

**PRIUS+ Candidate Battery Packs**

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Color legend:

**Calculated**

*Guessed*

*Exceptional*

*Unacceptable*

**Special**

Modules in each section listed in order of increasing cost per electric mile (incl. depreciation); Li-ion kept separate.

Brand	Model	Chem.	Supplier	Notes	% Dis-charge	V @2C	Rated TypAh	Ah <sup>1</sup> @2C	Vol. Wt, lb	cu-in	Cells	V sag %/C <sup>4</sup>	Rated Cont C	Rated Int C	Calc <sup>10</sup> Max C	\$ info	Retail \$	Cycle Life <sup>2</sup>	U-Whr/lb <sup>1</sup>	\$/U-kWh <sup>1</sup>	\$/U-kWh thruput <sup>1</sup>
<b>Suggested requirements for 20 mile PRIUS+ ==&gt;</b>																					
<b>Used in place of the Prius' (64 lb) hybrid battery<sup>5</sup> (config #2):</b>																					
Evercel	MB40-12-8	NiZn	Evercel		60%	11.5	33.0	30.0	17.6	288	8	4.9%	6.0	N/A	4.1	previous	\$125	2000	13.9	\$639	\$0.32
Evercel + Maxwell	MB40-12-8	NiZn	Evercel + Maxwell	+ 2 strings supercaps	60%	11.5	33.0	30.0	18.6	288	8	3.0%	6.0	N/A	6.7	previous	\$385	6000	13.0	\$1,969	\$0.33
Evercel	MB40-12-8	NiZn	Evercel		75%	11.5	33.0	30.0	17.6	288	8	4.9%	6.0	N/A	4.1	previous	\$125	1000	17.4	\$512	\$0.51
Evercel + Maxwell	MB40-12-8	NiZn	Evercel + Maxwell	+ 2 strings supercaps	75%	11.5	33.0	30.0	18.6	288	8	3.0%	6.0	N/A	6.7	previous	\$385	3000	16.2	\$1,575	\$0.53
<b>Theoretical wish</b>	2/3 Cobasys 550	<b>NIMH</b>	none	Liquid cooled; pricing unknown	60%	11.0	36.0	30.4	17.3	239	10	3.1%	6.0	10.6	6.5	pure guess	\$500	4000	14.6	\$2,490	\$0.62
<b>BB Battery</b>	EVP20-12	PbAcid	ElectricRider.com	<b>Existing, for testing only</b>	75%	11.0	20.0	12.5	14.9	143	6	3.5%	8.0	24.0	5.7	retail	\$38	400	9.1	\$368	\$0.92
<b>Theoretical wish</b>	2/3 Cobasys 550	<b>NIMH</b>	none	Liquid cooled; pricing unknown	75%	11.0	36.0	30.4	17.3	239	10	3.1%	6.0	10.6	6.5	pure guess	\$500	2000	18.3	\$1,992	\$1.00
RabbitTool et al	211V + supercap	<b>NIMH</b>	RabbitTool et al	D11000 meas. + 2/3 supercap st	60%	####	11.0	9.0	82.00	640	176	3.4%	6.0	12.0	5.9	ed. Guess	\$2,600	2400	17.2	\$2,487	\$1.04
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Titanium D11000 (measured)	60%	####	11.0	8.5	72.00	440	176	6.8%	6.0	12.0	2.9	ed. Guess	\$1,100	1000	17.6	\$1,114	\$1.11
RabbitTool et al	211V + supercap	<b>NIMH</b>	RabbitTool et al	D11000 meas. + 2/3 supercap st	75%	####	11.0	9.0	82.00	640	176	3.4%	6.0	12.0	5.9	ed. Guess	\$2,600	1200	21.5	\$1,990	\$1.66
RabbitTool et al	900-9Dx36 mod	<b>NIMH</b>	RabbitTool et al	Harding; 4 parallel strings in mod	60%	8.8	38.0	34.2	12.75	211	32	2.0%	6.0	12.0	10.0	price list	\$316	1000	18.3	\$1,750	\$1.75
Saft	NHP10-340	<b>NIMH</b>	N/A	liquid cooled; low vol. pricing	75%	11.0	34.0	30.6	19.14	279	10	2.0%	6.0	22.0	10.0	pure guess	\$900	2000	16.2	\$3,565	\$1.78
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Titanium D11000 (measured)	75%	####	11.0	8.5	72.00	440	176	6.8%	6.0	12.0	2.9	price list	\$1,100	500	22.0	\$891	\$1.78
RabbitTool et al	885-12Mx40 mod	<b>NIMH</b>	RabbitTool et al	Suppo; 2 parallel strings in modu	60%	11.0	50.0	35.0	20.20	307	20	6.0%	0.5	1.0	3.3	price list	\$424	1000	14.1	\$1,835	\$1.84
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding	60%	####	9.0	8.1	72.00	440	176	2.0%	6.0	12.0	10.0	ed. Guess	\$1,760	1000	16.8	\$1,871	\$1.87
RabbitTool et al	885-14LMx32 mc	<b>NIMH</b>	RabbitTool et al	Suppo	60%	13.2	40.0	28.0	20.00	300	12	6.0%	0.5	1.0	3.3	guess	\$424	1000	14.4	\$1,912	\$1.91
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding HS-D9000 (measured)	60%	####	9.0	7.5	72.00	440	176	5.1%	6.0	12.0	3.9	ed. Guess	\$1,760	1000	15.6	\$2,020	\$2.02
Panasonic (HEV-II)	<b>NIMH</b>	Toyota dealer	<b>Possible use for spares</b>		60%	6.6	6.5	6.2	2.30	36.2	6	1.0%	N/A	28.9	20.0	used price?	\$50	1000	13.3	\$2,045	\$2.04
RabbitTool et al	850-12Mx20 mod	<b>NIMH</b>	RabbitTool et al	Suppo	60%	11.0	25.0	17.5	11.00	168	10	6.0%	0.5	1.0	3.3	price list	\$260	1000	16.0	\$2,251	\$2.25
RabbitTool et al	885-12Mx40 mod	<b>NIMH</b>	RabbitTool et al	Suppo; 2 parallel strings in modu	75%	11.0	50.0	35.0	20.20	307	20	6.0%	0.5	1.0	3.3	price list	\$424	500	17.6	\$1,468	\$2.94
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding	75%	####	9.0	8.1	72.00	440	176	2.0%	6.0	12.0	10.0	ed. Guess	\$1,760	500	21.0	\$1,496	\$2.99
RabbitTool et al	885-14LMx32 mc	<b>NIMH</b>	RabbitTool et al	Suppo	75%	13.2	40.0	28.0	20.00	300	12	6.0%	0.5	1.0	3.3	guess	\$424	500	18.0	\$1,530	\$3.06
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding HS-D9000 (measured)	75%	####	9.0	7.5	72.00	440	176	5.1%	6.0	12.0	3.9	ed. Guess	\$1,760	500	19.4	\$1,616	\$3.23
Panasonic (HEV-II)	<b>NIMH</b>	Toyota dealer	<b>Possible use for spares</b>		75%	6.6	6.5	6.2	2.30	36.2	6	1.0%	N/A	28.9	20.0	used price?	\$50	500	17.7	\$1,636	\$3.27
RabbitTool et al	850-12Mx20 mod	<b>NIMH</b>	RabbitTool et al	Suppo	75%	11.0	25.0	17.5	11.00	168	10	6.0%	0.5	1.0	3.3	price list	\$260	500	20.0	\$1,801	\$3.60
Saft	NHP10-340	<b>NIMH</b>	N/A	liquid cooled; low vol. pricing	60%	11.0	34.0	30.6	19.14	279	10	2.0%	6.0	22.0	10.0	manuf.	\$900	1000	13.0	\$4,456	\$4.46
Panasonic (HEV-II)	<b>NIMH</b>	Toyota dealer	<b>Orig Prius battery for comparison</b>		60%	6.6	6.5	6.2	2.30	36.2	6	1.0%	N/A	28.9	20.0	pack price	\$143	1000	1711.7	\$5,842	\$5.84
Valence	U-Charge VU1	Li-ion	N/A	How real? High C, so max. C O.	60%	13.2	46.4	35.7	14.1	256	4	4.6%	1.3	6.6	4.3	possible	\$600	4000	29.8	\$2,120	\$0.53
Valence	U-Charge VU1	Li-ion	N/A	How real? High C, so max. C O.	75%	13.2	46.4	35.7	14.1	256	4	4.6%	1.3	6.6	4.3	possible	\$600	2000	37.2	\$1,696	\$0.85
?	18650 module <sup>9</sup>	Li-ion	Batteries Plus	<b>Too many cells</b>	60%	6.6	11.0	7.7	1.06	19.6	10	6.0%	2.0	N/A	3.3	Batt+ <sup>9</sup>	\$80	1000	50.4	\$2,624	\$1.57
?	18650 module <sup>9</sup>	Li-ion	Batteries Plus	<b>Too many cells</b>	75%	6.6	11.0	7.7	1.06	19.6	10	6.0%	2.0	N/A	3.3	Batt+ <sup>9</sup>	\$80	500	77.6	\$2,099	\$2.52
ThunderSky <sup>6,7</sup>	TS-LP6163A	Cr-F-Li	Metricmind	<b>NOT possible in this config.</b>	75%	3.3	40.0	30.0	2.64	69	1	18%	1.5	N/A	1.1	100's retail	\$ 100	500	49.6	\$1,347	\$2.69
<b>Used in parallel with the Prius' (64 lb) hybrid battery<sup>5</sup> (config #1, 2 BMS's may be required):</b>																					
Evercel	MB40-12-8	NiZn	Evercel		60%	11.5	33.0	30.0	17.6	288	8	4.9%	6.0	N/A	4.1	previous	\$125	2000	11.1	\$639	\$0.32
<b>BB Battery</b>	EVP20-12	PbAcid	ElectricRider.com	<b>Significant config 1 benefits</b>	60%	11.0	20.0	12.5	14.3	143	6	3.5%	8.0	24.0	5.7	retail	\$38	800	5.8	\$461	\$0.58
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding	60%	####	9.0	8.1	72.00	440	176	2.0%	6.0	12.0	10.0	ed. Guess	\$1,760	1000	13.1	\$1,871	\$1.87
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Harding HS-D9000 (measured)	60%	####	9.0	7.5	72.00	440	176	5.1%	6.0	12.0	3.9	ed. Guess	\$1,760	1000	12.1	\$2,020	\$2.02
RabbitTool et al	211V module	<b>NIMH</b>	RabbitTool et al	Titanium D11000 (measured)	60%	####	11.0	9.0	72.00	440	176	6.8%	6.0	12.0	2.9	ed. Guess	\$1,100	1000	14.5	\$1,052	\$1.05
RabbitTool et al	211V + supercap	<b>NIMH</b>	RabbitTool et al	D11000 meas. + 2/3 supercap st	60%	####	11.0	9.0	82.00	640	176	3.4%	6.0	12.0	5.9	ed. Guess	\$2,600	2400	12.7	\$2,487	\$1.04
RabbitTool et al	885-12Mx40 mod	<b>NIMH</b>	RabbitTool et al	Suppo; 2 parallel strings in modu	60%	11.0	40.0	28.0	20.20	307	20	6.0%	0.5	1.0	3.3	price list	\$424	1000	9.1	\$2,294	\$2.29
RabbitTool et al	885-14LMx32 mc	<b>NIMH</b>	RabbitTool et al	Suppo	60%	13.2	32.0	22.4	20.00	300	12	6.0%	0.5	1.0	3.3	guess	\$424	1000	8.9	\$2,390	\$2.39
RabbitTool et al	850-12Mx20 mod	<b>NIMH</b>	RabbitTool et al	Suppo	60%	11.0	20.0	14.0	11.00	168	10	6.0%	0.5	1.0	3.3	price list	\$260	1000	8.4	\$2,814	\$2.81
Valence	U-Charge VU1	Li-ion	N/A	Minimal config 1 benefits	60%	13.2	46.4	35.7	14.1	256	4	4.6%	1.3	6.6	4.3	possible	\$600	4000	20.1	\$2,120	\$0.53
?	18650 module <sup>9</sup>	Li-ion	Batteries Plus	<b>Too many cells</b>	45%	6.6	11.0	7.7	1.06	19.6	10	6.0%	2.0	N/A	3.3	Batt+ <sup>9</sup>	\$80	2000	21.5	\$3,498	\$1.05
?	18650 module <sup>9</sup>	Li-ion	Batteries Plus	<b>Too many cells</b>	60%	6.6	11.0	7.7	1.06	19.6	10	6.0%	2.0	N/A	3.3	Batt+ <sup>9</sup>	\$80	1000	28.7	\$2,624	\$1.57
ThunderSky <sup>6,7</sup>	TS-LP6163A	Cr-F-Li	Metricmind	<b>Possible only in this config</b>	75%	3.3	40.0	30.0	2.64	69	1	18%	1.5	N/A	1.1	100's retail	\$ 100	500	28.1	\$1,347	\$2.69
Panasonic (HEV-II)	<b>NIMH</b>	Toyota dealer	<b>Too expensive, for comparison</b>		75%	6.6	6.5	6.2	2.30	36.2	6	1.0%	N/A	28.9	20.0	pack price	\$143	1000	13.3	\$4,674	\$4.67
<b>30-40 mile PHEV battery packs (shown for config #2) -- Differing requirements ==&gt;</b>																					
Cobasys	5500	<b>NIMH</b>	Cobasys	Liquid cooled; <b>too heavy</b>	75%	11.0	54.0	45.6	26.0	358	10	3.1%	6.0	10.6	6.5	pure guess	\$600	1000	17.0	\$1,594	\$1.59
Cobasys	4500	<b>NIMH</b>	Cobasys	Liquid cooled; <b>too heavy</b>	75%	11.0	43.0	39.3	26.0	358	10	1.7%	10.0	19.0	11.8	pure guess	\$600	1000	14.6	\$1,848	\$1.85
ThunderSky <sup>6,7</sup>	TS-LP6163A	Cr-F-Li	Metricmind	<b>Config #1 (required)</b>	45%	3.3	40.0	30.0	2.64	69	1	18%	1.5	N/A	1.1	100's retail	\$ 100	2000	16.9	\$2,245	\$1.12
?	18650 module <sup>9</sup>	Li-ion	Batteries Plus	<b>Too many cells</b>	45%	6.6	11.0	7.7	1.06	19.6	10	6.0%	2.0	N/A	3.3	Batt+ <sup>9</sup>	\$80	1500	29.4	\$3,498	\$1.40
ThunderSky <sup>6,7</sup>	TS-LP6163A	Cr-F-Li	Metricmind	<b>Config #1 (required)</b>	60%	3.3	40.0	30.0	2.64	69	1	18%	1.5	N/A	1.1	100's retail	\$ 100	1000	22.5	\$1,684	\$1.68
Saft	LV41M-6S	Li-ion			45%	19.8	41.0	32.8	17.6	345.4	6	4.0%	3.7	9.8	5.0	pure guess	\$1,250	2500	20.3	\$4,277	\$1.71



**Configurations also investigated - ranked by estimated \$/mile (shown for config #2 (replace hybrid battery):**

BB Battery	EVP35-12	PbAcid	ElectricRider.com	<b>Too heavy</b>	75%	11.0	35.0	22.0	27.6	280	6	3.3%	8.0	23.9	6.1	retail	\$53	400	7.6	\$292	\$0.73
Sanyo	N-20000MC	NiCd		12-cell module	75%	13.2	20.0	17.8	19.4	204	12	4.5%	2.0	4.0	4.4	memory	\$336	1000	12.9	\$1,697	\$1.70
ThunderSky <sup>6,7</sup>	TS-LP6163A	Cr-F-Li	Metricmind	<b>Protection? Track record?</b>	75%	3.3	40.0	30.0	2.64	69	1	18%	1.5	N/A	1.1	100's retail	\$ 100	500	35.9	\$1,347	\$2.69
Panasonic	EV-95	NiMH	Amondo Tech.	<b>Low V, high A; availability?</b>	75%	11.0	95.0	76.0	41.1	390	10	4.0%	N/A	N/A	5.0	pure guess	\$2,000	1000	18.9	\$3,190	\$3.19
Titanium	high disch. Sub-C	NiMH	Amondo Tech.	custom 36-cell module w/fuse	75%	13.2	9.0	7.8	4.67	54	12	2.7%	5.0	N/A	7.4	cells * 1.5	\$124	500	24.5	\$1,611	\$3.22
Titanium	high disch. Sub-C	NiMH	Amondo Tech.	custom 36-cell module w/fuse	75%	13.2	9.9	8.6	4.67	54	12	2.7%	9.1	N/A	7.4	cells * 1.5	\$151	500	26.9	\$1,783	\$3.57
Sanyo	HR-D	NiMH	TNR Technical	<b>HR-DU is better</b>	75%	13.2	7.3	7.0	4.85	40	12	3.2%	4.1	N/A	6.3	100's retail	\$120	500	18.7	\$1,732	\$3.46
Worley, LG Chem, etc <sup>6</sup>	18650W4,A2	Li-ion		<b>Need modules with protection</b>	75%	3.3	2.2	1.5	0.10	1.7	1	6.0%	2.0	N/A	3.3	AC Propul.	\$4	300	112.2	\$1,049	\$3.50
Worley <sup>6</sup>	THDR 10	Li-ion		<b>No track record</b>	75%	3.3		8.0	0.86	?	1	?			#####	pure guess	\$45	500	41.5	\$2,273	\$4.55
Kokam <sup>6</sup>	SLPB78216216	Li-ion		<b>No track record</b>	75%	3.3		25.0	1.89	?	1	?			#####	experimenter	\$150	500	82.6	\$2,424	\$4.85
Kokam <sup>6</sup>	SLPB55205130	Li-ion		<b>No track record</b>	75%	3.3		9.0	0.51	?	1	?			#####	experimenter	\$55	500	-378.6	\$2,469	\$4.94
EV-1/Ovonics (used)	?	NiMH		<b>Unknown condition; no future</b>	75%	7.7	80	70	44.1	?	7	0.03			6.7	experimenter	\$155	500	9.9	\$447	\$0.89

<sup>1</sup> Ah & W-hr ratings at 1/2 hr (2C) rate; note that these are less than the long-term ratings; "U-" ratings are "usable", to listed % discharge.

<sup>2</sup> Est. cycle life, range, and battery cost per electric mile figured at 5 miles/kWh average for EV mode; effect of added battery weight expected to be compensated for by lower internal resistance. Cycle life figures are often fuzzy or nonexistant

**Note that unless hybrid mileage is improved too, this cost plus \$0.2-\$0.3 for electricity must be compared to approx. \$0.5 otherwise paid per mile for gasoline. If we have reached peak oil, gasoline prices will soon rise steep**

<sup>3</sup> 75% is from 100% to 25% SOC; hybrid action then remains between 20-30% SOC; 60% is similarly from 90% to 30%, with occasional equalization charge to 100%. 45% is similarly between e.g. 80% to 35% SOC.

<sup>4</sup> Good measure of power handling capability. Calculated from manufacturer's high-rate discharge curves at 30-50% SOC. For Prius battery, calculated from 0.35 ohm measured internal resistance of pack less 20% for cabling, etc.

<sup>5</sup> For replacement, discharge is 44%, from 100% to 56% SOC. For parallel with trick, discharge is 70% from 100% to 30% SOC.

<sup>6</sup> Charge management circuitry plus extra cooling may be necessary, at an additional parts cost

<sup>7</sup> Capacity reduced to 60% after 300 (80%?) cycles; 30 Ah est. at 1/2 hour rate for 50 Ah cell after many cycles;

customer satisfaction has been non-existent, with major cell-to-cell variations, failure to come close to meeting specifications, and many serious problems.

<sup>8</sup> **Guessed improvement in overall hybrid performance, from reduced battery internal resistance, less projected city driving losses from increased weight. THS battery cycle losses guessed at 20% (10% @ 10C \* 2)**

<sup>9</sup> Includes charge balancing and safety electronics, which can survive past battery replacement. Therefore, \$/mile has been reduced by 40%.

<sup>10</sup> Max discharge rate is estimated as the rate where internal resistance causes 20% loss.

**Column Explanations**

Brand, Model, Supplier, Notes	Other self-explanatory columns like these will be skipped
Chem.	Chemistry
% Discharge	Percentage of the module's capacity tha this option is expected to use
V@2C	The module's approximate voltage at a 2C discharge rate
Rated Typ Ah	The module's "typical" (as opposed to minimum) Ah rating, usually at a low discharge rate
Ah@2C	The module's expected Ah rating at a 2C discharge rate
Cells	The number of cells in the module
V sag %/C	This is a measure of the module's high-rate discharge capabilities. It is the % of voltage sag per C discharge rate, and was most often taken from manufacturers' high-rate discharge curves.
Rated Cont C	The module's maximum continuous discharge rate, in C
Rated Int C	The module's maximum intermittant discharge rate, in C
Calc Max C	The module's calculated discharge rate where the voltage has sagged to 80% of low-discharge-rate voltage
\$ info	A note about source of the data for the next column, "Retail \$"
Retail \$	The retail price of the module, in the quantity required for one PRIUS+
Cycle life	The projected cycle life of the module at the specified "% Discharge"
U-Whr/lb	Usuable Watt-hr/lb, given the specified "% Discharge" and "V@2C"
\$/U-kWh	Cost per usable kilowatt-hr (same parameters)
\$/U-kWh thruput	This is \$/U-kWh divided by the expected cycle life of the module
Series	The number of modules in series for the suggested battery pack
Par.	The number of modules in parallel for the suggested battery pack
Modules	The number of modules in the suggested battery pack
Cells	The number of cells in the suggested battery pack
Voltage	The voltage of the suggested battery pack, at a 2C discharge rate
U-Ah	The usable Ah of the suggested battery pack, at a 2C discharge rate
Sw. A	The switching current required of a control circuit to supply 8 kW to the vehicle or hybrid battery
% Prius U-kWh	Sw.A is not important for battery packs connected like the Prius' hybrid pack. For these options, this column is usable kilowatt-hr as a percentage of that available from the Prius' hybrid pack.
Max kW	The maximum kW output of the suggested battery pack, at the "Calc Max C" rate
Max kW %	The max kW output of the suggested battery pack, as a % of that of the Prius' hybrid pack. Where the suggested pack is paralleled with the Prius hybrid pack, this is the combined total.
Hybrid+	The possible improvement in regular hybrid efficiency (gasoline mileage) that could occur due to decrease in battery losses from those of the Prius hybrid battery
U-kWh	The usable kilowatt-hr available from the suggested battery pack at a 2C discharge rate
cu-in	The size of the suggested battery pack. Space for wiring and cooling has not been added.
H. in	The minimum height of the suggested battery pack. The spare tire well is only approximately 7 inches tall.
Range	The projected low-speed electric propulsion range provided by the suggested battery pack, estimated at 5 mi/kWh
Retail \$	The price of the suggested battery pack, given the "Retail \$" per module
Life, mi	The expected lifetime of the battery pack, in miles of EV propulsion
Battery \$/E-mile	The cost of the suggested battery pack divided by the number of electric propulsion miles expected to be deliverable within the pack's cycle life
mi/lb	The electric propulsion range of the suggested battery pack divided by its weight

EVP35-12	17	1	17	102	187	16.5	3.1	24.9	109%	0.18	-3.3%	405	4760	7	15	\$901	6,171	\$0.146	26.3
N-20000MC	16	1	16	192	211	15.0	3.2	18.8	82%	0.48	-10.6%	246	3264	3	16	\$5,376	15,840	\$0.339	15.6
TS-LP6163A	56	2	112	112	184.8	45.0	8.3	12.3	54%	0.42	-8.4%	232	7728	7.5	42	\$11,200	20,790	\$0.539	5.6
EV-95	8	1	8	80	88	57.0	5.0	33.4	147%	N/A	N/A	265	3120	7	25	\$16,000	25,080	\$0.638	10.6
high disch. Sub-C	14	3	42	504	184.8	17.5	3.2	32.0	140%	0.18	1.0%	132	2268	2.1	16	\$5,216	8,093	\$0.645	8.2
high disch. Sub-C	14	3	42	504	184.8	19.3	3.6	35.2	154%	0.17	1.5%	132	2268	2.1	18	\$6,350	8,902	\$0.713	7.4
HR-D	14	4	56	672	184.8	21.0	3.9	32.3	142%	0.20	-0.9%	208	2240	2.1	19	\$6,720	9,702	\$0.693	10.7
18650W4,A2	56	17	952	952	184.8	19.6	3.6	16.1	71%	0.30	-1.1%	32	1618	7	18	\$3,808	5,443	\$0.700	1.8
THDR 10	56	3	168	168	184.8	18.0	3.3	#####	#VALUE!	#VALUE!	#####	80	#####	7	17	\$7,560	8,316	\$0.909	4.8
SLPB78216216	56	1	56	56	184.8	18.8	3.5	#####	#VALUE!	#VALUE!	#####	42	#####	9	17	\$8,400	8,663	\$0.970	2.4
SLPB55205130	56	2	112	112	185	13.5	2.5	#####	#VALUE!	#VALUE!	#####	-7	#####	6	12	\$6,160	6,237	\$0.988	-0.5
?	6	1	7	49	46	52.5	2.4	25.2	110%	0.02	4.7%	245	#####	7	12	\$1,085	6,064	\$0.179	20.2

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Revision history:

6/20/04, rdg	Created (many modifications before first modification record on 7/14/04)
7/14/04, rdg	Added Batteries Plus modules; changed all Li-ion's to 3.3V/cell; changed to U-Whr/lb, \$/U-kWh, U-Ah, & U-kWh; added \$/U-kWh-cycle; added more colors; rm'd >300 lb options except under "Also..."
7/21/04, rdg	Moved all batteries, except those currently being considered, to "Also investigated"; added battery chemistry paragraph; added Notes & mi/lb columns
7/29/04, rdg	Expanded battery chemistry comparison and moved it to a separate page; set to print on legal paper by default for easier reading
8/9/04, rdg	Added PowerThat modules; D+W modules are now Titanium/AmondoTech; added IntRes, MaxRate, Cells, MaxkW, cu-in, & %ToyotaU-kWh columns; removed L & W columns
8/16/04, rdg	Updated Amondo Tech battery info; added more NiMH "D" cells; separated results for parallel vs. replace hybrid battery; added "Rated Typ Ah", "V sag %/C", "Rated Cont C", "Rated Int C", "Max kW %", and "Hybrid+" columns; many details updated; added column explanations
8/17/04, rdg	Formatted to 4 pages (vs. 1) when printed
12/9/04, rdg	Major rework; columns, formulas, and batteries. Removed the "Used as separate traction battery" section, as we have proved this configuration to be unworkable
12/19/04, rdg	Added RabbitTool et al batteries; commented config #1 (Notes column) & added more batteries; moved some batteries around, changed their configurations, and/or fixed their numbers; fixed highlights
1/8/05, rdg	Lowered all voltages to approx. existing voltage, due to problems otherwise at low temperatures; changed Rabbitool modules
2/4/05, rdg	Removed all modules with paralleled cells, then added Rabbitool with paralleled D & M strings, and with single M & LM cells
2/18/05, rdg	Added Saft NHP10-340 modules - note how close they are to "Theoretical wish"; added "et al" to RabbitTool modules to indicate such D-cell modules could be from other suppliers
4/18/05, rdg	Added "measured" results; changed some D cell modules to series (modules will be paralleled); added D cell & Evercel modules with paralleled supercaps (cycle life increased to reflect high supercap lifet

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