NPS

BUSINESS PLAN

EY 安永

Building a better working world

Australia National Power Storage Holding Pty Ltd.

Business Plan

(Speech Version)

Ernst & Young (China) Advisory Limited

Company Introduction

- Company Profile: The company is located in Chatswood West, NsW 2067, Australia, with three laboratories for cycle life, safety temperature control and BMS circuit, and a production center, covering a total area of 5000m2;
- There are 70 employees at present, 90% of whom are above bachelor degree;
- R&D achievements: more than *800* patents for inventions and utility models have been applied for
- Product highlights: reach the *first in the world* in terms of battery capacity, cycle life, safety and kilowatt-hour cost
- Company position: to provide global customers with low-cost and high-safety LFP storage battery and system solution

NPS is a R&D enterprise for LFP batteries and devices specialized in energy storage

NPS

BUSINESS PLAN

EY 安永 Building a better working world

CONTENTS

01

Part I

Electricity Energy Storage Market

Status Quo of Power System

Thermal power
Hydro power
Nuclear power

- Power generation is stable every moment, while power consumption is variable, requiring 20% of energy storage for regulation
- It mainly depends on which cost of electricity storage or power generation is higher
- ***Non-rigid demand***

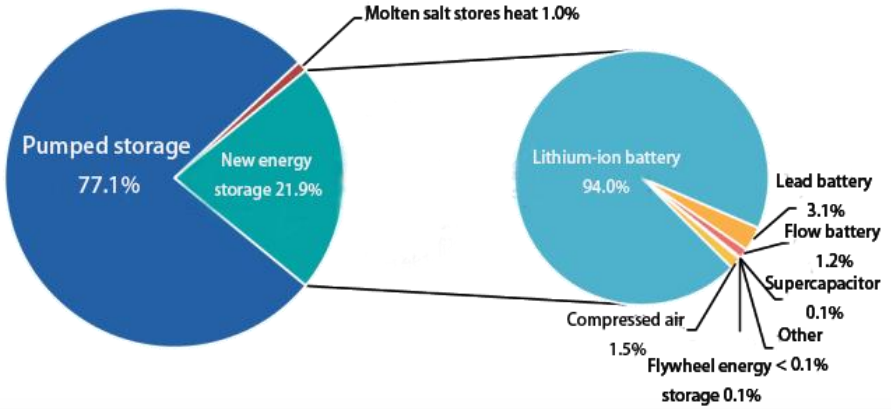
Photoelectricity
Wind power

- Photovoltaic power generation generally lasts from 11:00 a. m. to 3:00 p. m., and 70% of the generated energy is required to store energy to meet the power consumption at other times.
- The wind power generation system is characterized by instability and non-continuity, sometimes it generates more power and sometimes less, and requires energy storage of 50% of the power generation to regulate
- Wind-solar storage is a complete power generation system
- ***Rigid demand***

According to the requirement of Dual Carbon, the energy storage device with at least 30% of the total power generation shall be newly installed, and the market capacity is more than 10 trillion.

Analysis of Energy Storage Technology Route

Type	Category	Cost of electricity per kilowatt-hour yuan/kWh	Disadvantages
Mechanical energy storage	Pumped hydro energy storage	0.21~0.25	Slow response, geographic resources required
	Compressed air energy storage	0.2	Slow response, geographic resources required
	Flywheel energy storage	High	High cost, high noise
Electrochemical energy storage	Lead-acid battery	2.56	Short service life, environmental protection problems
	Ternary lithium battery	0.5	High fire risk
	Vanadium redox flow battery	0.2	Low Energy storage density, Expensive
	Sodium-sulfur battery	2.22	Operational safety at high temperatures needs to be improved
	Iron lithium battery	0.1	Safety issues need to be improved
Electromagnetic energy storage	Superconducting energy storage	High	High cost, difficult maintenance
	Supercapacitor energy storage	High	High cost, low energy storage



LFP battery develops from 3 yuan/Wh and 2000 cycles in 2014 to 0.4 yuan/Wh and 10000 cycles in 2023. The cost is reduced by 35 times in 10 years, and the cost per kWh is less than 0.1 yuan. Its mainstream position has been established.

Safety and storage cost are key indicators for evaluating energy storage systems

Development Direction

Photovoltaic will become more and more dispersed, while energy storage will become more and more centralized. Large-scale centralized (shared) energy storage has obvious advantages in terms of safety and cost

Portable energy storage

Capacity: 1 KWh

Cost Wh: CNY ***1.5***

Time of outbreak: 2021

Domestic energy storage

Capacity: 15 KWh

Cost Wh: CNY ***1.0***

Time of outbreak: 2022

Industrial and commercial energy storage

Capacity: 200KWh

Cost Wh: CNY ***0.8***

Time of outbreak: 2023

Centralized energy storage

Capacity: >2000 KWh

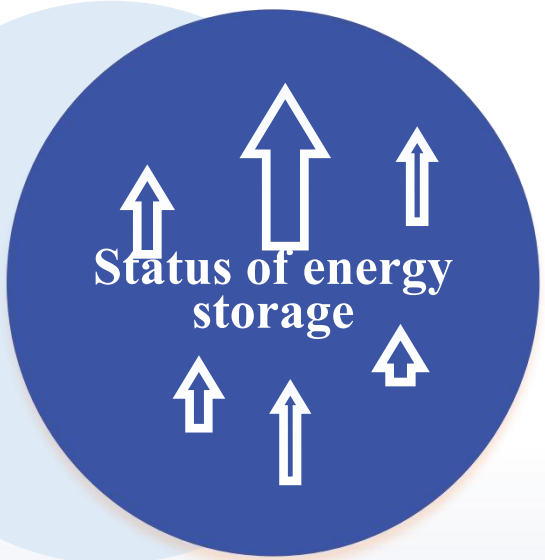
Cost Wh: CNY ***0.65***

Time of outbreak: Next year and the year after

New energy dragon vein is energy storage, energy storage dragon vein is " large storage ", large storage of lithium iron phosphate is the trend of energy storage.

*For details, please refer to "*New energy dragon vein is energy storage, energy storage dragon vein is 'large storage'*".*

Energy Storage Market Summary



Market Scale	More than ten trillion
Scale of energy storage	The scale has fallen far behind the development of wind power and photovoltaic power, which has become the resistance to the development of new energy. It is expected that a large-scale outbreak will occur in the following years.
Mainstream technology	Centralized (shared) energy storage of lithium iron phosphate
Capacity	Energy storage market is multiplying, but capacity is increasing even more
Manufacturer	Product homogenization is in a serious situation, shuffling has begun

In 2020, our company began to study the centralized LFP energy storage device, which is totally stepping into the rhythm of energy storage development

02

Part II

Status of Lithium Iron Phosphate Battery

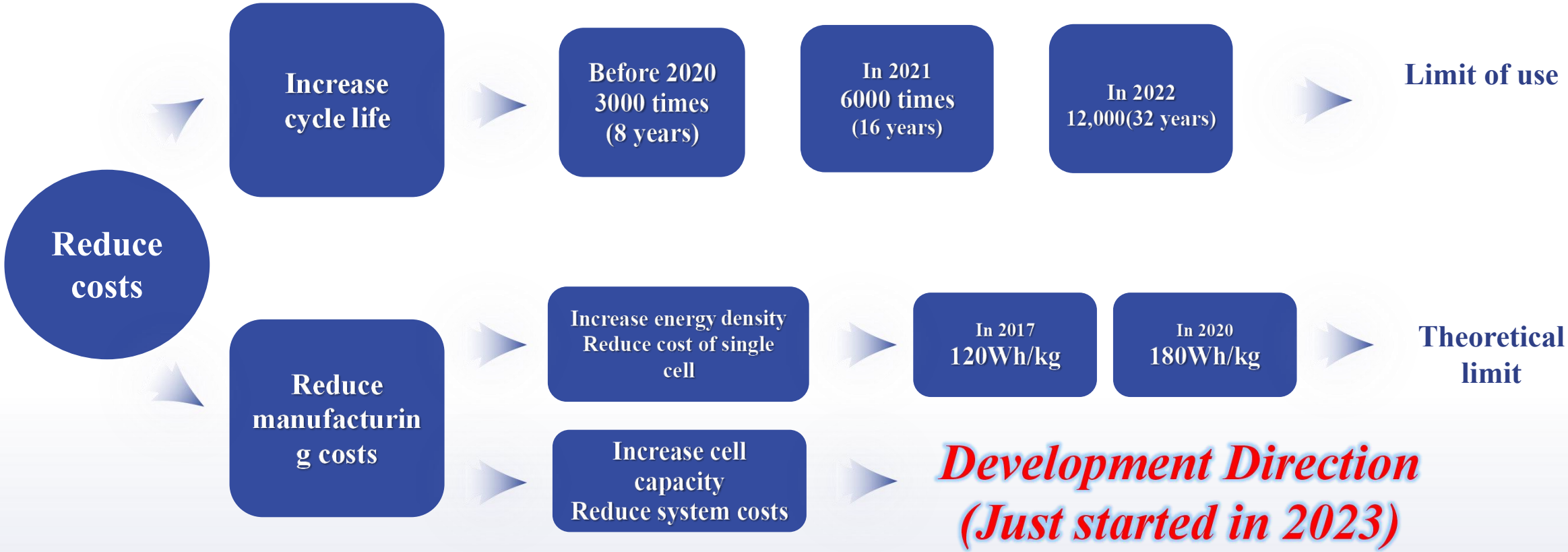
Problems Faced

On the afternoon of May 15, 2024, a fire broke out in California, once known as the world's largest lithium-ion battery energy storage facility, and continued to burn for five days, leading to the evacuation of some surrounding residents.

On the morning of July 30, 2021, there was a fire in Tesla's lithium battery energy storage project in Australia, which burned for five days without casualties.

How to further improve the safety and reduce the cost of LFP battery is an urgent problem to be solved.

Future Technical Direction of Lithium Iron Phosphate



Large capacity cell, long cycle life and high safety becomes the technical direction of LFP energy storage battery

Advantages of Large Capacity

Electric vehicle

Cost of single battery cell accounts for **45%**

55% ***Other costs***

Electric energy rotation energy, be available for sitting, comfortable (reasonable proportion)

Container energy storage cabinet

Cost of single battery cell accounts for **60%**

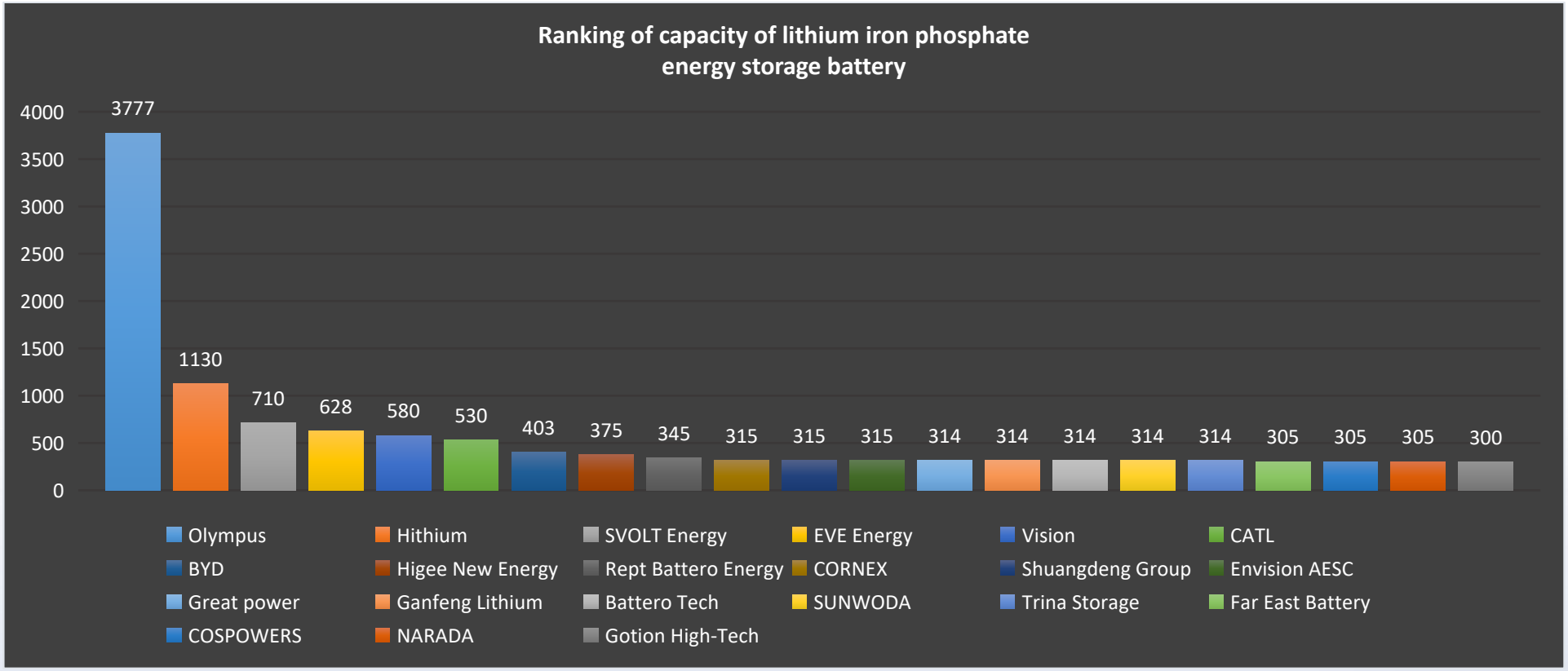
40% ***Other costs***

Conversion between DC and AC (unreasonable proportion, large price reduction space)

The best way to reduce the cost of energy storage system is to increase the battery cell capacity and reduce the number of batteries

Capacity Development

Since the release of 560Ah energy storage battery cell by EVE Energy in October 2022, mainstream battery manufacturers have started to embark on the main research direction of how to increase the single capacity. The following figure is the research and development plan of each manufacturer this year. Except us, at present, the largest battery cell in the market with national type approval is still ***thousands Ah*** behind us..



The R&D difficulties of high-capacity battery are harmful of cell, the heat dissipation, and low yield

Status Quo of Lithium Iron Phosphate Energy Storage Battery

The lithium iron phosphate energy storage battery is divided into power battery (for vehicle) and energy storage battery, which are mainly reflected in the different requirements of energy density, cycle life and safety. The three indexes are opposite to each other and have great differences in terms of battery design.

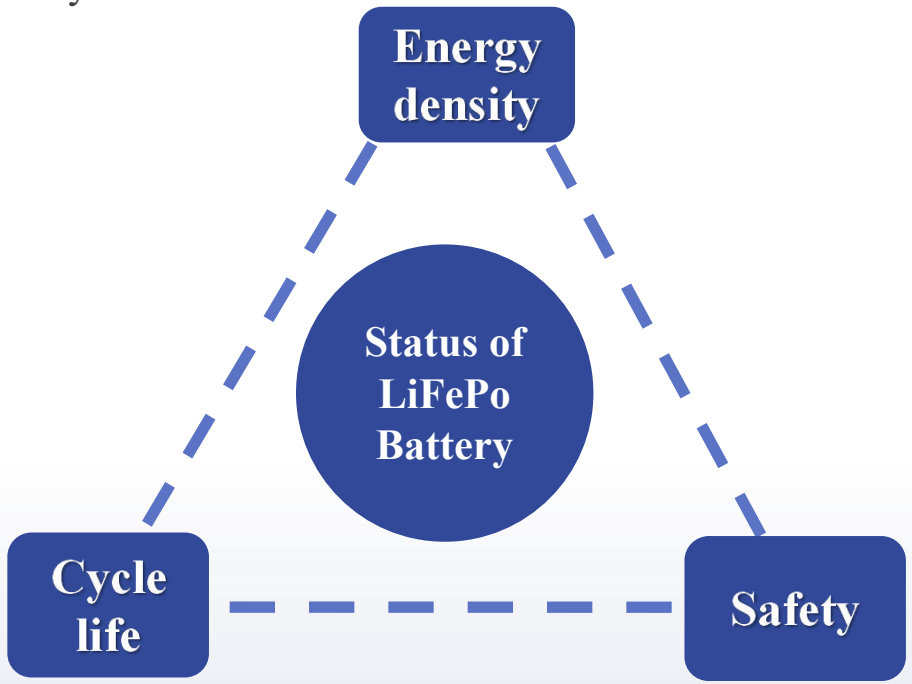
At present, each mainstream battery factory is still adopting the concept of ***power battery to design special*** battery for energy storage, and its maximum capacity can only reach 560Ah.

Energy storage battery

Energy Density:
Medium with small space constraints

Cycle Life:
The higher the better

Security:
High, battery non-flammable



"Opposite triangle"

Power battery

Energy Density:
High, limited by interior space

Cycle Life:
2000 times can meet the requirement of 500,000 km

Security:
Medium, battery flammable, but
Five minutes of warning

NPS is the only company to design LFP batteries for energy storage with energy storage battery concept.

03

PART III

Technology and Product

Technical Team

President: Guo Hongbao

Mr. Guo Hongbao, born in 1969, has attained a bachelor's degree in safety engineering of Beijing Institute of Technology and EMBA of Peking University; he was once the actual controller of listed company Shaanxi J&R Fire Safety Equipment and Shenzhen OptimumNano Battery Co., Ltd. He is the author of "Aerosol Fire Extinguishing Technology" and has applied for more than 70 invention patents, which have been cited by the national compulsory regulations. In short, he has rich R&D experience and great achievements in fire fighting technology and lithium battery technology, and is the chief scientist of the company.

President of academy
Zhao Yichen

Male, born in 1986, graduated from Xi'an University of Technology. He has served as a training teacher of All-China Patent Attorneys Association, an expert of Xi'an Intellectual Property Think Tank and a partner of a patent company in Xi'an. He has more than ten years of experience in terms of patent retrieval, application and infringement maintenance.

Vice President, Systems R&D
Yang Xin

Male, born in 1980, graduated from Xidian University of Electronic Science and Technology. He is the chairman and founder of Xi`an Gtds Electronic Co., Ltd. who is the earliest engaged in BMS R&D and production in China. He has 18 years of rich achievements and experience in the field of BMS system integration in terms of military industry and civil use.

Vice President of Manufacturing Technology
Shi Fengjin

Male, born in 1986, graduated from China University of Petroleum, served as General Manager of Weinan Branch of OptimumNano Battery Factory and General Manager of a new energy plant in Inner Mongolia. He has more than ten years of management experience in terms of the construction, production, quality control and sales management of newly-built factories.

Vice President, Safety R&D
Lei Zhengjun

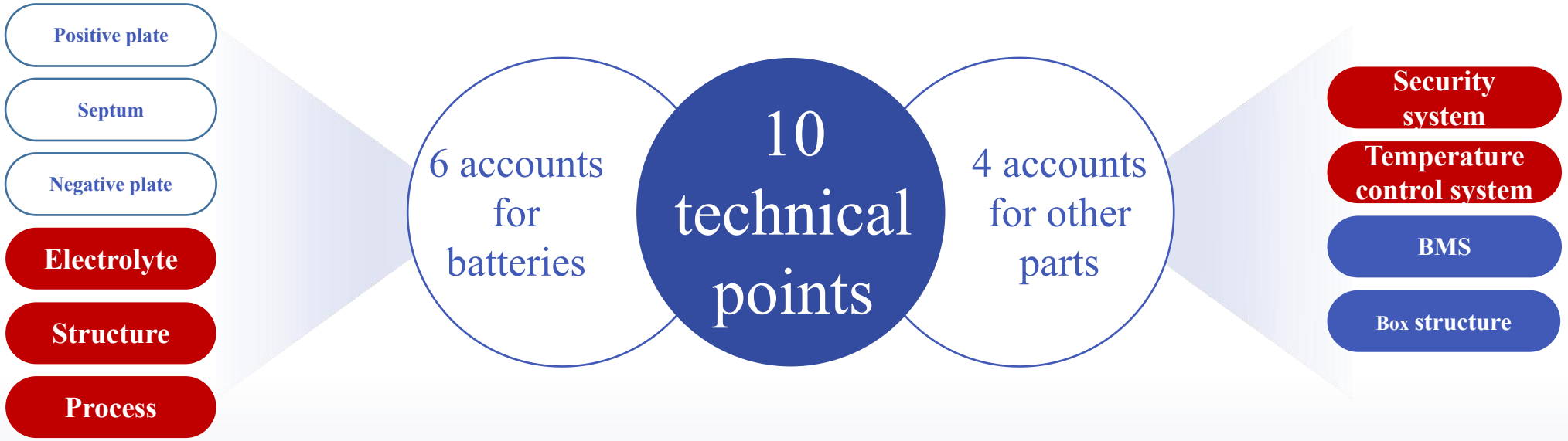
Male, born in 1969, graduated from Beijing Institute of Technology with the major of chemical engineering. He has served as senior engineer of a well-known research institute in China and R&D director of a listed company. He has rich R&D experience and achievements in lithium battery and fire fighting.

It is the only technical team that comprehends both lithium batteries and safety.

This team has natural advantages for R&D high-capacity lithium batteries

R&D Innovation Points

The container energy storage device is composed of a battery and other components, and relates to ten technical points in total. In addition to positive and negative plates and diaphragms, NPS carries out innovation on the other seven points, and the three problems of large-capacity lithium battery single harm, difficult heat dissipation and low yield has been overcome



Innovation on ***5*** technical points for ***the first time in the world***

Improvement on ***2*** technical points

It is the only manufacturer to solve the three problems of high-capacity lithium battery, and the technology is also suitable for sodium battery and other rocking chair batteries

High-Capacity Lithium Battery

- Rated capacity: 3777Ah
- Rated voltage: 3.2V
- Working voltage: 2.5~3.65V
- Internal resistance of battery: <0.2mΩ
- Charge/discharge rate: 0.5C
- Rated energy: 12.086kWh
- Cycle Life: 12000 cycles
- Dimensions (L*W*H): 1095×203×294mm
- Weight: 100Kg

1.28MWh Standard Energy Storage Cabinet

- 1.5MW/3MWh (User side)
- Including fire control, temperature control system, BMS and battery cell
- Serial-parallel mode: 1P256S
- Nominal voltage: 819.2V
- Allowable grid voltage： 380V
- Rated energy: 3094kWh
- Dimensions (W*D*H): 4.8×2.8×3.1m
- Weight: ＜35T
- Degree of protection: IP55

1.28MWh Standard Energy Storage Cabinet

- 5MWh （Grid side)
- Including fire control, temperature control system, BMS and battery cell
- Serial-parallel mode: 1P416S
- Nominal voltage: 1331.2V
- Rated energy: 5027kWh
- Dimensions (W*D*H): 7.3x2.8×3.1m
- Weight: ＜55T
- Degree of protection: IP55

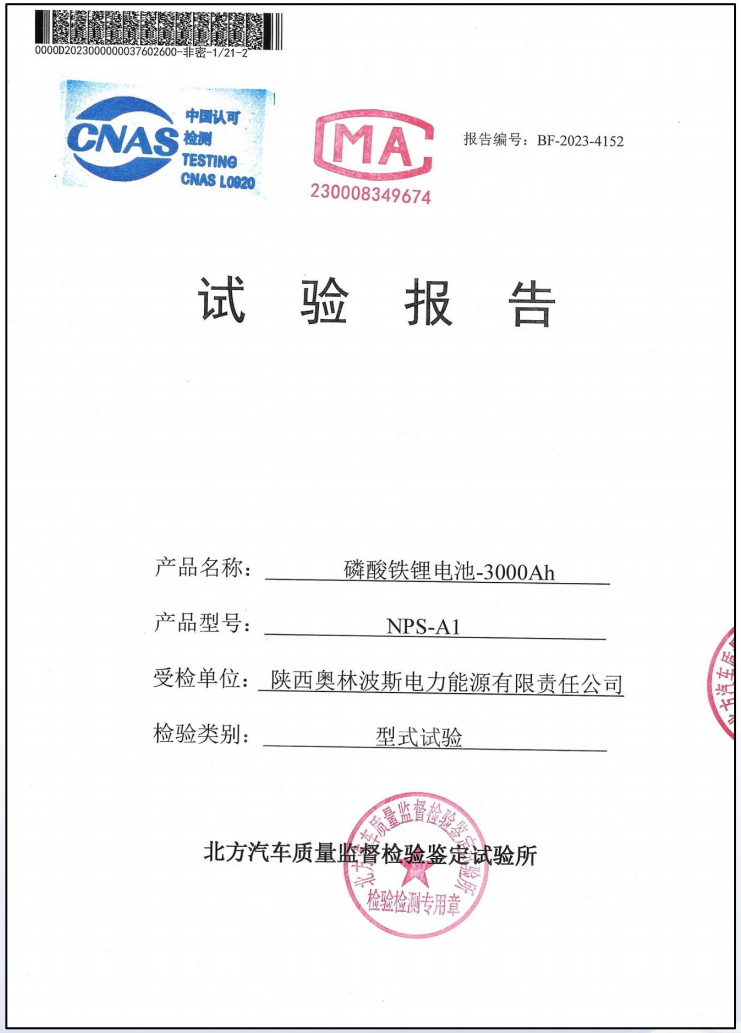
Energy Storage Monitoring Platform

The large storage monitoring platform independently developed by NPS can master the operating conditions of the system in real time and support firmware upgrade

The platform can timely obtain the operation information of energy storage products at any place, such as cumulative charge and discharge capacity, the amount that can be charged and discharged, energy efficiency, capacity retention rate, real-time power, state of charge, etc. It can also monitor the detailed information of a single large battery, such as balanced capacity, full energy, temperature point distribution, etc.

Product Progress

- The company has a production line of large-capacity batteries and devices with an annual output value of 200 million yuan
- The product has ***obtained*** the type test approval report of the national-level testing center.
- It has been nominated for the ***first set*** by the National Energy Board in 2023
- The company has received the first round of investment of ***CNY 6 million*** valued at CNY 540 million.



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CNAS 中国认可 检测 TESTING CNAS L0920

CMA 230008349674

报告编号：BF-2023-4152

试 验 报 告

产品名称：磷酸铁锂电池-3000Ah

产品型号：NPS-A1

受检单位：陕西奥林波斯电力能源有限责任公司

检验类别：型式试验

北方汽车质量监督检验鉴定试验所

检验检测专用章

04

Part IV

Our Strengths

R&D Achievements

Maximum single battery capacity

3777Ah

Highest safety

Flue gas generated after thermal runaway is non-combustible

Maximum number of cycles

12,000

Lowest cost

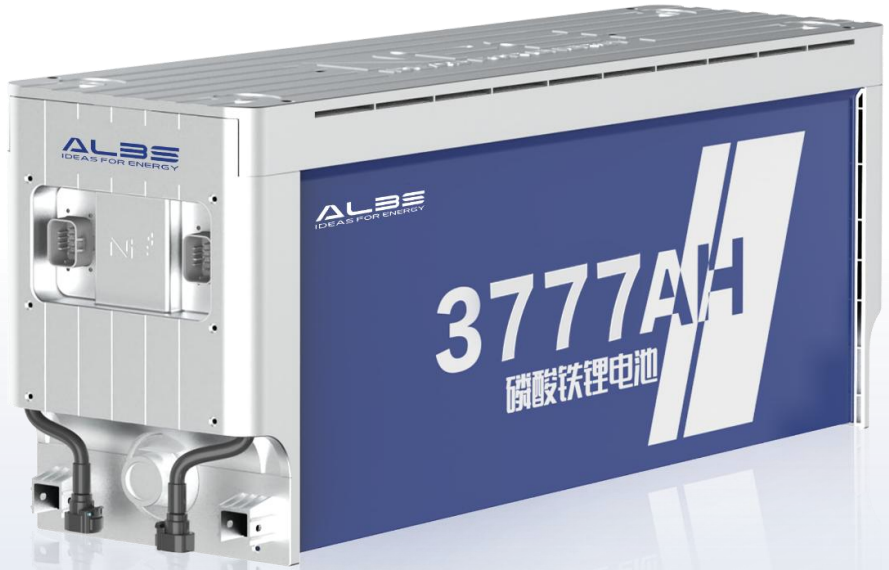
0.05 yuan/kWh

*Compared with domestic and foreign lithium battery enterprises, NPS has **four** global No. 1s.*

The Largest Single Cell In the World

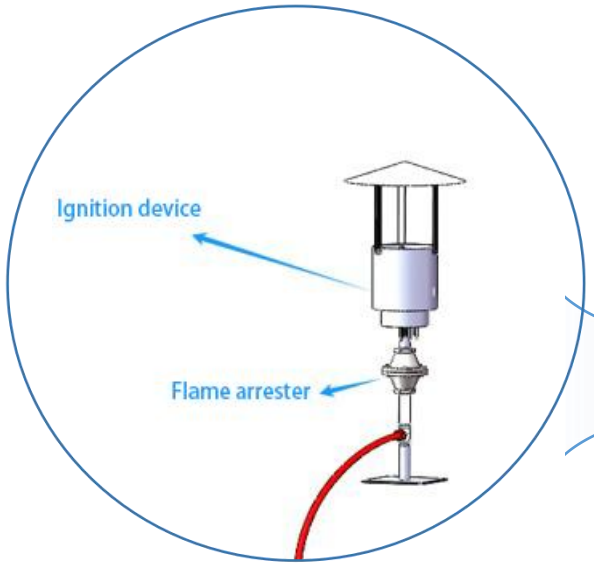
At present, in addition to NPS 3777Ah high-capacity battery, the largest single battery capacity on the market is the energy storage battery MIC 1130Ah released on December 12, 2023, which is still more than 3 times the gap with NPS 3777Ah battery capacity, and the battery can only charge and discharge under 0.25C conditions. The NPS 3777Ah can be charged and discharged at 0.5C.

At present, the largest cell on the market that has received national type approval is still thousands of amp-hour capacity gap with us.



*The world's largest certified lithium battery, about **ten** times larger than the second-ranked lithium battery*

The Safest Energy Storage Device in the World



Ignition device

In the event of a thermal runaway,the flammable gas is orderly discharged to the pressure pulse automatic igniter through the pipeline, eliminate safety hazards through orderly and controlled combustion

Click above to view the security technology video

Fundamentally solve the potential safety hazard of lithium battery since the thermal runaway flue gas is ignited

Same Cycle Life as The World's Best Lithium Battery

1. In terms of cycle life, CATL ranks first, NPS ranks second in Olin and Hithium ranks third.

According to the 1,000 cycle life test data of the type test carried out by the National Testing Center (Northern Automobile Quality Supervision, Inspection and Appraisal Test Institute), compared with the type test reports of similar CATL 302Ah and Hithium 280Ah, the ***1,000*** cycle life of NPS high-capacity lithium iron phosphate battery is between CATL and Hithium.

Rank	Manufacturer	Model (Ah)	Initial Discharge Energy (Wh)	1,000 Weeks Discharge Energy (Wh)	Discharge energy retention rate
1	CATL	302	1003.47	947.28	94.40%
2	NPS	3000	9690.0	9050.01	93.39%
3	Xiamen Hithium	280	920.7	854.7	92.83%

2. The cycle life calculated by the third party is 11,000 times (80% capacity)

Hefei Guangce Product Testing Institute conducted inspection and analysis on cycle life of NPS-A1 (3000Ah) lithium iron phosphate battery and issued Analysis Report (No.: GC202212190020).

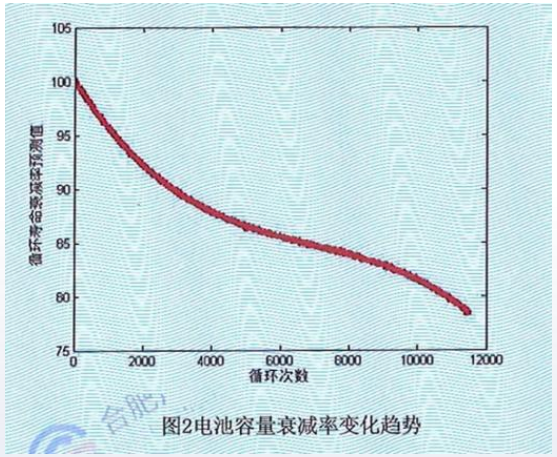


图2电池容量衰减率变化趋势

Analysis Report Display

The theoretical service life of ***NPS-A1 (3000Ah)*** lithium iron phosphate battery submitted by NPS is ***11,000 times*** (***80%*** rated capacity).

The cycle life is 11,000 times, reaching the world-class level

The World's Lowest Priced Energy Storage Device

Cost Comparison Table of *5MWh* Energy Storage System (exclusive PCS)

No.	Composition of energy storage cabinet	3777Ah LFP battery		314Ah LFP battery		Remark
		QTY	Price (Ten thousand Yuan)	QTY	Price (Ten thousand Yuan)	
1	Battery	416	225	4992pc	200	314Ah battery is calculated at 0.4 yuan /Wh, 3777Ah battery is calculated at 0.45 yuan /Wh 3777Ah contains heat conduction fire pipe, electrolyte, single BMS, etc., the cost is slightly higher
2	PACK box	0 pc	0	96 pcs	50	3777Ah battery no need PACK box
3	Battery connection cables	1 set	3.69	1 set		3777Ah battery lower configuration, fewer connected devices, lower cost
4	BMS	416 points	3.46	4992 points		The number of collection points is reduced, and the hardware cost of level 3 BMS is significantly reduced
5	Collecting box	0 set	0	12 set	50	3777Ah battery cluster requires no collecting
6	High pressure tank	1 set	1.32	12 set		3777Ah battery cluster required only 1 high pressure tank
7	Normal fire protection system	1 set	1.99	1 set		The 3777Ah normally doesn't need to be configured with conventional fire protection system, this designe just to reduce disputes
8	Self-developed fire protection system	1 set	0.96	0 set		3777Ah comes with fire protection device, high safety factor
9	Temperature control system	1 set	5.71	1 set		3777Ah battery precise cooling, high efficiency, low cost
10	Prefabricated cabin	1 set	9.44	1 set		Identical structure
	Total		251		300	Cost reduction: 16.3%

20% cost reduction compared with other BESS, cost per kilowatt-hour is CNY 0.05, the lowest in the world.

Kilowatt-hour cost refers to the cost of storing one kilowatt-hour of energy storage system at a time, which is calculated mainly based on the cost and cycle life calculation of energy storage system

05

Part V

Intellectual property

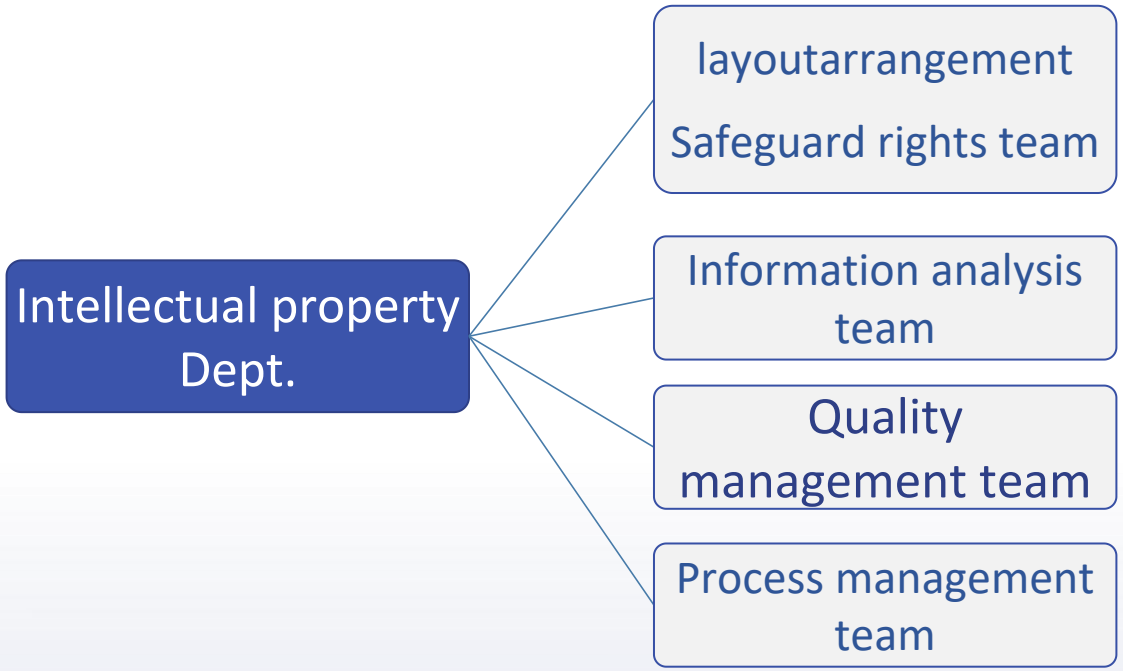
Patents Data

With five major technology points as the core, a patent group consisting of more than **800** patents has been built

The patent group comprehensively covers the structure and process of large-capacity batteries based on NPS technology

The patent cluster has formed a patent monopoly in the field of large-capacity batteries based on NPS technology, which is difficult for competitors to evade

Team Structure



Patent commissioner

- 11 years of practice, 7 years of qualification
- Acting for 1000+ cases, acting for review, invalid cases 100+
- He has successively served as the designer of Beiren Printing Machinery Co., LTD., the acting director of a Patent Office in Xi 'an, and the guidance expert of Xi 'an Branch of a Beijing consulting Group

Patent commissioner

- 9 years of practice, 9 years of qualification
- Representing 1000+ cases and 70+ reexamined and invalid cases
- Successively served as director of foreign affairs Department, director of agency department and partner of a Patent Office in Xi 'an
- The analysis project was selected into Xi 'an Patent Information Analysis Report Collection

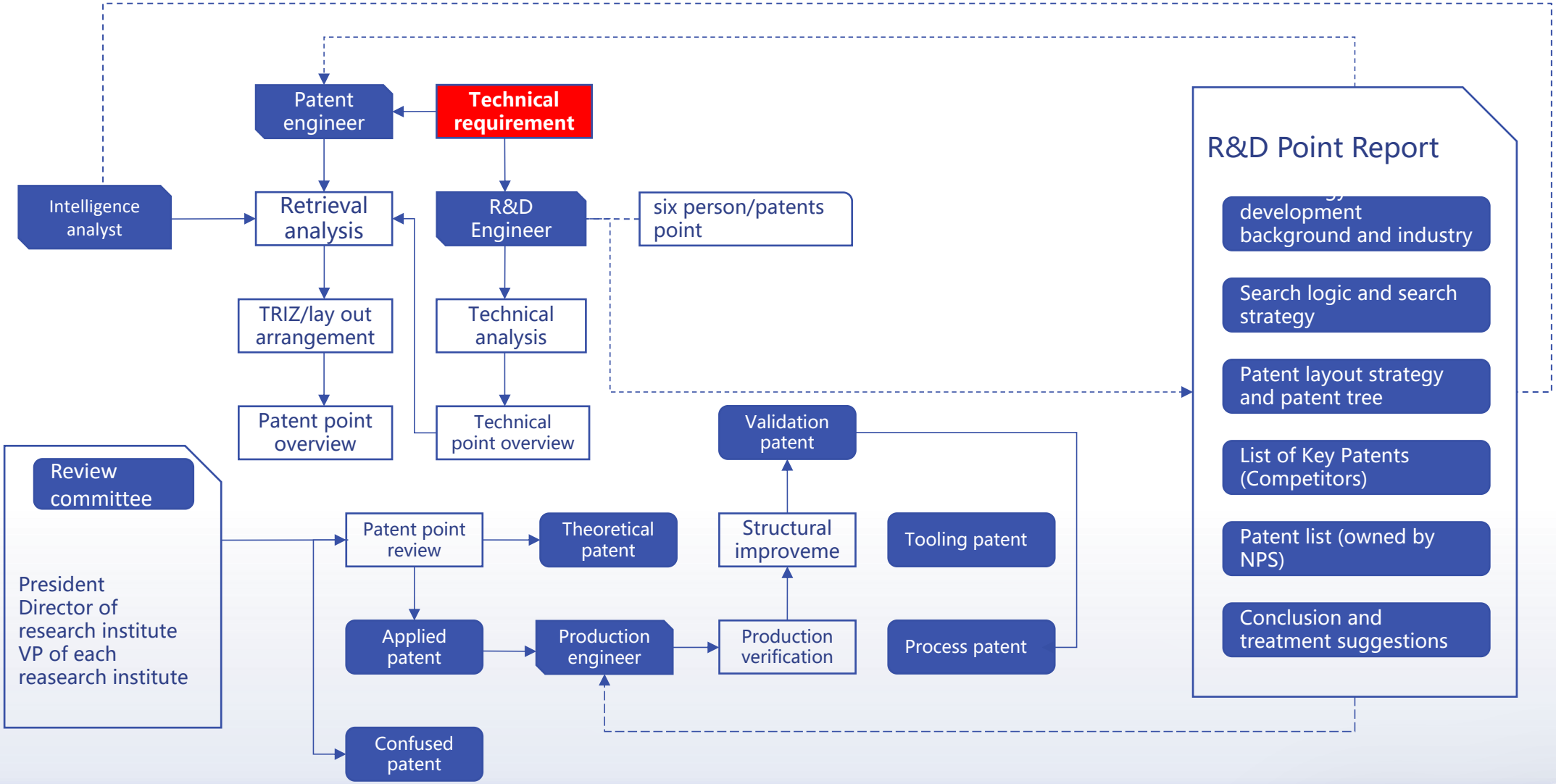
Patent commissioner

- 7 years of practice, 5 years of qualification
- Representing 1000+ cases and 30+ review and invalid cases
- Successively served as R&D engineer of Hunan Liou, a listed company, director of agency department, director of pre-examination and priority examination Department of a Patent Office in Xi 'an

Patent commissioner

- Engaged in intellectual property work for 12 years
- Engaged in patent analysis, patent navigation, soft research 30+
- He successively served as the director of the intellectual property department of a listed company and the regional head of an intellectual property consulting company in Xi 'an

Conclusion and treatment suggestions

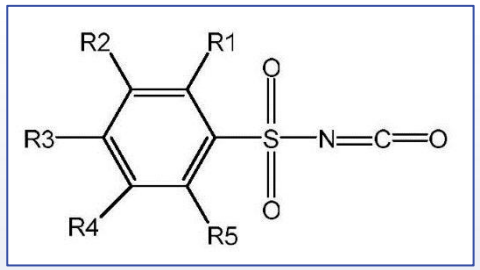


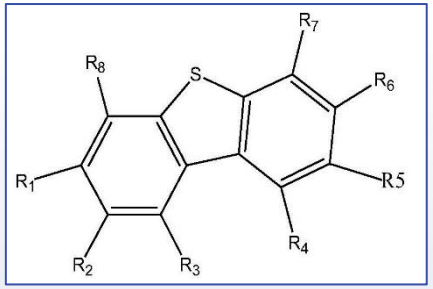
Invention point example

Electrolyte additive

- 8 first-class patents
- 15 Second-Class patents
- 13 third class patents

One invention is fully protected by 36 patents





6 theoretical patents
1. Limited structural functionality
2. Limited process functionality
3. Combination of multiple R&D sites

13 applied patents
1. Specific structure
2. Combination of multiple R&D sites
3. Design the replacement solution
4. Priority and subdivision

4 confirmatory patents
1. Specific structure
2. Design replacement solutions
3. Priority and subdivision

4 technology patents
1. Process specific limit
2. Design replacement solutions
3. Combination of multiple R&D sites

4 tooling patents
1. Specific structure
2. Design replacement solutions
3. Limited use method

There are 5 confusing patents
1. Specific structure
2. Process specific limit
3. Design the replacement solution

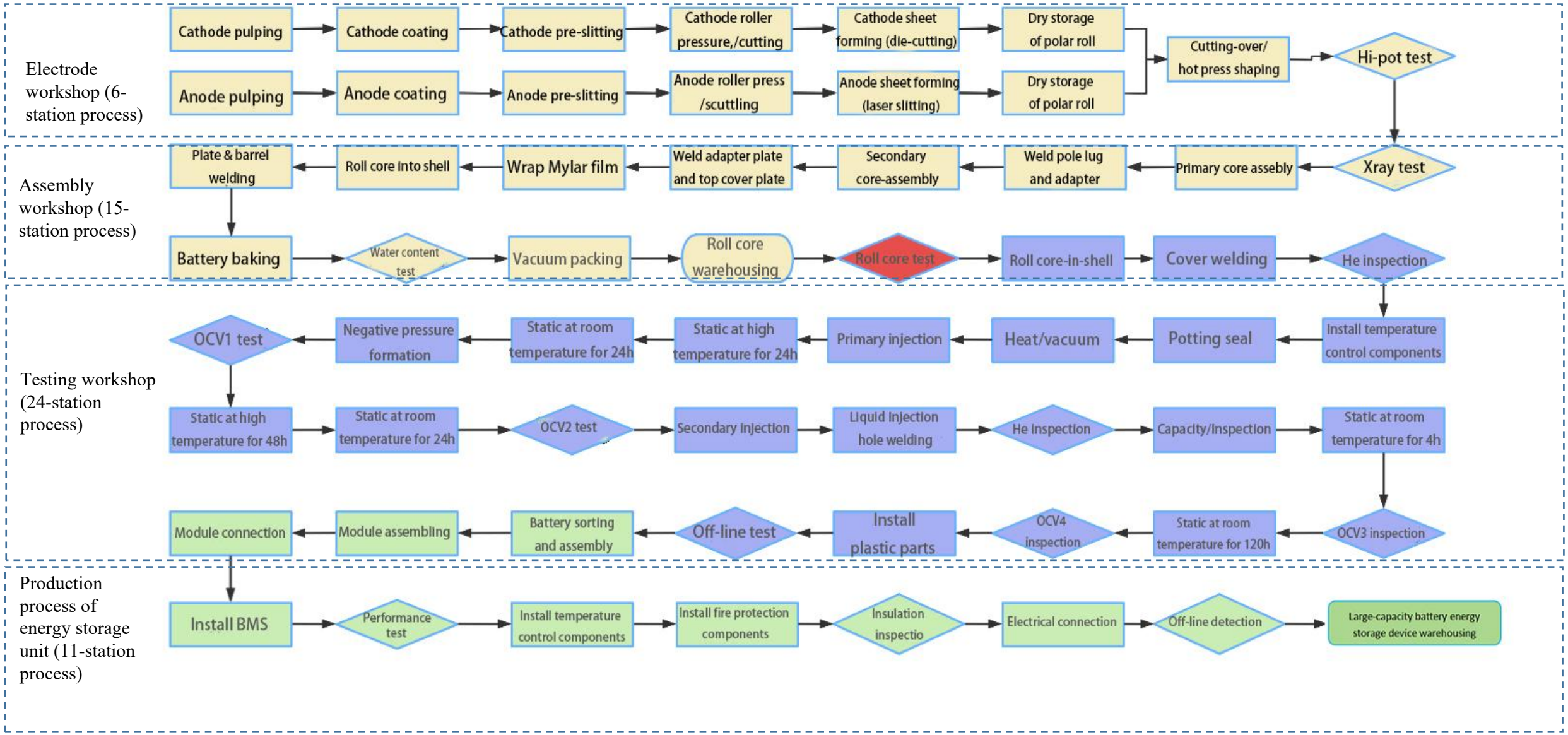
06

Part VI

Production planning

Battery Manufacturing Process Flow Chart

➢ Production Process Flow Chart of High-capacity Battery and MWh Energy Storage Unit



Planning and Construction Scheme of Battery Production Line

Project	Detailed requirements of pole piece processing production line	Detailed requirements for the whole process of battery production line
Start and end of battery process	Laminated core-large capacity battery	Pulping process---large capacity battery
Planned capacity	2GWh	2GWh
Area of plant	14000㎡	23000㎡
Production Personnel	192	488
Construction Scope	Plant decoration, equipment procurement, plant power construction, office supplies, etc.	Plant decoration, equipment procurement, plant power construction, office supplies, etc.
Construction cycle	90 days	240 days
Investment in facilities and equipment	CNY 31 million	CNY 450-500 million
Investment in fixed assets	CNY 10.4 million	CNY 80 million
Working capital	CNY 400 million	CNY 400 million
Annual output value	CNY 1.6 billion	CNY 1.6 billion

Capacity Planning

Capacity planning from 2024 to 2028										
Project	Capacity Planning in 2024		Capacity Planning in 2025		Capacity Planning in 2026		Capacity Planning in 2027		Capacity Planning in 2028	
	External pole piece	Whole process	External pole piece	Whole process	External pole piece	Whole process	External pole piece	Whole process	External pole piece	Whole process
Planned capacity	0.5GWh	-	2.5GWh	-	2.5GWh	2GWh	2.5GWh	7.5GWh	2.5GWh	17.5GWh
Area of plant	5000㎡		16000㎡		40500㎡		111375㎡		202500㎡	
Production Personnel	60		216		412		1,134		2,061	
Investment in fixed assets	CNY 30 million		CNY 125 million Yuan		CNY 580 million		CNY 1.6 billion		CNY 2.9 billion	
Working capital	CNY 150 million		CNY 600 million		CNY 600 million		CNY 1.65 billion		CNY 3 billion yuan	
Annual output value	CNY 400 million		CNY 1.8 billion yuan		CNY 3.4 billion yuan		CNY 8 billion yuan		CNY 16 billion yuan	

07

Part VII

Valuation and model

Post-Investment Valuation (Ernst & Young)

CNY 540 million
Post-investment valuation

35 times
PE

Method Selection

- **P/E valuation method will be adopted for valuation of the company in 2024**

① The products of the company are basically mature, and large-scale production is started.

② It generates steady profitability and will grow steadily over the forecast period

③ Valuation is a good reflection of the company's profitability

- **Formula used**

Company Valuation=Net Profit×PE×Reasonable Discount

Comparable Company

- **According to the comparable valuation method, we select Pylon Technology, Great Power Energy, Saide Battery and Narada Battery as the comparable companies, and take SDI as the reference.**

① Energy storage products are mainly lithium iron phosphate batteries for household storage market

② The production capacity of energy storage cells in 2022-2024 is 0-30GWh, which is close to the capacity scale of the company.

- At present, the average PE of comparable companies is 134, and PE fluctuates greatly. The average PE of comparable companies in three years is about 67

Discount Correction

- Considering that the Company faces the power generation side and household storage market with rapid increasing demand, and the production capacity will be released in a rapid manner; however, the Company's scale, order acquisition capacity and upstream and downstream supply capacity are inferior to those of comparable companies, so the Company is estimated in a conservative manner by 35 times of PE
- Considering that the Company is a non-listed company with insufficient capital liquidity, 67% liquidity discount will be granted for the final valuation
- **Valuation of the Company in 2023**
- Net profit (0.23 million yuan)×PE (35)×discount (67%)=540 million yuan

Purpose of financing

Financing requirements

- **Financing stage**: Pre-A
- **Financing amount**: CNY 50 million
- **Transfer of shares**: 10%

Financing requirements

Equipment fund

It is estimated to invest 5 million yuan to purchase production equipment and build 0.5GWh production line

Product Stocking

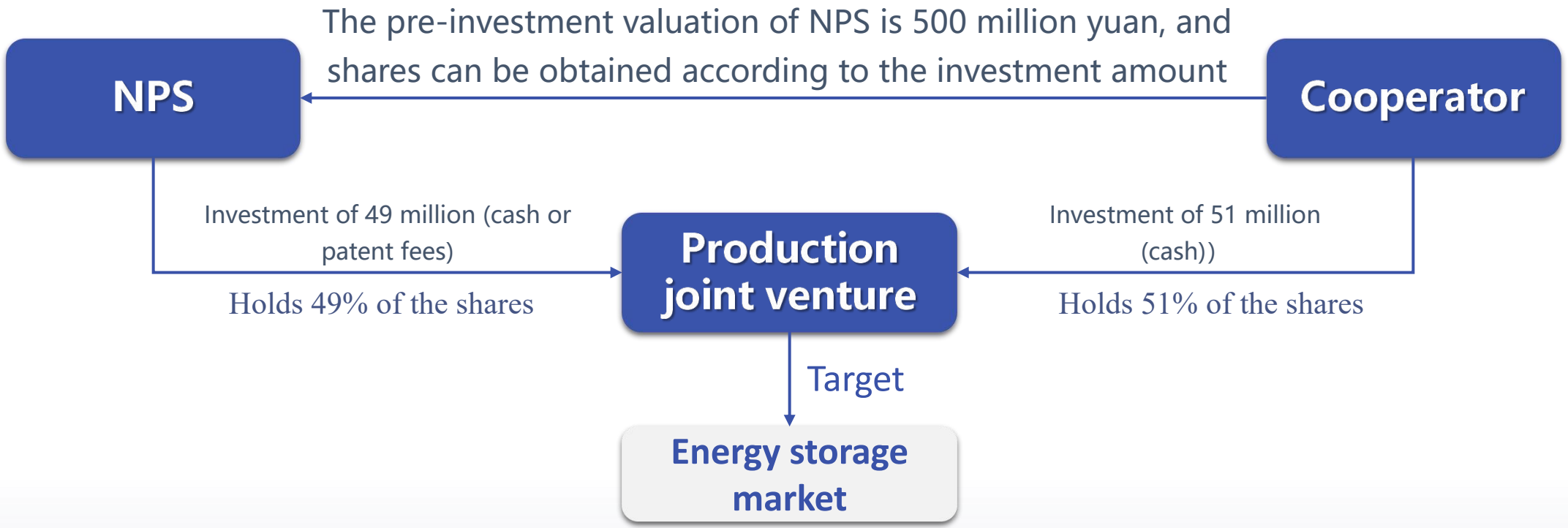
Customized production is required to reduce the product cost, and the estimated cost is about CNY 40 million

Project R&D

Investment of about CNY 5 million for continuous research and development of products and technologies

Ernst & Young's valuation after investment is CNY 540 million (see Ernst & Young Report for details)

Mode of Cooperation



Note:

1. NPS will license all its Chinese patent royalties to the joint venture company at 0.007 yuan /Wh, and the ladder will be lowered.
2. The joint venture company shall maintain itself within the system controlled by its major shareholders and shall not charge patent royalties.
3. NPS shall offset its contribution with cash or patent fees.

Conclusion

This year, the energy storage market is multiplying, but the capacity is increasing more, the energy storage market reshuffle has begun, and companies want to survive, either by differentiation or by scale.

In terms of scale, the head battery factory has begun to launch its own industrial and commercial and container products, and they start from the battery, and have the scale advantage, its inevitable lowest cost, that other battery factories and system manufacturers only have a *short* sales advantage, and will not survive in the long run.

In terms of differentiation, the concept of lithium iron phosphate batteries was proposed in the 1960s, and was first commercialized by SONY in the early 1990s, more than 30 years ago. There can be no breakthrough technology, Ningde and BYD have nearly ten thousand master/doctor, so far has not developed a weight of product technology, and most of the production process technology, it can be said that in energy storage technology, whether battery or energy storage device, in addition to *us,* the size of the plant is basically the same, no difference.

We should be the *only* opportunity for small and medium-sized battery factories and system manufacturers to gain a foothold in the energy storage market.

NPS

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