Australia National Power Storage Holding Pty Ltd

Business Plan

Ernst & Young

Company Introduction

- Company profile: NPS is headquartered in Sydney, Australia. The branch office in Xi'an, China has three laboratories for cycle life, safety&temperature control, and BMS circuit, and a production center of 5,000 square meters.
- Currently, NPS has 70 employees, 90% of whom hold bachelor's degree or above.
- R&D results: More than *1,000* invention and utility model patents have been applied for.
- Product highlights: The product ranks *first* in the world in terms of battery capacity, cycle life, safety, and cost per kilowatt-hour.
- Company positioning: Provide low-cost, high level of safety LFP energy storage batteries and system solutions for global customers.

NPS, a R&D company dedicated to lithium-ion batteries and devices that are only used for energy storage.

01

Part One

Product

Large-capacity Lithium-ion Battery

- Rated capacity: 3777Ah
- Rated voltage: 3.2V
- Working voltage: 2.5~3.65V
- Battery internal resistance: <0.01mΩ
- Charge and discharge rate: 0.5C
- Rated energy: 12.086KWh
- Cycle life: 12,000 times
- Dimensions (L*W*H): 920×189×245mm
- Weight: 80Kg

1.5MW/3MWh Standard Energy Storage Container

- 1.5MW/3MWh (Commercial)
- Contains PCS, fire protection and temperature control system, BMS, batteries
- Serial and parallel mode: 1P256S
- Nominal voltage: 819.2V
- Allowable grid voltage: 380V
- Rated energy: 3094KWh
- Dimensions (W*D*H): 6058*2438*2591mm
- Weight: <35T
- Protection level: IP55

5MWh Standard Energy Storage Container

- 5MWh (Grid side)
- Includes fire protection, temperature control system, BMS, batteries
- Series and parallel mode: 1P416S
- Nominal voltage: 1331.2V
- Rated energy: 5027KWh
- Dimensions (W*D*H): 6058*2438*2896mm
- Weight: 45T
- Protection level: IP55

Energy Storage Monitoring Platform

NPS independently developed a energy storage monitoring platform that can grasp the system operating conditions in real time and support firmware upgrades.

The platform can obtain real-time operation information of energy storage products at any location, such as cumulative charge and discharge capacity, chargeable and dis-chargeable capacity, energy efficiency, capacity retention rate, real-time power, state of charge, etc. It can also monitor detailed information of a single large battery, such as balanced capacity, full energy, temperature point distribution, etc.

Certification

试 验 报 告

产品名称：磷酸铁锂电池-3000Ah

产品型号：NPS-A1

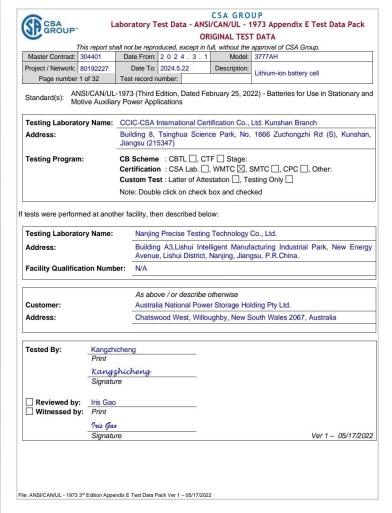
受检单位：陕西奥林波斯电力能源有限责任公司

检验类别：型式试验

北方汽车质量监督检验鉴定试验所

GB/T 36276

NO：BF-2023-4152



CSA GROUP

Laboratory Test Data - ANSI/CAN/UL - 1973 Appendix E Test Data Pack

ORIGINAL TEST DATA

This report shall not be reproduced, except in full, without the approval of CSA Group.

Master Contract:	304401	Date From:	2 0 2 4 . 3 . 1	Model:	3777AH
Project / Network:	80192227	Date To:	2024.5.22	Description:	Lithium-ion battery cell
Page number 1 of 32		Test record number:			

Standard(s): ANSI/CAN/UL-1973 (Third Edition, Dated February 25, 2022) - Batteries for Use in Stationary and Motive Auxiliary Power Applications

Testing Laboratory Name: CCIC-CSA International Certification Co., Ltd. Kunshan Branch

Address: Building 8, Tsinghua Science Park, No. 1666 Zuchongzhi Rd (S), Kunshan, Jiangsu (215347)

Testing Program: **CB Scheme** : CBTL ☐, CTF ☐ Stage:
Certification : CSA Lab. ☐, WMTC ☒, SMTC ☐, CPC ☐, Other:
Custom Test : Latter of Attestation ☐, Testing Only ☐
Note: Double click on check box and checked

If tests were performed at another facility, then described below:

Testing Laboratory Name: Nanjing Precise Testing Technology Co., Ltd.

Address: Building A3,Lishui Intelligent Manufacturing Industrial Park, New Energy Avenue, Lishui District, Nanjing, Jiangsu, P.R.China.

Facility Qualification Number: N/A

As above / or describe otherwise

Customer: Australia National Power Storage Holding Pty Ltd.

Address: Chatswood West, Willoughby, New South Wales 2067, Australia

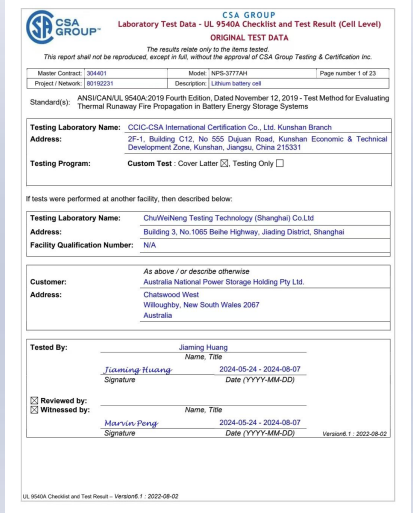
Tested By: Kangzhicheng *Print*
Kangzhicheng *Signature*

☐ **Reviewed by:** Iris Gao *Print*
☐ **Witnessed by:** *Iris Gao* *Signature* *Ver 1 – 05/17/2022*

File: ANSI/CAN/UL - 1973 3rd Edition Appendix E Test Data Pack Ver 1 – 05/17/2022

UL1973

NO：80192227



CSA GROUP

Laboratory Test Data - UL 9540A Checklist and Test Result (Cell Level)

ORIGINAL TEST DATA

The results relate only to the items tested.
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Master Contract:	304401			Model:	NPS-3777AH
Project / Network:	80192231			Description:	Lithium battery cell
					Page number 1 of 23

Standard(s): ANSI/CAN/UL 9540A:2019 Fourth Edition, Dated November 12, 2019 - Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems

Testing Laboratory Name: CCIC-CSA International Certification Co., Ltd. Kunshan Branch

Address: 2F-1, Building C12, No 555 Dujuan Road, Kunshan Economic & Technical Development Zone, Kunshan, Jiangsu, China 215331

Testing Program: **Custom Test** : Cover Latter ☒, Testing Only ☐

If tests were performed at another facility, then described below:

Testing Laboratory Name: ChuWeiNeng Testing Technology (Shanghai) Co.Ltd

Address: Building 3, No.1065 Beihe Highway, Jiading District, Shanghai

Facility Qualification Number: N/A

As above / or describe otherwise

Customer: Australia National Power Storage Holding Pty Ltd.

Address: Chatswood West
Willoughby, New South Wales 2067
Australia

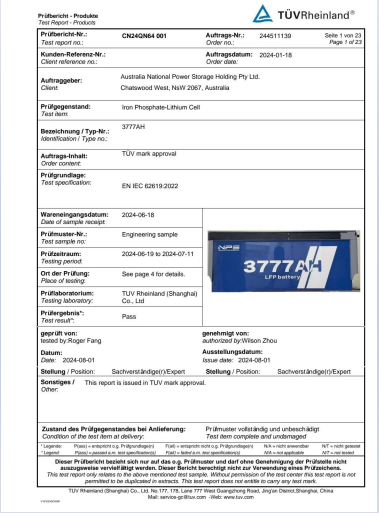
Tested By: Jiaming Huang *Name, Title*
Jiaming Huang *Signature* 2024-05-24 - 2024-08-07 *Date (YYYY-MM-DD)*

☒ **Reviewed by:**
☒ **Witnessed by:** *Name, Title*
Marvin Peng *Signature* 2024-05-24 - 2024-08-07 *Date (YYYY-MM-DD)* *Version6.1 : 2022-08-02*

UL 9540A Checklist and Test Result – Version6.1 : 2022-08-02

UL9540A

NO：80192231



Prüfbericht - Produkte
Test Report - Products

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	CN24QN64 001	**Auftrags-Nr.:** *Order no.:*	244511139 Seite 1 von 23 *Page 1 of 23*
Kunden-Referenz-Nr.: *Client reference no.:*		**Auftragsdatum:** *Order date:*	2024-01-18
Auftraggeber: *Client:*	Australia National Power Storage Holding Pty Ltd. Chatswood West, NsW 2067, Australia		
Prüfgegenstand: *Test item:*	Iron Phosphate-Lithium Cell		
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	3777AH		
Auftrags-Inhalt: *Order content:*	TÜV mark approval		
Prüfgrundlage: *Test specification:*	EN IEC 62619:2022		
Wareneingangsdatum: *Date of sample receipt:*	2024-06-18		
Prüfmuster-Nr.: *Test sample no:*	Engineering sample		
Prüfzeitraum: *Testing period:*	2024-06-19 to 2024-07-11		
Ort der Prüfung: *Place of testing:*	See page 4 for details.		
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd		
Prüfergebnis*: *Test result*:*	Pass		

geprüft von: tested by Roger Fang

genehmigt von: authorized by Wilson Zhou

Datum: *Date:* 2024-08-01

Ausstellungsdatum: *Issue date:* 2024-08-01

Stellung / Position: Sachverständige(r)/Expert

Stellung / Position: Sachverständige(r)/Expert

Sonstiges / Other: This report is issued in TÜV mark approval.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt / *Test item complete and undamaged*

* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) / F(ail) = entspricht nicht o.g. Prüfgrundlage(n) / N/A = nicht anwendbar / NT = nicht getestet
* Legend: P(ass) = passed (i.e. test specification(s)) / F(ail) = failed (i.e. test specification(s)) / N/A = not applicable / NT = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Ohne Genehmigung darf er nicht verwendet werden.
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

TÜV Rheinland (Shanghai) Co., Ltd. No.177, 178, Lane 777 West Guangzhong Road, Jing'an District,Shanghai, China
Mail: service.ge@tuv.com · Web: www.tuv.com

IEC 62619

NO：CN24QN64-001

02 Part Two

Our Advantages

R&D Accomplishments

Largest Capacity of A Single Battery

3777Ah

Highest Level of Safety

Collect and process the thermal runaway smoke in a controllable way

Long Cycle Life

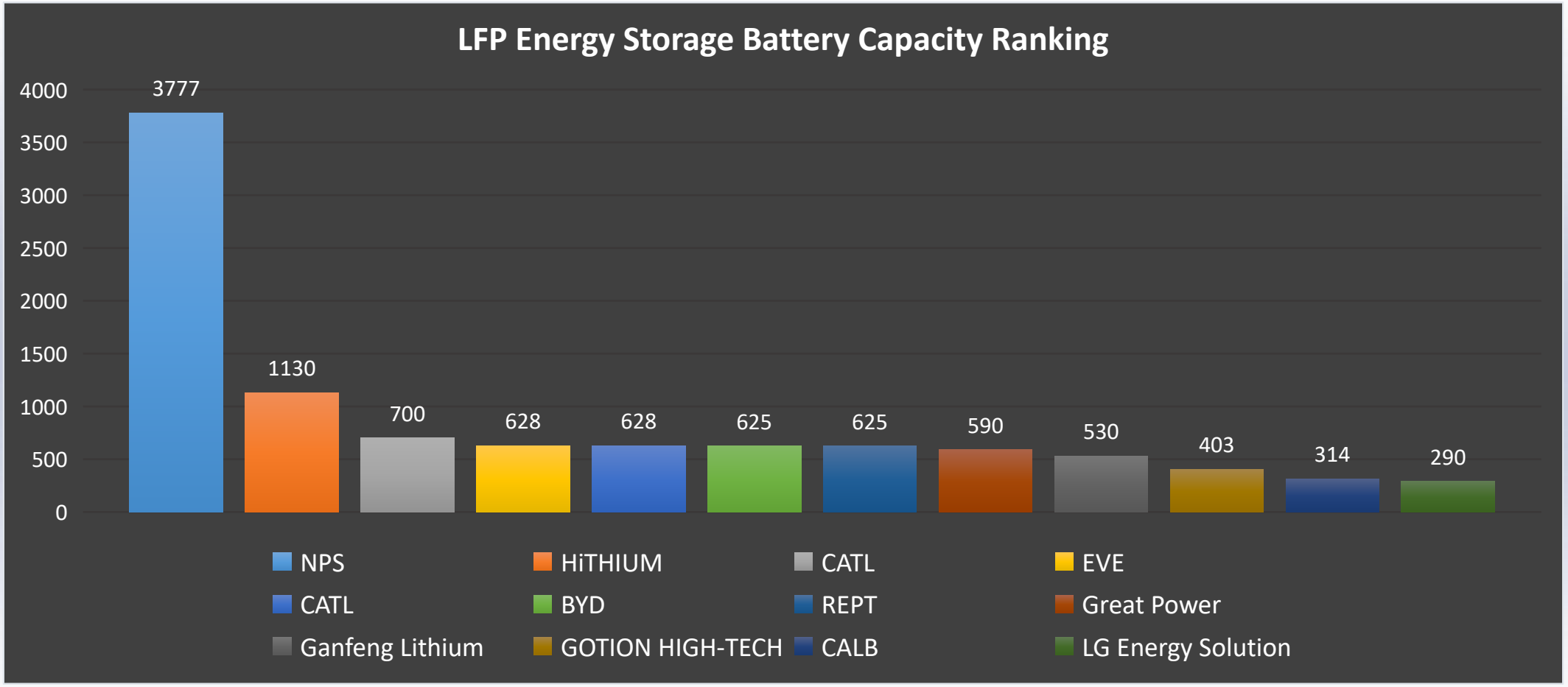
12000 times

Lowest Cost

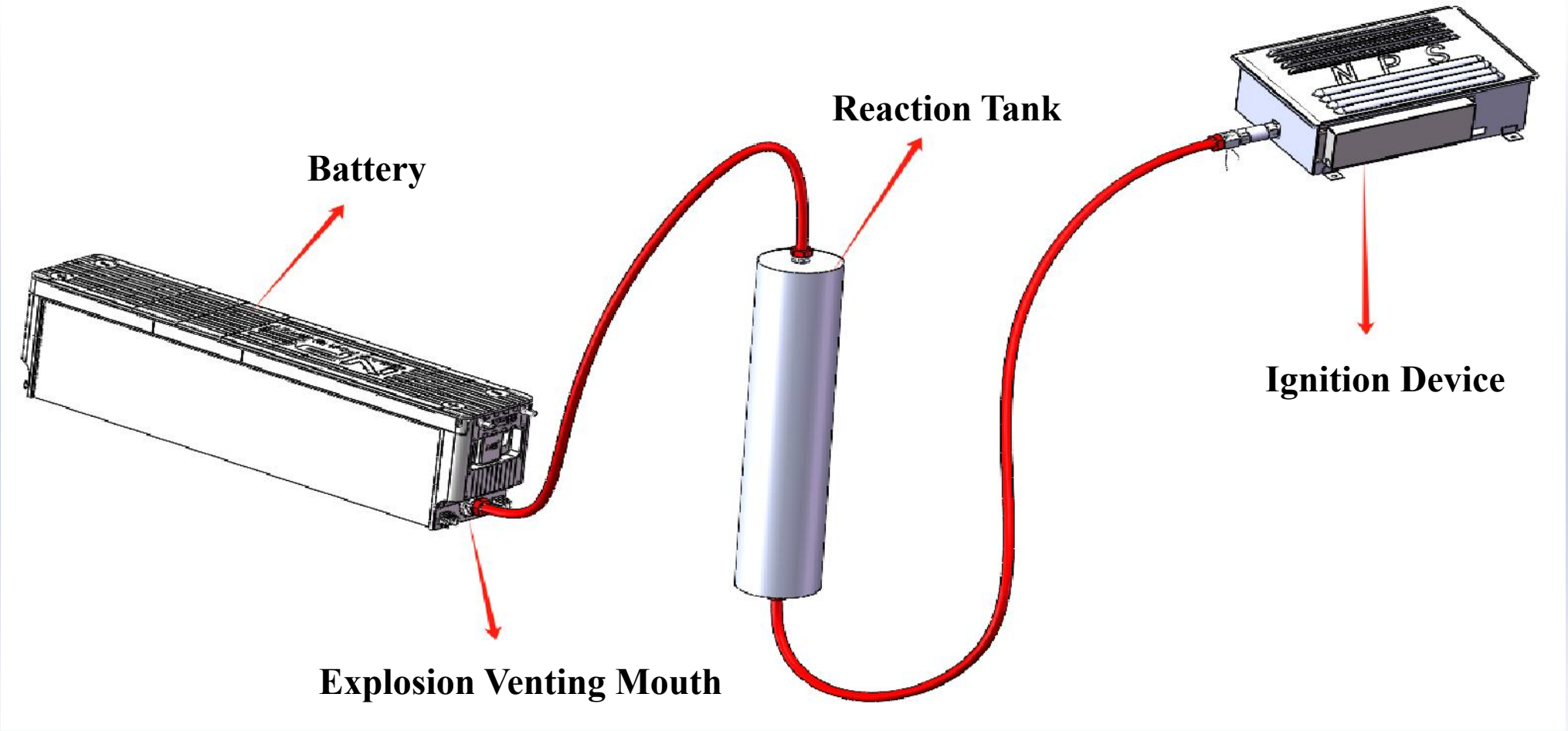
0.1USD/Wh

Compared with domestic and overseas lithium-ion battery companies, NPS claims four No. 1 globally

The Single Battery with World’s Largest Capacity



World's largest certified lithium-ion battery, three times the capacity of the world's second-ranked well-known energy storage battery manufacturer



When the battery occurs thermal runaway, its combustible smoke is discharged to the reaction tank in an orderly and controllable manner through the pipeline, then to the ignition device, eliminating safety hazards through orderly and controllable combustion.

Same Cycle Life as the World’s Best LFP Battery

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

According to the 1000 cycle life test data of the type test conducted by the National Testing Center (Northern Automobile Quality Supervision, Inspection and Identification Test Institute), compared with the type test reports of the similar CALT 302Ah and HTHIUM 280Ah, the 1000 cycle life of NPS's large-capacity LFP battery is between CALT and HTHIUM.

Rank	Manufacturer	Type (Ah)	Initial Discharge Energy (Wh)	1000 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	HTHIUM	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 cyclelifeof NPS-A1 (3000Ah)lithiumiron phosphate battery and issued Analysis Report(No.:GC202212190020).

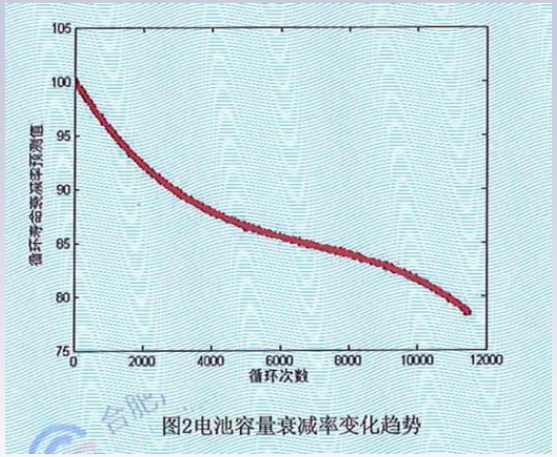


图2电池容量衰减率变化趋势

Analysis Report Display
The theoretical service life of NPS 3000Ah LFP battery submitted by NPS is *11000* times. (80% rated capacity)

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

Cost Comparison Table of *5MWh* Energy Storage System (Taking China as an example)

No.	Composition of energy storage cabinet	3777Ah LFP battery		314Ah LFP battery		Remarks
		QTY	Price (USD)	QTY	Price (USD)	
1	Battery	416	200,711	4992	193,538	The cost of 314Ah battery is about 0.038USD/Wh, and the cost of 3777Ah battery is about 0.039USD /Wh. 3777Ah contains heat conduction fire pipe, more electrolyte, single BMS, etc., the cost is slightly higher.
2	Pack	0	0	96	33,658	3777Ah battery doesn't need PACK box
3	BMS	416	2,808	4,992	7,587	The number of collection points is reduced, and the hardware cost of 3-level BMS is significantly reduced
4	Combiner Box	0	0	12	6,483	3777Ah battery cluster requires no combiner box
5	High-voltage Cabinet	1	1,793	12	8,276	3777Ah battery cluster requires only 1 high-voltage cabinet
6	Fire Protection System	2 set	4,414	1	9,518	3777Ah comes with self-developed fire protection device, which guarantees highest level of safety
7	Temperature Control System	1 set	8,966	1 set	10,345	Precisely cooling, high efficiency, low cost
8	Prefabricated Cabin	1 set	15,036	1 set	15,036	Identical structure
	Total		234,370		284,444	Cost reduction: 17.6%

Compared with other BESS, the 5MWh container composed of 3777Ah batteries lowers the cost by 17.6%

03

Part Three

Company Profile

Technical Team

Battery Technology Consultant
Wang Guoxiu

Wang Guoxiu, the current battery technology consultant of the company, graduated from Zhejiang University of Technology in 1987; Mr. Wang graduated with a doctorate from the University of Wollongong in 2001, and stayed at the school as a senior lecturer and associate professor; in 2010, he was hired as a professor at the University of Technology Sydney. He is the director and distinguished professor of the Clean Energy Technology Center of the School of Mathematical and Physical Sciences, Faculty of Science, University of Technology Sydney (UTS), Australia. He is the deputy editor-in-chief of Electrochemical Energy Reviews (Springer-Nature) and Energy Storage Materials (Elsevier). He has presided over and completed more than 20 projects of the Australian Foundation for Science and Industry. Professor Wang has published more than 700 journal papers, cited more than 78,000 times, and has an h-index of 152. He has been selected for many years in the list of "Global Highly Cited Scientists" in the field of materials by Clarivate Analytics.

Principal Scientist
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 Optimum Nano 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-ion battery technology, and is the chief scientist of the company.

Technical Team

Principal Scientist
Guo Hongbao

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
BMS 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
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.

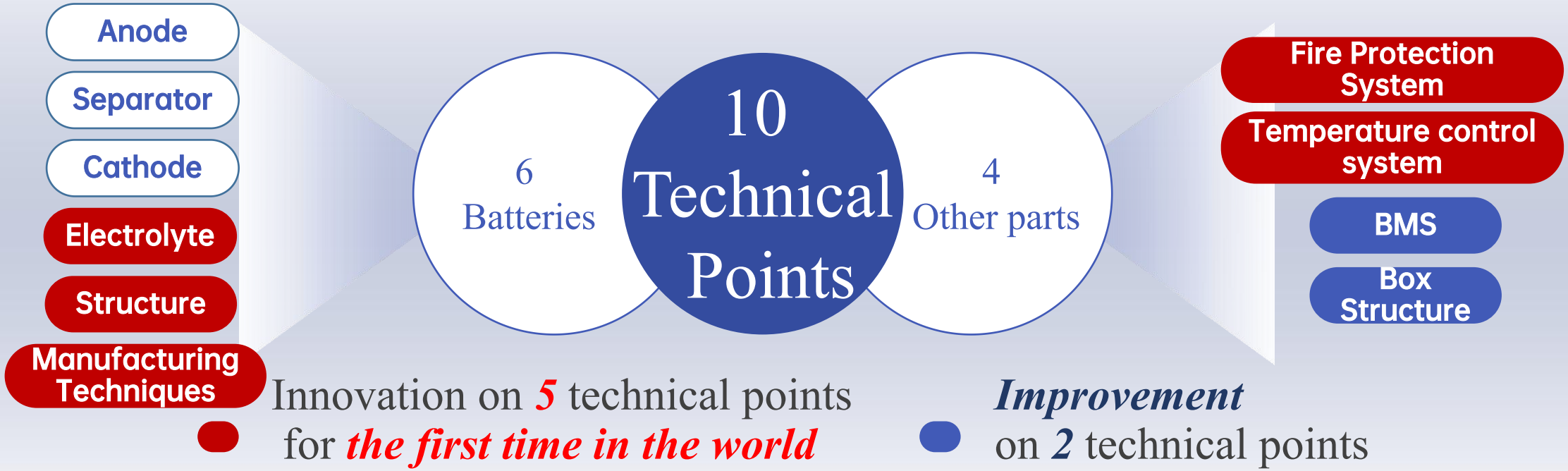
Vice President
Safety R&D
Lei Zhengjun

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-ion battery and fire fighting.

It is the only technical team that comprehends both lithium-ion batteries and safety.
This team has natural advantages for developing large-capacity lithium-ion batteries

R&D Innovation Highlights

The energy storage device is composed of batteries and other components, and relates to ten technical points in total. Except for anode, cathode and separator, NPS carries out innovation on the other seven points, and overcomes three problems of how to produce large-capacity lithium-ion battery, that is the harmfulness of a single battery, heat dissipation and low output.



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

Patents Data

With five major technology highlights as the core, a patent group consisting of more than***1000*** patents has been built(including invention patent, utility model patent, PCT patent)

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

Planning and Construction Scheme of Battery Production Line

2GWh Large-capacity Battery Production Line Construction Plan

Project	Requirements of Large-capacity Battery Production Line	
Battery Production Scope	Custom-made battery—Large-capacity battery	
Planned Capacity	2GWh	
Area of Plant	14000㎡	
Production Personnel	192	
Construction Scope	Plant decoration, equipment procurement, plant power construction, office supplies, etc.	
Construction Cycle	90 days	
Investment in Fixed Assets	Investment in production equipment	6 million USD
	Investment in facilities	4 million USD
Liquidity		28 million USD
Annual Output Value		120 million USD

Note:
Customized battery processing large-capacity battery technology has the characteristics of low capital investment, short construction period, and wide compatibility in the construction of large-capacity battery production lines, which can achieve rapid replication and mass production in a very short period of time. The production process does not produce waste gas, waste water, solid waste, and is **environmentally friendly.**

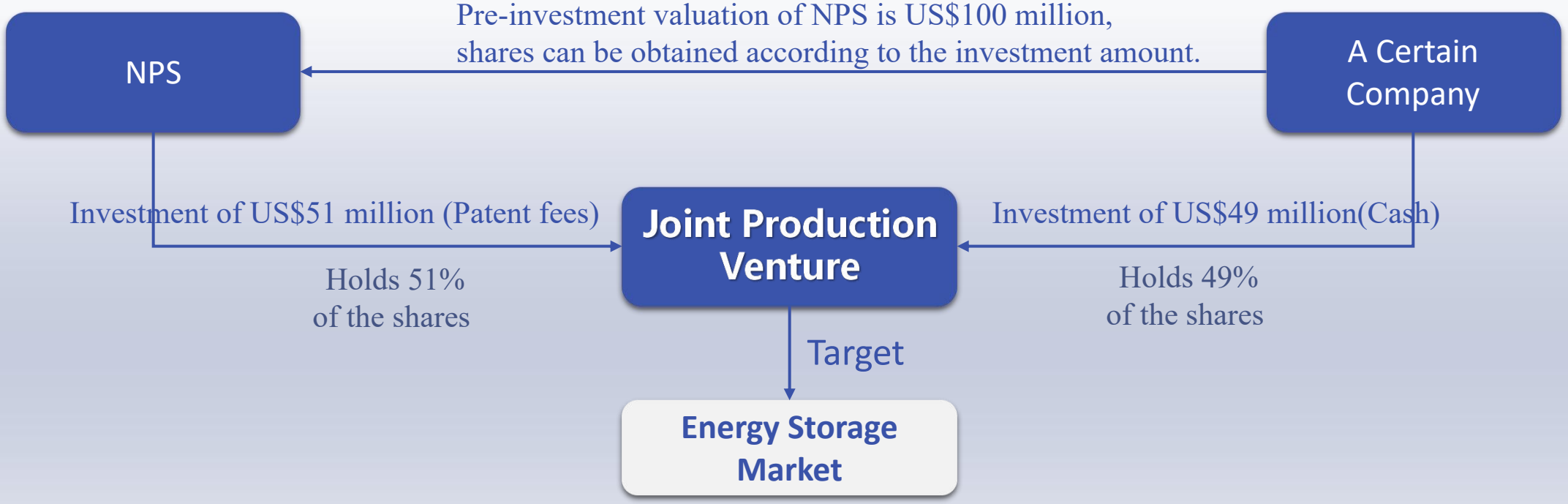
Large-capacity battery production lines: low investment, short construction time and wide compatibility.

04

Part Four

Cooperation Mode

Cooperation Mode



Note:

NPS will exclusively grant its patents in the United States, Europe, Australia, Japan, and India to the company in the country where it is located, and license it to the joint venture at 0.98 US dollars/KWh for five years. After the expiration, the excess will be refunded and the shortfall will be supplemented.

05

Part Five

Conclusion

Conclusion

NPS——The Best Investment Opportunity

In the lithium-ion battery energy storage industry, China is currently the best on both technology and production. Our team is composed of elites from the lithium-ion battery industry, and our technology is a huge improvement on Chinese current technology. What's more valuable is that this technology has nothing to do with Chinese companies and belongs entirely to NPS.

The goal of NPS is to become a company that can surpass Chinese' companies with its cutting-edge technology in the world.

NPS manufactures advanced lithium-ion batteries and energy storage systems incorporating advanced and internationally patented energy storage technology. The energy storage systems NPS produce are absolute the best in the global market in terms of safety, power and cost.

NPS Current Strategic Action and Investment Opportunity:

1.We plan to build seven joint ventures in major regions of the world, such as the Americas, Europe, Asia, Australia. With an investment of US $10 million, we can build a factory for lithium batteries and energy storage systems with an annual output of 2GWh (US $400m).

2.We are currently in the financing process of Pre-A round, planning to sell 10 percent of the shares and raise $10 million. You are invited to participate in this exciting unique opportunity.

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Email: albs@nps.energy