



2023

中期報告

Interim Report



中國同輻股份有限公司

China Isotope & Radiation Corporation

(於中華人民共和國註冊成立的股份有限公司)

(A joint stock company incorporated in the
People's Republic of China with limited liability)

股份代號 Stock Code : 1763

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CORPORATE INFORMATION

LEGAL NAME OF THE COMPANY

中國同輻股份有限公司(Abbreviation : 中國同輻)

ENGLISH NAME OF THE COMPANY

China Isotope & Radiation Corporation*

REGISTERED OFFICE

Room 418, South 4th Floor
Building 1, No. 66 Changwa Middle Street
Haidian District
Beijing
PRC

HEAD OFFICE IN THE PRC

No. 66 Changwa Middle Street
Haidian District
Beijing
PRC

PRINCIPAL PLACE OF BUSINESS IN HONG KONG

5/F, Manulife Place, No. 348 Kwun Tong Road,
Kowloon, Hong Kong

BOARD OF DIRECTORS

Executive Directors

Mr. Wang Suohui (*chairman*)
Mr. Xu Hongchao
Mr. Du Jin

Non-executive Directors

Mr. Chen Shoulei
Mr. Ding Jianmin
(*vice-chairman, appointed on 30 June 2023*)
Ms. Chang Jinyu
Ms. Liu Xiuhong
Mr. Dai Shuquan
(*vice-chairman, resigned on 30 June 2023*)

Independent Non-executive Directors

Mr. Poon Chiu Kwok (*appointed on 30 June 2023*)
Mr. Tian Jiahe
Ms. Chen Jingshan
Mr. Lu Chuang
Mr. Hui Wan Fai (*resigned on 30 June 2023*)

* For identification purposes only

THE COMMITTEES UNDER THE BOARD

Audit and Risk Management Committee

Mr. Poon Chiu Kwok (*chairman, appointed on 30 June 2023*)

Mr. Chen Shoulei

Mr. Lu Chuang

Mr. Hui Wan Fai (*chairman, resigned on 30 June 2023*)

Nomination Committee

Ms. Chen Jingshan (*chairman*)

Mr. Poon Chiu Kwok (*appointed on 30 June 2023*)

Mr. Lu Chuang

Mr. Hui Wan Fai (*resigned on 30 June 2023*)

Remuneration and Appraisal Committee

Mr. Lu Chuang (*chairman*)

Ms. Liu Xiuhong

Ms. Chen Jingshan

Strategy Committee

Mr. Wang Suohui (*chairman*)

Mr. Xu Hongchao

Mr. Chen Shoulei

Mr. Ding Jianmin (*appointed on 30 June 2023*)

Mr. Tian Jiahe

Mr. Dai Shuquan (*resigned on 30 June 2023*)

Legal Affairs Committee

Mr. Wang Suohui (*chairman*)

Mr. Chen Shoulei

Ms. Liu Xiuhong

Ms. Chen Jingshan

Mr. Poon Chiu Kwok (*appointed on 30 June 2023*)

Mr. Hui Wan Fai (*resigned on 30 June 2023*)

Science and Technology Innovation Committee

Mr. Wang Suohui (*chairman*)

Mr. Xu Hongchao

Mr. Du Jin

Mr. Tian Jiahe

Mr. Lu Chuang

CORPORATE INFORMATION (CONTINUED)

LEGAL REPRESENTATIVE

Mr. Wang Suohui

AUTHORIZED REPRESENTATIVES

Mr. Wang Suohui (*chairman*)

Mr. Gui Youquan

Ms. Kam Mei Ha Wendy (*as the alternate representative of Mr. Wang Suohui*)

SUPERVISORS

Mr. Liu Zhonglin (*chairman*)

Mr. Zhang Guoping

Mr. Zhao Nanfei

Mr. Ma Fuxin

Ms. Peng Qihui

JOINT COMPANY SECRETARIES

Mr. Gui Youquan

Ms. Kam Mei Ha Wendy

AUDITOR

SHINEWING (HK) CPA Limited

LEGAL ADVISORS

As to Hong Kong Law

Haiwen & Partners LLP

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As to PRC Law

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PRINCIPAL BANK

Industrial and Commercial Bank of China,
Chang'an Branch

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LISTING DATE

6 July 2018

FINANCIAL HIGHLIGHTS

(RMB in million)	Six months ended 30 June 2023	Six months ended 30 June 2022
Revenue	2,740.6	2,619.6
Gross profit	1,484.8	1,532.8
Profit from operating activities	340.8	324.0
Profit before taxation	350.6	312.1
Profit attributable to equity shareholders of the Company	126.9	112.0
Basic/diluted earnings per share (RMB)	0.40	0.35
Profitability		
Gross profit margin	54.2%	58.5%
Operating profit margin	12.4%	12.4%
Net profit margin	10.4%	9.2%
	At 30 June 2023	At 31 December 2022
Total assets	11,796.8	11,686.6
Total liabilities	5,301.3	5,133.1
Net assets	6,495.5	6,553.5

GROUP PROFILE

As a leading enterprise in the nuclear technology application industry in the PRC, CIRC tapped into the field of nuclear technology application since its establishment in 1983, and tilled the nuclear technology application industry for 40 years. Nuclear technology application serves as a comprehensive strategic industry that is closely related to nearly one-third of the industries in the manufacturing sector of the national economy and plays a pivotal role in technological innovation, economic construction, national health and national security, etc. As China's economy continues to develop and people's living standards steadily improve, the market for nuclear technology application will continue expanding in the future, opening up greater room for CIRC to thrive.

CIRC focuses on research and development, manufacturing, sales of pharmaceuticals and is also engaged in radioactive sources, irradiation, nuclear medical equipment and independent clinical laboratory services. The Company derives 65.23% of its revenue and 84.55% of its gross profit from the pharmaceuticals segment in the nuclear medicine industry. As a leading enterprise in the PRC nuclear medicine industry featured with huge potential, high entry barriers and robust profitability, CIRC stands as the largest manufacturer of imaging diagnostic and therapeutic radiopharmaceuticals, UBT kits and analyzers, and RIA kits in the PRC. In terms of radioactive source products, CIRC is the sole core enterprise with industrialized and large-scale R&D and production capability in the field of research and application of radioactive sources in China. In terms of the irradiation service, CIRC is the third largest provider for irradiation service, and is the only one which provides the services of the upstream production as well as the downstream design and installation of irradiation facilities in China. Two subsidiaries of CIRC are, among the three qualified EPC service providers, approved by the Ministry of Ecology and Environment to engage in the design, manufacturing and installation of irradiation facilities in China.

As an important member of CNNC in the nuclear technology application industry, CIRC has inherited CNNC's profound experience in the fields of isotopes, radiopharmaceuticals, radioactive sources and irradiation application, and will further cooperate with other companies under CNNC in its future development, making full use of CNNC's advantageous resources to better serve the national economy and contribute to the high quality development of nuclear technology application.

MANAGEMENT DISCUSSION AND ANALYSIS

The Group is primarily engaged in the research, development, manufacturing and sale of diagnostic and therapeutic radiopharmaceuticals and radioactive source products for medical and industrial applications, the provision of irradiation service for sterilization purpose and engineering, procurement and construction (“EPC”) service for the design, manufacturing and installation of gamma ray irradiation facilities and the provision of nuclear medical equipment and services such as independent clinical laboratory services to hospitals and other medical institutions.

BUSINESS REVIEW

As of 30 June 2023, we have operated five business segments, namely pharmaceuticals, radioactive source products, irradiation, radiation therapy equipment and related services, and other businesses. In the first half of 2023, we continued to increase our market development efforts and proactively seized market opportunities, resulting in the improvement of various economic indicators. During the Reporting Period, the Group achieved revenue of RMB2,740.6 million, representing a year-on-year increase of 4.6%, net profit of RMB283.7 million, representing a year-on-year increase of 17.9%, and net profit attributable to equity shareholders of the Company of RMB126.9 million, representing a year-on-year increase of 13.3%.

BUSINESS SEGMENTS

1. Pharmaceuticals

The Group is a leading manufacturer of diagnostic and therapeutic radiopharmaceuticals in China, primarily engaged in the research, development, manufacturing and sale of a wide range of imaging diagnostic and therapeutic radiopharmaceuticals, UBT kits and analyzers and in vitro diagnostic reagents and kits in the domestic market.

During the Reporting Period, the Group adhered to the strategic development plan of each business segment. In respect of pharmaceutical segment, it provided a stable supply of radiopharmaceuticals to domestic medical institutions and strengthened the promotion of nuclear medicine diagnosis and treatment technology to clinical departments and other market development work through supporting the work of the nuclear medicine unit of the Chinese Medical Association. It continued to carry out nuclear medicine diagnosis and treatment to promote the construction of demonstration bases, and constantly promoted the development of the existing industries such as nuclear medicine diagnosis and therapeutic pharmaceuticals. It accelerated the clinical study on the efficacy and safety evaluation of strontium-89 chloride injections to promote the application of strontium-89 chloride injections in the treatment of bone metastases for thyroid cancer, providing a safe and effective drug for clinical tumor patients and expanding the market capacity of radiopharmaceuticals. The Group further improved its competitiveness in the market by integrating the sales of Iodine-125 sealed source products of its subsidiaries HTA and Ningbo Junan and achieved exclusive strategic cooperation with particle therapy supporting equipment and device suppliers to provide comprehensive solutions to customers. Through academic conferences and other means, the Group promoted nuclear medicine to the general public and nuclear medicine clients, including the introduction of new products such as “therapeutic sodium iodine-131 capsule” and scientific radionuclide, thus enhancing its influence in the field of nuclear medicine. The Group vigorously promoted academic brand building of its respiratory disease testing products. The Group launched a national scientific knowledge competition on health management in the field of physical examination and health care and launched helicobacter pylori-related on-air lectures and academic activities on online platforms through promoting “specialist outpatient” lower-tier academic promotional activities. It actively participated in various academic promotional activities involving national, provincial and municipal core specialists, focused on clinical scientific research, and actively carried out post-market clinical scientific research and evaluation experiments on the strip film card (帶膜卡) and the electrostatic card.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

During the Reporting Period, the Group recorded revenue of RMB1,787.8 million from sales of pharmaceuticals, representing a year-on-year increase of 1.3%, of which, the Group recorded revenue of RMB816.6 million from imaging diagnostic and therapeutic radiopharmaceuticals, representing a year-on-year increase of 15.9% compared with 2022 and the Group recorded revenue of RMB924.6 million from breath test, representing a year-on-year decrease of 7.3%.

2. Radioactive source products

The Group is a major manufacturer of medical and industrial radioactive source products in China and also a radioactive source producer with the most complete range of radioactive source product offerings in China, primarily engaged in the research, development, manufacturing and sale of various medical and industrial radioactive source products as well as provision of related technical services.

During the Reporting Period, the Group visited customers in the source industry more frequently, with revenue from the non-destructive testing radioactive sources business reaching a record high in the past three years and the gamma knife source and device source maintaining at a historically high level with an operating revenue of RMB120 million, representing a year-on-year increase of 31%. The Group cooperated closely with scientific research institutes and users, and a number of research and development projects were carried out in an orderly manner. The supporting radioactive source developed by the Group for the Shenzhou XV manned spacecraft has contributed to the successful recovery of the spacecraft and ensured the successful completion of the Shenzhou XV manned mission.

During the Reporting Period, the Group recorded revenue of RMB226.5 million from sales of radioactive source products, representing a year-on-year increase of 31.7%.

3. Irradiation

In the field of irradiation processing, the Group mainly aimed at providing the manufacturers of medical devices, food, traditional Chinese medicine and cosmetics for sterilization in China, meanwhile, EPC services related to the design, manufacturing and installation of irradiation facilities were also accessible.

In terms of business expansion, the Group continued to plough into the field of electron beam curing to realize the differentiated characteristics of the accelerator application field. The Group cooperated with Wuxi El Pont, a leading enterprise in the field of accelerator, to jointly invest in the establishment of Zhongtong El Pont Tech Co., Ltd. (中同愛邦高新技術有限公司) to carry out in-depth cooperation in low-energy accelerators and their application industries. Through the cooperation with the leading domestic household enterprises, it is expected that the Group will achieve large-scale production and sales in the segment of electron beam curing plates.

The Group continued to strengthen its irradiation and sterilization industry and improve its nationwide presence. Currently, the Group is expanding its presence in Yangtze River Delta and regions surrounding Bohai to further enhance its irradiation and sterilization services and scale in these regions. Meanwhile, the Group has taken Huadong Radiation as a pilot to launch a safety management platform to further strengthen the production safety management of irradiation enterprises, which will be promoted to its subordinate irradiation enterprises for the purpose of realizing the informationization of safety management. The Group actively explored new areas of irradiation application by leveraging the characteristics of irradiation technology. The Group has signed a cooperation agreement with Chinese Academy of Inspection and Quarantine, under which both parties will jointly promote the application and business promotion of isotope and irradiation technologies in the fields of inspection and quarantine, food safety testing, biosecurity and pest disinfection.

During the Reporting Period, the Group recorded revenue of RMB76.7 million from irradiation-related business, representing a year-on-year increase of 3.7%.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

4. Radiation therapy equipment and related services

During the Reporting Period, the Group accelerated the nationalization of high-end radiotherapy equipment and made significant progress in the research and development of the Smart Cobalt-60-based Cone Beam Focused Stereotactic Therapy System, which has successfully completed the product test and obtained the type test report. The production and research of national high-end Gamma Knife equipment made further progress, and will enter the stage of the clinical trial. The Group will make every effort to prepare for pre-clinical trial and the on-site protection during the clinical trial, so as to lay a solid foundation for early obtaining of registration certificate, satisfying marketing conditions and serving clinical users. The Company has achieved significant results on research and development project on mobile digital medical X-ray imaging system under development, and the product developed under the project has obtained the medical device registration certificate.

During the Reporting Period, the Group recorded revenue of RMB402.1 million from radiation therapy equipment and related services, representing a year-on-year increase of 49.3%.

5. Other businesses

In order to provide users with a full range of services, the Group also provides services such as trade and independent clinical laboratory services for nuclear technology industry applications and medical product applications. We primarily provide users with trade services for imported radioactive source, medical nuclides, imported radiopharmaceuticals, nuclear instruments and devices, medical equipment and other products. The Group is promoting the cooperation with international pharmaceutical companies to introduce advanced radiopharmaceuticals, intensive management services for hospital consumables, and import agency sales of medical devices.

During the Reporting Period, the Group's trade services and other businesses recorded revenue of RMB247.5 million, representing a year-on-year decrease of 27.3%.

The table below sets forth our revenue by business segment for the six months ended 30 June 2023 and for the six months ended 30 June 2022:

(RMB in million, except in percentage)	Six months ended 30 June 2023		Six months ended 30 June 2022	
	Amount	%	Amount	%
Pharmaceuticals	1,787.8	65.2	1,764.2	67.3
Radioactive source products	226.5	8.3	172.0	6.6
Irradiation	76.7	2.8	74.0	2.8
Radiation therapy equipment and related services	402.1	14.7	269.3	10.3
Other businesses	247.5	9.0	340.1	13.0
Total	2,740.6		2,619.6	

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

MARKETING

During the Reporting Period, the Group continued to promote its brand building and hosted the Sichuan Medical Isotopes and Radiopharmaceuticals Industry Promotion Meeting (四川省醫用同位素及放射性藥物產業推進會) to promote the implementation of the “Action Plan for the Development of Medical Isotopes and Radiopharmaceuticals Industry in Sichuan Province (2022-2025)” (《四川省醫用同位素及放射性藥物產業發展行動計劃(2022-2025)》). Meanwhile, the Group continued to optimize its internal marketing platform, with online activities such as the “Isotope & Radiation Technology Lecture Hall” being constantly updated, and worked with CSCO nuclear medicine experts to promote the standardization of nuclide therapy, thereby continuously expanding its influence. A base has been established in Xinjiang under the “Nuclear Medicine Diagnostic and Treatment Work Promotion Demonstration Base Construction Project”. As of the first half of the year, the Group and the nuclear medicine unit of Chinese Medical Association initiated projects in 67 hospitals, accelerating the popularization of the application of nuclear medicine in clinical diagnosis and treatment.

The Group’s Nuclear Medicine Development Center and Wu Jieping Medical Foundation jointly established Tongfu Smart Nuclear Medical Special Fund (同輻智慧核醫療專項基金), aiming to create an all-in-one solution for smart nuclear medicine. The Group has been deeply engaging in the field of nuclear medicine for 40 years and has been providing a full range of product solutions to users in the fields of radiopharmaceuticals, nuclear medical equipment, radioimmunity and respiratory diagnosis, etc. The Group’s Nuclear Medicine Development Center also established “Zhejiang Province Nuclide Therapy Specialist Alliance” (浙江省核素治療專科聯盟) with a number of hospitals in Zhejiang, aiming to promote the development of nuclear technology application industry in Zhejiang. As a director of the Alliance, the Company will assist the Alliance in promoting the construction of nuclear medicine departments with emphasis on nuclide therapy, promoting the formulation of clinical guidelines and construction standards for nuclide therapy, promoting the construction of more demonstration bases for nuclide therapy, and promoting the standardization and high-quality development of nuclide therapy in the province. The Nuclear Medicine Development Center of the Group and Nuclear Medicine Special Committee of Xinjiang Medical Association, the nuclear medicine unit of Chinese Medical Association have jointly established the Xinjiang “The Belt and Road” Nuclear Medicine Development Committee to promote the integration of nuclear medicine industry resources, with the aim of providing integrated and intelligent nuclear medicine turnkey services for newly built and to-be-built hospitals, and to promote the standardization and high-quality development of nuclear medicine departments and clinical precision diagnosis and treatment throughout Xinjiang.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

SCIENTIFIC RESEARCH AND INNOVATION

The Group has always actively conducted research and development work on various types of imaging diagnosis and therapeutic pharmaceuticals to fill the void of various fields of medical treatment and meet the medical needs of China. As of 30 June 2023, we had a number of imaging diagnosis and therapeutic radiopharmaceuticals under research and development, among which, sodium fluorine-18 injection was completed with clinical trials and was submitted for new drug application; iodine-131-MIBG injection was in Phase III clinical trial; fluorine-18 stamine injection, technetium-99m sulfide colloidal injection, fluorine-18 betazine injection, fluorine-18-L dopa injection, ⁶⁸Ga-Dotatate injection and lutetium-177 oxyoctreotide injection were approved for the clinical trial, and a variety of imaging diagnosis and therapeutic radiopharmaceuticals were in preclinical research and development stage.

Diagnostic drugs

Diagnostic drugs for tumors

1. Bone imaging drug: sodium fluorine-18 is a PET bone imaging drug used to diagnose lesions with altered bone activity, including bone metastases, incipient fracture, ostealgia, joint hyperplasia, etc. The Group's product under development, sodium fluorine-18 injection, obtained the Notice of Acceptance of Registration of Pharmaceutical Product from the National Medical Products Administration on 28 December 2022. At present, on-site verifications of the clinical research center and the drug registration have been completed.
2. Pheochromocytoma diagnostic drug: iodine-131-MIBG injection can be used for the diagnosis of neuroendocrine tumors such as pheochromocytoma and neuroblastoma. The Group's product under development, iodine-131-MIBG injection, was in Phase III clinical trial.
3. Prostate cancer diagnostic drug: PMSA is an ideal tumor marker for prostate cancer. The development of radioactive targeted PMSA diagnostic (therapeutic) drugs is currently a hot spot of interest that the domestic and foreign radiopharmaceutical companies concerned about and competed for. The combination of [¹⁸F] Florastamin and PSMA has a higher specificity and a higher safety profile. The Group has signed a joint development agreement with FutureChem in Republic of Korea to obtain the exclusive rights to develop, manufacture and market [¹⁸F]Florastamin injection in PRC. The Group obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 15 March 2023.
4. Breast cancer sentinel lymph nodes imaging drug: technetium-99m sulfide colloid is the first technetium-marked radiocolloid for lymph node imaging, which is used for the location and tracing of breast cancer sentinel lymph nodes. The Group obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 4 January 2023.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Diagnostic drugs for neurodegenerative diseases

1. Alzheimer (AD) diagnostic drug: β -Amyloid ($A\beta$) is an important target for early diagnosis of AD. The development of positron emission tomography (PET) imaging agents with high affinity and selectivity with $A\beta$ protein can realize early non-invasive diagnosis of such disease. [^{18}F]Florbetazine injection is an $A\beta$ -PET imaging agent jointly developed by the Group and the Key Laboratory of the Ministry of Education for Radiopharmaceuticals of Beijing Normal University, which has independent intellectual property rights and good imaging properties, and is a domestic Class I innovative drug. The Group obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 8 March 2023.
2. Parkinsonism diagnostic drug: 6-fluorine-18-L dopa injection is used clinically for the diagnosis of nervous system diseases such as parkinsonism, schizophrenia and AD, and has clinical value for early diagnosis of disease, assessment of disease severity and cell transplantation detection. The Group obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 17 April 2023.

Therapeutic drug for tumor

Therapeutic drug for prostate cancer. Palladium-103 sealed source is an in vivo implant for brachytherapy, suitable for the permanent implantation of solid tumors with low to neutral sensitivity to radiation, both for superficial, intra-thoracic and intra-abdominal solid tumors such as prostate cancer, pancreatic cancer, lung cancer, head and neck cancer, as well as for residual diseases and recurrent tumors after external radiation therapy. The Group's product under development, palladium-103 sealed source, was completed with various pre-clinical studies.

Integrated drug for diagnosis and treatment

Integrated drug for diagnosis and treatment for neuroendocrine tumor. Internationally, the use of ^{68}Ga -DOTATATE for PET/CT of neuroendocrine tumor has become the gold standard in imaging. ^{68}Ga -DOTATATE can also be used to evaluate the treatment effect of patients with neuroendocrine tumor. ^{177}Lu -DOTATATE is an effective drug in the treatment of neuroendocrine tumor. The Group's product under development, ^{68}Ga -DOTATATE injection and kits obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 20 February 2023. The product under development, lutetium-177 oxyoctreotide injection obtained the Notice of Approval for Clinical Trial of Drugs approved and issued by the National Medical Products Administration on 8 May 2023.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Nuclear medicine equipment

The Gamma-ray Stereotactic Radiotherapy System (Gamma Knife) developed by the Group is a radiosurgery product integrating IGS image guidance technology and radiotherapy technology, which is suitable for the radiotherapy of head and body solid tumors. The product is equipped with functions such as CBCT image guidance, six-dimensional bed auto-correction, large dose rate, and target area AI auto-sketch. It has the advantages of more accurate positioning, smarter treatment planning and treatment process, and shorter single treatment time. The project was awarded the Gamma Knife Equipment type test report on 7 June 2023.

Tomo Therapy is an image-guided radiotherapy (IGRT) system that is highly effective in the treatment of malignant tumors. The Tomo C product developed by the Group introduces cutting-edge international technology and integrates with the needs of the local market. Based on the existing Tomo Therapy, the Group innovatively introduces spiral CT imaging technology into the radiotherapy platform, combining high-resolution CT images and spiral tomotherapy into one system, which achieves diagnostic-grade imaging experience and customized precision treatment, and significantly shortens the treatment time. The Group's Tomo C product passed the registration system verification on 28 March 2023.

Internal platforms

Name of platform	Research field
In Vitro Diagnostic Technology R&D Center	In vitro diagnosis
Radiopharmaceuticals R&D Center	Radiopharmaceuticals
Stable Isotope and Breath Test Technology R&D Center	Stable isotope and breath test
Radioactive Sources and Industrial Application R&D Center	Radioactive sources and industrial application
Irradiation Application Technology R&D Center	Irradiation application

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

External platforms

Name of platform	Research field
National Atomic Energy Agency Research and Development Center for Nuclear Technology (Radiopharmaceutical Engineering Transformation)	Radiopharmaceuticals
CNNC Radiopharmaceuticals Engineering and Technology Research Center	Radiopharmaceuticals
Key Laboratory of Quality Control of In Vitro Diagnostic Reagents of the National Medical Products Administration	In vitro diagnostic reagent
Sichuan Radioisotope Engineering and Technology Research Center	Radioisotopes
Shanxi Molecular Imaging Technology and Equipment Research and Development and Transformation Engineering Research Center	Medical equipment
Key Laboratory of Radiopharmaceuticals Quality Control and Evaluation of Guangdong Medical Products Administration	Radiopharmaceuticals
Guangdong Radioactive Isotope-labeled Drugs Engineering Technology Research Center	Radiopharmaceuticals
Guangdong Stable Isotope Application Engineering Technology Research Center	Stable isotope
Shenzhen Carbon Isotope Application Engineering Technology Research Center	Carbon isotope
Technology Center of Anhui Young-Hearty Medical Appliance & Equipment Co., Ltd.	Breath test
Shanghai Molecular Imaging Probe Engineering Technology Center	Radiopharmaceuticals

During the Reporting Period, the Group achieved remarkable results in the work on intellectual properties, with a total of 113 patents applied, including 70 invention patents, 94 patent authorizations obtained, including 14 invention patents and 14 registered software copyrights. In addition, our overseas patent portfolio continued to grow, with a total of 6 foreign invention patents and 7 foreign design patents applied and 2 foreign design patents obtained.

In terms of standards development and revision, 1 national standard and 1 group standard were issued during the Reporting Period, 1 national standard and 4 nuclear industry standards were pending to be published, and 1 agricultural industry standard and 9 group standards were under preparation.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

In terms of industry-academia-research cooperation, the Group has actively established research cooperation with industry-advanced research institutes, universities and hospitals such as National Institute of Metrology, Shanghai Institute of Materia Medica of Chinese Academy of Sciences, China Institute for Radiation Protection, Harbin Institute of Technology, Sichuan University, Beijing Normal University, Peking Union Medical College Hospital and 301 Hospital, and strengthened academic exchanges and research talent cultivation through the establishment of joint laboratories, research and development centers and collaborative innovation centers to achieve comprehensive cooperation in technological innovation.

The Group has a long-standing commitment to building a system of high-level talents, with 7 national-level talents, 14 provincial and ministerial level talents, 5 chief experts, 16 technology leaders, and a scientific research team of 527 research and development personnel focusing on extensive researching and optimizing production technologies, developing new products and the safety and efficacy upgrading of existing products to jointly promote technological innovation in various industrial fields of the Group. In addition, the Group has set up a post-doctoral research workstation of MOHRSS, a post-doctoral innovation practice base in Shenzhen, a post-graduate workstation for radiopharmaceuticals in Jiangsu Province and a post-graduate workstation for irradiation application in Suzhou University to actively develop post-doctoral and post-graduate training and continuously strengthen the construction of talent teams.

INTERNATIONAL BUSINESS

During the Reporting Period, the Group has exported UBT analyzers, RIA kits, gamma irradiation station, cobalt sources, medical equipment, medical consumables and other products to dozens of countries and regions, realizing a total export revenue of RMB146.5 million. During the Reporting Period, the Group successfully won the bidding and contract for the medical and healthcare project in Uzbekistan led by the Asian Development Bank, won the bidding for a large-scale national foreign medical aid project involving products with nuclear technology applications, and continued to implement the gamma irradiation station project in Malaysia, which was on track. The Group proactively explored the markets in the Americas, Africa and ASEAN countries and steadily increased the market share of our products in the aforementioned regions. At the same time, as the world's third largest supplier of cobalt sources, the Group continued to carry out the cobalt source export business, kept promoting the overseas registration of RIA products and radiopharmaceuticals to lay the foundation for the future development of overseas radiopharmaceuticals markets.

In terms of channel construction, the Group continued to expand its business channels, actively promoted internal and external business synergies, actively participated in a number of international exhibitions at home and abroad, signed memorandums of cooperation with a number of international companies to promote the export of various products, and at the same time, actively liaised with local governments and renowned enterprises to promote the construction of international sales channels. In terms of system management, the Group strengthened its business management and promoted the construction and improvement of its internal management system to further enhance the Group's international operations.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

CAPITAL OPERATION

Upholding the strategic objective of “Becoming Larger, Stronger and Better”, the Group firmly follows the development concept of “Assetization and Globalization” to transform itself into a topnotch international organization and provider of nuclear technology application products and services. To implement the Group’s strategy and improve the Company’s financial gains, we have teamed up with CIRC Innovation Industrial Investment Fund to invest in various fields of nuclear technology applications, including nuclear medicine, medical device, in vitro diagnosis, industrial irradiation application and equipment manufacturing. These various projects have been underway as planned. During the Reporting Period, the Group has not acquired any enterprises.

As of 30 June 2023, the Group’s actual amount paid to the CIRC Fund was RMB443.9 million, accounting for 43.6% of the total actual amount of RMB1,018.0 million paid to the CIRC Fund. After evaluation, the net assets of CIRC Fund measured at fair value as of 30 June 2023 were RMB1,153.0 million. The Company’s share of CIRC Fund’s net asset was RMB484.3 million, accounting for 4.1% of the Company’s total assets. In the first half of 2023, the Company’s investment income in CIRC Fund was RMB10.3 million, and the Company has not received dividends yet.

PRODUCTION CAPACITY

In order to meet the growing demand for radiopharmaceuticals in China in a timely manner, the Group accelerated the national layout of our pharmaceutical centers in the first half of 2023, during which Xi’an pharmaceutical center was completed and put into operation, bringing the cumulative number of centers in operation to 24, three production lines of positron drugs in Shantou, Kunming and Nanning were completed and put into operation, bringing the cumulative number of companies that can supply positron drugs to 18, six pharmaceutical centers have entered the construction/certification stage, and four were in the pre-project phase, gradually improving the network layout of national pharmaceutical centers.

In order to further enhance the R&D and production capacity of the Group in the fields of radiopharmaceuticals and radioactive sources, we have been vigorously promoting the construction of R&D and production bases of isotopes and their products in recent years. At present, the diagnostic and therapeutic radiopharmaceuticals manufacturing bases of the Group were mainly located in four regions (i.e. Beijing, Ningbo etc.), and the medical bases in northern China and Shanghai that are newly planned and laid out were progressing in an orderly manner. The UBT kits and analyzers manufacturing bases were located in Shenzhen and Tongcheng. The radioactive source manufacturing bases were located in Beijing and Leshan. The newly planned research, development and production base for radioactive sources was also being actively promoted. The in vitro immunoassay diagnostic reagents and kits manufacturing bases were located in Beijing. The construction of CNNC Qinshan isotope production base project proceeded in an orderly manner, which will become the largest isotope production base in China after completion and is of great significance to enhance China’s isotope nationalization capability.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

SCIENCE AND TECHNOLOGY REFORM

In recent years, the Group has been solidly promoting the “Science and Technology Reform Demonstration Action” and completing the relevant specialised appraisal with high quality. In May 2023, the SASAC issued the “Notice on the Publication of the Results of the 2022 Specialised Assessment of the ‘Double Hundred Enterprises’ and ‘Science and Technology Reform Demonstration Enterprises’ under the Central Enterprises” (SASAC Reform Office [2023] No. 34) (《關於印發中央企業所屬“雙百企業”“科改示範企業”2022年度專項考核結果的通知》(國資廳改辦[2023]34號)) announcing the results of the 2022 specialised assessment of the “Science and Technology Reform Demonstration Enterprises” under the central enterprises, in which the Group was ranked the 3rd place in the grade of “Excellent” of the science and technology reform demonstration enterprises (with 274 responding enterprises in total). As of 30 June, the Group had completed 8 out of the 13 tasks on the 2023 account, representing a completion rate of 61.5%, and the remaining tasks were progressing according to plan.

The Group anchored on science and technology innovation to stimulate the new impetus of enterprise development, and systematically established the leading mechanism and incentive mechanism for scientific and technological innovation. The Group announced the establishment of the Science and Technology Innovation Committee at the end of 2022, and formulated and issued the “Working Rules of the Science and Technology Innovation Committee of the Board of China Isotope & Radiation Corporation”. In the first half of this year, the Science and Technology Innovation Committee played a leading role in a series of top-level planning, designing and decision-making in respect of the innovations of scientific and technological research talents. In order to further deepen the implementation of the “10 Articles on Science and Technology Reform” and to stimulate the spirit of entrepreneurship among scientific research talents, the Group has made every effort to create a science and technology innovation platform for scientific research talents with higher quality during the Reporting Period, and issued the “Administrative Rules for the Retirement and Re-employment of Scientific Research Talents of China Isotope & Radiation Corporation” and the “Guidelines for Medium- and Long-Term Incentives of China Isotope & Radiation Corporation (Trial)” to give better play to the professional role of the scientific research talents through the establishment of rules and regulations.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

IMPROVING THE QUALITY OF LISTED COMPANIES

The Group integrated the improvement of the quality of listed companies with the development of enterprises in a deep and efficient manner, refined its initiatives, and implemented them in a pragmatic manner, so as to smoothly push forward the implementation of various initiatives for improving the quality of listed companies according to the plan. The Group focused on 5 major areas, including 15 sub-themes, 38 work objectives, 75 work measures and 69 milestone achievements, and made concerted efforts to continuously improve the quality of listed companies. As of June 2023, the Group has accomplished a total of 15 work objectives (completion rate of 39.5%), 31 specific work initiatives (completion rate of 41.3%) and 34 milestone achievements (completion rate of 49.3%). At present, all tasks are progressing in an orderly manner according to the plan, and the overall progress is good.

The Group adhered to the strategy of innovation-driven development and coordinated special works such as the improvement of the quality of listed companies, the Year of Innovation and Optimization, the science and technology reform demonstration action, deepening the Three-Year Action for State-owned Enterprise Reform, and benchmarking the value creation of world-class enterprises, thus continuously shaping the new drivers and strengths for high-quality development and further enhancing the core competitiveness of the enterprise. During the Reporting Period, the Group accomplished a total of 5 work objectives, 15 work measures and 17 milestone achievements in improving the quality of listed companies. The key of promoting the quality of listed companies lies in implementation. The Group will further raise its political position, deepen its understanding on its dual responsibility of building a “strong nuclear power nation” and a “healthy China”, and continuously enhance its sense of responsibility, mission and urgency. Based on the requirements of “Three New and One High” (三新一高) and the strategic positioning of the Company, it has anchored itself in the goal of “Three-in-One” (三位一體), and is determined to push forward the implementation of various measures to improve the quality of listed companies, further implements the relevant requirements of the Group, continues to innovate and optimize to enhance its core competitiveness, and leads its peers in the industry in a more enthusiastic and enterprising manner to promote the high-quality development of the nuclear medicine and radiopharmaceutical industries, continuously improve the level of precision medicine in China, and contribute to the construction of “Healthy China”.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

FUTURE DEVELOPMENT

In recent years, the State attached great importance to the development of nuclear technology application industry. In terms of radiopharmaceuticals, since the release of the “Medium and Long-term Development Plan for Medical Isotopes (2021-2035)” (《醫用同位素中長期發展規劃(2021-2035年)》) in 2021, support for medical isotopes and related industries from all sectors of the community has continued to increase. In January this year, Sichuan Province released the “Action Plan for the Development of Medical Isotopes and Radiopharmaceuticals Industry in Sichuan Province (2022-2025)” (《四川省醫用同位素及放射性藥物產業發展行動計劃(2022-2025)》), proposing that efforts will be made to build an advanced and complete nuclear medical and health industry system. In April this year, the “Opinions of the National Medical Products Administration on Reforming and Improving the Management System for the Assessment and Approval of Radiopharmaceuticals” (《國家藥監局關於改革完善放射性藥品審評審批管理體系的意見》) was released, proposing that the characteristics of radiopharmaceuticals will be fully considered, and that the assessment and approval work will be reformed and improved scientifically.

In terms of nuclear medical equipment, in March this year, the National Health Commission issued the “Notice on Issuance of Large Medical Equipment Configuration Permit Management Catalogue (2023)” (《關於發佈大型醫用設備配置許可管理目錄(2023)的通知》), which adjusted the spiral tomotherapy system from “Class A” to “Class B”; in June this year, the National Health Commission issued the “14th Five-Year Plan for the Configuration of Large-scale Medical Equipment” (《十四五大型醫用設備配置規劃》), in which the State will plan to configure 76 sets of high-end radiotherapy equipment and 1,968 sets of conventional radiotherapy equipment during the 14th Five-Year Plan period (including 95 sets of Gamma-ray Stereotactic Radiotherapy System).

In the face of a series of favourable policies and broad industry prospects, the Company, as an industry leader, will closely focus on the goals and tasks of the “14th Five-Year Plan”, with standardized operation, lean management, change and innovation, high efficiency and quality. In addition, we will continue to deepen lean management, pay more attention to innovation, make every effort to stabilize growth, seek innovation, promote reform, expand market by all means, strengthen and make up for the chain and optimize the layout, and build up the momentum and strengthen management. Besides, we will firmly guard the bottom line of the quality of the safety and environmental protection, as well as compliance operation, and promote the development of a bigger, stronger and better business as a whole, and strive to promote CIRC’s high-quality development to a new level.

All efforts are to be made to stabilize growth. In the first half of this year, with the full resumption of normal operation of the economy and society, the effect of the national growth stabilization policy has gradually emerged, market demand has gradually recovered, the quality of development has continued to improve, and China’s macro-economic environment will continue to improve in the future. With scientific and technological innovation and broad market prospects, China’s nuclear technology application industry will enter the “fast lane” of development under the impetus of a series of favourable policies. CIRC will grasp the development opportunities and make every effort to maintain the momentum of growth, striving to reach new heights in operating revenue, net profit and other business indicators in 2023.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

We will be determined to forge ahead for innovation. CIRC will adhere to innovation-led development, unswervingly place scientific and technological innovation at the core of the overall development, and make every effort to promote new breakthroughs in the research and development of medical isotopes, radiopharmaceuticals, high-end nuclear medical equipment and other fields. At the same time, CIRC will continue to optimize the institutional mechanism of scientific and technological innovation, vigorously construct national technology centers, increase scientific research investment through multiple channels, continuously improve the scientific and technological innovation capacity of R&D platforms at all levels, improve incentives for major scientific and technological achievements, and strengthen medium and long-term incentives for scientific and technological innovation.

The real deal is pushing for reform. CIRC will not waver in its belief in reform and further release the innovative vitality and development potential of the Company through deepening reform. We will push forward the special reform of “Science and Technology Reform Demonstration Enterprise”, accelerate to improve the shortcomings and weaknesses and make every effort to build a model of state-owned science and technology-based enterprise reform and a leader of independent innovation. We will deepen the target of “upgrading management against world-class standards”, successively promote the achievement and establishment of standards, accelerate the creation of leading enterprises in science and technology, high-tech enterprises and specialized, refined, special and novel enterprises, and continuously enhance the value creativity and industry competitiveness of enterprises.

We will expand the market by all means. CIRC will firmly grasp the development opportunities brought by the strategy of expanding domestic demand, and make full efforts in the market and investment side. We will actively implement the national plan and accelerate the implementation of the “One County, One Department” program of CNNC. We will innovate marketing models and promote sales of key products through multiple channels. We will continue to improve our investment map, use the “listed company + industry fund” model to carry out strategic mergers and acquisitions, and strive to complete a number of capital operations in medical diagnostics, irradiation applications, medical devices and other areas that are important to support the industry. We will make every effort to promote our nuclear technology products and services, focus on key projects, deeply plough key countries and promote the implementation of nuclear medicine, radiotherapy and irradiation application solutions.

We will strengthen and make up for the chain and optimize the layout. In order to meet the growing demand of domestic users for medical isotopes and their products in a timely manner, we will vigorously enhance production capacity, fully promote the construction of key projects such as medical isotopes, radiopharmaceuticals and radioactive source research and development and production bases, and promote the national layout of pharmaceutical centers in succession, striving to put into operation a total of 25 pharmaceutical centers by 2023.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

We will build up the momentum and strengthen management. CIRC will keep pace with the times and plan for the future, carry out the mid-term evaluation and revision of the “14th Five-Year Plan”, more accurately grasp the laws of the sub-sector, highlight the new journey, new starting point and new mission, and focus more on high level and quality. We will continue to deepen lean management, accelerate the establishment of lean benchmark workshops for radiopharmaceuticals, radioactive sources, irradiation applications and other business modules, and give full play to the driving effect of benchmark workshops. We will strengthen the construction of talent pool, carry out special projects to improve the quality of scientific and technological talents and skilled personnel, focus on key areas, major projects and major tasks in the near and long term, and increase the introduction of high-level talents. We will organize and carry out the work of “CIRC Work Plan for Improving the Quality of Listed Companies” (《中國同輻提高上市公司質量工作方案》), and continuously improve the core competitiveness and market influence of listed companies. We will continuously promote the development of standardized production safety and strive to improve the safety management level in key areas. We will strengthen the construction of compliance system, explore the construction of compliance management and legal, internal control and risk management synergistic operation mechanism, and improve the effectiveness of compliance management.

The “14th Five-Year Plan” is a strategic opportunity period for the development of the nuclear technology application industry. We will closely focus on the objectives of the “14th Five-Year Plan”, unify our ideology and understanding, maintain our strategic determination, practice the “CIRC speed”, make every effort to promote the implementation of the key tasks of the “14th Five-Year Plan”, and accelerate the establishment of an internationally renowned isotope and radiation technology application products and services supply group.

PRINCIPAL RISKS AND UNCERTAINTIES

The Group’s financial condition, results of operations, and business prospects may be affected by a number of risks and uncertainties directly or indirectly pertaining to the Group’s businesses. To the best of knowledge and belief of the Directors, the Directors consider that the following are the principal risks and uncertainties identified by the Group as at the date of this report.

Market Risk

Market risk is the risk that deteriorates profitability or affects ability to meet business objectives arising from the movement in market prices, like foreign exchange rates and interest rates. The management of the Group manages and monitors these exposures to ensure that appropriate measures are implemented on a timely and effective manner.

Foreign Exchange Risk

The Group mainly operates in the PRC with most of the transactions settled in Renminbi. As of 30 June 2023, other than those mentioned above, the Group did not carry out any other hedging activity against foreign currency risk. Any substantial exchange rate fluctuation of foreign currencies against Renminbi may have a financial impact on the Group.

Interest Rate Risk

For interest-sensitive products and investments, the Group analyses the interest rate exposure on a dynamic basis and considers managing this risk in a cost-effective manner when appropriate, through variety of means.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Liquidity Risk

Liquidity risk is the potential that the Group will be unable to meet its obligations when they fall due because of an inability to obtain adequate funding or liquidate assets. In managing liquidity risk, the Group monitors cash flows and maintains an adequate level of cash and cash equivalent to ensure the ability to finance the Group's operations and reduce the effects of fluctuation in cash flows.

Operational Risk

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Responsibility for managing operational risks basically rests with every function at divisional and departmental levels. Key functions in the Group are guided by their standard operating procedures, limits of authority and reporting framework. The management will identify and assess key operational exposures regularly to properly respond to risks.

Investment Risk

Investment risk can be defined as the likelihood of occurrence of losses relative to the expected return on any particular investment. Key concern of investment framework will be balancing risk and return across different investments, and thus risk assessment is a core aspect of the investment decision process. Proper authorization system has been set up and detailed analysis will be made before approving investments. Regular updates on the progress of the investments of the Group would be submitted to the Board.

Economic Environment

Most of the Group's facilities, operations are located in and its revenue derived from mainland China and Hong Kong. The Group's results of operations and financial condition therefore depend on the economies of mainland China and Hong Kong. The economy of Hong Kong is significantly affected by the developments in mainland China and the Asia-Pacific region. Mainland China's economy may experience negative economic developments, and other regional economies may also deteriorate.

The Group also has significant business across the PRC and one of its growth strategies is to expand into new regions. These regions have also been adversely affected by the global economic slowdown and any continued slowdown may have an adverse effect on the Group's existing operations in, and planned expansion into, these regions.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

FINANCIAL REVIEW

Revenue

We derived our revenue mainly from five major business segments: (1) pharmaceuticals; (2) radioactive source products; (3) irradiation; (4) radiation therapy equipment and related services; and (5) other businesses.

Our revenue increased by 4.6% from RMB2,619.6 million for the six months ended 30 June 2022 to RMB2,740.6 million during the Reporting Period, which was mainly due to the Company's hard work to develop the market during the Reporting Period, the revenue of our radioactive source, radiation therapy equipment and related services segment all increased significantly.

Cost of Sales, Gross Profit and Gross Margin

Our cost of sales increased by 15.5% from RMB1,086.8 million for the six months ended 30 June 2022 to RMB1,255.7 million during the Reporting Period, which was mainly due to the significant increase in the business volume of radiation therapy equipment and related services during the Reporting Period compared with that of the same period of the previous year, leading to a corresponding increase in the cost of sales.

Our gross profit decreased by 3.1% from RMB1,532.8 million for the six months ended 30 June 2022 to RMB1,484.8 million during the Reporting Period and our gross margin decreased by 4.3% from 58.5% to 54.2%. The decrease in gross margin was primarily due to a change in the Company's sales structure as a result of an increase in the business volume and revenue share of the radiation therapy equipment which, due to the nature of its business, had a lower gross margin than other business segments.

Other Income

Our other income decreased by 15.8% from RMB36.4 million for the six months ended 30 June 2022 to RMB30.6 million during the Reporting Period, which was mainly due to decreased non-operating revenue during the Reporting Period.

Selling and Distribution Expenses

Our selling and distribution expenses decreased by 10.7% from RMB872.9 million for the six months ended 30 June 2022 to RMB779.5 million during the Reporting Period, which was mainly due to (i) the decrease in sales service expenses as a result of the decrease in other businesses; and (ii) the decrease in sales service fees due to the changes in pharmaceuticals sales policies.

The percentage of selling and distribution expenses to revenue decreased from 33.3% for the six months ended 30 June 2022 to 28.4% during the Reporting Period, which was mainly due to the change in sales structure during the Reporting Period.

Administrative Expenses, Research and Development Costs and Credit Loss on Trade and Other Receivables

Our administrative expenses, research and development costs and total credit loss on trade and other receivables increased by 6.1% from RMB372.4 million for the six months ended 30 June 2022 to RMB395.2 million during the Reporting Period. Our administrative expenses increased by 2.1% from RMB241.6 million for the six months ended 30 June 2022 to RMB246.8 million during the Reporting Period, which was mainly due to an increase in employee compensation and travelling expenses as result of the development of the Company's business during the Reporting Period.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

The research and development costs increased by 16.3% from RMB116.6 million for the six months ended 30 June 2022 to RMB135.5 million during the Reporting Period, which was mainly due the increase of research and development investment and technological innovation by the Company.

The total credit loss on trade and other receivables decreased by 8.8% from RMB14.2 million for the six months ended 30 June 2022 to RMB12.9 million during the Reporting Period, which was mainly due to the decreased bad debt losses accrued based on credit risk this year.

The percentage of administrative expenses, research and development costs and total impairment loss on trade and other receivables to revenue increased from 14.2% for the six months ended 30 June 2022 to 14.4% during the Reporting Period, which was mainly due to the increase of research and development costs of the Company.

Finance Costs

Our finance costs decreased by 36.1% from RMB23.9 million for the six months ended 30 June 2022 to RMB15.3 million during the Reporting Period, which was mainly due to the decrease in our interest exchange losses resulting from foreign exchange fluctuations during the year.

Share of Profits Less Losses of Associates and Share of Profits of Joint Ventures

Our share of profits less losses of associates decreased by 2.0% from RMB4.4 million for the six months ended 30 June 2022 to RMB4.3 million during the Reporting Period, mainly due to the decrease in profits of associates. Our share of profits of joint ventures increased by 172.8% from RMB7.6 million for the six months ended 30 June 2022 to RMB20.8 million during the Reporting Period, mainly due to an increase in profits from our joint ventures Shanghai GMS Pharmaceutical Co., Ltd. and CIRC Fund.

Profit before Tax

As a result of the foregoing, our profit before tax increased by 12.3% from RMB312.1 million for the six months ended 30 June 2022 to RMB350.6 million during the Reporting Period.

Income Tax

Our income tax decreased by 6.4% from RMB71.5 million for the six months ended 30 June 2022 to RMB66.9 million during the Reporting Period, mainly due to the decrease in our taxable income.

For the six months ended 30 June 2022 and during our Reporting Period, our effective tax rate was 22.9% and 19.1% respectively.

Profit for the Period

As a result of the foregoing, our profit for the period increased by 17.9% from RMB240.6 million for the six months ended 30 June 2022 to RMB283.7 million during the Reporting Period.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

FINANCIAL POSITION

Overview

For the six months ended 30 June 2023, the total assets, the total liabilities and the total equity of the Group were RMB11,796.8 million, RMB5,301.3 million and RMB6,495.5 million respectively.

Net Current Assets

The table below sets forth our current assets, current liabilities and net current assets as of the dates indicated:

	At 30 June 2023	<i>RMB in million</i> At 31 December 2022
Inventories	835.7	677.6
Contract assets	28.1	27.4
Trade and bill receivables	3,591.5	3,501.3
Deposits and other receivables	178.0	146.5
Prepayments	610.4	236.7
Cash at bank and in hand	2,199.7	2,923.2
Total Current Assets	7,443.4	7,512.7
Bank loans	88.1	18.2
Trade payables	554.1	488.3
Accruals and other payables	3,258.1	3,270.7
Lease liabilities	25.6	28.5
Provisions	91.0	86.3
Income tax payable	43.3	95.8
Total Current Liabilities	4,060.2	3,987.8
Net Current Assets	3,383.2	3,524.9

Our net current assets decreased by 4.0% from RMB3,524.9 million as of 31 December 2022 to RMB3,383.2 million as of 30 June 2023, which was mainly due to the decrease in current assets, resulting from a decrease in cash at bank and in hand.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Adjusted Net Gearing Ratio and Quick Ratio

As of 31 December 2022 and 30 June 2023, our adjusted net gearing ratios (adjusted net debt (interest-bearing debt plus unaccrued proposed dividends) divided by adjusted equity (all components of equity less unaccrued proposed dividends)) were 13.5% and 15.7% respectively.

As of 31 December 2022 and 30 June 2023, our quick ratios (total current assets excluding inventories divided by total current liabilities as of the same date) were 1.7 times and 1.6 times, respectively.

Analysis of Cash Flows

The following table sets forth the cash flows of the Group:

	<i>RMB in million</i>	
	Six months ended 30 June	
	2023	2022
Net cash used in operating activities	(292.0)	(87.3)
Net cash used in investing activities	(55.5)	(55.0)
Net cash used in financing activities	(203.0)	(57.6)
Net decrease in cash and cash equivalents	(550.5)	(199.9)
Cash and cash equivalents at the beginning of the period	2,206.0	2,141.5
Effect of changes in foreign exchange rate	0	0.7
Cash and cash equivalents at the end of the period	1,655.5	1,942.3

Trade and Bill Receivables, Prepayments, Deposits and Other Receivables

Trade and bill and other receivables are stated at amortised cost using the effective interest method less allowance for credit losses. As of 30 June 2023, our trade and bill receivables, prepayments, deposits and other receivables (net of bad debt allowance of RMB207.9 million) were RMB4,379.9 million.

Trade and Other Payables

Our trade and other payables mainly consist of trade payables and accruals and other payables, which include receipts in advance, other taxes payables, deposits from distributors, payables to distributors, payables for staff-related costs, dividends payables and other accruals and payables. As of 30 June 2023, our trade and other payables were RMB3,812.2 million.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Bank Loans and Pledge of Assets

As of 30 June 2023, the Group's total bank loans were RMB946.7 million.

As of 30 June 2023, the unsecured long-term bank loans mainly included:

- (i) A loan principal of RMB500.0 million borrowed by the Group at an interest rate of 2.7%.
- (ii) A loan principal of RMB95.0 million borrowed by a subsidiary of the Group at an interest rate of 2.7%.
- (iii) A loan principal balance of RMB152.85 million borrowed by a subsidiary of the Group, including RMB143.27 million at an interest rate of 3.8% and RMB9.58 million at an interest rate of 3.95%.
- (iv) A loan principal balance of RMB3.8 million of a subsidiary of the Group at an interest rate of 3.5%, which was guaranteed by Chengdu Gaotong Isotope Co., Ltd (成都中核高通同位素股份有限公司).
- (v) A loan principal balance of RMB2.27 million borrowed by a subsidiary of the Group at an interest rate of 3.1%.
- (vi) A loan principal of RMB16.91 million borrowed by a subsidiary of the Group in 2023 at an interest rate of 2.8%.
- (vii) A loan principal of RMB39.81 million borrowed by a subsidiary of the Group in 2023 at an interest rate of 3.23%.

As of 30 June 2023, the secured long-term bank loans mainly include:

- (i) A loan principal of RMB6.7 million borrowed by a subsidiary of the Group at an interest rate of 5.1%, with a carrying amount of RMB6.1 million, for which the assets with total carrying amount of RMB16.4 million were pledged.

As of 30 June 2023, the secured short-term bank loans mainly included:

- (i) A loan principal of RMB10.0 million borrowed by a subsidiary of the Group in 2023 at an interest rate of 3.82%, for which the assets with total carrying amount of RMB16.4 million were pledged.
- (ii) A loan principal of RMB10.0 million borrowed by a subsidiary of the Group at an interest rate of 3.65%, for which the assets with total carrying amount of RMB0.9 million were pledged.

As of 30 June 2023, the unsecured short-term bank loans mainly included:

- (i) A loan principal of RMB26.70 million borrowed by a subsidiary of the Group in 2023 at an interest rate of 3.05%. It was a credit facility without guarantee.
- (ii) A loan principal of RMB26.60 million borrowed by a subsidiary of the Group in 2023 at an interest rate of 3%. It was a credit facility without guarantee.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Capital Expenditures

Our capital expenditures mainly comprise additions to ownership interests in leasehold land held for own use, investment properties, plant and equipment and intangible assets. During the Reporting Period, our capital expenditures were RMB298.6 million.

Contingent Liabilities

As of 30 June 2023, we did not have any material contingent liabilities.

Foreign Exchange and Foreign Exchange Risk

During the six months ended 30 June 2023, the Group was exposed to currency risks primarily through bank deposits denominated in foreign currency, which were primarily Hong Kong dollars. The Group monitors foreign exchange movements and determines exchange when necessary. The Group currently has no foreign exchange hedging policy.

Credit Risks

In order to minimise the credit risk, we have policies in place to monitor the exposures to these credit risks on an ongoing basis. Before accepting any new customer requiring credit over a certain credit amount, we carry out research into their credibility and assess their credit quality and define credit limits for that customer. Our individual credit evaluations focus on the customer's historical payment records, and take into account information specific to the customer as well as pertaining to the economic environment in which the customer operates.

We normally do not require collateral from customers. Therefore, our exposure to credit risk is influenced mainly by the individual characteristics of each customer rather than the industry in which the customer operates. The significant concentration of credit risk primarily arises when we rely heavily on individual customers. We will, however, perform periodic credit evaluation on our customers and monitor the compliance of credit terms by them. We believe we do not have any significant concentration of credit risk as the trade and bill receivables involve a large number of customers across diverse industries and geographical areas.

Liquidity Risks

Our policy is to regularly monitor current and expected liquidity requirements to ensure that we maintain sufficient reserves of cash and adequate commitment funds from major financial institutions to meet both short and long term liquidity requirements. Our Directors believe that there is no significant liquidity risk, as we have sufficient monetary capital to fund our operations.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

DIVIDEND POLICY

When the Board recommends the declaration of cash dividends to shareholders at a general meeting, the decision to declare any dividends and the amount of dividends will depend on, among other things:

- our results of operations and cash flows;
- our financial position;
- overall performance;
- our future prospects;
- statutory, regulatory and contractual restrictions on the payment of dividends by us; and
- other factors that the Board deems relevant.

Our Board will propose declaration of dividend, if any, in Renminbi with respect to the shares on a per share basis for shareholders' approval. We will pay such dividend in Renminbi. According to the Articles of Association of the Company, all of our shareholders are equally entitled to dividend and distribution. Holders of the shares will be proportionally entitled to all dividends and other distributions declared on a per share basis.

INTERIM DIVIDEND

The Board does not recommend the payment of any interim dividend for the six months ended 30 June 2023.

NO MATERIAL ADVERSE CHANGE

The Directors have confirmed that there was no material adverse change in our financial and trading position or prospects since 30 June 2023.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

USE OF PROCEEDS FROM THE INITIAL PUBLIC OFFERING

On 6 July 2018, H shares of the Company became listed on the Main Board of The Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) (stock code: 1763). Based on the offer price of HKD21.60 per H share and upon the partial exercise of the over-allotment option (100 shares), the net proceeds that the Group received from the global offering were approximately HKD1,690.0 million after deduction of the underwriting commissions and other estimated expenses in relation to the global offering.

In accordance with the requirements of paragraph 11(8) of Appendix 16 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “**Listing Rules**”), the update of use of proceeds, and the use of proceeds from the initial public offering for the first half of 2023 (including the expected time of full utilisation of the balance) are set out below:

RMB in million

Use	Initial Allocation of the net proceeds	Revised Allocation of the net proceeds	Amount Utilised as of 31 December 2018	Amount Utilised as of 31 December 2019	Amount Utilised as of 31 December 2020	Amount Utilised as of 31 December 2021	Amount Utilised as of 31 December 2022	Amount Utilised as of 30 June 2023	Balance as of 30 June 2023	Expected time of full utilisation of balance
Investment in imaging diagnostic and therapeutic radiopharmaceuticals manufacturing and research and development bases	597.3	460.0	0.0	29.5	200.0	251.5	427.0	427.0	33.0	In 2023
Establishment of production and distribution subsidiaries	67.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Establishment of new production facilities	84.5	50.0	0.0	50.0	50.0	50.0	50.0	50.0	0.0	
Investment in the research and development of various imaging diagnostic and therapeutic radiopharmaceuticals, raw materials of radioactive source products, medical radioisotopes, and UBT products and related raw materials	253.6	118.3	0.0	76.6	101.2	105.4	105.5	105.5	12.8	In 2023
Investments/selective (mergers) acquisitions	286.5	536.1	51.4	529.9	536.1	536.1	536.1	536.1	0.0	
Working capital and general corporate purposes	143.3	268.1	71.7	232.5	268.1	268.1	268.1	268.1	0.0	
Total	1,432.5	1,432.5	123.1	918.5	1,155.4	1,211.2	1,386.7	1,386.7	45.8	

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

Note: The investment in the research and development in the use of proceeds is under preparation due to certain research and development projects to be newly launched. There may be differences between the actual and expected timeline for utilizing the proceeds for investment in research and development. The specific timeline of utilization of the proceeds for the investment in the research and development is subject to the actual timeline of utilization of the projects. The Company will fulfill the disclosure obligations in accordance with the relevant requirements according to the progress of the projects.

EMPLOYEES AND REMUNERATION POLICY

The Group had a total of 3,264 employees as of 30 June 2023 (as of 30 June 2022: 3,244). During the six months ended 30 June 2023, our staff costs were approximately RMB357.6 million (for the six months ended 30 June 2022: RMB485.9 million). The remuneration policy of the Group is to motivate and retain excellent staff so as to realize the long-term enterprise goals and objectives of the Group. The employee remuneration policy of the Group is determined after taking into account the overall salary level in the industry, employees' performance and other factors. The management regularly reviews the employee remuneration policy and arrangement of the Group.

We provide our employees with salaries and bonuses, as well as employee benefits, including employee retirement benefit schemes, medical and vocational injury insurance schemes and housing provident fund schemes. Our employees located in China are covered by the mandatory social security schemes defined by PRC local practice and regulations, which are essentially defined contribution schemes.

We provide training to all of our employees to have them equipped with the necessary skills to perform their jobs competently and to give them the opportunities to realize their personal career goals and aspirations. We are also committed to providing individuals with management and leadership training that will improve our capability to achieve our vision, mission and growth objectives. We realize the importance of developing individual career paths that will help employees develop their full potential. Development opportunities are provided as a result of on-the-job training and formal training programs.

HEDGING ACTIVITIES

During the six months ended 30 June 2023, the Group had not entered into any hedging transaction in relation to foreign exchange risks or interest rate risks.

ACQUISITIONS AND DISPOSALS OF SUBSIDIARIES, ASSOCIATES AND JOINT VENTURES

During the six months ended 30 June 2023, the Company did not have any acquisition and disposal of subsidiaries, associates and joint ventures.

MANAGEMENT DISCUSSION AND ANALYSIS (CONTINUED)

MATERIAL INVESTMENTS AND FUTURE PLANS FOR MATERIAL INVESTMENTS OR CAPITAL ASSETS

During the six months ended 30 June 2023, the Company did not have any material investments.

The Group will actively explore investment opportunities in and outside the PRC to diversify its source of income, which may or may not include any acquisition or disposal of assets and/or business by the Group. Any such plans will comply with the applicable requirements under the Listing Rules (where appropriate). As at the date of this interim report, the Company has no specific plans for significant investment or acquisition of material capital assets in the future.

By order of the Board of Directors
CHINA ISOTOPE & RADIATION CORPORATION
Chairman of the Board
Wang Suohui

Beijing, the PRC, 5 September 2023

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION

COMPLIANCE WITH THE CORPORATE GOVERNANCE CODE

The Company has adopted and applied the principles and code provisions of the Corporate Governance Code set out in Appendix 14 to the Listing Rules. During the Reporting Period, the Company has complied with the mandatory code provisions set out in the Corporate Governance Code. The Group has always been committed to enhancing its corporate governance level and deems the corporate governance as an integral part of the value created for shareholders of the Company. The Group has, with reference to the code provisions of the Corporate Governance Code set out in Appendix 14 to the Listing Rules, established a modern corporate governance structure effectively balanced and independently operated by the general meetings, the Board, the Board of Supervisors and senior management of the Company. The Company has also adopted the Corporate Governance Code as the corporate governance practices of the Company.

COMPLIANCE WITH THE MODEL CODE FOR SECURITIES TRANSACTIONS

The Group has adopted a set of codes (the “**Customized Code**”) with standards no less favourable than that of the Model Code for Securities Transactions by Directors of Listed Issuers (the “**Model Code**”) as set out in Appendix 10 of the Listing Rules as its own code of conduct regarding securities transaction by all Directors, Supervisors and the relevant employees of the Company.

Having made specific enquiries to the Directors and Supervisors, all Directors and Supervisors confirmed that they had complied with the required standards as set out in the Customized Code during the Reporting Period. The Company was also not aware of any incidents of non-compliance with the Customized Code by the relevant employees.

INDEPENDENT NON-EXECUTIVE DIRECTORS

The Company has appointed a sufficient number of independent non-executive Directors, one of whom with appropriate professional qualifications, or appropriate accounting or related financial management expertise in accordance with the requirements of the Listing Rules. As of the date of this interim report, the Company appointed a total of four independent non-executive Directors, including Mr. Poon Chiu Kwok, Mr. Tian Jiahe, Ms. Chen Jingshan and Mr. Lu Chuang.

AUDIT AND RISK MANAGEMENT COMMITTEE

As of the date of this interim report, the audit and risk management committee of the Company (the “**Audit and Risk Management Committee**”) consists of two independent non-executive Directors and one non-executive Director, namely Mr. Poon Chiu Kwok (chairman), Mr. Lu Chuang and Mr. Chen Shoulei, and its terms of reference comply with the requirements of the Listing Rules.

The Audit and Risk Management Committee has considered and reviewed the accounting principles and practices adopted by the Group and has discussed the relevant internal control and financial reporting matters with the management, including reviewing the unaudited condensed consolidated interim financial results of the Group for the six months ended 30 June 2023.

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION (CONTINUED)

On 29 August 2023, the Audit and Risk Management Committee reviewed and confirmed the interim results announcement of the Group for the six months ended 30 June 2023, the 2023 interim report and the unaudited condensed consolidated interim financial information for the six months ended 30 June 2023 prepared in accordance with the IAS 34 Interim Financial Reporting.

SHARE CAPITAL

As of 30 June 2023, the share capital of the Company totalled RMB319,874,900, divided into 79,968,800 H Shares and 239,906,100 Domestic Shares of RMB1.00 each. The Company's share capital has not changed during the Reporting Period.

INTERESTS AND SHORT POSITIONS OF DIRECTORS, SUPERVISORS AND CHIEF EXECUTIVE IN SHARES, UNDERLYING SHARES AND DEBENTURES

As of 30 June 2023, none of the Directors, Supervisors and chief executive of the Company had interests and short positions (a) which will have to be notified to our Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests and short positions which are taken or deemed to have under such provisions of SFO); or (b) which will be required, pursuant to section 352 of the SFO, to be recorded in the register referred to therein; or (c) which will be required to be notified to our Company and the Stock Exchange pursuant to the Model Code.

SUBSTANTIAL SHAREHOLDERS' INTERESTS AND SHORT POSITIONS IN THE SHARES AND UNDERLYING SHARES

To the best knowledge of the Company, as of 30 June 2023, the following persons (other than the Directors, Supervisors and chief executive of the Company) had interests or short positions in the Shares or underlying Shares of our Company which are required to be disclosed to our Company and the Stock Exchange pursuant to the provisions of Divisions 2 and 3 of Part XV of the SFO, or interests or short positions recorded in the register required to be kept by the Company pursuant to Section 336 of the SFO, or, directly or indirectly, be interested in 5% or more of the nominal value of any class of our share capital:

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION (CONTINUED)

Shareholder	Class of Shares	Nature of interest	Number of Shares held ⁽⁶⁾	Approximate percentage of shareholding in the relevant class of Shares %	Approximate percentage of shareholding in the total share capital of our Company %
CNNC ⁽¹⁾	Domestic Shares	Beneficial owner/ Interest of controlled corporation	236,150,233(L)	98.43(L)	73.83
CIAE ⁽¹⁾	Domestic Shares	Beneficial owner	58,534,835(L)	24.40(L)	18.30
NPIC ⁽¹⁾	Domestic Shares	Beneficial owner	46,994,835(L)	19.59(L)	14.69
CNNC Fund ⁽¹⁾	Domestic Shares	Beneficial owner	18,779,342(L)	7.83(L)	5.87
Shanghai Industrial Investment (Holdings) Company Limited ("SIC") ⁽²⁾	H Shares	Interest of controlled corporation	17,522,600(L)	21.91(L)	5.48
Shanghai Industrial Investment Treasury Company Limited ⁽²⁾	H Shares	Interest of controlled corporation	9,516,600(L)	11.90(L)	2.98
Shanghai Investment Holdings Limited ⁽²⁾	H Shares	Interest of controlled corporation	9,516,600(L)	11.90(L)	2.98
Shanghai Industrial Holdings Limited ("SIHL") ⁽²⁾	H Shares	Interest of controlled corporation	9,516,600(L)	11.90(L)	2.98
S.I. Infrastructure (Holdings) Limited ⁽²⁾	H Shares	Interest of controlled corporation	9,516,600(L)	11.90(L)	2.98
Sure Advance Holdings Limited ("Sure Advance") ⁽²⁾	H Shares	Beneficial owner	9,516,600(L)	11.90(L)	2.98
Shanghai Shangshi (Group) Co., Ltd. ("Shanghai Shangshi") ⁽²⁾	H Shares	Interest of controlled corporation	8,006,000(L)	10.01(L)	2.50
Shanghai Pharmaceuticals Holding Co. Ltd ("SPH") ⁽²⁾	H Shares	Interest of controlled corporation	8,006,000(L)	10.01(L)	2.50
Shanghai Pharmaceuticals (HK) Investment Limited ("SPH HK") ⁽²⁾	H Shares	Beneficial owner	8,006,000(L)	10.01(L)	2.50
Lianwen Ltd ⁽³⁾	H Shares	Beneficial owner	14,309,800(L)	17.89(L)	4.47
Li Hongbo ⁽³⁾	H Shares	Interest of controlled corporation	16,809,800(L)	21.02(L)	5.26
Serenity Capital Management, Ltd. ⁽⁴⁾	H Shares	Investment manager	4,801,600(L)	6.00(L)	1.50
Serenity Investment Master Fund Limited ⁽⁴⁾	H Shares	Beneficial owner	4,801,600(L)	6.00(L)	1.50
UBS Group AG ⁽⁵⁾	H Shares	Interest of controlled corporation	4,265,077(L)	5.33(L)	1.33
JPMorgan Chase & Co.	H Shares	Interest of controlled corporation/Person having security interest in shares	5,578,094(L) ⁽⁶⁾	6.97(L)	1.74
		Interest of controlled corporation	5,471,162(S) ⁽⁷⁾	6.84(S)	1.71

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION (CONTINUED)

Notes:

(1) CNNC directly holds 106,676,903 Domestic Shares of the Company, representing approximately 44.47% of the domestic share capital of our Company. Each of CIAE and NPIC is a public institute controlled and managed by CNNC and holds 58,534,835 Domestic Shares and 46,994,835 Domestic Shares, representing approximately 24.40% and 19.59% of the domestic share capital of our Company, respectively. CNNC Fund is a non-wholly-owned subsidiary of CNNC and holds 18,779,342 Domestic Shares, representing approximately 7.83% of the domestic share capital of our Company. Each of CNNC 404 Company Limited (“**404 Company**”) and China Baoyuan Investment Co., Ltd. (“**China Baoyuan**”) is a wholly-owned subsidiary of CNNC and holds 3,755,868 Domestic Shares and 1,408,450 Domestic Shares, respectively, representing approximately 1.57% and 0.59% of the domestic share capital of our Company, respectively. By virtue of the SFO, CNNC is deemed to be interested in the Domestic Shares held by CIAE, NPIC, CNNC Fund, 404 Company and China Baoyuan, which in aggregate representing approximately 98.43% of the domestic share capital of our Company.

(2) By virtue of the SFO, SIIC is deemed to be interested in the 9,516,600 H Shares held by Sure Advance, a controlled corporation of SIIC. SIIC holds 100% equity interest in Shanghai Industrial Investment Treasury Company Limited, while Shanghai Industrial Investment Treasury Company Limited directly holds 100% equity interest in Shanghai Investment Holdings Limited, which in turn holds approximately 55.13% equity interest in SIHL. SIHL directly holds 100% equity interest in S.I. Infrastructure (Holdings) Limited, which directly holds 100% equity interest in Sure Advance.

By virtue of the SFO, SIIC is deemed to be interested in the 8,006,000 H Shares held by SPH HK, a controlled corporation of SIIC. SIIC holds 100% equity interest in Shanghai Shangshi, while Shanghai Shangshi directly holds approximately 35.56% equity interest in SPH, which directly holds 100% equity interest in SPH HK.

(3) Lianwen Ltd and Lianwen Holding Pte. Ltd are 100% controlled by Li Hongbo. By virtue of the SFO, Li Hongbo is deemed to be interested in the 14,309,800 H Shares held by Lianwen Ltd and the 2,500,000 H Shares held by Lianwen Holding Pte. Ltd.

(4) Serenity Investment Master Fund Limited is 100% controlled by Serenity Capital Management, Ltd. By virtue of the SFO, Serenity Capital Management, Ltd. is deemed to be interested in the 4,801,600 H Shares held by Serenity Investment Master Fund Limited.

(5) UBS Group AG directly holds 100% equity interest in UBS AG and UBS Switzerland AG respectively. By virtue of the SFO, UBS Group AG is deemed to be interested in the 4,125,078 H Shares held by UBS AG, its controlled corporation, and the 139,999 H Shares held by UBS Switzerland AG, its controlled corporation.

(6) Of these 5,578,094 H Shares, 5,267,000 H Shares are held by JPMorgan Chase Bank, National Association, a direct wholly-owned subsidiary of JPMorgan Chase & Co. and 311,094 H Shares are held by J.P. Morgan Securities PLC, an indirect wholly-owned subsidiary of JPMorgan Chase & Co. Accordingly, by virtue of the SFO, JPMorgan Chase & Co. is deemed to be interested in the H Shares held by its aforementioned subsidiaries.

(7) Of these 5,471,162 H Shares, 5,267,000 H Shares are held by JPMorgan Chase Bank, National Association, a direct wholly-owned subsidiary of JPMorgan Chase & Co. and 204,162 H Shares are held by J.P. Morgan Securities PLC, an indirect wholly-owned subsidiary of JPMorgan Chase & Co. Accordingly, by virtue of the SFO, JPMorgan Chase & Co. is deemed to be interested in the H Shares held by its aforementioned subsidiaries.

(8) (L) represents long position and (S) represents short position.

Save as disclosed herein, as of 30 June 2023, the Company is not aware of any other person (other than the Directors, Supervisors and chief executive of the Company) who has an interest or short position, which would be required to be disclosed to our Company and the Stock Exchange under the provisions of Divisions 2 and 3 of Part XV of the SFO, or interests or short positions recorded in the register required to be kept by the Company pursuant to Section 336 of the SFO, or, directly or indirectly, be interested in 5% or more of the nominal value of any class of our Company's share capital.

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION (CONTINUED)

PURCHASE, SALE OR REDEMPTION OF THE COMPANY'S LISTED SECURITIES

During the six months ended 30 June 2023 and as of the date of this interim report, neither the Company nor any of its subsidiaries purchased, sold or redeemed any listed securities of the Company.

SUBSEQUENT EVENTS

Save as disclosed above, no significant subsequent event has taken place after the Reporting Period to the date of this interim report.

MATERIAL LITIGATION

As of 30 June 2023, the Company was not involved in any material litigation or arbitration. Nor were the Directors aware of any material litigation or claims that were pending or threatened against the Company.

COMPLIANCE WITH THE OFAC UNDERTAKINGS

During the Reporting Period, the Company has requested its subsidiaries to conduct overseas business in accordance with the Detailed Rules on the Work of the Overseas Risk Management Committee of China Isotope & Radiation Corporation. The Company has kept the relevant OFAC undertakings during the Reporting Period and will continue doing so in the future daily operation.

CHANGE IN INFORMATION OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

The changes in the information of Directors, Supervisors and senior management of the Company which are required to be disclosed pursuant to Rule 13.51B(1) of the Listing Rules, after the publication of the last annual report, are as follows:

- Mr. Dai Shuquan resigned as a non-executive Director, vice-chairman and member of the strategy committee of the Board with effect from 30 June 2023.
- Mr. Ding Jianmin was appointed on 30 June 2023 as a non-executive Director, vice-chairman and member of the strategy committee of the Board.
- Mr. Hui Wan Fai resigned as an independent non-executive Director, a member of the nomination committee, a member of the legal affairs committee and the chairman of the Audit and Risk Management Committee of the Board with effect from 30 June 2023.
- Mr. Poon Chui Kwok was appointed on 30 June 2023 as an independent non-executive Director, a member of the nomination committee, a member of the legal affairs committee and the chairman of the Audit and Risk Management Committee of the Board. On 30 June 2023, Mr. Poon Chiu Kwok resigned as an independent non-executive director of each of Yankuang Energy Group Company Limited (the shares of which are listed on the Stock Exchange, stock code: 1171) and Changan Minsheng APLL Logistics Co., Ltd. (the shares of which are listed on the Stock Exchange, stock code:1292).

CORPORATE GOVERNANCE REPORT AND OTHER INFORMATION (CONTINUED)

- Mr. Wang Suohui, an executive Director, has been concurrently serving as a member of the Twelfth Committee of the nuclear medicine unit of the Chinese Medical Association since April 2023.
- Mr. Fan Guomin, a senior management of the Company, has ceased to serve as a director of the Eighth Council of the Beijing Nuclear Society since April 2023.
- Mr. Gui Youquan, a senior management of the Company, has been concurrently serving as a director of the second session of the board of CNNC Accuray (Tianjin) Medical Technology Co., Ltd. since February 2023.
- Mr. Huang Li, a senior management of the Company, has been concurrently serving as a director of the Eighth Council of the Beijing Nuclear Society since April 2023, a director and chairman of the board of Zhongtong Aibang Hi-Tech Company Limited (中同愛邦高新技術有限公司) since May 2023, and a director of the Eighth Council of the Beijing Nuclear Society and a vice-chairman of the Nuclear Medicine of the China Society of Radiation Protection since June 2023.

Save as disclosed above, as at the date of this interim report, the Company is not aware of any change in the information of Directors, Supervisors and chief executive which is required to be disclosed pursuant to Rule 13.51B(1) of the Listing Rules.

By order of the Board of Directors
China Isotope & Radiation Corporation
Chairman of the Board
Wang Suohui

Beijing, the PRC, 5 September 2023

REPORT ON REVIEW OF INTERIM FINANCIAL INFORMATION



SHINEWING (HK) CPA Limited
17/F, Chubb Tower, Windsor House,
311 Gloucester Road,
Causeway Bay, Hong Kong

信永中和(香港)會計師事務所有限公司
香港銅鑼灣告士打道311號
皇室大廈安達人壽大樓17樓

TO THE BOARD OF DIRECTORS OF CHINA ISOTOPE & RADIATION CORPORATION

(A joint stock company incorporated in the People's Republic of China with limited liability)

INTRODUCTION

We have reviewed the condensed consolidated financial statements of China Isotope & Radiation Corporation (the "Company") and its subsidiaries set out on pages 39 to 62, which comprise the condensed consolidated statement of financial position as of 30 June 2023 and the related condensed consolidated statement of profit or loss, statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows for the six-month period then ended, and other explanatory notes.

The Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited require the preparation of a report on interim financial information to be in compliance with the relevant provisions thereof and International Accounting Standard ("IAS") 34 "Interim Financial Reporting" issued by the International Accounting Standards Board (the "IASB"). The directors of the Company are responsible for the preparation and presentation of these condensed consolidated financial statements in accordance with IAS 34.

Our responsibility is to express a conclusion on these condensed consolidated financial statements based on our review, and to report our conclusion solely to you, as a body, in accordance with our agreed terms of engagement, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report.

SCOPE OF REVIEW

We conducted our review in accordance with Hong Kong Standard on Review Engagements 2410 "Review of Interim Financial Information Performed by the Independent Auditor of the Entity" issued by the Hong Kong Institute of Certified Public Accountants. A review of these condensed consolidated financial statements consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Hong Kong Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

CONCLUSION

Based on our review, nothing has come to our attention that causes us to believe that the condensed consolidated financial statements are not prepared, in all material respects, in accordance with IAS 34.

SHINEWING (HK) CPA Limited

Certified Public Accountants

Lee Shun Ming

Practising Certificate Number: P07068

Hong Kong
29 August 2023

CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS

For the six months ended 30 June 2023

	NOTES	Six months ended 30 June	
		2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited) (Restated)
Revenue	4	2,740,586	2,619,579
Cost of sales		(1,255,745)	(1,086,787)
Gross profit		1,484,841	1,532,792
Other income, gains and losses	5	30,622	36,386
Selling and distribution expenses		(779,465)	(872,858)
Administrative expenses		(246,773)	(241,609)
Research and development costs		(135,508)	(116,556)
Impairment losses on trade and other receivables		(12,945)	(14,192)
Profit from operations		340,772	323,963
Finance costs	6(a)	(15,293)	(23,937)
Share of profits less losses of associates		4,352	4,442
Share of profits of joint ventures		20,759	7,609
Profit before taxation	6	350,590	312,077
Income tax	7	(66,923)	(71,523)
Profit for the period		283,667	240,554
Attributable to:			
– Equity shareholders of the Company		126,897	111,986
– Non-controlling interests		156,770	128,568
Profit for the period		283,667	240,554
Earnings per share	8		
Basic and diluted (RMB)		0.40	0.35

CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

For the six months ended 30 June 2023

	Six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited) (Restated)
Profit for the period	283,667	240,554
Other comprehensive income (expense) for the period		
<i>Items that will not be reclassified subsequently to profit or loss:</i>		
Remeasurement of defined benefit liability	1	(6)
Equity securities designated at fair value through other comprehensive income – net movement in fair value reserve (non-recycling)	1,790	5,768
Other comprehensive income for the period	1,791	5,762
Total comprehensive income for the period	285,458	246,316
Attributable to:		
– Equity shareholders of the Company	128,688	117,748
– Non-controlling interests	156,770	128,568
Total comprehensive income for the period	285,458	246,316

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 30 June 2023

	NOTES	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited) (Restated)
Non-current assets			
Property, plant and equipment	9	2,947,638	2,820,749
Investment property		47,128	49,604
Intangible assets		170,222	160,876
Goodwill	10	30,764	30,764
Interests in associates		199,748	165,096
Interests in joint ventures		518,279	512,867
Long-term receivables		38,997	38,997
Unquoted equity investments		164,599	162,494
Deferred tax assets		228,798	222,476
Other non-current assets		7,239	9,899
		4,353,412	4,173,822
Current assets			
Inventories		835,682	677,636
Contract assets		28,137	27,359
Trade and bill receivables	11	3,591,530	3,501,338
Deposits and other receivables		178,005	146,462
Prepayments		610,395	236,724
Cash at bank	12	2,199,653	2,923,191
		7,443,402	7,512,710
Current liabilities			
Bank loans		88,065	18,196
Trade payables	13	554,095	488,288
Accruals and other payables		3,258,060	3,270,735
Lease liabilities	9(b)	25,602	28,520
Provisions		91,031	86,322
Income tax payable		43,326	95,729
		4,060,179	3,987,790
Net current assets		3,383,223	3,524,920
Total assets less current liabilities		7,736,635	7,698,742

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

As at 30 June 2023

	NOTE	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited) (Restated)
Non-current liabilities			
Bank loans		858,670	786,513
Deferred income		59,918	60,001
Lease liabilities	9(b)	47,202	51,631
Defined benefit retirement obligation		53,720	53,940
Deferred tax liabilities		18,727	19,055
Provisions		141,118	137,885
Other long-term payables		61,774	36,255
		1,241,129	1,145,280
Net assets			
		6,495,506	6,553,462
Capital and reserves			
Share capital		319,875	319,875
Reserves		4,133,357	4,145,638
Total equity attributable to equity shareholders of the Company			
		4,453,232	4,465,513
Non-controlling interests		2,042,274	2,087,949
Total equity			
		6,495,506	6,553,462

CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the six months ended 30 June 2023

	Attributable to Owner of the Company										
	Share capital RMB'000	Capital reserve RMB'000	PRC statutory reserve RMB'000	Fair value reserve			Exchange reserve RMB'000	Retained profits RMB'000	Sub-total RMB'000	Non-controlling interests RMB'000	Total equity RMB'000
				Other reserve RMB'000	(non-recycling) RMB'000	(non-recycling) RMB'000					
At 31 December 2022 and 1 January 2023 (audited and originally stated)	319,875	2,119,164	155,945	54,913	57,569	-	1,757,821	4,465,287	2,087,996	6,553,283	
Change in accounting policy (Note 3)	-	-	-	-	-	-	226	226	(47)	179	
As 1 January 2023, as restated	319,875	2,119,164	155,945	54,913	57,569	-	1,758,047	4,465,513	2,087,949	6,553,462	
Changes in equity for the six months ended 30 June 2023	-	-	-	-	-	-	126,897	126,897	156,770	283,667	
Profit for the period	-	-	-	-	-	-	-	-	-	1,791	
Other comprehensive income	-	-	-	1,791	-	-	-	-	-	-	
Total comprehensive income for the period	-	-	-	1,791	-	-	-	126,897	126,897	156,770	
Capital contributions from non-controlling equity owners of subsidiaries	-	-	-	-	-	-	-	-	-	9,818	
Appropriation of maintenance and production funds	-	-	-	-	21,171	-	(21,171)	-	-	-	
Utilisation of maintenance and production funds	-	-	-	-	(14,450)	-	14,450	-	-	-	
Dividends (Note 14)	-	-	-	-	-	-	(140,969)	(140,969)	-	(140,969)	
Distributions by subsidiaries to non-controlling equity owners	-	-	-	-	-	-	-	-	(212,263)	(212,263)	
At 30 June 2023 (unaudited)	319,875	2,119,164	155,945	56,704	64,290	-	1,737,254	4,453,232	2,042,274	6,495,506	

CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

For the six months ended 30 June 2023

	Attributable to Owner of the Company								Non-controlling interests	Total equity		
	Share capital	Capital reserve	PRC statutory reserve	Fair value reserve (non-recycling)	Other reserve	Exchange reserve	Retained profits	Sub-total			RMB'000	RMB'000
At 31 December 2021 and 1 January 2022 (audited and originally stated)	319,875	2,117,421	144,218	39,390	47,970	-	1,510,416	4,179,290	1,852,098	6,031,388		
Change in accounting policy (Note 3)	-	-	-	-	-	-	(161)	(161)	(50)	(211)		
As 1 January 2022, as restated	319,875	2,117,421	144,218	39,390	47,970	-	1,510,255	4,179,129	1,852,048	6,031,177		
Changes in equity for the six months ended 30 June 2022												
Profit for the period	-	-	-	-	-	-	111,986	111,986	128,568	240,554		
Other comprehensive income	-	-	-	5,762	-	-	-	5,762	-	5,762		
Total comprehensive income for the period	-	-	-	5,762	-	-	111,986	117,748	128,568	246,316		
Capital contributions from non-controlling equity owners of subsidiaries	-	-	-	-	-	-	-	-	23,924	23,924		
Appropriation of maintenance and production funds	-	-	-	-	15,902	-	(15,902)	-	-	-		
Utilisation of maintenance and production funds	-	-	-	-	(12,126)	-	12,126	-	-	-		
Dividends (Note 14)	-	-	-	-	-	-	(120,880)	(120,880)	-	(120,880)		
Distributions by subsidiaries to non-controlling equity owners	-	-	-	-	-	-	-	-	(48,283)	(48,283)		
At 30 June 2022 (unaudited)	319,875	2,117,421	144,218	45,152	51,746	-	1,497,585	4,175,997	1,956,257	6,132,254		

CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

For the six months ended 30 June 2023

	Six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Operating activities		
Cash used in operations	(165,703)	(9,084)
Income tax paid	(126,291)	(78,235)
Net cash used in operating activities	(291,994)	(87,319)
Investing activities		
Net decrease in deposits with banks	173,010	65,000
Payments for purchase of investment property, property, plant and equipment and intangible assets	(245,872)	(128,761)
Capital injection in interests in associates	(30,300)	(18,800)
Proceeds on disposal of interest in an associate	–	3,102
Proceeds from disposal of property, plant and equipment	–	160
Interests received	12,856	9,054
Distribution received from joint ventures	15,347	3,994
Dividends received from unlisted equity investments	–	29
Government grants received	19,423	11,259
Net cash used in investing activities	(55,536)	(54,963)
Financing activities		
Capital element of lease rentals paid	(11,149)	(13,475)
Interest element of lease rentals paid	(1,601)	(1,568)
Capital contributions from non-controlling equity owners of subsidiaries	9,818	23,925
Proceeds from bank loans	150,891	25,800
Repayments of bank loans	(23,075)	(59,620)
Other interests paid	–	(5,139)
Dividends paid by subsidiaries to non-controlling equity owners	(212,263)	(30,088)
Other cash flows (used in) generated from financing activities	(115,619)	2,549
Net cash used in financing activities	(202,998)	(57,616)
Net decrease in cash and cash equivalents	(550,528)	(199,897)
Cash and cash equivalents at 1 January	2,205,988	2,141,450
Effect of foreign exchanges rates changes	–	753
Cash and cash equivalents at 30 June, representing bank balances and cash	1,655,460	1,942,306

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION

For the six months ended 30 June 2023

1. ORGANISATION

China Isotope & Radiation Corporation (the “Company”) was established on 4 December 2007 in the People’s Republic of China (the “PRC”) as a state-owned enterprise with limited liability. The Company was converted into a joint stock company with limited liability on 6 December 2011. The immediate and ultimate holding company of the Company is China National Nuclear Corporation (“CNNC”).

2. BASIS OF PREPARATION

This interim financial report has been prepared in accordance with the applicable disclosure provisions of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited, including compliance with International Accounting Standard (“IAS”) 34, Interim Financial Reporting, issued by the International Accounting Standards Board (“IASB”). It was authorised for issue on 29 August 2023.

The interim financial report has been prepared in accordance with the same accounting policies adopted in the 2022 annual consolidated financial statements, except for the changes in accounting policy resulting from the amendments to International Financial Reporting Standards (“IFRSs”) issued by the IASB that are expected to be reflected in the 2023 annual consolidated financial statements. Details of any changes in accounting policies are set out in Note 3.

The preparation of an interim financial report in conformity with IAS 34 requires management to make judgments, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses on a year to date basis. Actual results may differ from these estimates.

This interim financial report contains condensed consolidated financial statements and selected explanatory notes. The notes include an explanation of events and transactions that are significant to an understanding of the changes in financial position and performance of the Company and its subsidiaries (collectively referred to as the “Group”) since the 2022 annual consolidated financial statements. The condensed consolidated interim financial statements and notes thereon do not include all of the information required for a full set of consolidated financial statements prepared in accordance with IFRSs issued by the IASB.

3. CHANGES IN ACCOUNTING POLICIES

The Group has applied, for the first time, the following new and amendments to IFRSs issued by the IASB, which are effective for the Group’s financial year beginning on 1 January 2023, for this interim financial report for the current accounting period:

IFRS 17 and related amendments	Insurance Contracts
Amendments to IAS 1 and IFRS Practice Statement 2	Disclosure of Accounting Policies
Amendments to IAS 8	Definition of Accounting Estimates
Amendments to IAS 12	Deferred Tax related to Assets and Liabilities arising from a Single Transaction
Amendments to IAS 12	International Tax Reform-Pillar Two Model Rules

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

3. CHANGES IN ACCOUNTING POLICIES (CONTINUED)

Except as described below, the application of the new and amendments to IFRSs in the current interim period has had no material impact on the Group's financial performance and positions for the current and prior periods and/or on the disclosures set out in these condensed consolidated financial statements.

Impact on application of Amendments to IAS 12 – Deferred Tax related to Assets and Liabilities arising from a Single Transaction

The amendments to IAS 12 narrow the scope of the recognition exemption of deferred tax liabilities and deferred tax assets in paragraphs 15 and 24 of IAS 12 so that it no longer applies to transactions that, on initial recognition, give rise to equal taxable and deductible temporary differences, such as leases and decommissioning liabilities. Therefore, entities are required to recognise a deferred tax asset (provided that sufficient taxable profit is available) and a deferred tax liability for temporary differences arising from these transactions. The amendments shall be applied to transactions related to leases and decommissioning obligations at the beginning of the earliest comparative period presented, with any cumulative effect recognised as an adjustment to the opening balance of retained profits or other component of equity as appropriate at that date. In addition, the amendments shall be applied prospectively to transactions other than leases and decommissioning obligations.

The Group previously applied IAS 12 requirements under IAS 12 Income taxes to the relevant assets and liabilities arising from a single transaction as a whole. Temporary differences relating to relevant assets and liabilities are assessed on a net basis. Upon application of the amendments to IAS 12, the Group has assessed the relevant deferred tax assets and deferred tax liabilities for all deductible and taxable temporary differences associated with the right-of-use assets and the lease liabilities separately.

In accordance with the transition provision:

- (i) the Group has applied the new accounting policy retrospectively to leasing transactions that occurred on or after 1 January 2022;
- (ii) the Group also, as at 1 January 2022, recognised deferred tax assets (to the extent that it is probable that taxable profit will be available against which the deductible temporary differences can be utilised) and deferred tax liabilities for all deductible and taxable temporary differences associated with right-of-use-assets and lease liabilities.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

3. CHANGES IN ACCOUNTING POLICIES (CONTINUED)

Impact on application of Amendments to IAS 12 – Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Continued)

The details of the impacts on each financial statement line item and earnings per share arising from the application of the amendments are set out below. Comparative figures have been restated.

The effects of changes in accounting policy on the condensed consolidated statement of profit or loss, condensed consolidated statement of profit or loss and other comprehensive income and earnings per share, are as follows:

Impact on profit for the period

	Six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Decrease in income tax expense	729	1,077
Net increase in profit for the period	729	1,077
Increase in profit for the period attributable to:		
– Equity shareholders of the Company	552	880
– Non-controlling interests	177	197
	729	1,077
Increase in total comprehensive income for the period attributable to:		
– Equity shareholders of the Company	522	880
– Non-controlling interests	177	197
	729	1,077

Impact on basic and diluted earnings per share

	Six months ended 30 June	
	2023 RMB (Unaudited)	2022 RMB (Unaudited)
Basic and diluted earnings per share before adjustments	0.398	0.347
Net adjustments arising from change in accounting policy in relation to:		
– Deferred tax impact on leasing transactions	0.002	0.003
Reported basic and diluted earnings per share	0.400	0.350

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

3. CHANGES IN ACCOUNTING POLICIES (CONTINUED)

Impact on application of Amendments to IAS 12 – Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Continued)

The effects of changes in accounting policy on the condensed consolidated statement of financial position as at 1 January 2022 and 1 January 2023, are as follows:

	As at 1 January 2022 (originally stated) RMB'000	Adjustments RMB'000	As at 1 January 2022 (restated) RMB'000
Deferred tax assets	214,445	679	215,124
Deferred tax liabilities	(17,347)	(890)	(18,237)
Total effect on net assets		(211)	
Reserves	3,859,415	(161)	3,859,254
Non-controlling interests	1,852,098	(50)	1,852,048
Total effect on equity	6,031,388	(211)	6,031,177

	As at 1 January 2023 (originally stated) RMB'000	Adjustments RMB'000	As at 1 January 2023 (restated) RMB'000
Deferred tax assets	221,484	992	222,476
Deferred tax liabilities	(18,242)	(813)	(19,055)
Total effect on net assets		179	
Reserves	4,145,412	226	4,145,638
Non-controlling interests	2,087,996	(47)	2,087,949
Total effect on equity	6,553,283	179	6,553,462

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

4. REVENUE AND SEGMENT REPORTING

The Group is principally engaged in research, development, manufacturing and sale of a broad range of pharmaceuticals and radioactive source products, design, manufacturing, construction and installation of gamma ray irradiation facilities and medical protection facilities, provision of irradiation service for sterilization purpose, sale of medical devices as well as independent clinical laboratory services.

(a) Disaggregation of revenue

Disaggregation of revenue from contracts with customers by major products or service lines is as follows:

	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Revenue from contracts with customers within the scope of IFRS 15		
Disaggregated by major products or services lines		
– sales of pharmaceuticals	1,787,803	1,764,175
– sales of radioactive source products	206,541	159,875
– sales of radiation therapy equipment	278,158	177,050
– irradiation services	76,714	73,994
– technical services	120,855	92,958
– revenue from construction contracts	23,058	11,379
– others	247,457	340,148
	2,740,586	2,619,579

Disaggregation of revenue from contracts with customers by the timing of revenue recognition is disclosed in Note 4(b).

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

4. REVENUE AND SEGMENT REPORTING (CONTINUED)

(b) Segment reporting

The Group manages its businesses by divisions, which are mainly organised by business lines (products and services). In a manner consistent with the way in which information is reported internally to the Group's most senior executive management for the purposes of resource allocation and performance assessment, the Group has presented the following five reportable segments. No operating segments have been aggregated to form the following reportable segments.

- Pharmaceuticals: manufacturing and sale of a range of imaging diagnostic and therapeutic radio pharmaceuticals imaging, UBT diagnostic kits and test analysers, in vitro immunoassay diagnostic reagents and kits and other products.
- Radioactive source products: sale of medical and industrial radioactive source products and technical services.
- Irradiation: provision of irradiation services to manufacturers of medical facilities, pharmaceuticals, cosmetics and food in the PRC for sterilisation purposes, and also design, manufacturing and installation of gamma ray irradiation facilities to irradiation service providers.
- Radiation therapy equipment and related services: sale of radiation therapy equipment, provision of related maintenance services, and also design, manufacturing and installation of medical protection facilities.

(i) Segment results, assets and liabilities

For the purposes of assessing segment performance and allocating resources among segments, the Group's senior executive management monitors the results attributable to each reportable segment on the following basis:

Revenue and expenses are allocated to the reportable segments with reference to revenue generated by those segments and the expenses incurred by those segments. The measure used for reporting segment profit is gross profit. The Group's other income and expense items, such as other income gains and losses, selling and distribution expenses, administrative and other operating expenses, and assets and liabilities, are not measured under individual segments. Accordingly, neither information on segment assets and liabilities nor information concerning capital expenditure, interest income and interest expenses is presented.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

4. REVENUE AND SEGMENT REPORTING (CONTINUED)

(b) Segment reporting (continued)

(i) Segment results, assets and liabilities (continued)

Disaggregation of revenue from contracts with customers by timing of revenue recognition, as well as information regarding the Group's reportable segments as provided to the Group's most senior executive management for the purposes of resource allocation and assessment of segment performance for the period is set out below.

	Six months ended 30 June 2023					Total RMB'000 (Unaudited)
	Pharmaceuticals RMB'000 (Unaudited)	Radioactive source products RMB'000 (Unaudited)	Irradiation RMB'000 (Unaudited)	Radiation therapy equipment and related services RMB'000 (Unaudited)	other businesses RMB'000 (Unaudited)	
Disaggregated by timing of revenue recognition						
Point in time	1,787,803	226,498	70,565	379,056	247,457	2,711,379
Over time	-	-	6,149	23,058	-	29,207
Revenue from external customers	1,787,803	226,498	76,714	402,114	247,457	2,740,586
Inter-segment revenue	20,036	7,723	1,803	1,730	27,925	59,217
Reportable segment revenue	1,807,839	234,221	78,517	403,844	275,382	2,799,803
Reportable segment profit (gross profit)	1,259,635	79,965	38,289	84,681	29,613	1,492,183

	Six months ended 30 June 2022					Total RMB'000 (Unaudited)
	Pharmaceuticals RMB'000 (Unaudited)	Radioactive source products RMB'000 (Unaudited)	Irradiation RMB'000 (Unaudited)	Radiation therapy equipment and related services RMB'000 (Unaudited)	other businesses RMB'000 (Unaudited)	
Disaggregated by timing of revenue recognition						
Point in time	1,764,175	171,964	68,440	257,919	340,148	2,602,646
Over time	-	-	5,554	11,379	-	16,933
Revenue from external customers	1,764,175	171,964	73,994	269,298	340,148	2,619,579
Inter-segment revenue	29,376	6,246	1,898	2,448	9,607	49,575
Reportable segment revenue	1,793,551	178,210	75,892	271,746	349,755	2,669,154
Reportable segment profit (gross profit)	1,278,806	53,594	37,139	48,227	123,566	1,541,332

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

4. REVENUE AND SEGMENT REPORTING (CONTINUED)

(b) Segment reporting (continued)

(ii) Reconciliation of reportable segment profit (gross profit)

	Six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Reportable segment profit (gross profit)	1,492,183	1,541,332
Elimination of inter-segment profit (gross profit)	(7,342)	(8,540)
Consolidated gross profit	1,484,841	1,532,792

(iii) Geographic information

All of the Group's operations are carried out and most of the Group's customers are located in the PRC. The Group's non-current assets, including property, plant and equipment, investment property, lease prepayments and intangible assets are all located or allocated to operations located in the PRC.

5. OTHER INCOME, GAINS AND LOSSES

	Six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Government grants	19,506	10,993
Interest income	12,856	15,399
Rental income from operating leases	1,902	3,041
Others	(3,642)	6,953
	30,622	36,386

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

6. PROFIT BEFORE TAXATION

Profit before taxation is arrived at after charging (crediting):

(a) Finance costs

	Six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Interests on bank loans and other borrowings	14,210	14,919
Interests on lease liabilities	1,601	1,568
Less: interest expense capitalised into construction inprogress	(3,869)	(3,106)
	11,942	13,381
Net foreign exchange loss	–	6,588
Interest accretion on reclamation obligations, net	2,349	1,938
Interest cost on defined benefit retirement plans	833	837
Interest cost on long-term payables	169	1,193
	15,293	23,937

The borrowing costs have been capitalised at a rate of 3.90% (six months ended 30 June 2022: 4.64%) per annum.

(b) Other items

	Six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Depreciation		
– property, plant and equipment	105,229	96,796
– investment property	3,378	502
Amortisation		
– intangible assets	9,189	7,970
Impairment losses (reversal of impairment loss) on		
– trade and bill receivables	13,280	13,313
– deposits and other receivables	(335)	879
Decrease in provisions for reclamation obligations	(5,593)	(5,380)
Cost of inventories	890,074	742,234

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

7. INCOME TAX

	For the six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited) (Restated)
Current tax		
– Provision for the period	67,101	71,467
– Under-provision in respect of prior years	6,787	9,146
	73,888	80,613
Deferred tax		
– Origination and reversal of temporary differences	(6,965)	(9,090)
	66,923	71,523

Notes:

- (i) The Company and its subsidiaries established in the PRC are subject to PRC Corporate Income Tax rate of 25% (six months ended 30 June 2022: 25%) for the six months ended 30 June 2023.
- (ii) Certain subsidiaries of the Group are approved High and New Technology Enterprises and are subject to a preferential PRC Corporate Income Tax rate of 15% during the approved period subject to fulfillment of recognition criteria.

8. EARNINGS PER SHARE

The calculation of basic earnings per share is based on the profit for the period attributable to equity shareholders of the Company of approximately RMB126,897,000 (six months ended 30 June 2022: RMB111,986,000) and the weighted average number of ordinary shares in issue of 319,874,900 (six months ended 30 June 2022: 319,874,900) in issue during the interim period.

The Company did not have any potential dilutive shares in existence during the interim period. Accordingly, diluted earnings per share is the same as basic earnings per share.

9. PROPERTY, PLANT AND EQUIPMENT AND LEASE LIABILITIES

- (a) During the six months ended 30 June 2023, the Group acquired items of plant and machinery with a cost of RMB235,279,000 (six months ended 30 June 2022: RMB147,466,000). Items of plant and machinery with a net book value of RMB15,510,000 were disposed of during the six months ended 30 June 2022 (six months ended 30 June 2023: nil), resulting in a gain on disposal of RMB189,000 (six months ended 30 June 2023: nil).
- (b) As at 30 June 2023, the carrying amount of lease liabilities was RMB72,804,000 (as at 31 December 2022: RMB80,151,000). During the six months ended 30 June 2023, the Group entered into a number of lease agreements for use of plants and offices, and therefore recognised the additions to right-of-use assets and lease liabilities of RMB3,802,000 (six months ended 30 June 2022: RMB32,193,000) and RMB3,802,000 (six months ended 30 June 2022: RMB17,437,000) respectively.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

10. GOODWILL

	RMB'000
Cost:	
At 1 January 2022 (audited), 31 December 2022 (audited) and 30 June 2023 (unaudited)	48,349
Impairment:	
At 1 January 2022 (audited), 31 December 2022 (audited) and 30 June 2023 (unaudited)	(17,585)
Carrying amount	
At 30 June 2023 (unaudited)	30,764
At 31 December 2022 (audited)	30,764

11. TRADE AND BILL RECEIVABLES

	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited)
Bill receivables	87,905	96,794
Trade receivables due from		
– related parties under CNNC	40,914	57,596
– associates and a joint venture	16,476	20,583
– third parties	3,644,098	3,511,727
	3,789,393	3,686,700
Less: loss allowance	(197,863)	(185,362)
	3,591,530	3,501,338

Aging analysis

At the end of the reporting period, the ageing analysis of trade and bills receivables based on the invoice date (or date of revenue recognition, if earlier) and net of loss allowance, is as follows:

	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited)
Within 1 year	3,041,094	3,028,761
Between 1 to 2 years	416,466	384,896
Between 2 to 3 years	98,670	66,112
Over 3 years	35,300	21,569
	3,591,530	3,501,338

The Group granted credit term on a case by case basis and trade and bills receivables are required to be settled in accordance with credit terms as stipulated in the contract and invoice due to issuance.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

12. CASH AT BANK

	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited)
Cash at bank	186,856	493,328
Cash at CNNC Finance Company Ltd.	2,012,797	2,429,863
	2,199,653	2,923,191
Representing:		
Cash and cash equivalents disclosed in condensed consolidated statement of cash flows	1,655,460	2,205,988
Time deposits with original maturity over three months	520,000	692,402
Restricted deposits	24,193	24,801
	2,199,653	2,923,191

Restricted deposits mainly represent deposits for guarantee of letters of credit issued by banks.

13. TRADE PAYABLES

At the end of the reporting period, the aging analyses of trade payables, based on the invoice dates, are as follows:

	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited)
Within 1 year	501,061	444,316
1 to 2 years	39,446	36,536
2 to 3 years	6,158	4,576
Over 3 years	7,430	2,860
	554,095	488,288

Trade payables are usually due for settlement within one year.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

14. DIVIDENDS

Dividends payable to equity shareholders attributable to the previous financial year, approved during the interim period.

	Six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Final dividend in respect of the previous financial year, approved during the current interim period, of RMB44.07 cents per share (six months ended 30 June 2022: RMB37.79 cents per share)	140,969	120,880

The final dividend in respect of the previous financial year proposed during the reporting period has not been paid at the end of the reporting period.

15. FAIR VALUES MEASUREMENT OF FINANCIAL INSTRUMENTS

Financial assets measured at fair value

(i) Fair value hierarchy

The following table presents the fair value of the Group's financial instruments measured at end of the reporting period on a recurring basis, categorised into the three-level fair value hierarchy as defined in IFRS 13, Fair value measurement. The level into which a fair value measurement is classified is determined with reference to the observability and significance of the inputs used in the valuation technique as follows:

- Level 1 valuations: Fair value measured using only Level 1 inputs, i.e. unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date
- Level 2 valuations: Fair value measured using Level 2 inputs, i.e. observable inputs fail to meet Level 1, and not using significant unobservable inputs. Unobservable inputs are inputs for which market data are not available
- Level 3 valuations: Fair value measured using significant unobservable inputs.

The Group has appointed a finance manager performing valuations for the bill receivables and equity securities designated at fair value through other comprehensive income ("FVOCI"). The manager reports directly to the chief financial officer and the audit committee. A valuation report with analysis of changes in fair value measurement is prepared by the manager at each interim and annual reporting date, and is reviewed and approved by the chief financial officer. Discussion of the valuation process and results with the chief financial officer and the audit committee is held twice a year, to coincide with the reporting dates.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

15. FAIR VALUES MEASUREMENT OF FINANCIAL INSTRUMENTS (CONTINUED)

Financial assets measured at fair value (continued)

(i) Fair value hierarchy (continued)

	Fair value measurements as at 30 June 2023			
	Fair value at 30 June 2023 RMB'000 (Unaudited)	categorised into		
		Level 1	Level 2	Level 3
		RMB'000 (Unaudited)	RMB'000 (Unaudited)	RMB'000 (Unaudited)
Recurring fair value measurement				
Bill receivables	14,606	-	14,606	-
Equity securities designated at FVOCI	164,599	-	-	164,599

	Fair value measurements as at 31 December 2022			
	Fair value at 31 December 2022 RMB'000 (Audited)	categorised into		
		Level 1	Level 2	Level 3
		RMB'000 (Audited)	RMB'000 (Audited)	RMB'000 (Audited)
Recurring fair value measurement				
Bill receivables	19,174	-	19,174	-
Equity securities designated at FVOCI	162,494	-	-	162,494

During the six months ended 30 June 2023, there were no transfers between Level 1 and Level 2, or transfers into or out of Level 3 (six months ended 30 June 2022: nil). The Group's policy is to recognize transfers between levels of fair value hierarchy as at the end of the reporting period in which they occur.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

15. FAIR VALUES MEASUREMENT OF FINANCIAL INSTRUMENTS (CONTINUED)

Financial assets measured at fair value (continued)

(ii) Information about Level 3 fair value measurements

	Valuation Techniques	Significant unobservable inputs	Range
Equity securities designated at FVOCI	Market comparable companies	Price-to-book ratio	1.09 to 1.14 (31 December 2022: 1.08 to 1.22)

The fair value of unlisted equity instruments designated at FVOCI is determined using the price to book ratio of comparable listed companies adjusted for price-to-book ratio. The fair value measurement is positively correlated to the price-to-book ratio. As at 30 June 2023, it is estimated that with all other variables held constant, an increase/a decrease in price-to-book ratio ability by 5% (31 December 2022: 5%) would have increased/decreased the Group's other comprehensive income by approximately RMB16,332,000 (31 December 2022: RMB18,177,000).

The movement during the period in the balance of Level 3 fair value measurements is as follows:

	At 30 June 2023 RMB'000 (Unaudited)	At 30 June 2022 RMB'000 (Unaudited)
Equity securities designated at FVOCI:		
At 1 January	162,494	150,410
Changes in fair value recognised in other comprehensive income during the period	2,105	7,690
At 30 June	164,599	158,100

Any gains or losses arising from the remeasurement of the Group's equity securities designated at FVOCI held for strategic purposes are recognised in the fair value reserve (non-recycling) in other comprehensive income. Upon disposal of the equity securities, the amount accumulated in other comprehensive income is transferred directly to retained profits.

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

16. COMMITMENTS

Capital commitments outstanding at the end of the reporting period not provided for in the condensed consolidated financial statements:

	At 30 June 2023 RMB'000 (Unaudited)	At 31 December 2022 RMB'000 (Audited)
Contracted for	514,319	504,012
Authorised but not contracted for	–	13,200
	514,319	517,212

17. MATERIAL RELATED PARTY TRANSACTIONS

The Group is part of a large group of companies under CNNC, and has significant transactions and relationships with CNNC and related parties under CNNC.

In addition to the balances disclosed elsewhere in this interim financial report, the principle transactions which were carried out in the ordinary course of business are as follows:

	Six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
<u>Sale of goods to</u>		
Related parties under CNNC	22,814	28,834
Associates and a joint venture	11,476	3,603
<u>Service provided to</u>		
Related parties under CNNC	1,258	15,075
Associates and a joint venture	1,531	–
<u>Purchase of goods from</u>		
Related parties under CNNC	10,608	15,788
Associates and a joint venture	9,274	6,817
<u>Purchase of a property, plant and equipment from</u>		
Related parties under CNNC	2,005	26
<u>Service provided by</u>		
Related parties under CNNC	48,258	36,058

NOTES TO THE CONDENSED CONSOLIDATED INTERIM FINANCIAL INFORMATION (CONTINUED)

For the six months ended 30 June 2023

17. MATERIAL RELATED PARTY TRANSACTIONS (CONTINUED)

	Six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
<u>Leases from</u>		
Related parties under CNNC		
– right of use assets recognised during the period under IFRS 16	1,178	2,943
– lease payments	4,730	15,259
<u>Interest expenses</u>		
Related parties under CNNC	958	1,602
<u>Net deposits withdrawn from</u>		
Related parties under CNNC	(99,202)	(45,189)
<u>Interest income</u>		
Related parties under CNNC	9,010	6,948
<u>Dividend received from</u>		
Related parties under CNNC	–	1,948
Associates and a joint venture	15,347	4,024
<u>Net cash withdrawn from</u>		
CNNC Finance Company Ltd	(417,066)	(308,969)

DEFINITIONS

“14th Five-Year Plan”	the Outline of the 14th Five-Year Plan for the National Economics and Social Development of the People’s Republic of China
“Articles of Association”	the articles of association of the Company
“Board” or “Board of Directors”	the Board of Directors of our Company
“Board of Supervisors”	the Board of Supervisors of the Company
“China” or “PRC”	the People’s Republic of China, for the purpose of this interim report, excluding Hong Kong, Macau and Taiwan
“CIAE”	China Institute of Atomic Energy
“CIRC”, “Company”, “our Company”, “we” or “us”	China Isotope & Radiation Corporation, a joint stock company incorporated in the PRC with limited liability
“CNNC”	China National Nuclear Corporation
“CNNC Accuray”	CNNC Accuray (Tianjin) Medical Technology Co., Ltd.
“CNNC Fund”	Beijing CNNC Industry Investment Fund (LLP)
“CNNC Headway”	Shenzhen Zhonghe Headway Bio-Sci & Tech Co., Ltd.
“Director(s)”	director(s) of our Company
“Domestic Share(s)”	ordinary shares in the share capital of the Company with a nominal value of RMB1.00 each, which are subscribed for and paid up in RMB
“EPC”	engineering, procurement and construction
“Group” or “our Group”	the Company and its subsidiaries from time to time
“H Share(s)”	overseas listed foreign shares in the ordinary share capital of the Company with a nominal value of RMB1.00 each, which are to be subscribed for and traded in HK dollars and have been approved for the granting of listing, and permission to deal, on the Stock Exchange
“HK\$” or “HK dollars” or “HKD”	Hong Kong dollars and cents, respectively, the lawful currency of Hong Kong

DEFINITIONS (CONTINUED)

“Hong Kong” or “HK”	Hong Kong Special Administrative Region of the PRC
“Listing Rules”	the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited
“Model Code”	the Model Code for Securities Transactions by Directors of Listed Issuers
“NPIC”	Nuclear Power Institute of China
“OFAC”	Office of Foreign Assets Control
“Reporting Period”	the six months ended 30 June 2023
“RMB”	Renminbi, the lawful currency of the PRC
“Rounding”	In this report, where information is presented in hundreds, thousands, ten thousands, millions or hundred millions, certain amounts of less than one hundred, one thousand, ten thousand, one million or hundred million, as the case may be, have been rounded to the nearest hundred, thousand, ten thousand, million or hundred million, respectively. Amounts presented as percentages have, in certain cases, been rounded to the nearest tenth or hundredth of a percent. Any discrepancies in any table or chart between totals and sums of amounts listed therein are due to rounding
“SFO”	the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong), as amended, supplemented or otherwise modified from time to time
“Share(s)”	the ordinary shares in the capital of the Company with a nominal value of RMB1.00 each, comprising the Domestic Shares and the H Shares
“Shareholder(s)”	holder(s) of the Share(s) of the Company
“Stock Exchange”	The Stock Exchange of Hong Kong Limited
“Supervisor(s)”	supervisor(s) of our Company
“%”	percent

中國同輻股份有限公司
China Isotope & Radiation Corporation