



Supercapacitor-Battery Breakthrough Highlights

Qpacity is a U.S. based company that represents and distributes a breakthrough-battery product as the best alternative to the dangerous and toxic Lithium and Lithium hybrid batteries. It has proven itself for over five years now and is in production for worldwide use. We are planning for massive growth over the next couple of years. This plan includes moving away from the current contract manufacturers and building multiple manufacturing plants in strategic locations worldwide, and licensing companies that desire to build and/or market particular type batteries in the multiple vertical battery markets. Following are the highlights of our battery advantages.

Uniqueness of Qpacity Batteries

Size and Weight: Let's start with one very exciting breakthrough. For a given amount of stored energy, Qpacity batteries are approximately 1/10th the size of other batteries depending on the application. This also means weight is drastically reduced. One can expect a 75-85% reduction in weight when comparing the same energy storage need. Note an example in the photo to the left of a golf cart with its typical array of 6 batteries weighing in at 470 pounds.



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Compare that to our battery that will replace all those batteries and weigh only 77 pounds. The energy density is a whopping min. 280 kW/kg. (new version will be an amazing 450 kW/kg) See photo to the right.



As can be seen in the photos to the left and right, each graphene cell is a soft, self-healing, pouch about the size of a 5x8 inch photo and only 5/6" thick. Easily accessible for inspection and replacement if needed.



Non-Toxic and Non-Flammable:

- Non-chemical based.
- Zero toxicity if put into any waste facility, such as landfills.
- Will not overheat, catch fire, or explode even if penetrated or put near extreme heat.
- Certified to be transported on aircraft and in closed spaces.

Operates in Extreme Temperatures:

- Batteries will function down to minus 40 degrees Celsius and as high as 70°C (158°F). These very high or low temperatures do not affect charging or discharging.

More Cycles:

- Can achieve more charge/discharge cycles than any battery in existence.
- We currently guarantee at least 20,000 cycles. (A current life cycle test underway has a battery with over 1,000,000 cycles and still going strong.)

Deep Cycling / DoD:

- Depth of Discharge (DoD) is a big concern in the battery industry. Qcapacity battery can be discharged 100% without damage and maintain full voltage until empty. No other battery can make that claim. (Most know that lead acid batteries cannot be discharged 100% without damage. In fact, most recommend not discharging more than 50% of capacity. Lithium batteries can have a greater DoD, but seldom to 100%. Typical is 80-90%.)

Charging Time:

- Our batteries can take a charge as fast as there is power available. In other words, a “firehose” of electricity can charge it, at a super speed, and without any heating. This method can occur all the way to 100% charge.

Discharging Rate:

- Discharging most batteries too fast or too deep can damage the battery. The Qcapacity battery can be discharged completely, and the power can be used or drained from it as fast or slow as needed.

Types of Batteries:

- There is no limit to the types of batteries that can enjoy this technology—from small AAA size batteries through utility grid backup shipping-container size ESS batteries and everything in between.

Current Production:

- Golf Cart Battery—5.2kW 100Ah
- Home (solar) Battery (3 sizes): 5.2kW 100Ah—10kW 200Ah—14.7kW 300Ah.
- ESS (Energy Storage System) for large commercial applications. There are two types of ESS's. One is strictly energy storage. These are most often used as a utility company's backup energy

for the grid. There is also a “smart” ESS that is used to accept power produced off-grid (e.g., solar, wind, water, etc.) and deliver the energy to end users. These ESS batteries have controllers, inverters, etc. A Smart ESS often will have numerous storage-only ESS units based on demand needs. (See Qpacity’s white paper on ESS for the latest information on worldwide needs and comparative analysis with other systems.)

COMPARATIVE SPECS	Qpacity ESS	Typical Competitor
Primary Storage	100% Graphene	Lithium-Ion
Battery Cycle Life	20,000—1M	3-6,000
Round Trip Efficiency	99.1%	85-90%
Useable Voltage/Amps	100%	80-90%
Depth of Discharge (DOD)	100%	85-95%
Temperature Range	-40°C to 70°C	-20°C to 60°C
Charge Current Limitation	NO LIMIT	95% Recommended
Discharge Current Limitation	NO LIMIT	80% Recommended
Non-Flammable / Non-Toxic	YES	NO
Thermal Stability	YES	NO
Energy Density	280-300 Wh/kg	180-250 Wh/kg

Qpacity Business Opportunities

If you have further interest in our technology and wish to discuss your market or industry, whether as a large user, or interest in dealership and joint venture opportunities or in vesting in the future of this technology, please contact Qpacity or the person who provided this information.

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Additional information

Our technology is purposely not patented. The battery technology has successfully relied on the inventor’s trade secrets for the past five years. Attempts by parties to reverse engineer our technology have proven unsuccessful. Qpacity has white papers available, detailed technical information, market analysis for over a dozen battery markets, and specific business plans that are available upon request after signing an appropriate non-disclosure agreement, which we can send to you for e-signature.