Flywheel Energy Systems Inc.
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Technical specifications

Our existing technology has been extensively tested and is fully detailed in our performance verification whitepaper. The existing flywheel technology is currently undergoing changes for new field trials and further commercial deployment. The new commercial flywheel offers the potential to achieve significant performance improvements over the existing flywheel including the following:

- extended DC link voltage range
- reduced volume
- higher power density
- higher energy density
- higher efficiency
- substantially lower cost

The envisioned performance characteristics of the commercial flywheel are contrasted with the verified characteristics of the existing flywheel in the table below.

Performance characteristics	Units	Existing flywheel	Commercial flywheel	
DC link voltage	V	600 – 750	550 – 850	N/A
Power	kW	120	120	0%
Energy	kWh	0.77	0.75	-3%
Mass	kg	150	230	53%
Volume	liters	103	70	-32%
Specific power	W/kg	800	520	-35%
Power density	W/liter	1,165	1,715	47%
Specific energy	Wh/kg	5.1	3.3	-35%
Energy density	Wh/liter	7.5	10.7	43%
Outside diameter	mm	610	400	-34%
Length	mm	460	540	17%
Average charge efficiency	N/A	93%	97%	4%
Average discharge efficiency	N/A	93%	97%	4%
Average round-trip efficiency	N/A	86%	94%	8%

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Our flywheel solutions are fully configurable and are available as components through to fully integrated solutions. The table below details what hardware is available in what configuration.

<table>
<tr><th rowspan="2">Component</th><th rowspan="2">Custom component offerings</th><th colspan="3">Integrated systems offerings</th></tr>
<tr><th>Flywheel module</th><th>Custom solution</th><th>Fully integrated solution</th></tr>
<tr><td>Flywheel rotor</td><td>X</td><td rowspan="3">X</td><td rowspan="3">X</td><td rowspan="8">X</td></tr>
<tr><td>Motor / generator</td><td>X</td></tr>
<tr><td>Bearing system</td><td>X</td></tr>
<tr><td colspan="3">Power electronics</td><td>Optional</td></tr>
<tr><td colspan="3">Control electronics</td><td>Optional</td></tr>
<tr><td colspan="3">Vacuum system</td><td>Optional</td></tr>
<tr><td colspan="3">Cooling system</td><td>Optional</td></tr>
<tr><td colspan="3">Cabinet</td><td>Optional</td></tr>
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