

strategy, the company is committed to deepening its presence in overseas markets. It possesses industrial parks or production bases in **Belt and Road** countries such as Italy, Germany, Mexico, Brazil, Turkey, and India. This has enabled the implementation of the company's overseas development strategy, transitioning from "going global" to "local" through localised operations, thereby creating new development opportunities.

#### (7) Robust Resource Allocation Capabilities and High Operational Efficiency

The company possesses robust resource allocation capabilities and superior operational efficiency. In personnel allocation, the company maintains a rational scale and structure, with per capita efficiency exceeding industry averages. Regarding asset allocation, the economic benefits generated per unit of fixed assets surpass industry benchmarks. In smart manufacturing, the company leads the sector in process automation and intelligent manufacturing. High-standard, high-efficiency facilities such as the Zoomlion Smart Industrial City, Tower Crane Intelligent Factory, and Mixer Truck Intelligent Factory have been established, enabling intelligent, automated, and flexible production. This exceptional smart manufacturing capability ensures the production of high-quality products. Regarding digital transformation, the company established Zhongke Cloud Valley to comprehensively enter the industrial internet sector, accelerating digital transformation and providing integrated client-side operational solutions based on intelligent equipment. As it deeply engages in the **Belt and Road** Initiative and continuously expands its international and domestic market operations, its robust resource allocation capabilities and high operational efficiency will further facilitate sustained and steady corporate development.

### IV. Analysis of Core Business Operations

#### 1. Overview

Refer to the relevant content in "II. Principal Business Activities Undertaken by the Company

During the Reporting Period"

#### (1) Revenue Composition

Unit: Yuan

Item	2024		2023		Year-on-Year Change
	Amount	Percentage of Operating Revenue	Amount	Percentage of Operating Revenue	
Total Operating Revenue	45,478,184,506.84	100%	47,074,853,106.11	100%	-3.39%
By sector					
Construction Machinery	40,356,175,498.10	88.74%	44,486,127,174.95	94.50%	-9.28%
Agricultural machinery	4,650,095,207.75	10.22%	2,091,906,252.12	4.44%	122.29%
Financial Services	471,913,800.99	1.04%	496,819,679.04	1.06%	-5.01%
By Product					
Concrete machinery	8,013,205,024.67	17.62%	8,598,304,323.75	18.27%	-6.80%
Crane Machinery	14,786,258,019.86	32.51%	19,290,882,902.67	40.98%	-23.35%
Earthmoving machinery	6,670,682,667.37	14.67%	6,648,104,411.19	14.12%	0.34%
Aerial machinery	6,833,428,363.53	15.03%	5,706,802,803.99	12.12%	19.74%
Other machinery and products	4,052,601,422.67	8.91%	4,242,032,733.35	9.01%	-4.47%
Agricultural Machinery	4,650,095,207.75	10.22%	2,091,906,252.12	4.44%	122.29%
Financial Services	471,913,800.99	1.04%	496,819,679.04	1.06%	-5.01%
By region					
Domestic revenue	22,098,075,332.11	48.59%	29,169,734,260.51	61.96%	-24.24%
Overseas Revenue	23,380,109,174.73	51.41%	17,905,118,845.60	38.04%	30.58%

#### (2) Sectors, products, regions, or sales models accounting for over 10% of the company's operating revenue or operating profit

☒ Applicable ☐ Not applicable

Unit: Yuan

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Item	Operating Revenue	Cost of Sales	Gross Profit Margin	Year-on-year Change in Operating Revenue	Year-on-year change in cost of sales	Change in gross profit margin compared to the same period last year
By Industry						
Construction Machinery	40,356,175,498.10	28,571,063,108.27	29.20%	-9.28%	-11.81%	2.02%
Agricultural Machinery	4,650,095,207.75	4,080,308,025.96	12.25%	122.29%	116.05%	2.53%
Financial services	471,913,800.99	16,853,665.14	96.43%	-5.01%	-1.72%	-0.12%
By Product						
Concrete machinery	8,013,205,024.67	6,195,924,971.86	22.68%	-6.80%	-6.77%	-0.03%
Crane Machinery	14,786,258,019.86	9,994,330,226.28	32.41%	-23.35%	-25.09%	1.57%
Earthmoving machinery	6,670,682,667.37	4,657,687,253.56	30.18%	0.34%	-3.36%	2.67%
Aerial Machinery	6,833,428,363.53	4,803,199,763.63	29.71%	19.74%	7.85%	7.75%
Other machinery and equipment	4,052,601,422.67	2,919,920,892.94	27.95%	-4.47%	-6.92%	1.90%
Products						
Agricultural Machinery	4,650,095,207.75	4,080,308,025.96	12.25%	122.29%	116.05%	2.53%
Financial Services	471,913,800.99	16,853,665.14	96.43%	-5.01%	-1.72%	-0.12%
By region						
Domestic revenue	22,098,075,332.11	16,780,537,402.87	24.06%	-24.24%	-24.20%	-0.05%
Overseas revenue	23,380,109,174.73	15,887,687,396.50	32.05%	30.58%	30.61%	-0.01%

Where the statistical scope of the Company's principal business data underwent adjustment during the reporting period, the principal business data adjusted according to the scope at the end of the most recent reporting period

☐ Applicable ☒ Not applicable

### (3) Whether the company's physical sales revenue exceeds its service revenue

☒ Yes ☐ No

Industry Classification	Item	Unit	2024	2023	Year-on-Year Change
Equipment Manufacturing	Sales Volume	Units/Sets	114,001	96,028	18.72%
	Production volume	units/sets	115,266	100,328	14.89%
	Inventory	Units/sets	29,400	28,135	4.50%

Reason for Year-on-Year Change Exceeding 30%

☐ Applicable ☒ Not applicable

### (4) Status of major sales contracts and major procurement contracts signed by the company as of the reporting period

☐ Applicable ☒ Not applicable

### (5) Composition of operating costs

Industry Classification

Unit: Yuan

Industry Classification	Item	2024		2023		Year-on-Year Change
		Amount	Percentage of Operating Costs Percentage	Amount	Percentage of operating costs Percentage	

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Equipment manufacturing	Material Consumption	29,432,960,881.36	90.10%	30,852,727,283.75	89.95%	0.15%
Equipment manufacturing	Labour Costs	1,464,070,237.94	4.48%	1,630,457,912.72	4.75%	-0.27%
Equipment Manufacturing	Depreciation and amortisation	469,727,722.18	1.44%	542,403,887.35	1.58%	-0.14%
Equipment Manufacturing	Financing lease costs	16,853,665.14	0.05%	17,149,372.34	0.05%	0.00%
Equipment Manufacturing	Other	1,284,612,292.75	3.93%	1,259,828,575.06	3.67%	0.26%
Total		32,668,224,799.37	100.00%	34,302,567,031.22	100.00%	

## (6) Changes in the scope of consolidation during the reporting period

☐ Yes ☒ No

## (7) Significant changes or adjustments to the Company's business, products or services during the reporting period

☐ Applicable ☒ Not applicable

## (8) Details of principal customers and suppliers

Details of principal customers

Total sales amount to the top five customers (RMB)		2,472,119,402.51	
Proportion of sales to top five customers relative to total annual sales		5.44%	
Proportion of Sales to Related Parties Among Top Five Customers' Sales Amounts Relative to Annual Total Sales Amount		0.00%	
		Sales Amount (RMB)	Proportion of Annual Total Sales
1	A Client	804,904,926.23	1.78%
2	Client B	664,147,396.81	1.46%
3	Client C	417,417,137.45	0.92%
4	D Client	365,830,730.23	0.80%
5	E Client	219,819,211.79	0.48%
Total	—	2,472,119,402.51	5.44%

Additional Information Regarding Major Customers

☐ Applicable ☒ Not applicable

Details of the Company's Principal Suppliers

Total procurement amount from top five suppliers (RMB)	3,717,358,549.02
Proportion of Top Five Suppliers' Total Procurement Amount to Annual Procurement Total	15.16%
Proportion of Related-Party Procurement within Top Five Suppliers' Total Procurement Amount to Annual Procurement Total	0.00%

Details of the Company's Top Five Suppliers

Serial No.	Supplier Name	Procurement Amount (RMB)	Proportion of Annual Total Procurement
1	Supplier A	1,241,212,329.56	5.06%
2	Supplier B	693,202,757.15	2.83%
3	C Supplier	622,211,944.84	2.54%
4	D Supplier	589,008,635.12	2.40%
5	E Supplier	571,722,882.35	2.33%
Total	—	3,717,358,549.02	15.16%

## Additional Information Regarding Principal Suppliers

☐ Applicable ☒ Not applicable

## 3. Fees

Unit: Yuan

Item	2024	2023	Year-on-Year Change	Explanation of Significant Changes
Sales Expenses	3,720,728,855.20	3,364,165,947.18	10.60%	Primarily attributable to increased expenses related to overseas market sales  Increase in expenses related to overseas market sales
Administrative expenses	2,241,867,422.52	1,903,556,446.50	17.77%	Primarily attributable to increased share-based payment expenses related to the employee share ownership scheme  Increase in share-based payment expenses
Financial expenses	56,401,019.76	-260,464,015.69		Primarily attributable to the impact of exchange gains and losses
Research and development expenses	2,768,640,061.34	3,440,642,461.33	-19.53%	Primarily attributable to increased remuneration for R&D personnel and enhanced R&D efficiency and reduced material consumption.

## 4. R&amp;D expenditure

☒ Applicable ☐ Not applicable

Name of Principal R&D Projects	Project Objectives	Project Progress	Targeted Outcomes	Anticipated Impact on the Company's Future Development
Phase I Key Technology Research for Intelligent Mining Equipment and Systems in Smart Mines	Addressing industry pain points including high safety risks, insufficient human resources, challenging cost control, and significant potential for efficiency gains.	Development of autonomous driving, remote control, intelligent dispatch, and UAV 3D reconstruction systems has been completed. Field testing and validation at China Gold's Wushan Mine site has demonstrated single-group unmanned transport operations involving four vehicles and one excavator.	Tailored for mining operations, the project developed autonomous driving systems, remote control systems, intelligent dispatch systems, and UAV 3D reconstruction systems. These enabled fully unmanned operations covering the entire excavation-loading-transport-unloading process within enclosed mining areas, achieving 70% of manual operational efficiency. The overall technical level is industry-leading.	This marks the first instance of fully unmanned loading and transportation operations across the entire process in metal mining, laying the groundwork for large-scale application in scenarios such as sand and gravel aggregates and large-scale coal mines. It is also expected to garner increased attention in the international mining market, bringing significant economic benefits to the company.
Research on Key Technologies for Intelligent Tower Crane Scheduling and Comprehensive Safety Early Warning Systems in Smart Nuclear Power Plants	This addresses pain points in nuclear power construction, including equipment density, high safety risks, complex construction tasks, and difficulties in improving work efficiency.	Research and development of the intelligent tower crane scheduling system and proactive collision avoidance safety early warning system has been completed. Field testing and validation were conducted at the China Nuclear Engineering Group's Xudabao Nuclear Power Plant construction site, achieving the deployment and application of three tower cranes and one concrete placing boom.	Tailored for nuclear power scenarios, the independently developed intelligent tower crane scheduling and proactive collision avoidance safety warning systems integrate the entire construction workflow from planning to execution. This forms a digital twin system covering tower cranes and concrete placing booms, supporting intelligent scheduling, comprehensive safety monitoring, and smart decision-making. Overall operational efficiency has increased by 10%, with the technology reaching industry-leading standards.  This achievement represents an industry-leading advancement.	This marks the industry's first implementation of flexible construction scheduling and comprehensive safety alerts for intelligent machinery fleets in nuclear power projects, filling a sector gap. It significantly enhances construction management standards and efficiency, underpins on-site management decisions, and effectively drives host machine sales alongside the adoption of intelligent construction solutions.

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Development of the ZAT40000H All-Terrain Crane	Developed the world's largest-tonnage all-terrain crane to meet the demands of ultra-high wind power development and installation on land.	The prototype has been completed and sold.	Developed a 4000-tonne capacity all-terrain crane with a maximum lifting height of 205 metres, capable of installing onshore wind turbines up to 190 to 205 metres, enabling installation of onshore wind turbines up to 190 metres tall and accommodating the largest 15-megawatt turbines.  The world's largest 4000-tonne all-terrain crane represents the company's continuous self-transc	The world's largest 4,000-tonne all-terrain crane represents the company's third world record-breaking innovation, pioneering the 4,000-tonne era for all-terrain cranes.  tonne class, setting a new benchmark in the industry.
			.	New industry benchmark.
ZTK120000V folding boom Crane Development	Developing the world's most powerful folding-boom crane to meet heavy-load lifting demands in confined spaces.	Product now available.	Developing a crane with a maximum lifting moment of 1,355 tonne-metres and a maximum lifting capacity of 140 tonnes. This innovative folding boom crane features an all-terrain chassis with no reduction in lifting capacity during lateral operations.  crane.	The world's most powerful folding boom crane resolves the industry challenge of lateral load capacity degradation, delivering a revolutionary lifting solution for confined-space operations.  solutions for confined lifting scenarios.
Development of the R23800 Tower Crane	Development of the world's largest tower crane to assist in the construction of the world's longest self-anchored suspension bridge - the Wanlong Bridge tower steel structure hoisting.	The prototype has now rolled off the production line.	Developing a crane with a rated lifting moment of 22,000 tonne-metres, with a maximum lifting moment of 23,800 tonne-metres, maximum lifting capacity of 730 tonnes, maximum independent height of 144.6 metres, and maximum lifting radius of 100 metres.  of 144.6 metres, and a maximum lifting height to 400 metres, to meet the construction requirements of the Wanlong Bridge construction requirements.	Following the creation of world-class flagship products including the world's first 10,000-tonne-metre class tower crane and 20,000-tonne-metre class tower crane, this represents another self-driven breakthrough, consistently demonstrating Zoomlion's leading capabilities in tower crane manufacturing.
Development of a flat-top/lifting jib dual-purpose tower crane	The development of a dual-purpose flat-top and luffing jib tower crane enables interchangeable use of both flat and luffing configurations.	A series of flat-top luffing tower cranes has been developed, including six models such as the RL90.	Development of an entirely new dual-purpose flat-boom/tilting-jib tower crane structure, overcoming key technological challenges such as hydraulic cylinder luffing technology and long-boom stability technology, to create flat-top/swing-jib dual-purpose tower crane.	The flat-top/swing-jib dual-purpose tower crane combines the advantages of both flat-top and swing-jib cranes, breaking the homogenised competitive landscape and enhancing the competitiveness of Zoomlion's tower crane products.  .
Development of 5 - axle 73-metre mild hybrid pump truck	Meeting market demand for long-boom new-energy pump trucks.	Prototype has rolled off the production line.	Independently developed new 2.0 mild hybrid centralised mixing electric drive power system, reducing standby energy consumption by over 80% and overall fuel consumption by over 15%.	Establishing the industry's longest-boom new energy pump truck, maintaining sustained technological leadership.
Development of the Lingguan second-generation pure electric mixer truck	to meet market demands for lightweight construction and energy efficiency.	Now available in volume production.	Employing pioneering lightweight technology to create the industry's first 32-tonne class electric mixer truck.	Maintaining industry-leading standards in lightweight construction and energy efficiency, driving sector advancement and continuously enhancing the company's market share in electric mixer trucks.  market share.
Overseas product development for the all-new G-series excavators	Completion of the all-new G-series excavator development, continuously enhancing model portfolio coverage and product competitiveness in key overseas markets.  .	The new generation has commenced mass production and market launch.	Through a new development philosophy, a new generation of excavators has been developed, with key performance areas leading the market.	Enhancing the overall competitiveness of the company's excavator products, expanding overseas market sales scale and market share
Development of 100-tonne class mining hydraulic excavators	Commencing development of five new ultra-large mining hydraulic excavators in the 100-400 tonne class to enhance the product portfolio coverage and market share in the mining sector.  market share.	Two models launched, with three prototype units completed.	The competitiveness of the hundred-tonne class mining excavator products leads the domestic market.	Enhance product portfolio coverage in the mining segment, expand sales scale and market share in the mining sector

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100-tonne class ZT160HEV Hybrid wide-body dump truck development	Traditional rigid dump trucks (rigid dump trucks) being costly with high maintenance and operational expenses, the market urgently requires a low-cost, fuel-efficient hundred-tonne-class mining wide-body vehicle to replace traditional mining trucks of the same tonnage.	Now in mass production.	Employing direct engine connection coupled with dual-motor synchronous drive, integrated with the proprietary ZM-i Super Hybrid Energy Management System, and featuring an independently developed single-pedal combined braking control strategy, this innovation resolves technical challenges in hundred-tonne mining trucks. It establishes the industry's first maximum-tonnage hybrid wide-body truck, achieving over 30% reduction in tonne-kilometre fuel consumption compared to conventional diesel vehicles.  by over 30%.	China's largest new energy mining wide-body dump truck fills the industry gap for heavy-duty wide-body vehicles, boasting industry-leading performance parameters and continuing to spearhead the new energy direction.
Development of the World's Largest ZTE520 Hybrid Mining Truck	Large electric-drive mining dump trucks present significant technological barriers, necessitating urgent breakthroughs in core component technologies to achieve a competitive edge.	Prototype testing is currently underway.	Innovative application of next-generation super-hybrid electric drive systems, high-torque hub drive systems, and China's largest largest automotive hybrid diesel engine	ZTE520 has pioneered the development direction for domestically produced heavy-duty hybrid mining trucks, further elevating elevating the Gaozhonglian Mining Machinery brand's standing within the global
	vehicles.		The ZTE520 achieves full domestic integration of electric drive systems and key engine components, featuring internationally leading hybrid technology. Compared to conventional models, it delivers a 16% increase in overall power performance, 10% improvement in transport efficiency, and 15% comprehensive energy savings.  15%.	The ZT82J straight-arm aerial work platform
Development of the ZT82J Straight Boom Aerial Work Platform	This addresses the lack of equipment for specialised ultra-high construction scenarios in petrochemical plants, bridges, and large venues, meeting customers' stringent requirements for operational stability, efficiency, and safety in ultra-high-reach products.	The prototype has been completed and is undergoing type testing.	Through innovative multi-sided non-standard boom design, ultra-long boom compound motion, and dual-cylinder coordinated control technologies, a diesel-powered straight-arm product with an operating height of 82.3 metres has been developed.	This marks the third time we have broken the world record, demonstrating exceptional product performance, outstanding operational experience, and comprehensive technological leadership. This achievement has established Zoomlion as the global leader in the ultra-high-reach segment, cementing the industry standard that "for ultra-high reach, look to Zoomlion".  ZTH4018 Telescopic Forklift
ZTH4018 Telescopic Forklift	Developed a non-rotating series mainstream product with a load capacity of 4 tonne load capacity and 18-metre working height, catering to construction requirements across diverse sectors including aerial work, construction, and mining.	Small-batch production phase.	Expand the product portfolio of non-rotating telescopic boom forklifts.	The product is reliable and durable, featuring precise handling performance and a first-class driving experience, providing new growth opportunities for overseas market expansion.
Development of 10-tonne electric counterbalanced forklift	Develop a heavy-duty electric forklift matching the performance of internal combustion models while adapting to diverse operational environments. This addresses customer demand for environmentally friendly, energy-efficient new-energy electric forklifts, advancing green industry development.	Prototype trial sales underway.	The product's technical performance reaches industry-leading standards, targeting high-profit-margin and environmentally stringent domestic and international markets.	The product's market launch signifies a major breakthrough in the company's large-tonnage new energy electric forklift sector, filling a gap in the product portfolio for heavy-duty electric forklifts. This lays a solid foundation for future development of heavy-duty electric forklift products, driving the transformation towards greener and smarter solutions. The product was honoured as the Most Influential Product of 2023 in China's Construction Machinery Industry.  Product of the Year 2023.

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Development of the ZR185 Rotary Drilling Rig	Developing a product with high reliability, low operating costs, and competitive pricing to enhance competitiveness in key overseas markets.	Now available in bulk.	Features include mast transport capability with integrated functions: "one-touch mast lowering, one-touch rock penetration, one-touch soil ejection, and one-touch <b>hole cleaning</b> ". The product holds the top market share in its regional segment. achieved top regional market share.	Became the market leader in South Asia for 180-class rotary drilling rigs, building market reputation, enhancing brand influence, and boosting overseas sales scale.
90-metre aerial platform fire engine	Meeting market demand for ultra-high-rise aerial platform fire engines, consolidating the company's leading position in the aerial fire engine sector	Now available in bulk.	Developed the world's tallest 5-axle 90-metre aerial platform fire engine, filling the gap in our company's ultra-high-reach vehicle portfolio; further advancing applied research into core technologies for large-scale aerial firefighting vehicles, enabling rapid development of integrated, series-produced high-rise rescue equipment	Further enhancing the comprehensive competitiveness of the company's aerial firefighting vehicle products, providing a strong guarantee for expanding the market share of aerial firefighting vehicles.
Development of the high-capacity TF220 harvester	Developing high-efficiency, reliable, low-maintenance, and cost-effective large-capacity products to replace existing models and address shortcomings.	Certain models have passed certification and testing.	Through a modular threshing technology approach + dual-airflow fan + large-area counter-rotating cleaning system, coupled with an intelligent operational status monitoring system, the entire machine achieves	benchmarking against international first-tier brands, filling the domestic gap in high-capacity feed products and enhancing the company's standing in the agricultural machinery sector.
			High efficiency, low loss, and intelligent operation.	
Research on Key Technologies for Intelligent Sensors Dedicated to Construction Machinery	In response to sensor development trends, research into MEMS application technology, sensor fusion technology, signal conditioning technology, and calibration and diagnostic technology will be conducted on the basis of sensors. This will facilitate the development of MEMS-based intelligent intelligent sensor products.	All project objectives have been achieved, and acceptance has been completed.	Four specialised intelligent sensors for construction machinery have been developed.	Breakthroughs have been achieved in high-precision, high-reliability attitude sensor technology for harsh environments, ending the long-standing reliance on imported sensors in the super-large crane lifting sector.
Development and application of key technologies for high-power fuel cells in construction machinery	Developed fuel cell products meeting the high-power, long-endurance requirements of mixer trucks and pump trucks, supporting the green transformation of construction machinery.	Prototype testing has been completed, achieving the world's first integration of hydrogen fuel cell technology into a concrete pump truck.	Research and development of high-power fuel cell products with independent intellectual property rights, achieving breakthroughs in multi-parameter coordinated control technology and energy recovery systems. These innovations have reached domestically leading standards, enabling the widespread adoption of such products in concrete mixer trucks, pump trucks, and other applications. Widespread application.	The product debuted on the world's first hydrogen-powered concrete pump truck at the Bao Engineering Machinery Exhibition, enhancing our company's influence in new energy products. Mastery of core high-power fuel cell technologies has positioned us to lead industry advancement and lay the groundwork for greening construction machinery. paving the way for greener construction machinery.

## Company R&amp;D Personnel Profile

Project	2024	2023	Change Ratio
Number of R&D Personnel (individuals)	10,724	9,995	7.29%
Proportion of R&D Personnel	33.74%	32.70%	1.04%
Educational background of R&D personnel			
Bachelor's degree	4,693	4,322	8.58%
Master's Degree	2,776	2,187	26.93%
Doctoral	45	44	2.27%
Other	3,210	3,442	-6.74%
Age Composition of R&D Personnel			
Under 30	4,745	4,491	5.66%
30-40 years old	4,526	4,282	5.70%

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40-50 years old	1,142	940	21.49%
50-60 years old	301	281	7.12%
60 years and above	10	1	900.00%

## Company R&amp;D Expenditure

Project	2024	2023	Percentage Change
R&D Expenditure (RMB)	3,162,567,358.20	4,033,670,864.15	-21.60%
R&D expenditure as a percentage of operating revenue	6.95%	8.57%	-1.62%
Amount capitalised for R&D expenditure (RMB)	393,927,296.86	428,647,424.23	-8.10%
Capitalised R&D expenditure as a percentage of total R&D expenditure of total R&D expenditure	12.46%	10.63%	1.83%

Reasons for and impact of significant changes in the composition of the company's R&D personnel

☐ Applicable ☒ Not applicable

Reason for significant change in the proportion of total R&D expenditure relative to operating revenue compared to the previous year

☐ Applicable ☒ Not applicable

Reasons for the substantial fluctuation in the capitalisation rate of R&D expenditure and justification thereof

☐ Applicable ☒ Not applicable