



Newsletter No.4, October 2021

Sweden-China Bridge – Collaborative Academic Platform for the Electrification of Transportation Systems project is funded by Trafikverket-TRV (Swedish Transport Administration) and started on September 1, 2020.

The authors of Newsletter No 4 are Dr. Jasmine Lihua Liu and Prof. Mike Danilovic.

Follow-Up on Exploring Battery-Swapping For Heavy Truck In China 1.0.

Commercialization of new energy heavy trucks (NEHT) in China in 2021

The development of new energy vehicles (passenger cars and heavy trucks) in China starts with companies identifying needs and opportunities and developing technology, pilot projects, demonstrators, etc.

The first step in the commercialization process for manufacturers of heavy trucks is to license and certify their new models to get the government approval of being eligible for subsidiaries as NEHT.

To be certified as a new energy vehicle and eligible for government subsidiaries, all vehicles must be certified according to norms and standards for different vehicles and regulatory demands.

The following table shows some key figures on the certified NEHTs in China during 2021

	January 2021	August 2021	September 2021
Total licensed new energy heavy trucks	17 models in total	30 models in total	23 models in total
Hydrogen fuel technology	1 model (5.9%)	8 models (26.6%)	10 models (43.5%)
Battery swapping technology	3 models (17.6%)	9 models (30%)	9 models (39.1%)
Battery based heavy truck models	13 models (76.5%)	11 models (36.7%)	3 models (13.0%)
ICE hybrid technology based	/	2 models (6.7%)	1 model (4.4%)

Table 1: Certification of new energy heavy truck, January to September 2021 in China

Source: Liu & Danilovic, 2021, Sweden-China Bridge - Exploring Battery Swapping for Heavy Trucks in China 1.0, page 51.

All certified vehicles are documented in the Catalogue being published regularly. Based on the classification of NEHTs, customers and buyers know how much subsidy they can get and the final price and conditions for buying NEHTs in China.

After that, the sales can take place.

In table 1, we can see that the total number of licensed /certified new energy heavy trucks is growing from 17 models in January 2021 to 30 models in August 2021 and to 23 models in September 2021.

Among those 23 models in September 2021, we can see that

- the hydrogen fuel technology stands for 43,5%, growing from 26,6% in August 2021 and 5,9% in January 2021,
- the battery swapping technology-based stands for 39,1%, growing from 30% in August 2021 and 17.6% in January 2021, and

- the integrated battery/vehicle technology stands for 13.0%, going down from 36.7% in August 2021 and 76.5% in January 2021, while



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- The ICE hybrid technology-based NEHT stands only for 1 model, which is 4.4%, going down from 6.7% in August 2021.

This is a clear indicator of the status of the market in the certification phase before real marketing and sales can take place.

Sales of new energy heavy trucks (NEHT) in China in 2021

This discussion follows the figures in table 1 as indicators of the progress of different technology routes among new energy heavy trucks (NEHT in China).

Total sales on new energy heavy trucks in 2021

The following figures are indicators of the real outcome of sales among different categories of NEHTs in 2021.

Energy supplement type	Total sales volume January – August 2021 (Units)	Total sales volume January – September 2021 (Units)	Percentage of total sales January – August 2021	Percentage of total sales January – September 2021	Sales volume in August 2021 (Units)	Sales volume in September 2021 (Units)	Percentage in August 2021	Percentage in September 2021
Total sale volumes		4,349			823	1,131	24%	37.42%
Hydrogen fuel	391	408	12.15%	9.38%	38	17	4.62%	1.50%
Battery swapping	919	1,441	28.56%	33.14%	373	522	45.32%	46.16%
Pure battery electric	1,907	2,499	59.26%	57.46%	412	592	50.06%	52.34%
ICE Hybrid	1	1	0.03%	0.02%	0	0	0.00%	0.00%

Table 2: Sales of new energy heavy truck, January to September 2021 in China

Source: <https://www.evpartner.com/news/135/detail-58266.html>

From January to September 2021, 4,349 units of NEHT were sold by 60 Chinese manufacturing companies. Among them, the top 11 manufacturers reached 3,645 units, accounting for 83.81% of the NEHT sales.

In August 2021, sales of NEHT skyrocketed by 24% from the previous month to 823 units.

In September 2021, 1131 new energy heavy trucks were sold, up 37.42% compared to August, reaching a new high volume.

Pure electric heavy trucks (BEHT) are still the leading models on the market, with steady growth. From January to August 2021, 1,907 units of BEHT were sold, accounting for 59.26% of the total number of new energy heavy trucks. From January to September 2021, 2,499 units of BEHT were sold, accounting for 57.46% of the total number of new energy heavy trucks.

Battery swapping is rapidly growing

The battery swapping mode of heavy trucks has become the highlight of NEHT, and the sales volume has continued to increase.

In January-August 2021, a total of 919 units of battery swapping heavy trucks were sold, accounting for 28.56% of the total number of NEHTs, of which 373 units were sold only in August, accounting for 45.32% of the month's sales.



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In January-September 2021, a total of 1441 units of battery swapping heavy trucks were sold, accounting for 33.14% of the total number of new energy heavy trucks, of which 522 units were sold in September, accounting for 46.16% of the month's sales.

Those figures of the actual sale should be compared to those of licensed models in September 2021, when the battery swapping-based heavy trucks accounted for 39.1% of all licensed EHT models.

In August 2021, the main sales models of NEHTs are tractor trucks (including semi-trailer tractor trucks), and a total of 475 units were sold, of which **294 are battery swapping based (62%)**, while 176 (37%) are pure electric tractor trucks and 5 (10%) are hydrogen-based tractor trucks.

In September 2021, the main sales models of NEHTs are tractor trucks (including semi-trailer tractor trucks), and a total of 523 units sold, of which **327 are battery swapping based (62.5%)**, 180 (**34.4%**) are pure electric tractor trucks and 16 (3%) are fuel cell tractor trucks.

In September 2021, 262 new energy dump trucks are sold, all of which are electric dump trucks. Among the 262 trucks, 193 (73.7%) are battery-swapping electric dump trucks (including dump garbage trucks), and 69 (26.3%) are pure electric dump trucks.

Fuel cell models increases

In January-August 2021, in total 391 heavy trucks based on hydrogen technology were sold, accounting for 12.15% of the total heavy truck sale.

In January-September 2021, in total, 408 heavy trucks based on hydrogen technology were sold, accounting for 9.38% of the total new energy heavy truck sale. Only 17 fuel cell heavy trucks were sold in September, accounting for 1.50% of the total of new energy heavy truck sales. Compared with the numbers in the previous eight months, the sales growth slowed down, and the proportion decreased.

Summary

The sales volume of new energy heavy trucks in the first eight months of 2021 has exceeded more than twice the total sales volume in 2020. The rapid growth of new energy heavy trucks shows its great development potential, and the prospect of new energy heavy trucks is very bright.

In the first nine months of 2021, the sales volume of battery swapping heavy trucks continues to rise, and its proportion among new energy heavy trucks continues to expand.

This has become the development trend of new energy heavy trucks. On November 1, 2021, the recommended national standard GB / T40032-2021 *Safety requirements for battery swapping electric vehicle* "are proposed by the Ministry of industry and information technology and issued by the National Automotive Standardization Technical Committee will be implemented. It will further benefit the development of battery swapping heavy trucks. The sales volume of battery-swapping heavy trucks is expected to increase further in the time to come.

GET THE FULL REPORT:

Exploring Battery-Swapping For Heavy Trucks In China 1.0.

Authors: Jasmine Lihua Liu & Mike Danilovic.

Report number: 2021-2.

ISBN: 978-91-987011-1-1.

Edition: Only available in pdf for individual printing.

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Research Team

- Mike Danilovic, Project Leader, Professor, Halmstad University, Sweden.
- Tomas Müllern, Professor, Jönköping University, Jönköping International Business School, Sweden.
- Jasmine Lihua Liu, Ph.D., Lund University, Sweden, Shanghai Dianji University, China, Affiliated Researcher at MMTC, Jönköping University, International Business School, Sweden.
- Arne Nåbo, Tech. Lic., Research Director, Swedish National Road and Transport Research Institute, Sweden.
- Jeanette Andersson, Researcher, Swedish National Road and Transport Research Institute, Sweden.
- Philip Almestrand Linné, Ph.D., Researcher, Swedish National Road and Transport Research Institute, Sweden.
- Wang Junhua, Professor, Tongji University, Shanghai, China.
- Liu Shuo, Assistant Professor, Tongji University, Shanghai, China.
- Qiu Xiaoping, Professor, Southwest Jiatong University, Chengdu, China.
- Susan Lijiang Sun, Professor, Shanghai Dianji University, Shanghai, China.
- Ma Hongwei, Associate Professor, Shanghai Dianji University, China.

Academia

- Halmstad University, Sweden.
- Lund University, Sweden.
- Jönköping University, Jönköping International Business School, Sweden.
- Swedish National Road and Transport Research Institute, Sweden.
- Tongji University, Shanghai, China.
- Southwest Jiatong University, Chengdu, China.
- Shanghai Dianji University, Shanghai, China.
- Urban and Rural Construction and Transportation Development Research Institute, China.
- Shenzhen Transportation Design & Research Institut, Shenzhen, China.

- Zhejiang University, Deqing Research Center, Institute of Artificial Intelligence, Hangzhou, China.

Industry

- Scania China Innovation Center, Beijing, China.
- Shanghai Powerkeeper, Shanghai, China.
- Shanghai Jiulong Power, Shanghai, China.
- Zhejiang VIE-Evatran Electronic Technologies Co., Ltd., Shanghai, China.
- BYD, Shanghai, China.
- DST, Shenzhen, China.
- Xieli innovation Center, Shenzhen, China.
- Shenzhen Bus Group, Shenzhen, China.
- Shenzhen Electric Vehicle Application and Promotion Center, Shenzhen, China.
- Shenzhen Truckload & Logistics Association, Shenzhen, China.
- Potevia New Energy, Shenzhen, China.
- Haylion, Shenzhen, China.
- Guangzhou Bus Group, Guangzhou, China.

Contact:

Mike Danilovic, Ph.D.
Professor of Industrial Management Innovation and
Technology Management Halmstad University
P O Box 823.

SE 183 01 HALMSTAD, SWEDEN.

Phone:

+46708157588 (Sweden).

+8613761129945 (China).

mike.danilovic@hh.se

Visiting professor: Distinguished Overseas Professor at
Shanghai Dianji University Shanghai, China.