

**Battery Energy Storage Summary Supply Side Resource Table**

Average Battery Data	1 MW Power Capacity				8 MW
	1 hour	2 hours	4 hours	8 hours	4 hours
<b>Duration</b>					
<b>Lithium Ion</b>					
Capital Cost (\$)	1,657,492	2,549,054	4,332,178	7,898,425	31,136,475
Annual O&M (\$/yr)	13,485	18,470	28,440	48,380	227,520
System Efficiency (AC out/AC in)	81%	81%	81%	81%	81%
Technical Life (years)	20	20	20	20	20
Maximum Annual Generation (MWh/yr)	184	368	736	1,472	5,888
EFOR (%)	3%	3%	3%	3%	3%
POR (%)	1%	1%	1%	1%	1%
Spinning Reserves (MW)	1	1	1	1	8
Ramp Rate (MW/sec)	50	50	50	50	400
Assumed recharge C-Rate (MW/MWh)	1	1	1	1	1
<b>Sodium Sulfur</b>					
Capital Cost (\$)	N/A	N/A	N/A	7,504,817	N/A
Annual O&M (\$/yr)	N/A	N/A	N/A	53,415	N/A
System Efficiency (AC out/AC in)	N/A	N/A	N/A	80%	N/A
Technical Life (years)	N/A	N/A	N/A	20	N/A
Maximum Annual Generation (MWh/yr)	N/A	N/A	N/A	1,448	N/A
EFOR (%)	5%	5%	5%	5%	5%
POR (%)	1%	1%	1%	1%	1%
Spinning Reserves (MW)	1	1	1	1	8
Ramp Rate (MW/sec)	0	0	0	0	1
Assumed recharge C-Rate (MW/MWh)	1	1	1	1	1
<b>Flow</b>					
Capital Cost (\$)	2,434,917	3,003,617	4,867,017	8,593,817	37,201,242
Annual O&M (\$/yr)	15,500	21,500	33,500	57,500	460,000
System Efficiency (AC out/AC in)	72%	72%	72%	72%	72%
Technical Life (years)	20	20	20	20	20
Maximum Annual Generation (MWh/yr)	500	1,000	2,000	4,000	16,000
EFOR (%)	5%	5%	5%	5%	5%
POR (%)	2%	2%	2%	2%	2%
Spinning Reserves (MW)	1	1	1	1	8
Ramp Rate (MW/sec)	25	25	25	25	200
Assumed recharge C-Rate (MW/MWh)	1	1	1	1	1

Standardized at a 20 year life.

Updated based on the 2016 DNV Battery Energy Storage Study.