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TIANNENG POWER INTERNATIONAL LIMITED

天能動力國際有限公司

(Incorporated in the Cayman Islands with limited liability)

(Stock Code: 00819)

INTERIM RESULTS ANNOUNCEMENT FOR THE SIX MONTHS ENDED 30 JUNE 2022

FINANCIAL HIGHLIGHTS

- Gross profit increased by approximately 23.01% to approximately RMB2.379 billion
- Profit for the period increased by approximately 21.23% to approximately RMB901 million
- Profit attributable to the owners of the Company increased by approximately 14.96% to approximately RMB760 million
- Basic earnings per share increased by approximately 14.98% to RMB67.47 cents

INTERIM RESULTS

The board (the “**Board**”) of directors (the “**Directors**”) of Tianneng Power International Limited (the “**Company**” or “**Tianneng**”) announces the unaudited interim results of the Company and its subsidiaries (collectively referred to as the “**Group**”) for the six months ended 30 June 2022, together with the comparative figures for the same period in 2021. These condensed consolidated interim financial statements have not been audited, but have been reviewed by the Company’s independent external auditors and the audit committee of the Company (the “**Audit Committee**”).

CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

For the six months ended 30 June 2022

	<i>Notes</i>	Six months ended 30 June	
		2022	2021
		<i>RMB'000</i>	<i>RMB'000</i>
		(unaudited)	(unaudited)
Revenue	3	31,026,206	36,276,133
Cost of sales		(28,646,673)	(34,341,730)
		<hr/>	<hr/>
Gross profit		2,379,533	1,934,403
Other income	5	677,583	573,914
Other gains and losses	6	(11,488)	65,620
Impairment losses recognised under expected credit loss model, net of reversal		(31,575)	(18,838)
Distribution and selling expenses		(461,613)	(409,348)
Administrative expenses		(568,190)	(441,459)
Research and development costs		(708,943)	(615,787)
Other expenses		(7,989)	(11,963)
Share of results of associates		508	(569)
Finance costs		(153,358)	(117,705)
		<hr/>	<hr/>
Profit before tax		1,114,468	958,268
Income tax expense	7	(213,321)	(214,946)
		<hr/>	<hr/>
Profit for the period	8	901,147	743,322
		<hr/>	<hr/>

CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME *(Continued)*

For the six months ended 30 June 2022

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Other comprehensive expenses:		
<i>Item that will not be reclassified to profit or loss:</i>		
Fair value loss on investments in equity instruments at fair value through other comprehensive income (“FVTOCI”)	<u>(5,241)</u>	<u>(64,770)</u>
	<u>(5,241)</u>	<u>(64,770)</u>
<i>Item that may be reclassified subsequently to profit or loss:</i>		
Fair value gain (loss) on debt instruments measured at FVTOCI, net of income tax	<u>5,687</u>	<u>(915)</u>
Other comprehensive income (expenses) for the period, net of income tax	<u>446</u>	<u>(65,685)</u>
Total comprehensive income for the period	<u>901,593</u>	<u>677,637</u>

CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME *(Continued)*

For the six months ended 30 June 2022

		Six months ended 30 June	
	<i>Note</i>	2022	2021
		<i>RMB'000</i>	<i>RMB'000</i>
		(unaudited)	(unaudited)
Profit for the period attributable to:			
Owners of the Company		759,754	660,863
Non-controlling interests		141,393	82,459
		<hr/> 901,147 <hr/>	<hr/> 743,322 <hr/>
Total comprehensive income for the period attributable to:			
Owners of the Company		760,200	595,178
Non-controlling interests		141,393	82,459
		<hr/> 901,593 <hr/>	<hr/> 677,637 <hr/>
Earnings per share			
	<i>10</i>		
– <i>Basic (RMB cents)</i>		67.47	58.68
		<hr/> 66.23 <hr/>	<hr/> 57.24 <hr/>
– <i>Diluted (RMB cents)</i>			

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION

At 30 June 2022

	<i>Note</i>	30/06/2022	31/12/2021
		RMB'000	RMB'000
		(unaudited)	(audited)
Non-current Assets			
Property, plant and equipment		7,259,010	6,504,488
Right-of-use assets		1,349,864	1,099,183
Goodwill		23,305	23,305
Interests in associates		146,576	36,115
Equity instruments at FVTOCI		261,806	267,489
Deferred tax assets		783,707	688,263
Deposits for acquisition of property, plant and equipment		970,297	743,273
Loan receivables		367,524	284,928
Long-term receivables		–	5,136
		<hr/>	<hr/>
		11,162,089	9,652,180
		<hr/>	<hr/>
Current Assets			
Inventories		7,045,572	4,484,624
Properties under development for sale		704,112	768,189
Bills, trade and other receivables	<i>11</i>	4,843,559	3,328,917
Loan receivables		638,801	203,954
Amounts due from related parties		802	3,479
Amount due from an associate		–	70,000
Debt instruments at FVTOCI		981,163	987,055
Financial assets at fair value through profit or loss (“FVTPL”)		2,198,892	1,600,095
Pledged bank deposits		3,311,697	2,943,087
Bank balances and cash		8,747,210	8,697,364
		<hr/>	<hr/>
		28,471,808	23,086,764
		<hr/>	<hr/>

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION *(Continued)**At 30 June 2022*

	<i>Note</i>	30/06/2022 <i>RMB'000</i> (unaudited)	31/12/2021 <i>RMB'000</i> (audited)
Current liabilities			
Bills, trade and other payables	12	10,836,581	8,923,504
Amounts due to related parties		239,613	239,970
Derivative financial instruments		–	263
Taxation liabilities		232,173	348,748
Borrowings – current portion		6,228,086	2,874,839
Lease liabilities		5,064	8,727
Provisions		727,444	720,292
Contract liabilities		3,285,218	2,129,216
Deferred government grants		–	42,026
		<hr/>	<hr/>
		21,554,179	15,287,585
		<hr/>	<hr/>
Net Current Assets		6,917,629	7,799,179
		<hr/>	<hr/>
Total Assets less Current Liabilities		18,079,718	17,451,359
		<hr/>	<hr/>
Non-current liabilities			
Deferred tax liabilities		40,310	60,407
Borrowings – non-current portion		1,391,287	1,408,682
Lease liabilities		10,561	13,637
Deferred government grants		755,537	591,701
		<hr/>	<hr/>
		2,197,695	2,074,427
		<hr/>	<hr/>
		15,882,023	15,376,932
		<hr/> <hr/>	<hr/> <hr/>

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION *(Continued)**At 30 June 2022*

	30/06/2022	31/12/2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(audited)
Capital and reserves		
Share capital	109,850	109,850
Share premium and reserves	13,246,252	12,870,646
	<hr/>	<hr/>
Equity attributable to the owners of the Company	13,356,102	12,980,496
Non-controlling interests	2,525,921	2,396,436
	<hr/>	<hr/>
Total Equity	15,882,023	15,376,932
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1. BASIS OF PREPARATION

Tianneng Power International Limited (the “**Company**”) was incorporated and registered as an exempted company with limited liability in the Cayman Islands under the Companies Law of the Cayman Islands on 16 November 2004 and its shares are listed on The Stock Exchange of Hong Kong Limited (the “**Hong Kong Stock Exchange**”) with effect from 11 June 2007. The Company and its subsidiaries are collectively referred to as the “**Group**”.

The Group’s condensed consolidated financial statements are presented in Renminbi (“**RMB**”), which is also the functional currency of the Company.

The condensed consolidated financial statements have been prepared in accordance with Hong Kong Accounting Standard 34 “*Interim Financial Reporting*” issued by the Hong Kong Institute of Certified Public Accountants (“**HKICPA**”) as well as the applicable disclosure requirements of Appendix 16 to the Rules Governing the Listing of Securities on the Hong Kong Stock Exchange.

2. PRINCIPAL ACCOUNTING POLICIES

The condensed consolidated financial statements have been prepared on the historical cost basis, except for certain financial instruments, which are measured at fair values.

Other than additional accounting policies resulting from application of amendments to Hong Kong Financial Reporting Standards (“**HKFRSs**”), the accounting policies and methods of computation used in the condensed consolidated financial statements for the six months ended 30 June 2022 are the same as those presented in the Group’s annual financial statements for the year ended 31 December 2021.

Application of amendments to HKFRSs

In the current interim period, the Group has applied the following amendments to HKFRSs issued by the HKICPA, for the first time, which are mandatorily effective for the Group’s annual period beginning on 1 January 2022 for the preparation of the Group’s condensed consolidated financial statements:

Amendments to HKFRS 3	Reference to the Conceptual Framework
Amendments to HKFRS 16	Covid-19-Related Rent Concessions beyond 30 June 2021
Amendments to HKAS 16	Property, Plant and Equipment – Proceeds before Intended Use
Amendments to HKAS 37	Onerous Contracts – Cost of Fulfilling a Contract
Amendments to HKFRSs	Annual Improvements to HKFRSs 2018-2020

The application of the amendments to HKFRSs in the current interim period has had no material impact on the Group’s financial positions and performance for the current and prior periods and/or on the disclosures set out in these condensed consolidated financial statements.

3. REVENUE FROM CONTRACTS WITH CUSTOMERS

	Six months ended 30 June	
	2022	2021
	RMB'000	RMB'000
	(unaudited)	(unaudited)
An analysis of revenue is as follows:		
Manufacturing business		
Lead-acid battery products	14,212,873	13,119,025
Renewable resources product	1,917,867	1,243,582
Lithium battery products	762,997	423,792
Others	515,808	1,318,815
Trading	13,616,661	20,170,919
	31,026,206	36,276,133
	31,026,206	36,276,133
Geographical markets		
Mainland China	30,815,846	36,194,398
Others	210,360	81,735
	31,026,206	36,276,133
	31,026,206	36,276,133
Timing of revenue recognition		
A point in time	30,643,322	35,400,437
Over time	382,884	875,696
	31,026,206	36,276,133
	31,026,206	36,276,133

4. SEGMENT INFORMATION

The following is an analysis of the Group's revenue and results by operating and reportable segments for the period:

	Six months ended 30 June	
	2022	2021
	RMB'000	RMB'000
	(unaudited)	(unaudited)
Segment revenue		
Manufacturing business		
– external sales	17,409,545	16,105,214
– inter-segment sales	1,632	14,905
Trading		
– external sales	13,616,661	20,170,919
– inter-segment sales	265,176	326,259
	<hr/>	<hr/>
Segment revenue	31,293,014	36,617,297
Eliminations	(266,808)	(341,164)
	<hr/>	<hr/>
Group revenue	31,026,206	36,276,133
	<hr/> <hr/>	<hr/> <hr/>
Segment result		
Manufacturing business	904,848	723,397
Trading	(3,850)	17,563
	<hr/>	<hr/>
	900,998	740,960
	<hr/>	<hr/>
Unallocated		
Other gains and losses	4,021	8,845
Share of results of associates	508	(569)
Corporate administrative expenses	(4,370)	(5,167)
Financial costs	(10)	(747)
	<hr/>	<hr/>
Profit for the period	901,147	743,322
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5. OTHER INCOME

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Government grants		
– grants related to income (<i>note i</i>)	437,102	332,915
– grants related to assets (<i>note ii</i>)	19,896	20,913
Interest income	121,949	82,353
Income from sales of scrap materials	93,299	100,278
Others	5,337	37,455
	<hr/>	<hr/>
	677,583	573,914
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Notes:

- i. The government grants related to income mainly represent unconditional government subsidies received from relevant government bodies to encourage the operations of certain subsidiaries. The government grants are accounted for as immediate financial support with no future related costs expected to be incurred and are not related to any assets.
- ii. The government grants related to assets mainly represent government subsidies obtained in relation to the acquisition of land use right or equipment of certain subsidiaries of the Group, which were included in the condensed consolidated statement of financial position as deferred government grants and credited to profit or loss on a straight-line basis over the lease term of the land use right or the useful life of the equipment.

6. OTHER GAINS AND LOSSES

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Gains (losses) from changes in fair value of financial assets at FVTPL		
– structured bank deposits	37,166	27,291
– investments in listed equity securities	(5,576)	(11,503)
– foreign currency forward contracts	9,974	–
– commodity derivative contracts	13,372	22,433
Loss on disposals/write off of property, plant and equipment	(23,579)	(10,839)
Net foreign exchange (losses) gains	(49,495)	38,238
Others	6,650	–
	<u>(11,488)</u>	<u>65,620</u>

7. INCOME TAX EXPENSE

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
PRC Enterprise Income Tax (“EIT”)		
– Current tax	296,256	278,902
Deferred tax		
Current period	(82,935)	(63,956)
	<u>213,321</u>	<u>214,946</u>

The Company was incorporated in the Cayman Islands and Tianneng International Investment Holdings Limited was incorporated in the British Virgin Islands (the “BVI”) and as such tax are exempted as no business carried out in Cayman Islands and BVI under the tax laws of the Cayman Islands and the BVI, respectively.

The subsidiaries of the Company operating in Hong Kong did not have tax assessable profit during both periods.

The income tax expense of the Group is recognised based on the PRC EIT rate of 25% during the both periods. Certain subsidiaries of the Group were accredited as High-Tech companies and enjoyed a tax rate of 15%.

8. PROFIT FOR THE PERIOD

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Profit for the period has been arrived at after charging:		
Depreciation of property, plant and equipment	331,261	283,147
Depreciation of right-of-use assets	17,989	12,333
Allowances of inventories (included in cost of sales)	13,518	–
	<u>362,768</u>	<u>295,480</u>

9. DIVIDENDS

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Dividends declared during the period:		
Six months ended 30 June 2022:		
2021 final dividend of HK\$40.00 cents (equivalent to RMB32.54 cents)		
(six months ended 30 June 2021:		
2020 final dividend of HK\$40.00 cents (equivalent to RMB33.28 cents)) per ordinary share	384,594	374,810
	<u>384,594</u>	<u>374,810</u>

The directors do not recommend the payment of an interim dividend for the six months ended 30 June 2022 and 30 June 2021.

10. EARNINGS PER SHARE

	Six months ended 30 June	
	2022	2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(unaudited)
Earnings:		
Earnings for the purposes of calculating basic and diluted earnings per share		
– attributable to the owners of the Company	<u>759,754</u>	<u>660,863</u>
Number of shares:		
Weighted average number of ordinary shares for the purpose of calculating basic earnings per share	1,126,124,500	1,126,124,500
Effect of dilutive potential ordinary shares – share options	<u>21,087,042</u>	<u>28,445,165</u>
Weighted average number of ordinary shares for the purpose of calculating diluted earnings per share	<u><u>1,147,211,542</u></u>	<u><u>1,154,569,665</u></u>

11. BILLS, TRADE AND OTHER RECEIVABLES

	30/06/2022	31/12/2021
	<i>RMB'000</i>	<i>RMB'000</i>
	(unaudited)	(audited)
Bills receivables*	1,347,224	–
Trade receivables	1,642,405	1,868,648
Less: Allowance for credit losses	<u>(245,395)</u>	<u>(253,511)</u>
Other receivables	1,397,010	1,615,137
Prepayments for materials	98,660	106,965
PRC value added tax and EIT recoverable	1,119,448	1,203,124
	<u>881,217</u>	<u>403,691</u>
	<u><u>4,843,559</u></u>	<u><u>3,328,917</u></u>

* The balance represents bills receivables held by the Group which is measured at amortised cost since the bills are held within a business model whose objective is to collect contractual cash flows and the contractual cash flows are solely payments of principal and interest on the principal amount outstanding. Bills receivables held by the Group as at 30 June 2022 will mature within 1 year.

11. BILLS, TRADE AND OTHER RECEIVABLES *(Continued)*

The Group allows an average credit period of 45 days to customers.

The following is an aged analysis of trade receivables net of allowance for credit losses presented based on the invoice date.

	30/06/2022 <i>RMB'000</i> (unaudited)	31/12/2021 <i>RMB'000</i> (audited)
0 to 45 days	1,001,993	978,311
46 to 90 days	212,209	349,392
91 to 180 days	41,558	160,253
181 to 365 days	31,350	86,048
1 year to 2 years	92,965	24,986
Over 2 years	16,935	16,147
	<hr/> 1,397,010 <hr/>	<hr/> 1,615,137 <hr/>

12. BILLS, TRADE AND OTHER PAYABLES

	30/06/2022 <i>RMB'000</i> (unaudited)	31/12/2021 <i>RMB'000</i> (audited)
Trade payables	3,427,163	3,004,111
Bills payables	4,676,014	3,278,323
Dividend payables	393,074	7,916
Other payables and accrued charges	2,340,330	2,633,154
	<hr/> 10,836,581 <hr/>	<hr/> 8,923,504 <hr/>

12. BILLS, TRADE AND OTHER PAYABLES (Continued)

The following is an aged analysis of trade payables, presented based on invoice date at the end of the reporting period:

	30/06/2022 <i>RMB'000</i> (unaudited)	31/12/2021 <i>RMB'000</i> (audited)
0 – 90 days	3,202,944	2,879,511
91 – 180 days	98,538	5,883
181 – 365 days	59,147	61,971
1 – 2 years	40,048	27,333
Over 2 years	26,486	29,413
	<u>3,427,163</u>	<u>3,004,111</u>

The following is an aged analysis of bills payables from issue date at the end of the reporting period:

	30/06/2022 <i>RMB'000</i> (unaudited)	31/12/2021 <i>RMB'000</i> (audited)
0 – 180 days	4,624,564	3,228,323
181 – 365 days	51,450	50,000
	<u>4,676,014</u>	<u>3,278,323</u>

13. SHARE-BASED PAYMENTS

Share options scheme

The Company has a share options scheme (the “Scheme”) for eligible directors of the Company, eligible employees of the Group and other selected participants. According to the terms of the Scheme, option granted must be taken up within 28 days from the date of grant, upon payment of HK\$1.00. The options may be exercised in accordance with the terms of the Scheme at any time during the exercise period determined by the board of directors which shall in any event not be more than ten years from the date of grant. Share options are vested over a period up to a maximum of four years after the date of grant.

13. SHARE-BASED PAYMENTS (Continued)

Share options scheme (Continued)

The total number of shares issued and which may fall to be issued upon exercise of the options granted pursuant to the Scheme to an eligible participant in any 12-month period shall not exceed 1% of the number of shares in issue unless approved by shareholders in a general meeting. The maximum number of shares in respect of which options may be granted under the Scheme shall not in aggregate exceed 10% of the shares in issue on the date on which dealings in the shares first commence on the Hong Kong Stock Exchange, i.e. a total of 100,000,000 shares (the “**Option Limit**”). Pursuant to an annual general meeting held on 16 May 2014, the Option Limit has been refreshed to 10% of the shares in issue on the date of the annual general meeting, i.e. a total of 111,190,800 shares.

All holders of options granted under the Scheme may only exercise their options in the following manner:

Maximum percentage of options exercisable	Vesting period
10% of the options	Upon the first anniversary of the date of grant
Additional 20% of the options	Upon the second anniversary of the date of grant
Additional 30% of the options	Upon the third anniversary of the date of grant
Additional 40% of the options	Upon the fourth anniversary of the date of grant

The following tables disclosed movements of the Company’s options under the Scheme during the six months ended 30 June 2022 and 30 June 2021.

Category	Grant date	Exercisable period	Exercise price	Outstanding at 01/01/2022	Forfeited during the period	Outstanding at 30/06/2022
Option C	16.6.2014	16.6.2015-15.6.2024	HK\$2.90	34,794,000	(450,000)	34,344,000
Exercisable at the end of the period						<u>34,344,000</u>

13. SHARE-BASED PAYMENTS (Continued)

Share options scheme (Continued)

Category	Grant date	Exercisable period	Exercise price	Outstanding at 01/01/2021	Forfeited during the period	Outstanding at 30/06/2021
Option C	16.6.2014	16.6.2015-15.6.2024	HK\$2.90	35,410,500	(373,500)	35,037,000
Exercisable at the end of the period						<u>35,037,000</u>

No options were exercised during the six months ended 30 June 2022 and 2021.

During the six months ended 30 June 2022 and 2021, no expense were recognised in relation to share options granted by the Company under the Scheme.

Share award scheme of a subsidiary of the Company

Pursuant to the shareholders' resolution approved on 23 May 2019, Tianneng Battery Group Co., Ltd. ("Tianneng Battery") adopted a share award scheme for eligible senior management and eligible employees of Tianneng Battery and its subsidiaries (the "Selected Employees") (the "Share Award Scheme"). The objective of the Share Award Scheme is to recognise the contribution by the Selected Employees and to provide them with incentives in order to retain them for the continuing operation and development of Tianneng Battery and its subsidiaries.

According to the Share Award Scheme, 41,200,000 shares of Tianneng Battery were granted to certain limited partnerships (the "Limited Partnership"), which were legally owned by Zhejiang Tianneng Commercial Management Co., Ltd. ("Tianneng Commercial"), a wholly owned subsidiary of the Group, and the Selected Employees and for the purpose of facilitating the purchasing, holding and selling of shares of Tianneng Battery for the benefit of the Selected Employees. The shares have been subscribed at a price of RMB7.69 per share.

These shares are restricted for sale until the fourth anniversary date after the initial public offering of Tianneng Battery in A-share market (the "Qualified IPO"). Upon the expiry of restriction of the awarded shares, the Limited Partnership shall dispose the awarded shares at the prevailing market price and transfer the proceeds in relation to the awarded shares to the respective Selected Employees.

If the Selected Employees resigned before the expiry of restriction of the awarded shares, they are required to sell back the awarded shares at a share price of RMB7.69 plus interest at 115% of the benchmark lending rate of peer loan issued by the People's Bank of China.

13. SHARE-BASED PAYMENTS *(Continued)*

Share award scheme of a subsidiary of the Company *(Continued)*

The fair value of restricted shares granted on 23 May 2019 amounted to approximately RMB71,367,000. During the current interim period, an expense of approximately RMB1,916,000 (six months ended 30 June 2021: RMB6,603,000) was recognised by the Group in relation to restricted shares granted by Tianneng Battery under the Share Award Scheme.

MANAGEMENT DISCUSSION AND ANALYSIS

COMPANY PROFILE

The Group is a leading company in the sector of batteries for new-energy vehicles in the People's Republic of China (“**China**” or the “**PRC**”), founded in 1986. In 2007, Tianneng was listed on the Main Board of The Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) (Stock Code: 00819.HK). After more than 30 years of development, the Group has become a new energy group focusing on the manufacturing and services of motive batteries for light electric vehicles and integrating the research and development (R&D), production and sale of various types of batteries (including motive batteries for electric vehicles, start-stop batteries for automobiles and energy storage batteries), the recycling of waste batteries and renewable resources, green and intelligent manufacturing industrial parks, and smart logistics platforms.

In the first half of 2022, the global pandemic was in a state of flux. The Central Economic Work Conference stated that “economic development is facing pressure of decrease in demand, supply shock and weakening expectations”. Tianneng, through the implementation of the “Industry Technology Capital” development strategy with determination, quickly and scientifically adjusted the operation strategies of various business segments, stepping on an “upward trend” during the off-season of the industry.

Leveraging on the core competitiveness built with rich industry experience of more than 30 years, comprehensive product research and development, production and sales systems, as well as profound brand power, Tianneng was able to withstand the impact of the external environment in the first half of 2022. It will continue to consolidate its foundation for development. Tianneng was listed on a number of honours, among which it was ranked the 160th on Fortune China 500, the 208th on Top 500 National Science and Technology Innovation Enterprise, the 10th on Top 500 Zhejiang Business Enterprises in China, and the 46th on Top 100 Creative Enterprises in Zhejiang Province, demonstrating high quality development of Tianneng.

I. Principal business and product application during the reporting period

The major products of the Group comprise of high-end eco-friendly batteries, new energy batteries and renewable new materials.

(1) *High-end eco-friendly battery*

High-end eco-friendly batteries are a series of sealed maintenance-free lead-acid battery products created by Tianneng relying on its R&D and technology innovations, which are advantageous for its cost-effectiveness, safety and stability and recyclability. Lead-acid batteries can be mainly categorized as motive batteries, start-stop batteries, energy storage batteries and standby batteries by application fields.

Lead-acid motive battery

As the power source of vehicles, lead-acid motive batteries are mainly used in light electric vehicles, special electric vehicles and other vehicles.

Light electric vehicles include two-wheeled electric vehicles, three-wheeled electric vehicles, light motorcycles and scooters. As an important consumer product for Chinese people's daily travel, logistics and express delivery, the light electric vehicle market is huge with rigid demand. Owing to their safety, stability and cost-effectiveness, lead-acid batteries are widely used in the power system of light electric vehicles as the main battery.

Special electric vehicles include storage and freight equipment, forklifts, tractors, electric tour buses, underground mining locomotives and other equipment. Lead-acid batteries can be used as DC power sources to provide power systems. The Group's tubular batteries for electric forklifts are used in electric forklifts, electric stackers, electric lift trucks and other freight equipment. Equipped with complete models, PzB and PzS series, the needs of different equipment can be met. Lead-acid batteries for electric tour buses are a DC power supply for golf carts, electric sightseeing vehicles, electric tour buses, electric police cars, electric recreational vehicles, etc. They can also be used as a DC power supply in other aspects.

Start-stop battery

Start-stop batteries are designed for instant starting, ignition, and lighting power needs of vehicles, ships, diesel locomotives, etc., which are applicable to starting fuel vehicles, heavy trucks, agricultural vehicles and engine sets under harsh environment;

starting outdoor motive equipment such as motorcycles, all-terrain vehicles, and snowmobiles; starting and deep cycle charging and discharging of vessels; and diesel locomotives, electric locomotives, railway passenger carrier lighting, emergency power supply and auxiliary electrical equipment, etc.

Start-stop batteries are used in the vehicle start-stop system to save energy and reduce consumption. Tianneng's EFB start-stop battery products are suitable for applications under partial state of charging, supporting more frequent engine starts and prolonging idle time. AGM batteries are applied to vehicles equipped with start-stop system, which can save nearly 5% of fuels compared with traditional vehicles with internal combustion engines.

Lead-carbon energy storage system and backup battery

Energy storage batteries can provide effective power supply for global communications, data centres, emergency power supplies, railways, vessels, radio and television, UPS, digital and consumer products. Lead-carbon batteries are non-flammable with relatively low cost, being advantageous of high safety and high efficiency in the application of large-scale energy storage. Tianneng TNC lead-carbon energy storage products can be used in solar power generation equipment, wind power generation equipment and other power equipment.

(2) *New energy battery*

New energy batteries mainly comprise lithium-ion batteries, and also include the production and R&D of next-generation battery products such as hydrogen fuel cells. The application fields of lithium-ion batteries are principally divided into motive field and non-motive field. The lithium-ion batteries for the motive category include light electric vehicles, electric passenger vehicles and electric commercial vehicles, while the lithium-ion batteries for the non-motive category include energy storage field and consumer electronic products.

Lithium-ion motive battery

The Group's lithium-ion motive batteries are mainly applied on electric bicycles, electric cars, electric passenger buses, micro electric vehicles, logistics vehicles, sanitation vehicles, special industrial vehicles, etc. The Company's products cover cylindrical batteries, pouch shell batteries, prismatic batteries and lithium-ion battery systems. Lithium-ion batteries, with a number of national patented technologies, are safe, environmentally friendly, lightweight, and long-life.

Among which, serving the world's top 50 construction machinery companies, the Group's industrial lithium-ion motive batteries can provide customised, safe, reliable and durable product solutions for forklifts, aerial work platforms, AGVs, etc. based on customer usage scenarios and actual needs, so as to facilitate the electrification process in the field of construction machinery.

The Group has also formed a rich product line comprising light motive lithium-ion batteries, high-charge-rate electric tool batteries, etc., which can be applied to electronic instruments and small household appliances, etc., to meet the needs of new markets and overseas markets.

Lithium-ion energy storage system and backup battery

Lithium-ion energy storage products can provide effective power for a variety of application scenarios as same as the Group's lead-carbon energy batteries do. Lithium-ion energy storage has the advantages of high energy density, high conversion efficiency, and long cycle life, mainly used on the power generation, grid and user perspectives.

Fuel cell battery

As a power generation device that converts chemical energy into electrical energy through chemical reactions, fuel cell batteries can provide electricity without interruption until the fuel is exhausted. Compared with primary batteries and fossil fuel power generation, fuel cells are a green eco-friendly battery.

The Group can provide customised hydrogen fuel cell system solutions (including systems and stacks) according to specific application scenarios, which are suitable for various fields such as transportation, aerospace and energy storage, including drones, two-wheeled vehicles, standby powers, sightseeing vehicles, forklifts, mainstream large buses, heavy trucks, logistics vehicles and various energy storage stations. In addition, in the field of electrolysis of water for hydrogen production, the Group can also customise the supporting electrolysed water MEA, electrolysis stack, electrolyser and hydrogen generator.

(3) *Renewable new materials*

In terms of the renewable new materials segment, the Company, based on the Extended Producer Responsibility Scheme (生產者責任延伸制度), has developed the recycling business of used lead-acid battery and lithium-ion battery apart from the main business, constructing a value chain of batteries. Meanwhile, the Company is also actively exploring other green recycling businesses including solid waste and hazardous waste disposal. It extended the upstream and downstream industrial chains and increased its influence in the subdivision fields.

Lead-acid battery recycling business

The Group's used lead-acid battery recycling business commenced in 2009. Used batteries include motive batteries, start-stop batteries, energy storage batteries and standby batteries. The metal recovery rate of used batteries can reach more than 99%. The plastic recovery rate is 99% and the recovery rate of residual acids is 100%. The products produced for recycling are mainly lead ingots, sulfuric acid, plastic shells, etc.

Lithium-ion battery recycling business

Used lithium-ion batteries are valuable "urban mines", while the green regeneration and material repair technology of retired power batteries is an important basis for ensuring the efficient recovery and recycling of used motive battery materials. Under the shortage of raw materials for lithium-ion batteries, the used lithium-ion battery recycling industry has received considerable attention. The Group commenced engaging in lithium-ion battery recycling business in 2018. Currently, lithium-ion motive batteries for new energy will also usher in the first wave of peak season for scraps. Lithium-ion battery recycling is mainly based on motive batteries, 3C consumer batteries, energy storage batteries, etc. The products produced are mainly cobalt sulfate, nickel sulfate, manganese sulfate, lithium carbonate, etc.

II. Industry development and operation

During the reporting period, the Group's manufacturing business achieved revenue of approximately RMB17,410 million, representing an increase of 8.10% as compared to the same period of last year. Profit attributable to owners of the Company amounted to approximately RMB760 million, representing an increase of 14.96% as compared to the same period of last year.

The industries where each of the Group's manufacturing business operates and operating conditions are as follows:

(1) *High-end eco-friendly battery*

During the reporting period, the operating income of high-end eco-friendly batteries amounted to approximately RMB14,213 million, representing an increase of 8.34% as compared with the same period of last year. As a principal business of the Group, the high-end eco-friendly battery business maintains the momentum of high-quality and sustainable development.

Lead-acid motive battery

In recent years, the thriving new economy has driven the demand for two-wheeled and three-wheeled electric vehicles in the short-distance delivery and express delivery. Meanwhile, the COVID-19 pandemic has propelled the transformation to the commuting alone mode for end consumers. According to the White Paper for the Development of the Chinese Twowheeled Electric Vehicles Industry (2022) (《中國電動二輪車行業發展白皮書(2022)》) published by EVTank, a research institute, China produced a total of 54.43 million two-wheeled electric vehicles in 2021, recording a year-on-year rise of approximately 12.6%. Given the aggregate ownership of approximately 350 million two-wheeled electric vehicles in 2022, approximately every four Chinese people own one two-wheeled electric vehicle. Based on the personal daily commute by consumers, lead-acid batteries need replacement every 0.5 to 3 years, generating an even greater market for replacement battery.

Following years of development and accumulation, the Company has built an integrated marketing and after-sales network of more than 3,000 distributors and more than 400,000 terminal stores covering 32 provinces, autonomous regions and municipalities. Meanwhile, the Tab Cloud (泰博雲), a digital tool to help its distributors identify the latest market supply and demand and grasp market incremental points in real time, which has sharpened their capabilities of business operation and refined operation. The Company's market share has increased year by year in the past three years that the market share of the lead-acid batteries for light electric vehicles currently exceeded 45%.

Tianneng endeavoured to explore products in respect of technology research and development. During the reporting period, Tianneng officially released the 3rd generation of "Long Mileage King" battery production and the 3rd generation of "Longevity King". The 3.0 version of the "Two-King series" lead-acid batteries is equipped with the 2nd generation Power Durable core technology system with a new graphene technology process applied, which has made a leap forward in terms of motive, cycle life, continuation mileage, low temperature resistance and charging rate as compared with the 2nd generation batteries.

The Group also jointly released a super new product equipped with 3.0 batteries – the liquid-cooled ultra-endurance electric vehicle with Luyuan Electric Vehicle (綠源電動車). In order to meet the replacement needs of users of two-wheeled electric vehicles under the national Statement of “Safety Technical Specification for Electric Bicycle (GB17761-2018)” promulgated in 2019 (the New National Standard), Tianneng’s rechargeable batteries for Luyuan’s new electric bicycles were also released. The launch of a series of new products covers electric bicycles, electric mopeds, electric motorcycles and other models, providing users with a variety of product choices for travel.

In addition, the Group released an overrun graphene battery using Balance Tech (衡科技), high-energy graphene composite modified materials and the world’s leading intelligent forging technology, aiming to solve the problems of non-durability and short life of batteries.

The number of three-wheeled electric vehicles in the market is increasing year by year, of which the market in townships and rural areas is growing rapidly. In order to facilitate the standardised and orderly development of the three-wheeled electric vehicle battery industry and fully meet the needs of three-wheeled vehicle users, Tianneng launched the “Tianju Battery (天聚電池)” brand which officially commenced its professional brand for three-wheeled vehicle battery during the reporting period when consolidating its leading position in the electric vehicle battery industry. Tianju Battery, equipped with a professional production line, is the first-ever deeply differentiated and exclusively customised product in the industry.

In order to increase more loads and durability of agricultural three-wheeled vehicles, Tianneng officially launched T3 graphene New Black Gold large batteries such as 6-EVF-62 in the press release for a high-capacity and large battery held in Jiashou City, Anhui Province, to redefine the standard of high-capacity and large batteries in the lead-acid battery industry with its excellent performance of “maximum loads doubling battery life”. Such battery adopts a brand new intelligent manufacturing technology to improve overall battery performance.

In terms of special electric vehicle batteries, the Group’s major customers include Hangcha Group, Anhui Heli, XCMG, Baoli Forklift, Zhejiang Dingli Machinery, Lonking, Zoomilion, etc. During the reporting period, Tianneng and Heli Group completed the strategic cooperation contract, pursuant to which both parties will carry out cooperation in various aspects.

The Beijing Winter Olympics was held on 4 February 2022. As one of the suppliers of shuttle buses equipped with Tianneng's new energy battery, Shandong Huarui Chida (山東華瑞馳達) assisted in providing shuttle and commuting services for athletes and staff of the Beijing Winter Olympics.

Start-stop battery

Based on different sales objects, the market of start-stop batteries is divided into primary and secondary markets. Automobile start-stop batteries have an average operating life of three to five years, with approximately a fifth of operating vehicles in need of battery replacement each year. Research institutions predict that the market size of the domestic start-stop batteries industry in the PRC is expected to reach RMB33 billion in 2025.

The Group constantly optimises secondary channels and new retail channels. At the same time, the Group also made breakthroughs in the primary market. In the first half of 2022, the number of start-stop battery orders of the Group increased year-on-year. In the first tier OEM market, new customers such as XCMG (徐工) and Kama Automobile (山東凱馬) which have passed the system audits by vehicle enterprises including Dongfeng Sokon (東風小康) and BAIC Foton Motor (北汽福田), have engaged in the commercial vehicle sector.

In the first half of the year, Tianneng launched a variety of AGM start-stop batteries and low lead consumption EFB start-stop batteries. The product parameters all meet the requirements of industry standards. EFB products have further reduced lead consumption through technological innovation. Based on the results of experimental verification, the current product technology level has reached the forefront of the industry. As of 30 June 2022, the Group has applied a total of 18 patents related to start-stop system, of which 5 are invention patents, mainly involving processes such as grids and electrolytes.

Lead-carbon energy storage system and backup battery

During the reporting period, the Group's energy storage recorded operating income of approximately RMB280 million, representing a year-on-year increase of approximately 32 times. Among which, lead-carbon energy storage recorded operating income of approximately RMB73.31 million, representing a year-on-year increase of 763%.

In June 2022, the 25 Key Requirements for Preventing Electricity Production Accident (2022 Edition) (Draft for Comment) (《防止電力生產事故的二十五項重點要求(2022年版)(徵求意見稿)》) was issued by the General Department of the National Energy Administration, which proposed the medium and large electrochemical energy storage power stations shall not apply for NCM lithium-ion batteries and sodium-sulphur batteries. The release of these policies emphasized the safety of new energy storage. In the future, the batteries specialised for energy storage featured with “high safety, low cost and easy recycling” will be widely used.

Based on its characteristic of high security and cost-effectiveness, lead-carbon energy storage has a broad market for applications in data centres and large-scale electrochemical energy storage power stations.

Tianneng is the enterprise that can provide both lead-carbon and lithium energy storage solutions. During the reporting period, Tianneng’s lead-carbon energy storage has expanded its markets in various fields. Currently, Tianneng’s products and system solutions in the field of new energy storage have covered the power generation side, grid side and user side, which are widely used in photovoltaic power stations, wind farms, urban power stations, large data centres, 5G base stations, industrial parks, and ordinary residences and other scenarios. Tianneng has rich product and technology reserves for sub-fields such as base station energy storage, user energy storage, industrial and commercial energy storage as well as energy storage power stations.

(2) *New energy battery*

During the reporting period, the Group’s new energy battery business recorded an operating revenue of approximately RMB763 million, representing a year-on-year increase of 80.04%.

In terms of production capacity development, in March 2022, the Company invested in the construction of Annual Output of 10GWh Lithium-ion Battery Second Phase Project for the Base in South Taihu New District, Huzhou, Zhejiang Province, with a planned production capacity of approximately 7GWh. The first phase of 3GWh has entered the mass production stage, which has facilitated the Company's production capacity layout for lithium-ion iron phosphate (LFP) batteries. At the same month, Tianneng Battery Group Co., Ltd. ("**Tianneng Battery**") (Stock Code: 688819.SH), a subsidiary of the Company, announced that it plans to invest in the construction of Annual Output of 15GWh Energy Storage and Motive Lithium-ion Battery Project with contribution of approximately RMB5.17 billion in three phases. This project investment will accelerate the implementation of the Company's development strategic plan, seize the development opportunities of the energy storage industry, continue to optimise the Company's industrial structure, and further enhance the Company's market competitiveness.

Lithium-ion motive battery

In the first half of 2022, the Group's lithium-ion motive batteries for light electric vehicles recorded operating income of approximately RMB410 million, representing a year-on-year increase of 17.77%.

The New National Standard has been gradually implemented, in particular several provinces and pilot cities have adhered to the New National Standard to regulate and rectify the light electric vehicle industry. The New National Standard clarifies parameters such as vehicle quality and maximum speed of electric bicycles, which is conducive to the development of leading enterprises in the industry. Lithium-ion batteries, featured with light weight, more charge cycles and short charging time, can meet the needs of urban mobility tools for commuting as well as the requirements of the New National Standard such as light quality, strong battery life and high output power. Therefore, the market share of lithium-ion batteries in the new car market for electric bicycles in line with the New National Standard has increased.

During the reporting period, Tianneng has made breakthroughs in the development of the mini passenger car and commercial vehicle markets. In April 2022, the pure electric passenger car of Jiangsu Huazi Vehicle Industry (江蘇華梓車業), equipped with Tianneng's LFP batteries, was listed in the Road Motor Vehicle Manufacturers and Products Announcement (《道路機動車輛生產企業及產品公告》) (Batch 355) by the Ministry of Industry and Information Technology of the People's Republic of China (MIIT). In June 2022, Tianneng appeared for the first time as a supporting supplier in the product catalogue of the Road Motor Vehicle Manufacturers and Products Announcement (Batch 357) issued by MIIT, equipped with two models of Farizon Auto (遠程汽車), Geely Commercial Vehicle's brand, and a model of its brand, Tang Jun Ouling Automobile (唐駿歐鈴汽車).

In today's rapid development of the warehousing and logistics industry, forklifts equipped with lithium-ion batteries have become an important element connecting warehousing and logistics as well as forklift performance. Tianneng continues to strengthen R&D and innovation in the field of industrial motive batteries, leading the high-voltage lithium-ion battery for forklifts into the high-power era. On the one hand, Tianneng's high-voltage lithium-ion battery for large capacity forklifts can effectively reduce the current of the forklifts, slow down the frequency of power fluctuation, reduce energy loss and generate electricity in an efficient way by saving more than 10% of the energy and improving the efficiency by more than 12%. On the other hand, it can provide stable voltage continuously without affecting the efficiency when discharging and prolong the service life of the battery cycle.

In addition, Tianneng's forklift lithium-ion battery for leasing was delivered offline in May this year, relying on its customised, high-performance products and industrial financial services to provide customers with battery leasing system solutions. As forklift lithium-ion battery for leasing adopts minimised size using LFP battery cells, the volumetric energy density of the battery pack is increased by approximately 30%. With a customised outer box, it is suitable for the majority of market models. Meanwhile, the battery is convenient for replacement and effectively reduce the purchase cost of the battery pack which is a cost-effective competitive advantage.

In the future, Tianneng will continue to rely on its strong scientific and technological innovation team and industrial strength to provide users with more efficient, safe and environmentally friendly products with an advanced intelligent manufacturing platform, and continue to promote the electrification process in the field of construction machinery.

Lithium-ion energy storage system and backup battery

During the reporting period, Tianneng's lithium-ion storage energy business achieved a breakthrough, recording operating income of approximately RMB206 million. Tianneng's lithium-ion battery energy storage products are mainly used for large power and grid side, outdoor energy storage, small households and other scenarios.

At present, the global energy transition is accelerating, while the integration of renewable energy sources such as wind power and photovoltaics as well as distributed power sources grid-connection continues to grow. Electrochemical energy storage is one of the important ways to store electricity. According to the data of the Gaogong Industry Institute (GGII), the global energy storage battery shipments reached 70GWh in 2021, representing a year-on-year increase of approximately 159.30%, of which China's energy storage battery shipments reached 48GWh, representing a year-on-year increase of approximately 196.30%. GGII predicts that by 2025, the global energy storage battery shipments will reach 460GWh, and it is optimistic about the future market.

In March 2022, the 14th Five-Year Plan for New Energy Storage Development Implementation Plan officially issued by the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) stated that the new energy storage will enter the stage of large-scale development from the initial stage of commercialisation equipped with the conditions for large-scale commercial application by 2025. In June of the same year, NDRC and NEA issued the Notice on Further Promoting the Participation of New Energy Storage in the Electricity Market and Dispatching Application (《關於進一步推動新型儲能參與電力市場和調度運用的通知》), clarifying that the new energy storage can participate in the electricity market as an independent energy storage with the deployment of its market mechanism, price mechanism and operation mechanism. By 2030, the new energy storage will be fully market-oriented.

Tianneng's lithium-ion battery is committed to continuously breaking through technical barriers, increasing R&D efforts in energy storage battery cycle life, energy storage cost and safety, and providing customers with products and systems that meet various energy storage applications.

In terms of outdoor portable energy storage, a 65W car refrigerator is able to run for 8.5 hours and a conventional notebook computer is able to run for 13.5 hours, with Tianneng's 550W high-voltage lithium-ion battery product fully charged. On the premise of supplementing power with solar photovoltaic panels, an outdoor energy storage power supply can fully meet the daily electricity demand for outdoor leisure and mobile office. In the post-epidemic era, as outdoor sports and suburban leisure are popular and common around the world, outdoor energy storage power sources have replaced fuel generators as the mainstream solution for outdoor power consumption. In terms of global carbon neutrality, this emerging category has entered into the fast lane of development.

Tianneng has also continued to increase the power generation side energy storage business, by signing strategic cooperation agreements with Datang Shandong Power Generation Co., Ltd. and State Grid Zhejiang Electric Power Co., Ltd. Huzhou Power Supply Company, as well as further expanding its production capacity to support Tianneng's high quality development in the field of new energy storage.

In May 2022, the installation of the first air-cooled energy storage container for the 100MWh system business undertaken by Tianneng was completed and successfully delivered to the customer, achieving a breakthrough for the Group in this field.

This air-cooled energy storage container adopts 280Ah batteries, with a service life of more than ten years. Meanwhile, it is geared with equipment such as fire protection, temperature control, monitoring, liquid leakage protection, thermal management system and battery management system, to protect the battery from salt spray, water vapor and dust pollution, ensuring the efficient and stable operation of the system. This system can provide energy storage battery integration solutions for microgrid systems, by coordinating with energy storage systems and photovoltaic systems to achieve functions such as peak shaving and valley filling, smooth output, and peak regulating.

Fuel cell battery

In recent years, since the fuel cell industry has commenced its rapid development, a number of hydrogen energy-related policies and plans have been issued at the national and local government levels to boost and support the industry. The strategic position of the hydrogen energy and fuel cell industry has been specified in documents such as the Medium and Long-Term Plan for the Development of the Hydrogen Energy Industry (2021-2035) (《氫能產業發展中長期規劃(2021-2035年)》) and the Outline of the National Innovation-Driven Development Strategy (《國家創新驅動發展戰略綱要》). By the end of 2021, more than 10 plans for hydrogen energy industry at the provincial and municipal levels across China exceeded, and more than 30 special plans for hydrogen energy projects at the prefecture and district levels have been received, which have greatly promoted the development of the hydrogen energy and fuel cell industries.

Following the general trend, Tianneng's hydrogen energy development has accelerated. After the establishment of relevant wholly-owned subsidiaries, the Company has actively carried out industry-university-institute cooperation. As it has successively carried out technical cooperation with Dalian Institute of Chemical Physics, Chinese Academy of Sciences (中科院大連化物所), Beijing University of Chemical Technology (北京化工大學) etc., its product technical capabilities have been continuously improved.

In terms of industrialisation, the Company has entered into a strategic cooperation agreement with Nanjing Golden Dragon (南京金龍), XCMG (徐工集團), Geely Auto (吉利汽車), Yadea (雅迪) and other manufacturers, to make arrangement for various field terminals such as public transportation, logistics vehicles, engineering vehicles (forklifts), backup power supply, distributed power generation, and two-wheeled vehicles. Skywell Passenger Bus (開沃客車), which cooperates with Nanjing Golden Dragon, and Farizon Passenger Bus (遠程牌客車), which cooperates with Geely Auto, are listed in the product catalogue of MIIT. The Company's fuel cell products have been mass-produced and shipped, which generates revenue. In January 2022, Tianneng won the New Future Talent Award (未來年度新銳獎) at the 2021 TrendBank Hydrogen Energy and Fuel Cell Industry Annual Conference (勢銀氫能與燃料電池產業年會).

In the future, Tianneng will continue to launch a series of higher quality hydrogen fuel cell products covering various fields such as transportation and power supply through a series of innovations as well as expand cooperation with leading enterprises in the hydrogen fuel cell industry, so as to improve the industrial layout.

(3) *Renewable new materials*

Tianneng adheres to the concept of green, low-carbon and circular development. From product design to manufacturing and application to regeneration, it keeps optimising the industrial structure and production methods while contributing to the construction of circular economy to solve the problem of global resource circulation. During the reporting period, the Group's renewable new materials business recorded operating income of approximately RMB1,918 million, representing a year-on-year increase of 54.22%. On 21 January 2022, MIIT announced the list of 2021 green manufacturing. The products from six subsidiaries of Tianneng were selected as green design products, and its two subsidiaries were selected as green supply chain management enterprises.

Lead-acid battery recycling business

In the first half of 2022, Tianneng has achieved a green “inner loop” of lead-acid battery recycling through production, supply chain and supplier management, green recycling system and platform for information collection, monitoring and disclosure.

Tianneng has four production bases for recycled lead, where 1,000,000 tons of used batteries can be processed annually. In the course of many years of production and operation, Tianneng has established a strong sales network. Through over 400,000 terminal stores across China, it can effectively realise the decentralised recycling, centralised disposal and harmless recycling and utilisation of used batteries, creating a closed-loop economic ecological circle.

On 13 May 2022, Tianneng signed a strategic cooperation agreement with the China Nonferrous Metals Industry Association Recycling Metal Branch (中國有色金屬工業協會再生金屬分會), pursuant to which both parties will give full play to their respective advantages and jointly promote the green cycle business level and core competitiveness of Tianneng.

On 25 May 2022, Tianneng signed a strategic cooperation with Zhejiang University of Technology, pursuant to which both parties will carry out school-enterprise cooperation in respect of advanced processes and technologies related to “carbon neutrality” on recycling and disposal of secondary used batteries, so as to promote the development of scientific research of both parties as well as cultivate industry high-end scientific and technological talents in China, thereby realising the common progress of enterprises, universities and society.

In July 2022, the Key Technologies and Applications of High-value Utilisation of Used Lead-Acid Batteries and Green Cycle of Resources (《廢鉛蓄電池高值利用及資源綠色循環關鍵技術與應用》) Project led by the Company was awarded the first runner-up of 2021 Zhejiang Science and Technology Progress Award (浙江省科學技術進步二等獎). The project focused on the opportunities arising from the large-scale and echelon utilisation of retired batteries in China’s used lead-acid battery recycling industry. The “carbon neutrality” technology for recycled lead industry based on echelon utilisation of retired batteries, pure oxygen side-blown molten pool smelting, and echelon utilisation of flue gas waste heat was created to promote the green development of the industry.

In addition, for the renewable resources industry, the Government has created a fair and sustainable operating environment through the two major systems of finance and taxation. The Announcement on Improving the Value-Added Tax Policy for Comprehensive Utilisation of Resources (《關於完善資源綜合利用增值稅政策的公告》) (the “**Announcement**”) issued by the Ministry of Finance and the State Administration of Taxation was implemented with effect from 1 March 2022. The Announcement stated that general VAT taxpayers engaged in the recycling of renewable resources pay VAT at the rate of 3% calculated with the simplified tax method when selling the renewable resources acquired. The proportion of tax rebates for integrated and utilised resources named “used batteries and related dismantled materials” has been increased from 30% to 50%.

Tianneng continued to accelerate the global layout of the large-scale recycling business. In addition to obtaining the recycling pilot qualifications in 15 provinces, Tianneng also empowers and creates values for customers in cooperative relationship through online platforms. In the future, the Company’s lead-acid battery recycling industry will continue to expand overseas markets.

Lithium-ion battery recycling business

The rapid development of the new energy vehicle industry leads to an accelerated growth in the number of retired power batteries. As an essential part of developing the circular economy and facilitating the intensive utilisation of resources, motive battery recycling is conducive to alleviating the limit of lithium resources and lithium prices. It is of great significance for implementing the “dual carbon” strategy and promoting the construction of ecological civilisation.

Currently, Tianneng's production capacity for lithium-ion battery recycling is 10,000 tons, with the recycling rate of NCM batteries at the forefront of the industry. During the reporting period, affected by the increase in the price of upstream raw materials for lithium-ion batteries, the Company's revenue and profit in this business increased significantly as compared with the same period of last year. The Company is one of the enterprises qualified with dual white lists for recycling and echelon utilisation across China. With this qualification, the Company can participate in the batteries disposal of battery companies, OEMs and operators, as well as obtain large quantities of retired batteries.

The Company also attaches great importance to the industry-university-institute cooperation with universities and scientific research institutes. In recent years, Tianneng has established extensive cooperative relationship with the Institute of Process Engineering, Chinese Academy of Sciences (中國科學院過程工程研究所), Central South University (中南大學), Zhejiang University of Technology (浙江工業大學) and other expert teams. Relying on these industry-university-institute innovation platforms, the Company has captured a number of key technologies for used battery recycling, greatly accelerating the industrialisation process of technological innovation achievements. In the first half of 2022, the Group has applied in respect of 31 patents for lithium-ion battery recycling, including 21 patents for invention.

In February 2022, Tianneng and the People's Government of Binhai County, Jiangsu Province jointly signed the Investment Agreement for the High-value Recycling and Utilisation Project with an Annual Treatment of 100,000 tons of Used Lithium-ion Batteries (《年處理10萬噸廢舊鋰離子電池高值資源化回收利用項目投資協議》). After such project is completed, the used lithium-ion battery recycling will be at the forefront of the industry as Tianneng will first form its north-south base across East China.

The peak season for the first batch of new energy vehicle motive batteries to be scrapped will be in 2025. At present, the industry is about to experience a period of explosive growth. As such, Tianneng is accelerating the arrangement of the used motive battery recycling industry through cooperation on the recycling and utilisation of used motive batteries and scrapped materials thereof as well as the echelon recycling of motive batteries, so as to explore a classic green development model for the global new energy industry.

III. Future prospect

In line with the improvement of battery technology and product competitiveness for batteries such as lead-acid batteries and lithium-ion batteries, the Group will strive to research and develop new-generation batteries, stimulate the innovation of the R&D team, facilitate the output arising from the Group's major R&D projects, and accelerate innovation-driven technologies. Recycling and new energy storage segment will be its focus while strengthening the fundamentals of lead-acid batteries.

Tianneng will strengthen the lead-acid battery recycling segment with its solid effort and continuously improve the operation management and equipment technology standards to accelerate the development plan of lithium-ion battery recycling. Building a strong recycling network and improving recycling technology are conducive to forming Tianneng's core competitiveness. The new energy storage business will have an extensive breakthrough to the new market and enhance the edge of various market segments, further increasing the competitiveness of the industry.

Limited resources, unlimited recycling

In recent years, the Chinese government has successively drafted or issued such laws and regulations as the Laws of PRC on the Notice of the General Office of the State Council on Issuing the Implementation Plan for Extended Producer Responsibility (《國務院辦公廳關於印發生產者責任延伸制度推行方案的通知》) and the Interim Measures for the Management of the Recycling and Utilisation of Lead-Acid Batteries (Draft for Comments) (《鉛蓄電池回收利用管理暫行辦法》(徵求意見稿)), with a view to setting out detailed provisions on the recycling and disposal processes of used batteries, establishing an Extended Producer Responsibility scheme for products such as lead-acid batteries and vehicle motive batteries. The objective is for China to recover over 70% of its lead-acid batteries by the end of 2025.

Under the laws of PRC, China strictly prohibits entities without licences or not in compliance with the requirements of the licences from engaging in operations regarding the collection, storage, utilisation and disposal of hazardous wastes. Going forward, the recycling industry will receive growing support for its sound and orderly development, with outdated and substandard capacity to phase out. As an enterprise that has been involved in the industry for many years, Tianneng will further expand the market in the future. While fulfilling its own corporate and social responsibility for production, the Group will also help to achieve the national goal of “dual carbon”.

Lead-lithium synergy, facilitating energy storage system market

New energy storage is leading the green energy industry to make progress with its one-of-a-kind industrial advantages and its clear direction for development. In the future, relying on its profound and accumulated experience in lead-carbon energy storage technology and lithium-ion battery energy storage technology, Tianneng will further integrate various advantageous technical routes and integrated systems to create a full set of smart energy storage solutions with “smart operation and maintenance, safety, reliability, clean and friendliness”, while taking into account the optimal allocation of innovative resources to promote the integrated development of the industry, academia, and research.

Tianneng will continue to delve into new energy storage business models, explore the application of business models such as shared energy storage, cloud energy storage, energy storage aggregation, and separate energy storage, focus on and dig into the commercial value of the energy storage industry, and develop a reasonable pilot demonstration of new energy storage system. Meanwhile, for the international market, Tianneng will also actively promote international cooperation in the process of new energy storage industrialisation and achieve high-quality introduction and high-level export of new energy storage technologies and industries.

FINANCIAL REVIEW

Turnover

The Group’s turnover for the reporting period was approximately RMB31,026 million, representing a decrease of approximately 14.47% as compared with the same period last year. Of which, turnover from the manufacturing industry was RMB17,410 million, representing an increase of approximately 8.10% as compared with the same period last year, turnover from trading was RMB13,617 million, representing a decrease of approximately 32.49% as compared with the same period last year.

Gross profit

The gross profit for the reporting period was approximately RMB2,380 million, representing an increase of approximately 23.01% as compared with the same period last year. It was mainly attributable to a growth in the battery’s gross profit margin. The gross profit margin for the reporting period was approximately 7.67%, representing an increase of approximately 2.34 percentage points as compared with the same period last year, of which the gross profit margin of the manufacturing industry was approximately 13.55%, representing an increase of approximately 1.63 percentage points as compared with the same period last year. It was mainly attributable to the increase in prices of products as compared with the same period last year.

Other income

The Group's other income for the reporting period was approximately RMB678 million (for the six months ended 30 June 2021: approximately RMB574 million), representing an increase of approximately 18.06% as compared with the same period last year. It was mainly attributable to the increase in interest income and government grants.

Distribution and selling costs

Distribution and selling costs increased from approximately RMB409 million in the same period last year to approximately RMB462 million for the reporting period, which was mainly attributable to the increase in salaries and advertising fees.

Administrative expenses

Administrative expenses increased from approximately RMB441 million in the same period last year to approximately RMB568 million for the reporting period, which was mainly attributable to the increase in salaries.

Research and development costs

R&D costs increased from approximately RMB616 million in the same period last year to approximately RMB709 million for the reporting period, which was mainly attributable to the increase in the number of R&D projects and optimisation of the R&D team.

Finance costs

Finance costs increased from approximately RMB118 million in the same period last year to approximately RMB153 million for the reporting period, which was mainly due to the increase in loan size.

Operating activities cash flow

The net cash generated from operating activities of the Group changed from approximately RMB-2,185 million in the same period last year to the net cash used in operating activities of approximately RMB-326 million for the reporting period. It was mainly attributable to the increase in inventories.

As at 30 June 2022, the equity attributable to the owners of the Company amounted to approximately RMB13,356 million (31 December 2021: approximately RMB12,980 million). The Group's capital structure is the equity attributable to owners of the Company, comprising issued share capital, reserves and accumulated profits.

As at 30 June 2022, the Group had total assets of approximately RMB39.634 billion, increasing by approximately 21.06% as compared with approximately RMB32.739 billion as at 31 December 2021, including total current assets of approximately RMB28.472 billion and total non-current assets of approximately RMB11.162 billion, increasing by approximately 23.33% and 15.64%, respectively. The increase in the current assets was mainly due to the increase in the inventory, notes receivable and bank deposits. The increase in the non-current assets was mainly due to the increase in deposits for the acquisition of property, plant and equipment.

As at 30 June 2022, the total liabilities of the Group were approximately RMB23.752 billion, increasing by approximately 36.80% as compared with approximately RMB17.362 billion as at 31 December 2021, including total current liabilities of approximately RMB21.554 billion and total non-current liabilities of approximately RMB2,198 million, increasing by approximately 40.99% and 5.94%, respectively. The increase in the current liabilities was mainly due to the increase in bank notes and short-term loans held by the Group. The increase in the non-current liabilities was mainly due to the increase in deferred revenue.

As at 30 June 2022, the cash and bank balances of the Group (including pledged bank deposits and bank deposits) were approximately RMB12.059 billion (31 December 2021: approximately RMB11,640 million), of which approximately RMB187 million and approximately RMB336 million are denominated in US dollars and Hong Kong dollars, respectively. As at 30 June 2022, the interest bearing borrowings and loan notes (together as "**interest bearing loans**") of the Group with maturity of within one year amounted to approximately RMB6,228 million (31 December 2021: approximately RMB2,875 million). The interest bearing loans with maturity of more than one year amounted to approximately RMB1,391 million (31 December 2021: approximately RMB1,409 million). The interest bearing loans of approximately RMB6,151 million were denominated in RMB. The loans denominated in RMB had fixed interest rates ranging from approximately 2.00% to 6.5% (2021: approximately 2.23% to 6.5%) per annum. In conclusion, the borrowings of the Group as at 30 June 2022 remained at a healthy and controllable level. With unutilised credit facilities of approximately RMB5,185 million, the Group will take a cautious stance and maximise the interests of the shareholders and the Company will strike a balance between borrowings and funding utilisation. Moreover, with continuously improving the fund structure as its financial objective in the long run, the Group will optimise its loan structure with further use of long term loans.

Pledge of assets

As at 30 June 2022, the bank facilities and bank borrowings of the Group were secured by its bank deposits, bills receivables, property, plant and equipment, and land use rights. The aggregate net book value of the assets pledged amounted to approximately RMB4,788 million (31 December 2021: approximately RMB4,315 million).

Gearing ratio

As at 30 June 2022, the Group's gearing ratio, defined as the percentage of the sum of current and non-current portions of interest bearing loans against the total assets, was approximately 19.22% (31 December 2021: approximately 13.08%).

Exposure to exchange rate fluctuations

As the Group's operations were mainly conducted in China and the majority of its businesses were transacted in RMB, the Board is of the view that the Company's operating cash flow and liquidity are not subject to significant foreign exchange rate risk.

Contingent liabilities

The Group did not have any significant contingent liabilities as at 30 June 2022 (31 December 2021: Nil).

Capital commitments

The amount contracted for but not stated in the condensed consolidated financial statements in respect of the acquisition of property, plant and equipment and commitment to contribute funds to an associate as at 30 June 2022 were approximately RMB2,482 million and RMB88 million, respectively (31 December 2021: approximately RMB2,043 million and RMB128 million).

EMPLOYEES AND REMUNERATION POLICIES

As at 30 June 2022, the Group employed a total of 26,921 employees (30 June 2021: 25,099). Staff cost of the Group for the reporting period was approximately RMB1,503 million (for the six months ended 30 June 2021: approximately RMB1,146 million). The cost included basic salaries and staff benefits such as discretionary bonus, medical and insurance plans, pension scheme, unemployment insurance plan, etc. Competitive remuneration packages were offered to employees by the Group. The Company has adopted incentive programs to encourage employees' performance and a range of training programs for the development of its staff.

INTERIM DIVIDEND

The Board does not recommend the payment of any interim dividend for the reporting period (for the six months ended 30 June 2021: Nil).

SIGNIFICANT INVESTMENTS HELD

Save for the investments in equity securities listed in Hong Kong and the PRC, unlisted equity securities in the PRC and the structured bank deposits, there were no other significant investments held by the Group as at 30 June 2022.

Financial assets at fair value through profit or loss

As at 30 June 2022, the Group's financial assets at fair value through profit or loss mainly included unlisted financial products purchased from commercial banks. The following table summarises the Group's financial assets at fair value through profit or loss as at 30 June 2022:—

Issuer	Product category	Principal activities	Investment cost/nominal value (RMB '000)	Fair value as at 30 June 2022 (RMB '000)	Interest/dividend received	Percentage of total assets of the Company as at 30 June 2022
Industrial and Commercial Bank of China Limited	Structured deposit	Banking services	120,000.00	120,000.00	—	0.30%
China Construction Bank Corporation	Structured deposit	Banking services	140,000.00	140,000.00	—	0.35%
Ping An Bank Co., Ltd.	Structured deposit	Banking services	130,000.00	130,000.00	—	0.33%
Shanghai Pudong Development Bank Co., Ltd.	Structured deposit	Banking services	180,000.00	180,000.00	—	0.45%
China Merchants Bank Co., Ltd.	Structured deposit	Banking services	300,000.00	300,000.00	—	0.76%
China CITIC Bank	Structured deposit	Banking services	320,000.00	320,000.00	—	0.81%
Hangzhou City Commercial Bank Co., Ltd.	Wealth management product	Banking services	60,000.00	60,000.00	—	0.15%
Bank of Ningbo	Wealth management product	Banking services	110,000.00	110,000.00	—	0.28%
Ping An Bank Co., Ltd.	Wealth management product	Banking services	127,000.00	127,000.00	—	0.32%
Shanghai Pudong Development Bank Co., Ltd.	Wealth management product	Banking services	3,920.00	3,920.00	—	0.01%
Bank of Shanghai	Wealth management product	Banking services	292,000.00	292,000.00	—	0.74%
Industrial Bank Co., Ltd.	Wealth management product	Banking services	330,025.59	330,025.59	—	0.83%
Listed company	Equity securities listed in China	—	36,227.95	42,311.34	—	0.11%
Listed company	Equity securities listed in Hong Kong, China	—	17,887.95	31,207.76	—	0.08%
Futures	Commodity derivative contracts	—	—	2,453.11	—	0.01%
The lock exchange	Forward foreign exchange contract	—	—	9,974.24	—	0.03%

MATERIAL ACQUISITION AND DISPOSAL

The Group has no material acquisition and disposal as at 30 June 2022.

DIRECTORS' RIGHTS TO ACQUIRE SHARES OR DEBENTURES

For details, please refer to note 13 to the condensed consolidated financial statements.

IMPORTANT EVENTS SINCE THE END OF THE FINANCIAL PERIOD

(A) Change of Auditor

ZHONGHUI ANDA CPA LIMITED (“ZHONGHUI ANDA”) has resigned as the auditor of the Group with effect from 5 July 2022. Deloitte Touche Tohmatsu has been appointed as the auditor of the Group with effect from 8 July 2022 to fill the casual vacancy following the resignation of ZHONGHUI ANDA and to hold the office until the conclusion of the forthcoming annual general meeting of the Company.

(B) Change of Address of Hong Kong Branch Share Registrar and Transfer Office

Tricor Investor Services Limited, the Hong Kong Branch Share Registrar and Transfer Office of the Company, has changed its address from Level 54, Hopewell Centre, 183 Queen's Road East, Hong Kong to 17/F, Far East Finance Centre, 16 Harcourt Road, Hong Kong with effect from 15 August 2022.

CORPORATE GOVERNANCE

The Company is committed to ensuring high standards of corporate governance. The Board believes that good corporate governance practices are increasingly important for maintaining and promoting investors' confidence. The Company has adopted and complied with the code provisions of the Corporate Governance Code (the "**CG Code**") as contained in Appendix 14 of the Rules Governing the Listing of Securities on the Stock Exchange (the "**Listing Rules**") during the reporting period, except for the code provision C.2.1 of the CG Code. Dr. Zhang Tianren is both the chairman ("**Chairman**") and Chief Executive Officer ("**CEO**") of the Company who is responsible for managing the Group's business. The Board considers that vesting the roles of Chairman and CEO in the same person facilitates the execution of the Company's business strategies and maximizes the effectiveness of its operation. With the present Board structure and scope of business, the Board considers that there is no imminent need to separate the roles into two individuals. However, the Board will continue to review the effectiveness of the Group's corporate governance structure to assess whether the separation of the position of the Chairman and CEO is necessary.

The primary duties of the Company's Audit Committee (inter alia) are to review the financial reporting system, the risk management and internal control systems of the Group, and to make proposals to the Board as to appointment, renewal and resignation of the Company's independent external auditors and the related remuneration and appointment terms. The Company's Audit Committee has reviewed this interim report with the management of the Company and the Company's independent external auditors and recommended its adoption by the Board.

The interim financial information of the Company in this report has not been audited. However, it has been prepared in accordance with Hong Kong Accounting Standard 34 "Interim Financial Reporting" and has been reviewed by the Company's independent external auditors, Deloitte Touche Tohmatsu, in accordance with the Hong Kong Standard on Review Engagement 2410, "Review of Interim Financial Information Performed by the Independent Auditor of the Entity".

The Company has adopted the Model Code for Securities Transactions by Directors of Listed Issuers (the "**Model Code**") contained in Appendix 10 of the Listing Rules. Having made specific enquiry, all Directors confirmed that they have complied with the required standard for securities transactions set out in the Model Code throughout the six months ended 30 June 2022.

Other than the above disclosures, the Company has also complied with Rules 3.10(1), 3.10(2) and 3.10A of the Listing Rules and appointed three independent non-executive Directors including one with financial management expertise.

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

Neither the Company nor any of its subsidiaries purchased, sold or redeemed any of the Company's listed securities during the period under review.

GENERAL INFORMATION

As at the date of this announcement, the executive Directors of the Company are Dr. ZHANG Tianren, Mr. ZHANG Aogen, Mr. ZHANG Kaihong, Mr. SHI Borong and Mr. ZHOU Jianzhong; the independent non-executive Directors of the Company are Mr. HUANG Dongliang, Mr. ZHANG Yong and Mr. XIAO Gang.

This announcement will be published on the website of the Stock Exchange at www.hkex.com.hk and on the Company's website at www.tianneng.com.hk.

By order of the Board

Zhang Tianren

Chairman

Hong Kong, 26 August 2022