STATEMENT

ON

USD0.007/KWH/CYCLE

OF

NPS 3777Ah LiFePO4 BATTERY

Australia National Power Storage Pty Holding Ltd

Jan. 2024

Statement on USD 0.007/kWh/Cycle

of

NPS 3777Ah LiFePO4 Battery

Energy storage power plants tend to be larger in scale and various in forms. With a series of unique advantages such as high operating voltage, high energy density, long cycle life, low self-discharge rate, no memory effect, green, easy to expand, LiFePO4 batteries are taking up more and more market shares,indicating a huge potential market.

Despite the development to a certain extend, LiFePO4 energy storage battery system still faces some obstacles during development. How to reduce cost and improve safety are the decisive factors to the explosive development of the LiFePO4 energy storage battery systems. The largest capacity of LiFePO4 battery in current market is about 280Ah. System integration with 280Ah batteries is complicated and requires a large number of PACK boxes, connection cables, BMS and many other components, leading to inefficient production, complicated and low-efficient safety/heat control and management, thus high overall system cost, there is still rooms for cost reduction.

Increasing the capacity of individual battery can reduce the number of batteries and components used in system integration and improve production efficiency, thus effectively reduce the overall system cost.

Over 700 patents have been applied for our independently developed 3777Ah

LiFePO4 battery, out of which more than 200 patents have been approved. The successful development of 3777Ah large-capacity battery has reduced the number of batteries used for our energy storage system to about one-tenth of the quantity of 280Ah battery commonly used in the market, which has considerably reduced costs and the parts and accessories needed for system integration, improving production efficiency greatly. At the same time, our self-developed battery management system has largely improved the management efficiency over temperature control and safety. Currently, the cost of container energy storage system consisting of 3777Ah batteries is 16.67% lower than that of the containers formed with 280Ah batteries commonly used in the market. This has brought the company a huge competitive advantage.

Ⅰ.System Cost

Taking 1MWh container energy storage system as an example, the cost of the system formed by NPS 3777Ah LiFePO4 batteries is USD 70,000 while that of the system with same capacity that consists of conventional 280Ah LiFePO4 batteries is USD 84,000, with a cost reduction of around 16.67%. Our system is the lowest in cost in the world .

See below cost comparison table for details:

1MWh BESS Cost Comparison Table				
No.	BESS	3777Ah	280Ah	Note
1	Battery	X+7000	X	3777Ah battery has hickened case and uses specialized electrolyte additive,as well as including thermal conductive fire extingushing tubes, so the cost is slightl higher.
2	PACK	-	64	
3	Cables and Connectors	Less	More	Since a small quantity of 3777Ah batteries, so the less demand for cables and connectors.
4	BMS Points	80	1200	The cost of the BMS is based on the number of batteries.
5	Control Equipments (Includes high-voltage control box)	1	10	The 3777Ah batteries don`t need the convergence cabinet because of the high electric current.
6	Fire Protection System	Simple	Complex	The 3777Ah batteries with built-in fire protection devices are safe and low-cost.
7	Thermal Management System	Little Power	High Power	The 3777Ah batteries allow for precise cooling,making it more efficient and less costly.
8	Other Accessories			Similar.
	Total	X＋14,000	X＋28,000	
Based on current battery prices of $0.056/Wh, so the X=$56,000		70,000	84,000	16.67% cost reduction.

Ⅱ. 11,000 cycles Calculation

1. Cycle life of NPS Battery is between CATL(302Ah) and HTHIUM(280Ah)

19 tests have been conducted on NPS-A1 LiFePO4 battery produced by Australia National Power Storage Pty Holding Ltd according to standards, of which the cycle life is tested under constant current and voltage according to the requirement that

the volumes remained must be over 90% after 1000 times deep charge/discharge, which is the most impartial data and longest cycle life test available for LiFePO4 battery. Based on 1000 times cycle life type test data by third-party organization,the result of NPS is between CATL(302Ah) and HTHIUM(280Ah).

Ranking	Company	Energy retention rate
1	CATL	94.40%
2	NPS	93.39%
3	HTHIUM	92.83%

2. 11,000 Cycles (80% Capacity) Calculated by Third-party Laboratory

On December 12, 2022, NPS entrusted a third-party laboratory to test and analyze the cycle life of NPS-A1 LiFePO4 battery. The analysis report (No. GC202212190020) issued by this lab shows that the theoretical cycle life of NPS-A1 LiFePO4 sent for testing by NPS is 11,000 (@80% of nominal capacity).

Ⅲ. Cost Per KWh Per Cycle

Per KWh Per Cycle Cost is the cost of energy storage system storing 1KWh of electricity in a single cycle, which is calculated mainly based on the production cost and cycle life of the energy storage system. The total cost of the container energy storage system of NPS is USD103,831. Considering attenuation of the battery, we take the median value of the battery storage capacity during its lifetime to calculate the Per KWh Per Cycle cost of NPS energy storage system:

Per KWh Per Cycle Cost = Production cost of 1MWh÷11,000 cycles÷900KWh

=USD70,000 ÷ 11,000 ÷ 900

=USD 0.007/KWh/Cycle

Ⅳ. Attachments

Attachment 1: Type test report for NPS 3000Ah LiFePO4 battery
Attachment 2: Analysis report of cycle life for NPS 3000Ah LiFePO4 battery
Attachment 3: Abstract of type test report for Hithium 280Ah LiFePO4 battery