C-2-C™ Energy Storage Solutions for Canadian Commercial & Industrial Applications

Behind-the-meter C-2-C™ energy storage brings a truly revolutionary cell-to-cabinet design that provides affordability & revenue stacking with up to a 20 year performance guarantee.

C-2-C™ provides 100% system uptime with its N+1 redundant PCS integrated powertrain with energy storage to de-risk your business while saving on facility expenses.
Storage Power Solutions’ C-2-C™ energy storage system uses proprietary controls to enable a scalable 60 minute to 20-hour storage solution integrated with an N+1 redundant PCS. This flexibility allows commercial and industrial customers to reduce peak demand and energy charges.

C-2-C™ is a 6th-generation integrated building block, incorporating 30 years of field experience with critical infrastructure design & deployment. C-2-C™ integrates a comprehensive redundant safety suite in every cabinet exceeding NFPA 855 standards.

C-2-C™ offers easy installation & plug & play capabilities. Installation and commissioning is simplified by packaging the cell-to-cabinet solution at SPS’ Canadian factory before shipping the system to site fully assembled and tested. This breakthrough approach ensures that the energy storage project comes in on time and on budget, while ensuring 100% availability for performance over the life of the asset.

ENERGY SAVINGS
- Enables significant reductions in energy costs through peak demand reduction, energy arbitrage and ability to participate in utility demand response programs.
- Each dual conversion UPS is able to perform 0–100% Demand Response.
- Each N+1 PCS is able to perform 0–100% Demand Response functions.
- BESS round-trip efficiency from AC input to AC output is greater than 88.0%.

EASY INSTALLATION
- Easy Installation & Plug & Play.
- Energy Storage integration with PCS that reduces installation complexity and cost.
- Modular cabinet design is scalable to meet a wide range of applications, while allowing for a small footprint.
- Minimized system footprint and connection study requirements.

C-2-C™ Configuration & Sizing

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power Rating</th>
<th>Storage Time</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>200kVA 600V 3P</td>
<td>6.5’x8’x10’</td>
<td>1-Hour System</td>
<td></td>
</tr>
<tr>
<td>400kVA 600V 3P</td>
<td>11.5’x8.5’x10’</td>
<td>2-Hour System</td>
<td></td>
</tr>
<tr>
<td>600kVA 600V 3P</td>
<td>16.5’x9’x10’</td>
<td>2-Hour System</td>
<td></td>
</tr>
<tr>
<td>800kVA 600V 3P</td>
<td>16’x16.5’x11.5’</td>
<td>4-Hour System</td>
<td></td>
</tr>
</tbody>
</table>

IMPROVED POWER QUALITY
- Dynamic reactive power input & output for voltage and frequency correction.
- Power factor correction through pure phase shift to adjust apparent power.
- PCS galvanically isolates the AC input and DC bus from the customer load, eliminating all neutral line common-mode noise coupling.
- 100 MW/min. ramp rate with 4 quadrant charge and discharge capability.
**Superior IRR**
De-risked projects with 20-year performance guarantee.

SPS drives value by eliminating costly balance-of-system components. Installation costs have been reduced through use of modular cartridge technology, perfected in the telecom world. C-2-C™ system arrives at site with all inter-cabinet connections included for quick and seamless installation.

**Optimized Revenue**
For the first time, storage integrates multiple customer value streams to maximize IRR. C-2-C™ enables true revenue stacking by segmenting storage into configurable units which can be dynamically reconfigured in real time to perform distinct revenue functions.

**Compact Design**
Balance of System Simplified, Miniaturized & Integrated, with 143 kW/306 kWh Per m² Footprint.

**High Efficiency**
NEMA 3R/IP55 rated.
Ultra-high efficiency power electronics & low auxiliary (10 kW) power requirements. Intelligent thermal management using forced air cooling.
Cabling & large switch gear eliminated.

**Sustainability**
SPS practices Circular Lifecycle Design Principles. LFP cells are 100% recyclable and meet all ROHS compliance requirements.

**100% Availability**
Engineered using principles from telecom applications for enhanced availability, providing cost effective N+1 redundancy and no single point of failure.
MTBF = 300,000 Hours.
MTTR = 60 Minutes.
Response time 2 msec.
Up to -40°C to 60°C operation (with de-rating).
High volume automated, manufacturing with strong automotive QA processes built in (IAT 16494:2016).

**Maximum Safety**
UL1741, UL1973, CSA/UL 9540/A and NFPA855 compliant.
7-Layers of safety built in for optimum protection against thermal runaway - 4 prevention layers and 3 containment layers.
There are an additional 6 unique protection layers for public and worker safety.
Holistic cybersecurity approach that meets IEC-62443-4-1 and BDEW whitepaper and NERC CIP.1.
Storage Power Solutions (SPS), founded in 2014 with its HQ near Toronto, Canada, designs, manufactures and distributes large-scale battery energy storage solutions that are infrastructure-hardened, resilient and affordable. SPS is uniquely positioned in energy storage, leveraging its 100+ years of experience in AC & DC Power Electronics, Ni-Cd, VRLA, Ni-MH and LFP batteries, control & monitoring, IP65 N+1 systems with network & asset management tools as well as solar energy. SPS has designed, deployed and managed over 6 GW/6 GWh in a variety of critical applications. SPS’ DNA is critical infrastructure and employs a field-proven system architecture in its C-2-C™ technology. This includes a proprietary front-end with analog intelligent controls of the battery module, enabling plug and play interface with a variety of PCS and UPS. With a focus on reliable and resilient (N+4) system design, SPS’ modular approach can scale from 50 kWh to GWh+ and is suited to a variety of applications requiring infrastructure hardening and rugged environments.