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Over the past few days, **CATL's "Choco-SEB" battery swapping project** has been making waves across the industry. As a company deeply rooted in the **new energy sector**, we at **HighJoule** have been following the news closely.

This time, **CATL** is joining forces with **FAW Group** (to build compatible swappable EVs), **Longsung New Energy** (battery swap infrastructure), and other partners to launch a **battery swap pilot project** in **Hong Kong**.

At first glance, it might seem like a small-scale trial. But in reality, it's a **strategic test run** for the future of **EV mobility**. Let's break down what's really happening here, the opportunities it brings, and what we see coming next.

I. What Is "Choco-SEB"?

"Choco-SEB" is **CATL's standardized** <u>EV battery module</u>. It got the nickname "chocolate" because the shape looks like chunky chocolate bars.

Think of it like swapping a battery on an electric scooter—but for cars. You drive in, the empty battery gets swapped out in minutes, a fully charged one goes in, and off you go. The whole process is faster than charging your phone.

Each module packs an impressive **160+ Wh/kg energy density**, is highly adaptable across platforms, and supports **one-minute ultra-fast swaps**.

II. Can Battery Swapping Solve EV Pain Points?

In recent years, **EV adoption** has grown fast—but not without growing pains. Many drivers have sarcastically dubbed them "electric burdens" instead of electric vehicles. Here's how swapping might fix that:

1. Slow & inconvenient charging

Urban charging stations are often scarce or broken, with long queues. For high-usage fleets like taxis and ride-hailing drivers, waiting to charge isn't an option. **Battery swapping** solves this: two minutes and you're back on the road.

2. High battery cost inflates EV prices

Batteries make up 30-40% of a car's price. **Swapping decouples** the car and battery—you buy the car, rent the battery. It slashes upfront costs and lowers the barrier to EV ownership.

3. Battery lifespan & resale anxiety

With platform-managed batteries, users don't have to worry about degradation. And once a battery retires from vehicles, it can be reused in **energy storage systems**—maximizing its value.

4. Pressure on the power grid

Charging thousands of EVs during peak hours stresses the grid. But swap stations can charge during off-peak times and distribute power later—effectively acting as **mobile energy storage stations** and helping with **grid balancing**.

III. Can Battery Swapping Scale in Mainland China?

Hong Kong is a great pilot market—but **China's mainland** is a whole different ballgame. For swapping to truly scale, we need to overcome several hurdles:



1. Lack of unified standards

Right now, every carmaker uses different battery specs. One car's battery can't be swapped in another's station. **CATL's push for standardization** is promising, but true unification needs **industry-wide cooperation**, **government coordination**, and possibly new regulations.

2. Complex station deployment

Swapping only needs about six parking spots—but in Tier-1 cities, land is expensive and approval processes are long. There's also grid access, safety compliance, and traffic flow to consider.

3. Business model uncertainty

The car-battery separation sounds great, but consumer trust is still low—especially for private EV owners. The idea of "not owning your battery" is still unfamiliar. On top of that, platform operators have to finance massive **battery inventories**, which is a heavy capital load.

IV. HighJoule's Take on the Battery Swap Track

To be honest, we're very bullish on **battery swapping**—especially when combined with **vehicle-battery separation**, **energy management**, and **smart storage dispatch**.

Behind every swap is an interconnected system of **EVs**, **battery assets**, **distributed storage**, and **grid integration**. Swapping solves user needs and contributes to **grid stability**, boosts **energy efficiency** for governments, and unlocks long-term returns for operators.

For **HighJoule**, this is a natural fit. Our strengths align perfectly with the demands of the **battery swap ecosystem**:

- Providing high-efficiency energy storage systems for swap stations
- Building unified battery asset management platforms
- Developing **dispatch systems** for peak shaving & frequency regulation
- Promoting integrated solar-storage-charging-swapping stations

V. Final Thoughts: Swapping Isn't Just About Batteries

CATL is making **battery swapping** real—not just a concept—and that's commendable. But for it to truly take off in **China**, it'll require ecosystem-wide collaboration: **policy support**, **industry alignment**, **consumer education**, and ongoing **tech evolution**.

We believe this **Hong Kong pilot** is only the beginning. In time, **battery swap stations** could be as common as gas stations, becoming part of a city's core **energy infrastructure**.

And when that day comes, **HighJoule** will be right there—leveraging our strengths in **storage** and **energy intelligence** to help power the future of clean, smart mobility.

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