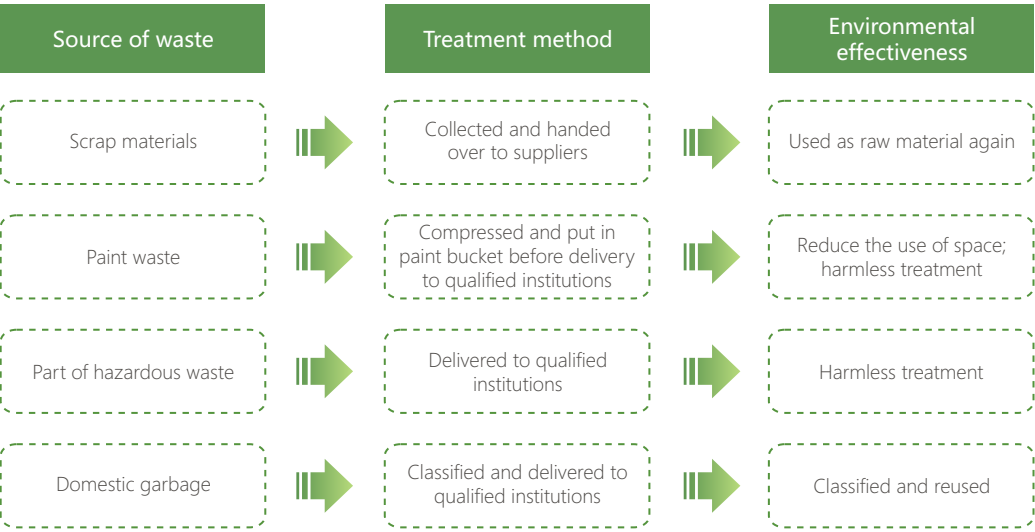
Exhaust monitoring

We use activated carbon adsorption, filter-type filter and catalytic combustion and other processes to deal with organic exhaust and metal oxide dust to ensure that the purification efficiency reaches 95%. All pollution emissions were up to standard during 2016.

		Huangpu Wenchong		GSI	
		Emission concentration (mg/m³)	Emission rate (kg/h)	Emission concentration (mg/m³)	Emission rate (kg/h)
Steel plate pre-treatment line	Particulates	14.6	0.12	8.3	0.04
	Toluene	0.010	1.31*10 ⁻⁴	0.102	0.003
	Xylene	1.08	0.03	6.33	0.162
Segmental coating	Particulates	16.1	0.45	9.7	0.102
	Toluene	0.988	0.03	0.242	0.013
	Xylene	1.52	0.05	7.422	0.394

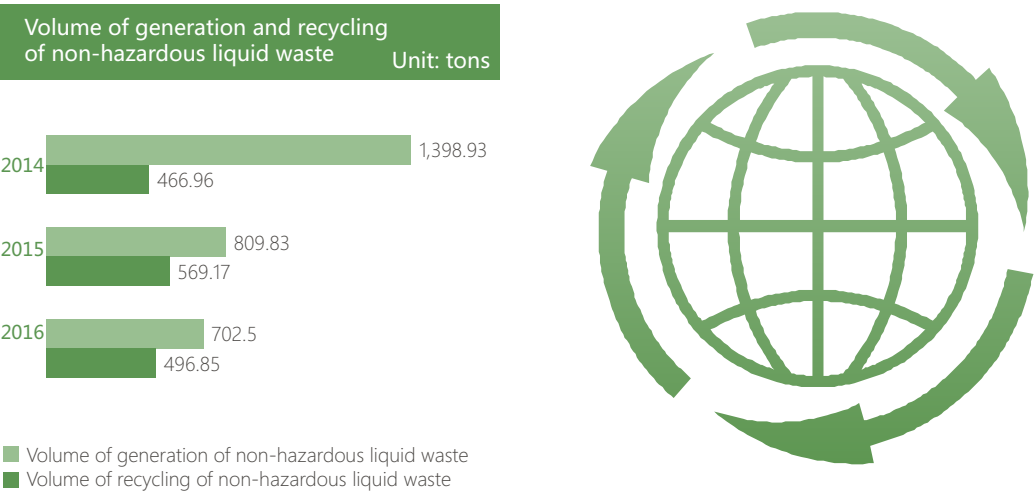
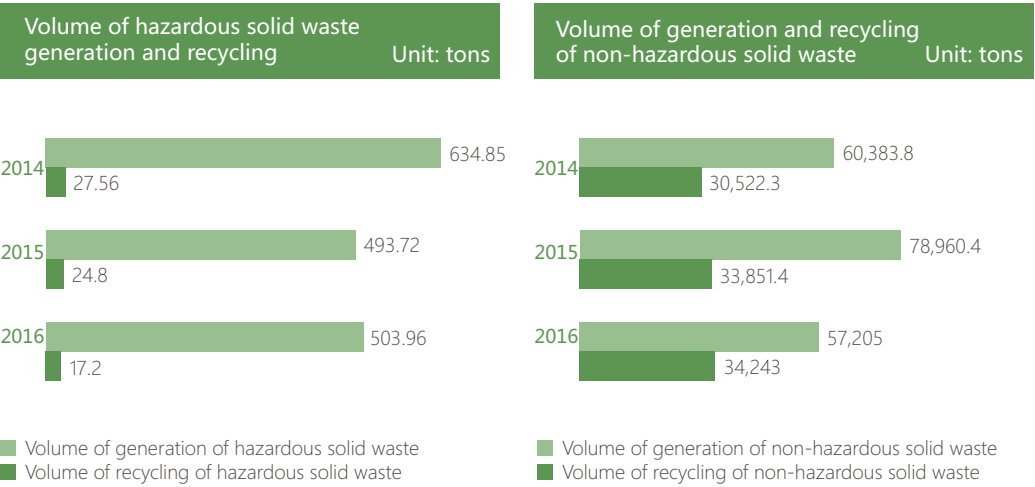
Waste Management

Waste is a by-product of our construction and operation. We focus on reducing the generation of waste and environmental hazards from the source. We have adopted various responsible measures, including improving waste classification management and comprehensive utilization efficiency, to reduce waste emissions and achieve recycling of resources.



Solid waste produced during the year
5.77 tons

Generation of liquid waste
702.50 tons



Water Resources Management

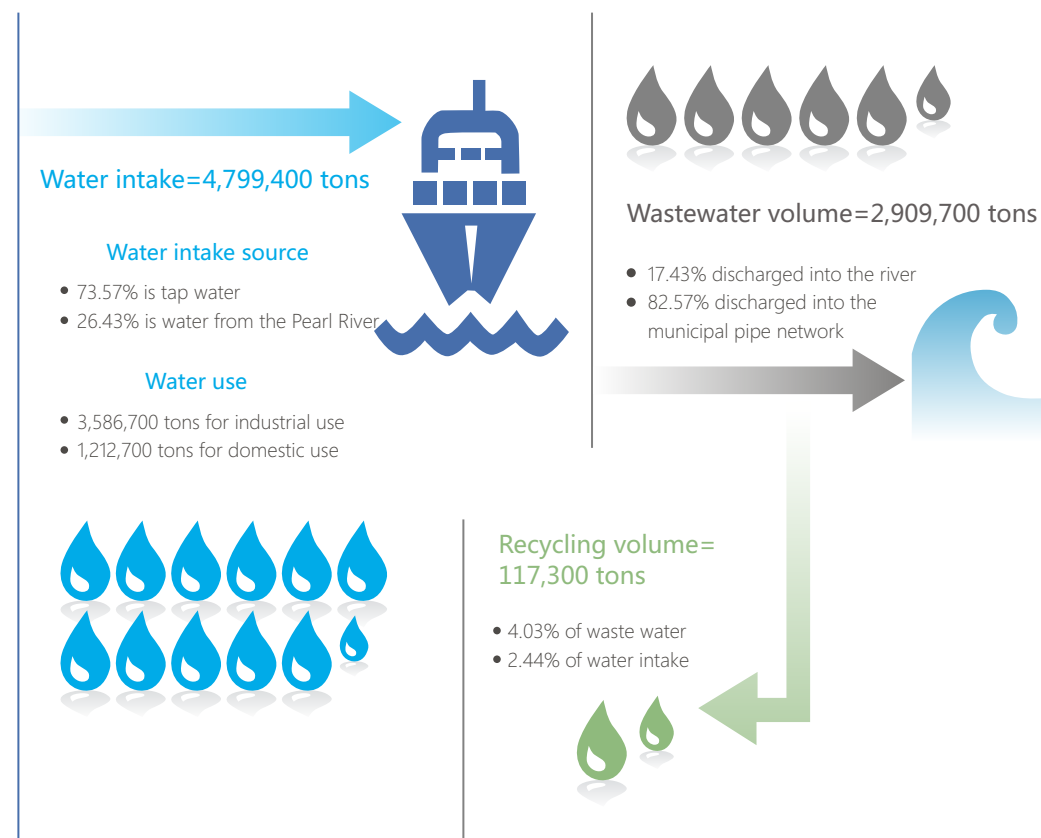
Water consumption per
10,000 DWT
shipbuilding business

18,470.19
tons/10,000 DWT

Wastewater discharge
per 10,000 DWT

9,446.01
tons/10,000 DWT

Water is one of the most valuable resources on Earth and an indispensable resource for the shipbuilding industry. We cherish every drop of water, are committed to scientific and rational use of water resources, and strictly control sewage treatment and emissions to maximize the protection of water resources.

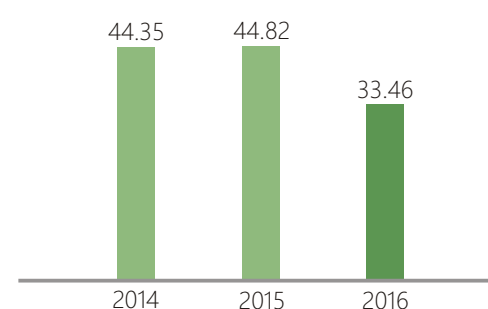


Wastewater treatment

In accordance with national and industry standards, we promote the continuous exploration by our shipyards of wastewater collection and processing technologies and methods. We carry out strict supervision and management of the operation of wastewater environmental protection equipment to prevent any water run, drop and leakage. We regularly carry out sewage outfall water monitoring, and the monitoring results are in line with the emission standards for Guangdong province.

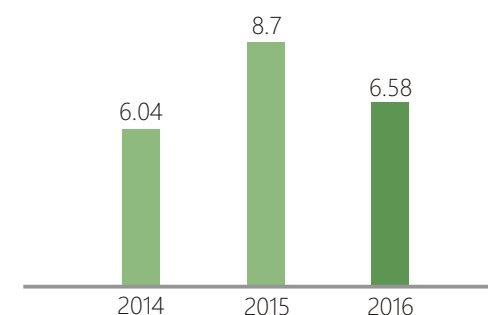
COD emission

Unit: ton



Ammonia nitrogen emission

Unit: ton



Practice Green Office

We integrate the concept of environmental protection into the daily work, encourage employees to start from the little things around and save very kilowatt hour of electricity, every drop of water, every piece of paper and every litre of oil.

- Indoor temperature is controlled at a reasonable level. Air conditioning temperature is set at ≥ 26 degrees in summer and ≤ 20 degrees in winter.
- Natural light is adopted as much as possible, and only a small number of lights are turned on in certain areas where there are few people. No lights shall be on permanently.
- We give priority to energy-saving certified office equipment in procurement. The equipment are set to operate at an energy-saving model and will be turned off when staff leaves.
- We promote paperless office and make full use of electronic office platforms to improve office efficiency and reduce resource consumption.
- We advocate the use of double-sided paper and encourage the re-use of envelopes and paper.

Save water save electricity save paper save oil **4 savings**

- We installed energy-saving faucets to avoid the run, flow, drip, leakage and long flow of water.
- We conduct strict management of the vehicles owned by Company and implement a "one card for one vehicle" system.
- Employees are encouraged to use public transport when going out for business.

Development of Environment Protection Business

While pursuing steady growth of our core shipbuilding business, we seized the green environmental protection opportunities to actively participate in various environmental protection industry projects by leveraging our established technology, resources and brand advantages, and strived to create new growth drivers on such basis and accumulate strength for the Company's green and efficient development.

- We established Guangzhou Urban Mineral Association, the first of such kind in China bearing "urban minerals" in its name, which regards improving environment and protecting the Earth as its own duty and aims to promote the development of the environmental protection industry in Guangzhou and China as a whole.
- We have established a smooth interaction and information communication mechanism with colleges and government authorities including Sun Yat-sen University, Guangzhou University and Liwan District Government of Guangzhou to together push forward the development of the environmental protection industry.
- We have entered into strategic cooperation agreements with Liwan District Government, the Research Center for Eco-Environmental Sciences of Chinese Academy of Sciences and Landon Envirotech Limited in relation to overall environmental services solution, renewable resource trading platform, construction waste recycling platform, automated construction waste recycling technology, automated domestic garbage resource processing technology and full sets of equipment and application, which has laid the foundation for the development of the emerging environmental protection market.
- We actively discussed with strategic partners including Guangzhou City Construction Investment Group, CSSC Investment and Guangzhou Federation of Supply and Marketing about the basis of cooperation and explored the establishment and operation of an environmental protection industry fund to pave the way for the development of environmental protection business.



SOCIAL RESPONSIBILITY

🔦 Staff development 🔦 Harmonious community 🔦 Win-win Cooperation

Together to build a harmonious society is our relentless pursuit. While in pursuit of our own development and growth, we always keep in mind our corporate citizenship and have not forgotten to pass on CSSC's gene for fulfilling social responsibility for over 100 years. We strive to provide staff with a broad space for development, to provide partners with a fair and transparent competition environment, and to create a harmonious and friendly atmosphere for the community, while actively exploring a duplicable and learnable way to targeted poverty alleviation to fulfil our social responsibility and realize the creation and sharing of enterprise social values.

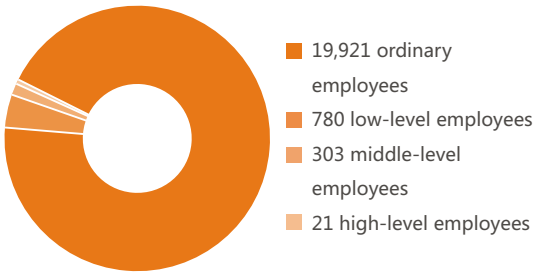


STAFF DEVELOPMENT

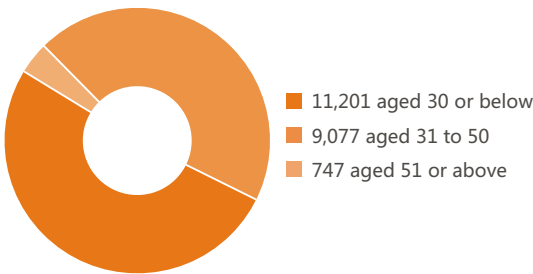
Only by creating an excellent team of employees will the Company be able to has a strong source of sustained growth in any case. We value and protect all lawful interests of our employees, provide them with a broad space for career development, and strive to achieve the common growth of the Company and our employees. As at the end of 2016, the Company had a total of 21,025 employees.



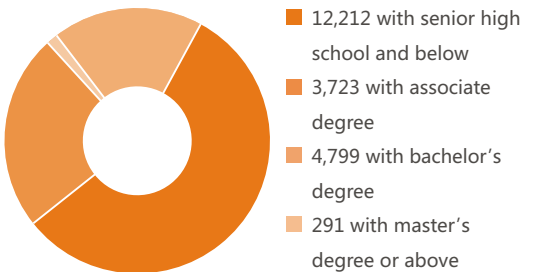
Staff title structure



Staff age structure



Staff education structure



Employee turnover rate

Total turnover rate		11.73%
Gender (Unit:person)	Male	2,329
	Female	138
Level of employees (Unit:person)	High-level employees	1
	Middle-level employees	5
	Low-level employees	13
	Ordinary employees	2,448
Age (Unit:person)	30 or below	2,071
	31-50	347
	51 or above	49
Education (Unit:person)	Senior high school and below	1,690
	Associate degree	417
	Bachelor's degree	327
	Master's degree or above	33

Protect Employees' Interests

We strictly follow the relevant labour laws and regulations, safeguard the basic rights and interests of employees and protect their occupational health, encourage employees to participate in democratic management of the Company, and strive to create a safe and comfortable working environment for employees.

Remuneration and benefits

We follow the principle of "efficiency first while ensuring fairness", whereby we encourage employees to work hard and provide higher returns to those with better performance. In distributing income, employees who have made considerable contribution to the Company will be preferred, in order to attract, retain and reward the employees who have made relentless efforts for the long-term development of the company so as to reflect their values. In addition, we have in place a sound benefit system to enhance the sense of belonging and happiness of employees.

Remuneration packages

Position salary, performance salary, length of service allowance, others (various subsidies, one-time bonus, overtime allowance, etc.)



Benefits

Five types of social insurance contributions and one housing fund contribution, major disease insurance, supplementary medical insurance, enterprise annuity (Huangpu Wenchong), paid annual leave, funeral leave, marriage leave, family leave, maternity leave and nursing leave

Staff labour contract signing rate of

100%

Staff social insurance coverage ratio

100%

Number of hours of paid leave for each employee

9 days

Democratic communication

We pay close attention to the needs of employees and strive to improve a domestic management system in the basic form of workers congress and democratic life meetings. We listen to the voices of employees and address the concerns of employees by holding Communist Youth League member representative meetings and the Mid-Autumn Festival form and seeking reasonable advices.



Workers congress

Occupational health

We advocate and establish the idea of “life first”, and has adopted a series of systems and measures to regulate the occupational health management and occupational disease prevention and control so that our employees can work with a healthy body and a positive attitude.

Occupational health training	Occupational health checks	Occupational hazard detection	Labour protection products	Work injury management
<ul style="list-style-type: none">We provide pre-job occupational health training, and arrange on-the-job training and publicity and education on an ad-hoc basis.We strive to improve the management of on-site Occupational Health Bulletin Board and Occupational Disease Hazard Notification Cards and popularize the knowledge on the protection against and prevention of occupational diseases.	<ul style="list-style-type: none">Each year we arrange employees holding positions with occupational hazard factors to receive on-the-job health examinations. The on-the-job health examination rate of employees of the Company for 2016 was 100%.	<ul style="list-style-type: none">We commission a qualified testing agency to detect the occupational hazard factors at the workplace of the Company on an annual basis.	<ul style="list-style-type: none">We equip our employees with labour products such as anti-dust masks, anti-virus masks, earlobes, earthquake gloves and hoods.In 2016 we incurred labour protection product expense of RMB42,887,000.	<ul style="list-style-type: none">We maintain work injury insurance for employees in accordance with the law, deal with work injury accidents according to the Four Principles for Accident/Incident investigation and Record, and spare no efforts to properly deal with the work injury accidents and rehabilitation work.The Company had no major and above accident during 2016.

Staff health record ratio
100%

Labour protection product expense RMB
42,887,000

Number of employees deceased due to work
0

Lost days due to work injury
1,923 days

Assist Staff Development

We attach great importance to career development of our employees and, by actively creating a multi-channel and multi-level staff training system, strive to establish a smooth channel for employees’ career development, stimulate their enthusiasm and creativity, and assist them in growth and advance at work.

Improve staff training system

We aim to improve employees’ ability to perform duties and their overall quality, and continue to provide them with training meeting job needs and beneficial for their growth and development in order to achieve the win-win of development of both the Company and the employees.

	Staff training	Number of employees trained	Number of hours of training provided to each employee		Staff training	Number of employees trained	Number of hours of training provided to each employee
By gender	Male	11,999	7.1	By type	High-level	20	18.4
					Middle-level	255	13.6
	Female	1,954	6.9		Low-level	790	13.9
					Ordinary employees	11,506	9.3

Management training
<ul style="list-style-type: none">In order to meet the needs of the strategic planning, production and operation of the Company in respect of competent management personnel, we strive to improve the scientific literacy and professional quality of managers of the Company mainly through new theories, new knowledge, new technologies and new methods.The training covers lessons on ideological and political education, change management, cost management, leadership and execution ability, ship design, production management and quality management.
Specialised technical training
<ul style="list-style-type: none">We attach importance to both technology and business and strive to enhance the overall quality and professional skills of low-level managers.The training covers lessons on ship design key points and specifications, design plan management knowledge and ability, design cost and modification management, design codes for classification societies, software development and software application, server maintenance, IT project management and ship English.

Skilled personnel training

- We strive to improve the comprehensive management skills of low-level managers, build a team of responsible and brave managers and promote effective production with safety and quality support.
- The training covers lessons on welder qualification training, obtaining and renewing military certificate and professional skill appraisal.

New employee training

- We attempt to improve the competency of new employees by enhancing the training and appraisal of interns, regulating job transfer training and appraisal, and pre-job and on-the-job training for new enrolled college graduates.
- The training covers lessons on new job knowledge and skills, quality, safety, confidentiality and the Company's rules and regulations.



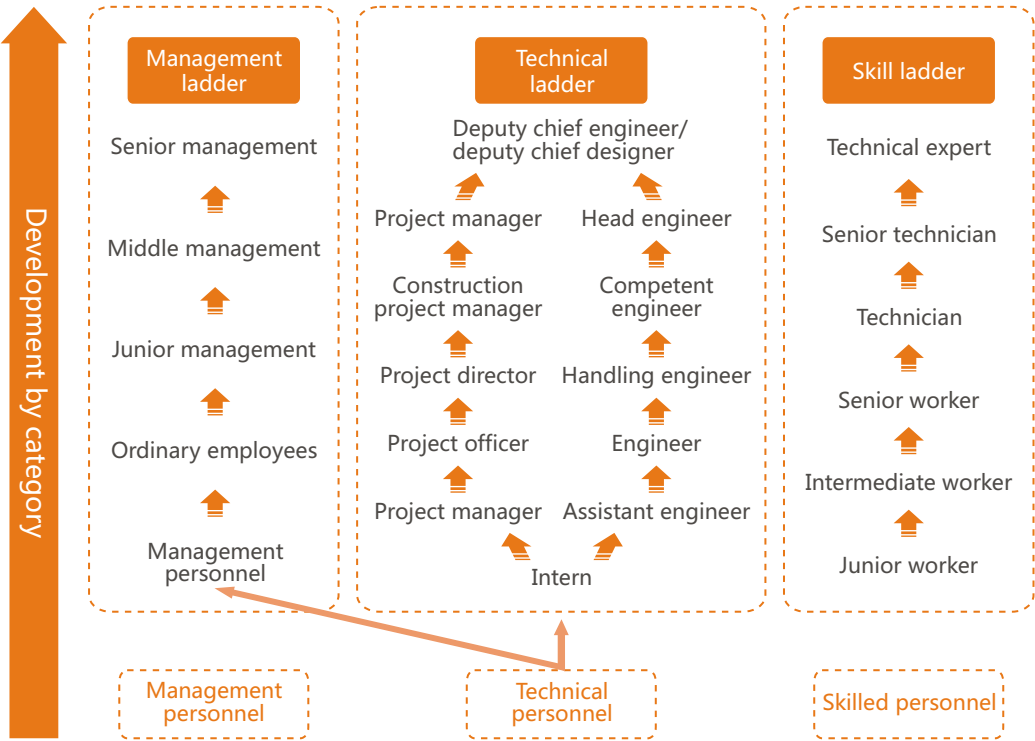
Key youth employee training



Outward bound training for new employees

Smooth career development channel

We follow the creed of “respecting employees’ wills and their choice of career development and assisting their growth” by designing a career development path with prospects for vertical promotion and horizontal development for management, design and skill employee. We encourage employees to choose their own development paths taking into account the development needs of the Company, their respective advantages and interest.



◎ Care for employees

We emphasize humanistic care for employees by providing assistance to employees with financial difficulties and providing front-line staff and workers with care in order to enrich their life and enhance the happiness and loyalty of employees, while creating a corporate atmosphere of advancement with harmony and a happy COMEC.

Help employees with financial difficulties

We help and care for employees with financial difficulties by starting from solving their practical difficulties in their work, life and family. We deliver the Company's care and warmth in a timely manner to employees with financial difficulties through various condolence activities and assistance.

Two dos well

- **Provided three major types of assistance.** A total of hardship subsidies amounting to approximately RMB820,000 was provided to 940 employees of the Company by Guangzhou Employee Special Major Disease Aid and Protection Program, Guangzhou Staff Hospitalization Aid and Protection Program and the Mutual Aid Association of the Company.
- **Conduct warmth and condolence activities.** On the holidays including Spring Festival, Women's Day and Labour Day, we visited and gave condolences to employees with financial difficulties, hospitalized due to injury and disabled due to work injury and the surviving family members of the employees deceased due to work injury.



Management of the Company visits and provides assistance to key employees with financial difficulties



Help employees with financial difficulties

Care for low-level employees

We adopted various measures to express our care for low-level employees including front-line staff and labour workers in order to fully mobilize the enthusiasm, initiative and creativity of employees.

- **Safeguard lawful interests of labour workers:** We ensured the payment of salary in full and on time to labour workers, arranged on-the-job health examinations for labour workers and provided legal advices to them.
- **Care for front-line staff:** We conducted condolence activities including the Spring Action, the Sending Warmth in Spring and the Delivering Coolness in Summer.



“For the Labour Worker Service Day” activity



Visit front-line production staff of maritime engineering business

Colourful staff activities

In order to further enrich the spiritual and cultural life of employees, we conducted a series of popular cultural and sports activities including the Dragon and Lion Show, the Sing Revolutionary Songs competition, speech contest, Communist Youth League member reading club and badminton, table tennis, basketball games, which are both educational and entertaining and have helped to build a healthy corporate cultural environment and increase the loyalty of employees.



“GSI • Female Beauty” fashion show



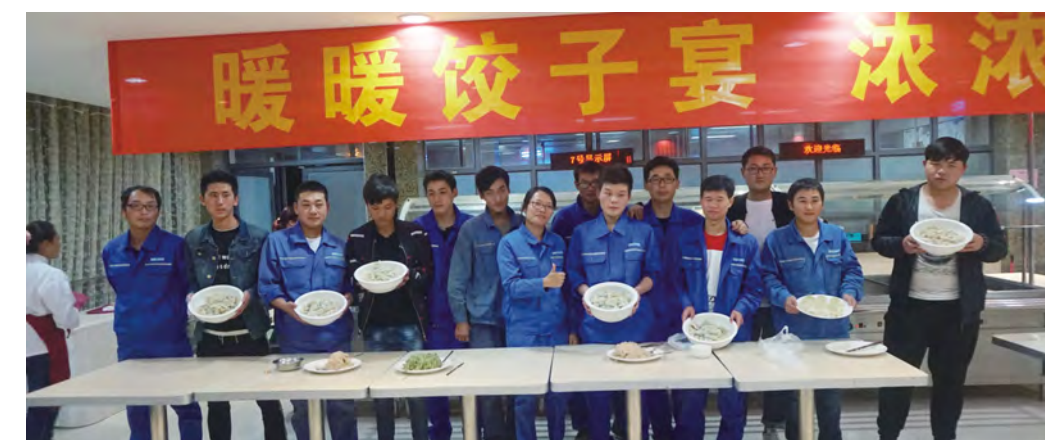
Staff swimming contest



Group wedding for youthful employees

Case Love and warmth in winter

In order to send warmth to the employees of the loading department, to activate the atmosphere in the department and to improve the relationship between different sections of the department, the loading department held a series of warm winter activates including dumpling contest and “Tractor” card games, which not only eased the work pressure of employees, but also encouraged employees to continue to pursue excellence and improve productivity and exhibited employees' united and positive spirits.



Dumpling contest

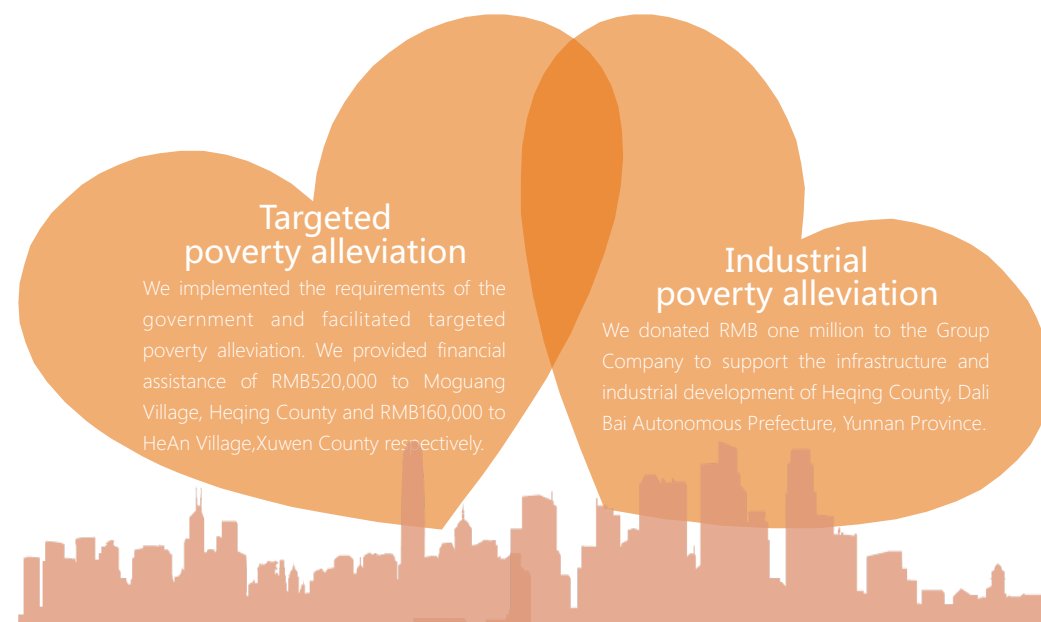
HARMONIOUS COMMUNITY

The development of an enterprise cannot do without the support of the community, while the development of the community also cannot do without the contribution from the enterprise. While accelerating our own development, we also actively participated in the targeted poverty alleviation cause and volunteer services in the community in order to realize the harmonious win-win of the development of each of the Company, its employees and the community.

Targeted Poverty Alleviation

Donation for targeted poverty alleviation during the year RMB

1,680,000



Volunteer Services

2,500 persons provided volunteer services during the year

430 hours of volunteer services were provided



"5 March Learn from Leifeng" volunteer service activity



Volunteers serve the community

Case Wududao Anti-drug Volunteer Team was established at Nansha Plant

On 26 September 2016, the ceremony for establishment of the Wududao Anti-drug Volunteer Team, jointly set up by GSI, Huangpu Wenchong and Chengxi Guangzhou with the support of Longxue Street Office and Longxue Anti-drug Committee, was held at Nansha Plant, and over 300 persons attended the ceremony. The Company actively fulfilled the social responsibility of building a "safe Longxue", arranged the Anti-drug Volunteer Team to carry out the relevant publicity in order to let the idea of "staying away from drugs and cherishing life" become deeply rooted in people.



WIN-WIN COOPERATION

A good partnership is an important cornerstone of the Company's long-term development. We stick to the philosophy of cooperation and win-win, and strive to build a harmonious and cooperative relationship with the stakeholders including suppliers, industry peers and government authorities, so as to promote the healthy and sustainable development of the industrial chain and achieve common prosperity and progress.

Supply Chain Management

Supply chain management has become an important part for modern enterprises to enhance core competitiveness. We strive to establish a sustainable supply chain and achieve growth through open and transparent procurement principles, standardized procurement management system and a sound supplier management system.

Responsible procurement

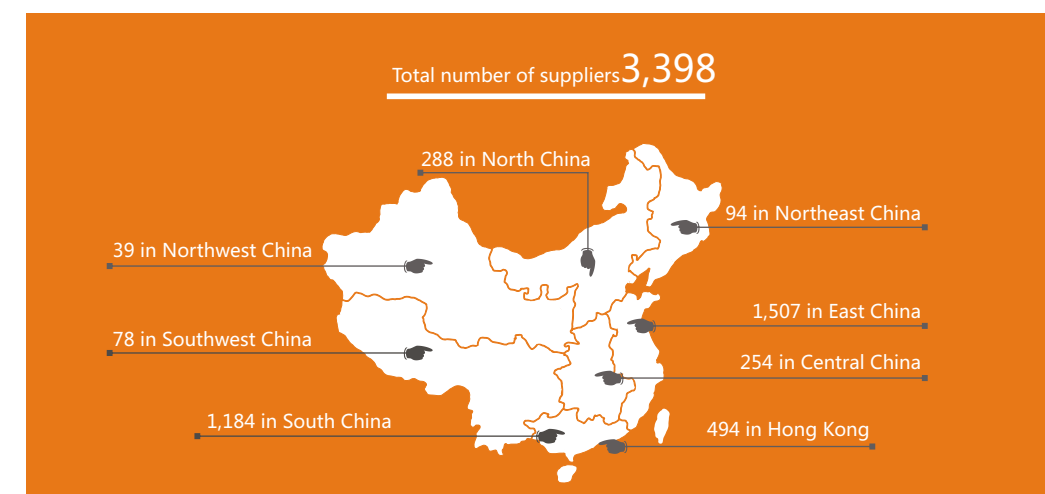
By following the principles of fairness, impartiality, openness and merit, we adopted a number of measures to regulate material procurement and create a sound environment for competition in order to maximize the comprehensive benefits from quality, cost, service and efficiency.

Open tender procurement rate during the year

7.92%

Percentage of local procurement

50.23%



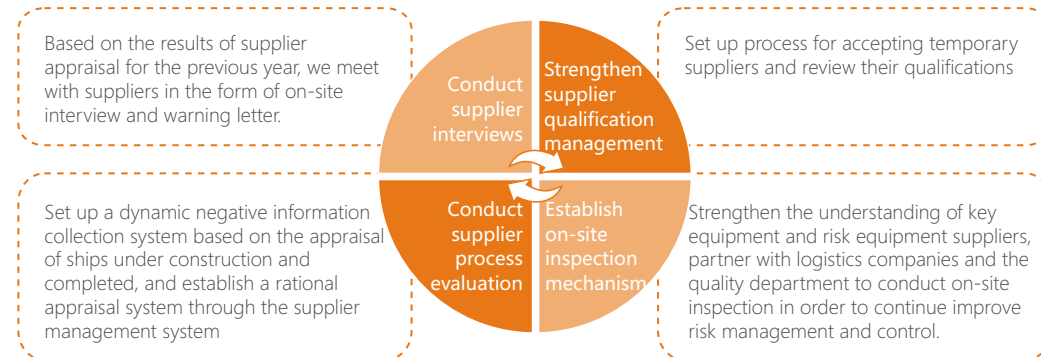
- **Establish a material procurement information platform.** The platform will gradually realize full coverage of all entities, all products and the entire procurement process. We strive to practice "procurement under the sun" by bidding, competitive negotiations and strategic procurement.
- **Implement centralized procurement strategy.** Procurement is carried out on a centralized basis through the procurement information platform of the Group. The procurement amount of Huangpu Wenchong for the year 2016 was RMB3,410 million, of which 84.1% represents civil products procured on a centralized basis.

Supplier management

Percentage of suppliers passing quality, environmental and occupational health and safety management system certifications:

61.1%

In order to select responsible suppliers, we strictly comply with the laws and regulations relating to bidding and have adopted multiple measures, including the qualification, appraisal and inspection of suppliers, to improve the management of suppliers and their ability to perform duties and lower supply risk.



Cooperation and Communication

While pursuing our own development, we also place stress on the communication and cooperation with domestic and overseas industry peers. We actively shared development experience with leading enterprises including Singapore Shipyard, Sanoyas Shipbuilding and CSSC Marine Power in order to improve management and enhance the Company's sustainable development ability.

Huangpu Wenchong and Sanoyas Shipbuilding hold a seminar on the 20th anniversary of technical cooperation to jointly promote the progress of shipbuilding.



8 May
2016

15 June
2016



Huangpu Wenchong and Dassault enter into a strategic memorandum of cooperation to jointly promote the more in-depth and extensive application of 3D experience platform.

Huangpu Wenchong and Liaoning Provincial Ocean Surveillance and Fishery Administration enter into a supplemental agreement to renew the "China Sea Supervisor 1001" agreement in order to build another 1,000-ton provincial ocean surveillance ship.



29 June
2016

19 July
2016

9 September
2016



The party committees of Huangpu Wenchong and Dalian Company enter into a cooperation agreement to jointly strengthen the development of the party's grassroots organizations.



GSI and Guangzhou Federation of Supply and Marketing enter into a strategic cooperation agreement to jointly participate in the development and utilisation of urban mineral resources.

OUTLOOK FOR 2017

In the face of the situations of excessive global shipping capacity and shipbuilding capacity, in 2017 we will continue to implement China's major strategies including the Belt and Road Initiative and building a marine power. Based on reality, we will continue to improve and enhance the quality and services of our ship products, develop diversified business and strive to become a maritime defence equipment manufacturer with strong competitiveness.

Economic responsibility

- Implement China's major strategies including the Belt and Road Initiative and building a marine power, improve the quality of major products including ships;
- Ensure production safety, continue to deepen 6S management, and strive to improve intrinsic safety;
- Enhance technological innovation, accelerate transformation and upgrading, innovations and informatization to achieve intelligent manufacturing;
- Strengthen the operation and management to enhance the Company's operating

Environment responsibility

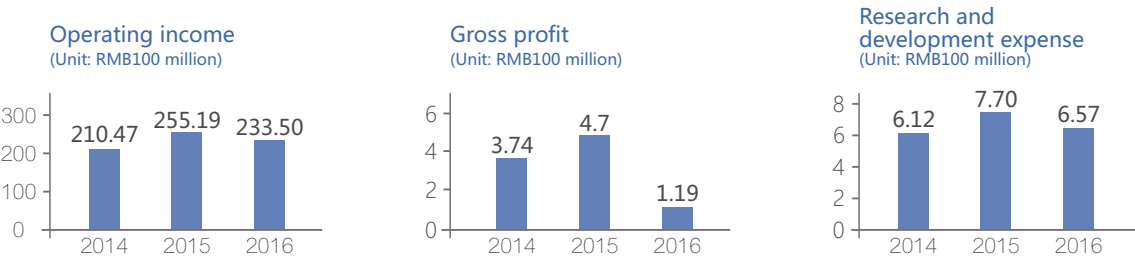
- Continue to promote green management and practice green office;
- Take the initiative to implement environmental protection policies, properly manage waste pollution to reduce the impact on environment;
- Endeavour to research and develop green environment-friendly products, and improve the energy efficiency of products to cope with climate changes.

Social responsibility

- Establish a rational and sound mechanism for the selection, education, use and retaining of talents, and compressively assist staff in realizing value;
- Advance targeted poverty alleviation work, and increase community volunteer service to achieve harmonious development with the community;
- Actively carry out responsible procurement and grow with enterprises along the supply chain.

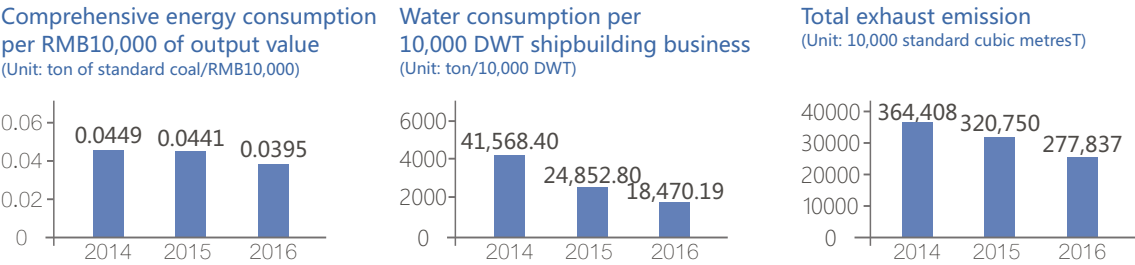
KEY PERFORMANCE INDICATORS

Economic responsibility



Name of project	Name of indicator	Performance in 2016
Economic performance	Operating income (in RMB100 million)	233.50
	Operating profit (in RMB100 million)	-0.18
	Gross profit (in RMB100 million)	1.19
	Net profit attributable to the Company (in RMB100 million)	0.71
	Equity attributable to owners of the Company (in RMB100 million)	103.48
	Value of social contribution per share (in RMB)	1.878
Product quality	Product quality assurance expenses (in RMB ten thousand)	4,320.4
	First pass rate of process (%)	96.70
Production safety	Number of major safety accidents	0
	Safety training expenses (in RMB ten thousand)	76.13
Technological innovations	Research and development expense (in RMB100 million)	6.57
	Research and development expense as a percentage of operating income (%)	2.81
	Percentage of research and development personnel to total employees (%)	11.23
	Number of patents owned by the Company	636

Environment responsibility



Name of project	Name of indicator	Performance in 2016
Environment management	Environment protection expenses (in RMB ten thousand)	1,644.9
	Number of energy-conserving technological achievements	20
Energy use and emission	Comprehensive energy consumption per RMB10,000 of output value (spot price) (ton of standard coal/RMB10,000)	0.0395
	Annual saving of comprehensive energy consumption (ton of standard coal)	3,100
	Power consumption per RMB10,000 of output value (spot price) (Kwh/RMB10,000)	290.70
	Greenhouse emission (ton of carbon dioxide equivalent)	152,014.27
	Total exhaust emission (10,000 standard cubic metres)	277,837
	Water consumption per 10,000 DWT shipbuilding business (ton/10,000 DWT)	18,470.19
Water resources management	Wastewater discharge per 10,000 DWT (ton/10,000 DWT)	9,446.01
	COD emission (ton)	33.46
	Ammonia nitrogen emission (ton)	6.58
Waste management	Solid waste generated (ton)	5.77
	Liquid waste generated (ton)	702.50

Social responsibilities

Name of project	Name of indicator	Performance in 2016
Staff structure	Number of employees	21,025
	Number of new employees	1,844
	Percentage of female employees (%)	12.76
	Employee turnover rate (%)	11.73
Staff development	Total number of hours of training provided to employees	149,134.8
	Number of hours of training provided to each employee	7.09
	Number of employees trained	13,953
Occupational health	Staff health record ratio (%)	100
	Number of employees deceased due to work	0
	Lost days due to work injury	1,923
Employee care	Total consolation money distributed to employees with financial difficulties (in RMB ten thousand)	109.81
Social welfare	Total amount of donation for targeted poverty alleviation (in RMB ten thousand)	168
	Volunteer services (persons)	2,500
Supply chain management	Total number of suppliers	3,938
	Open tender procurement rate (%)	7.92

INDEX OF INDICATORS

Aspect	Key Performance Indicators	Pages
A Environment		
Aspect A1: Emissions		
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to exhaust and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	● P28-32
A1.1	The types of emissions and respective emissions data.	● P28-32
A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity.	● P28
A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity.	● P31
A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity.	● P31
A1.5	Description of measures to mitigate emissions and results achieved.	● P29
A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	● P31
Aspect A2: Use of Resources		
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials.	● P29-33
A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total and intensity.	● P29
A2.2	Water consumption in total and intensity.	● P32
A2.3	Description of energy use efficiency initiatives and results achieved.	● P28-29
A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	● P32
A2.5	Total packaging material used for finished products and with reference to per unit produced.	● Not applicable
Aspect A3: The Environment and Natural Resources		
General Disclosure	Policies on minimizing the issuer's significant impact on the environment and natural resources.	● P26-27
A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	● P26
B Social		
Employment and labour practices		
Aspect B1: Employment		
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	● P36-37
B1.1	Total workforce by gender, employment type, age group and geographical region.	○ P36
B1.2	Employee turnover rate by gender, age group and geographical region.	○ P36
Aspect B2: Health and Safety		
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	● P38
B2.1	Number and rate of work-related fatalities.	○ P38
B2.2	Lost days due to work injury.	○ P38
B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	○ P38

Aspect B3: Development and Training				
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	●	P38-39	
B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	○	P38	
B3.2	The average training hours completed per employee by gender and employee category.	○	P38	
Aspect B4: Labour Standards				
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	●	No violation of laws or regulations on preventing child and forced labour during the Reporting Period	
B4.1	Description of measures to review employment practices to avoid child and forced labour.	○		
B4.2	Description of steps taken to eliminate such practices when discovered.	○		
Operating Practices				
Aspect B5: Supply Chain Management				
General Disclosure	Policies on managing environmental and social risks of the supply chain.	●	P43	
B5.1	Number of suppliers by geographical region.	○	P43	
B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	○	P44	
Aspect B6: Product Liability				
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	●	P16-19	
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	○	There were no products subject to recalls for safety and health reasons during the Reporting Period.	
B6.2	Number of products and service related complaints received and how they are dealt with.	○	Recommended Disclosure Indicator, and the relevant information is to be collected	
B6.3	Description of practices relating to observing and protecting intellectual property rights.	○	P21	
B6.4	Description of quality assurance process and recall procedures.	○	P17	
B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	○	Recommended Disclosure Indicator, and the relevant information is to be collected	
Aspect B6: Product Liability				
General Disclosure	Information on the policies and compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	●	P22	
B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	○	There were no legal cases regarding corrupt practices during the Reporting Period	
B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	○	P22	
Community				
Aspect B8: Community Investment				
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	●	P42	
B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport)	○	P42	
B8.2	Resources contributed (e.g. money or time) to the focus area.	○	P42	
Note: ● means "comply or explain" indicators, and ○ means "disclosure recommended" indicators.				

ABOUT THIS REPORT

Dear readers, this report is the ninth social responsibility report issued by CSSC Offshore & Marine Engineering (Group) Company Limited. This report is addressed to all stakeholders of CSSC Offshore & Marine Engineering (Group) Company Limited, and its purpose is to describe the Company's concept of sustainable development and disclose the opportunities and challenged faced by the Company in creating values together with its stakeholders, the measures adopted by the Company to achieve sustainable development and the results. With this report, we wish you can feel our care and support and help COMEC's development.



Time frame

1 January 2016 to 31 December 2016, moderately extended to previous and subsequent years for certain contents.



Boundary of report

This report fully discloses the information and key performance of CSSC Offshore & Marine Engineering (Group) Company Limited and its related entities on fulfilling economic, social and environment responsibilities in 2016.



Basis for preparation

- *G4 Sustainability Reporting Guidelines* issued by the Global Reporting Initiative (GRIG4)
- *Guiding Opinions on Fulfillment of Social Responsibilities by Central State-owned Enterprises* issued by the State-owned Assets supervision and Administration Commission of the State Council
- Special Industry Guidelines set out in the*Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises 3.0 Version* issued by the Chinese Academy of Social Sciences
- *Environmental, Social and Governance Reporting Guide* issued by the Hong Kong Stock Exchange
- *Guidelines for Disclosure of Information by Listed Companies* issued by the Shanghai Stock Exchange



Reliability assurance

The Company undertakes that this reports contains no false statements, misleading statements or material omissions.



Source

All information and data used in this report are derived from official internal documents, statistical reports and annual reports of the Company. Unless otherwise specified, all amounts are expressed in Renminbi.



Explanation for titles

For ease of presentation and reading, in this report, "COMEC", "the Company" and "we" mean "CSSC Offshore & Marine Engineering (Group) Company Limited"; "the Group" means "COMEC and its related entities"; "CSSC" means "China State Shipbuilding Corporation"; "GSI" means "Guangzhou Shipyard International Company Limited"; "Huangpu Wenchong" means "CSSC Huangpu Wenchong Shipbuilding Company Limited"; and "GSI Yangzhou" means "GSI Yangzhou Co., Ltd".



Method to obtain this report

You may view or download the electronic version of this report at our website (comec.cssc.net.cn).

FEEDBACK FORM

Dear readers,

Hello! Thanks for reading this report during your busy time. It is inevitable that there may be flaws and omissions in this report. In order to improve our report preparation, we sincerely hope to hear your opinions and suggestions. Please feel free to contact us! Your opinions and suggestions will become an important basis for us to improve our report.



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Open questions: (Please mark “√” in the corresponding box)

	Very good	Good	Fair	Bad	Very bad
Your overall impression of this report:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You think the quality of information on social responsibility disclosed in this report is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You think the structure of this report is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You think the layout design of this report is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You think the readability of this report is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which issues disclosed in this report are you most concerned about? (Up to three items)

- ☐ Quality management
- ☐ Production safety
- ☐ Technological innovations
- ☐ Compliance operation
- ☐ Green management
- ☐ Green research and development
- ☐ Green production
- ☐ Environmental protection business
- ☐ Staff development
- ☐ Targeted poverty alleviation
- ☐ Cooperation and Win-win
- ☐ Others (pleas specify)_____

Open questions:

What further opinions or recommendations do you have on this social responsibility report or our social responsibility performance?