

## Supplementary material

### Global Lithium Sources, Industrial Use and Future in the Electric vehicle industry: A review

**Table S1.** CRMs listed by the EC in 2017. HREEs - heavy rare earth elements, LREEs - light rare earth elements, PGMs - platinum group metals [4].

Antimony	Fluorspar	LREEs	Phosphorus
Baryte	Gallium	Magnesium	Scandium
Beryllium	Germanium	Natural graphite	Silicon metal
Bismuth	Hafnium	Natural rubber	Tantalum
Borate	Helium	Niobium	Tungsten
Cobalt	HREEs	PGMs	Vanadium
Coking coal	Indium	Phosphate rock	

**Table S2.** Known EU lithium mineralisation's. Main mineral present, percentage lithium oxide and estimated lithium reserve.

Description	Mineral	%Li <sub>2</sub> O	reserve (Mt)	Reference
EU, Austria, Wolfsberg,	Spodumene	1.0	0.1	[5]
EU, Czechia, Cinovec,	Zinnwaldite	0.39	----	[6]
EU, Germany, Sadisdorf	Zinnwaldite	0.45	----	[7]
EU, Finland, Haapaluoma	Spodumene	----	----	[8]
EU, Finland, Hirvikallio	Spodumene	0.47	0.00047	[8]
EU, Finland, Kietyonmaki	Spodumene	0.7	0.007	[8]
EU, Finland, Länttä, Ullava	Spodumene	0.94	0.014	[8]
EU, Finland, Osterbotten	Spodumene	0.43	0.0019	[8]
EU, Finland, Syväjärvi	Spodumene	1.24	1.97	[9]
EU, Finland, Rapasaari	Spodumene	1.15	3.46	[9]
EU, Finland, Outovesi	Spodumene	1.43	0.28	[9]
EU, Finland, Emmes	Spodumene	1.43	0.82	[9]
EU, Finland, Leviäkangas	Spodumene	1.01	0.4	[9]
EU, Ireland, Leinster	Spodumene	2.3	0.5	[10]
EU, Norway, Helgeland	----	----	----	[8]
EU, Poland, Kostrzya	Zinnwaldite	----	----	[11]
EU, Portugal, Barroso-Alvao	Spodumene	0.57-1	0.0514	[12]
EU, Portugal, Gondiaes	petalite			[7]
EU, Portugal, Serra de Arga	----	----	----	[7]
EU, Portugal, Barca de Alva	----	----	----	[7]
EU, Portugal, Mangualde	----	----	----	[7]
EU, Portugal, Guarda-Goncalo	Lepidolite	----	----	[13]
EU, Portugal, Segura	----	----	----	[7]
EU, Serbia, Jadar valley	Jadarite	0.84	1	[12]
EU, Spain, Morille	Lepidolite	----	0.2	[12]
EU, Spain, San Jose	Lepidolite	1	0.2	[12]
EU, Spain, Alberto	Lepidolite	----	----	[12]
EU, Sweden, Järkvissle, Medelpad	Spodumene	0.45	0.003	[14]
EU, Sweden, Utö, Haninge	Petalite	----	----	[15]
EU, Sweden, Varuträsk	Spodumene	1.3 - 2	0.001	[14]
EU, Sweden, Spodumenberget	Spodumene	1.0	----	[15]
EU, UK, Cornwall Camborne	Amblygonite	0.84	----	[16]
EU, UK, Devon	Amblygonite	----	----	[16]

**Table S3.** Lithium concentrations in seawater given in the literature, units – mg/l.

(mg/l) Lithium	Reference	(mg/l) Lithium	Reference
0.2	[36]	0.17 - 0.2	[14]
0.18	[37]	0.17	[40]
0.18	[38]	0.17	[41]
0.18	[17]	0.17	[42]
0.18	[39]	0.17	[26]

**Table S4.** Lithium's average crustal abundance, units – mg/kg lithium.

(mg/kg) Lithium	Reference	(mg/kg) Lithium	Reference
65	[59]	20	[14]
26	[60]	20	[64]
24	[61]	18	[65]
20	[38]	17 - 20	[66]
20	[37]	17	[39]
20	[62]	16	[67]
20	[17]	13.7	[68]
20	[63]	13	[69]

**Table S5.** Lithium concentrations in various rocks, units – mg/kg, Sources.

Rock	(mg/kg)	Rock	(mg/kg)	Rock	(mg/kg)
Granite	20 [20]	Limestone	27 [66]	Sedimentary	52 [73]
Granite	13 [60]	Limestone	28 [20]	Sedimentary	53 [75]
Granite	28 [75]	Limestone	5 – 20 [70]	Sedimentary	53 [63]
Granite	24 [63]	Limestone	5 [73]	Sedimentary	56 – 60 [72]
Granite	30 [45]	Limestone	12 [32]	Sedimentary	52 [32]
Granite	30 [14]	Sandstone	10 – 40 [70]	Shale	50 – 75 [70]
Granite	25 – 40 [70]	Sandstone	15 [66]	Shale	33 – 165 [74]
Granite	40 [73]	Sandstone	17 [71]	Shale	20 – 100 [32]
Granite	74 [72]	Sandstone	62 [74]	Shale	66 [66]
Granite	20 [71]	Sandstone	18 [20]	Shale	44 [32]

**Table S6.** Lithium concentration in different soils, units – mg/kg.

Soil Description	Range mg/kg	Soil Description	Range mg/kg
Australian soil [76]	6 - 28	New Zealand, soil [70]	60 - 105
Clay faction of soil [77]	0.002 - 63	U.S (meadows) [70]	10 - 57
Denmark (meadow) [70]	0.5 – 3.2	Various soil [39]	20 - 70
Jordan valley soils [32]	0.95 – 2.7	Great Britain soils [70]	25
Light organic soils [32]	1.3	Various soil [32]	25
New Zealand (clay soil) [70]	1.4 - 130	Russian (forest) [70]	25 – 26
New Zealand (meadows) [70]	0.01 – 2.8	U.S (clay) [32]	10 - 64
New Zealand soil [60]	0.08 - 92	U.S (clay) [32]	11.5 - 12
Papua New Guinea soil [76]	0.29 – 118.3	Ireland's soils [78]	20 - 30
Poland (clay soil) [70]	0.1 - 38	Russian (sandy soil) [70]	17 - 60
Poland (sandy soil) [70]	0.01 - 12	Various soil [85]	10 - 100
U.S (Nevada, California) [79]	8 - 400	Various soil [83]	70
U.S (siliceous soils) [32]	3.7 – 5.8	Calcareous soil [32]	56

U.S (Silty soils) <sup>[80]</sup>	3.7 – 59.9	Authigenic clays <sup>[32]</sup>	200 - 500
U.S (South East) <sup>[80]</sup>	3.74 – 59.93	Various soil <sup>[84]</sup>	26
U.S (various soils) <sup>[70]</sup>	0.7 – 1.6	U.S (various soils) <sup>[81]</sup>	20.4
Various soil <sup>[34]</sup>	7 - 200	U.S (calcareous soils) <sup>[70]</sup>	60 - 105
Various soil <sup>[82]</sup>	8 - 400	Detrital clays <sup>[45]</sup>	70 - 80
Various soils <sup>[45]</sup>	3 - 350	U.S (fine soils) <sup>[32]</sup>	25.4 – 33.3

**Table S7.** Global lithium resource estimates, units – Mt (megatons).

Year	Resources (Mt)	Reference	Year	Resources (Mt)	Reference
1999	12	[95]	2011	38.68	[87]
2005	9.4 - 21	[42]	2011	25.5	[101]
2007	35.5	[96]	2012	30.9	[102]
2008	31.8	[18]	2012	50.2	[8]
2008	29.9	[97]	2012	56	[103]
2009	39.4	[98]	2013	39	[41]
2009	44	[5]	2013	65	[12]
2010	74	[58]	2014	64	[43]
2010	69	[87]	2016	73	[104]
2010	34.5	[99]	2017	34	[6]
2011	39	[100]	2018	53	[105]

**Table S8.** Estimates of global lithium resources by country from the literature. Units – Mt (megatons), (D.R. Congo – Democratic Republic of Congo).

Country	(Mt)	Reference	Country	(Mt)	Reference
Afghanistan	2	[96]	Chile	40	[106]
Afghanistan	1.27	[41]	Chile	8.4	[105]
Argentina	10.6	[106]	Chile	8	[18]
Argentina	9.8	[105]	Chile	7.5	[5]
Argentina	9	[5]	Chile	7.1	[66]
Argentina	6.52	[66]	Chile	6.3	[87]
Argentina	6	[18]	Chile	6.2	[107]
Argentina	2.6	[43]	Chile	3	[96]
Australia	13	[102]	China	17	[106]
Australia	8	[106]	China	7	[5]
Australia	5	[105]	China	7	[105]
Australia	2	[5]	China	2.7	[96]
Austria	0.134	[66]	China	3.35	[66]
Austria	0.1	[5]	D.R. Congo	2.3	[66]
Austria	0.05	[105]	D.R. Congo	1	[5]
Bolivia	10.2	[87]	Finland	0.0014	[66]
Bolivia	9	[96]	Mali	0.2	[105]
Bolivia	9	[43]	Mexico	0.2	[5]

Bolivia	9	[5]	Mexico	0.18	[66]
Bolivia	9	[99]	Mexico	0.18	[105]
Bolivia	9	[105]	Portugal	0.3	[106]
Bolivia	8.9	[66]	Portugal	0.1	[105]
Brazil	1	[96]	Russia	1	[5]
Brazil	0.3	[106]	Russia	1.683	[66]
Brazil	0.2	[5]	Spain	0.4	[105]
Brazil	0.185	[66]	Serbia	1	[5]
Brazil	0.18	[105]	USA	7	[66]
Canada	2	[5]	USA	6.9	[5]
Canada	1.9	[105]	USA	6.8	[105]
Canada	1	[66]	Zimbabwe	1	[106]
Canada	0	[96]	Zimbabwe	0.1	[5]

**Table S9.** Location and parameters of some of the main lithium containing brines.

Location	% Li <sub>2</sub> O	Mg/Li ratio	Li reserve (Mt)
Chile, Salar de Atacama <sup>[15]</sup>	0.18	6.6	7.5 - 8
Chile, Salar de Maricunga <sup>[97]</sup>	0.092	8	0.4
USA, Smackover <sup>[14]</sup>	0.065	20	0.75
Bolivia, Salar de Uyuni <sup>[87]</sup>	0.0532	21.5	5.5
USA, Searles Lake <sup>[36]</sup>	0.047	4.1	----
Argentina, Salar de Hombre Muerto <sup>[97]</sup>	0.043	1.37	0.85
Chile, Salar de Aguas Calientes <sup>[97]</sup>	0.025	0.5	----
Canada, Fox Creek <sup>[15]</sup>	0.02	10	0.3 – 1.3
USA, Clayton Valley <sup>[15]</sup>	0.018	1.33	0.04 – 0.1
Argentina, Salar de Vida <sup>[87]</sup>	0.017	2.2	1.188
Argentina, Salar de Cauchari <sup>[97]</sup>	0.015	2.84	0.035
Argentina, Salar de Rincon <sup>[15]</sup>	0.013	8.61	0.14
USA, Salton Sea <sup>[14]</sup>	0.013	1.27	0.3 – 0.5
Chile, Aqua Amarga <sup>[97]</sup>	0.011	0.05	----
Chile, Salar de Pedernales <sup>[97]</sup>	0.009	----	----
Chile, Tara <sup>[97]</sup>	0.009	0.97	----
Chile, Gorbea <sup>[97]</sup>	0.009	0.01	----
USA, Brawley <sup>[87]</sup>	0.009	----	1.0
Chile, Quisquiro <sup>[97]</sup>	0.008	0.18	----
Argentina, Salar de Mariana <sup>[89]</sup>	0.007	16	0.618
Chile, Pajonales <sup>[97]</sup>	0.005	0.03	----
Israel, Dead Sea <sup>[45]</sup>	0.004	1700	0.9 – 1.9
USA, Bonneville Salt Flats <sup>[14]</sup>	0.004	100	----
Chile, Punta Negra Salar <sup>[97]</sup>	0.003	----	----
Chile, El Laco <sup>[97]</sup>	0.003	0.06	----
Argentina, Salar de Olaroz <sup>[87]</sup>	0.0015	2.8	0.156
Chile, La Isla <sup>[97]</sup>	0.001	0.22	----
Chile, Pujsa <sup>[97]</sup>	0.001	0.26	----
Argentina, Salar de Arizaro <sup>[89]</sup>	----	----	----
Argentina, Salar de diablilos <sup>[116]</sup>	----	----	----
Argentina, Salar de Grandes <sup>[117]</sup>	----	----	----
Argentina, Salar de Los Angelas <sup>[97]</sup>	----	----	----
Bolivia, Salar de Coipasa <sup>[87]</sup>	----	----	----
Canada, Beaver hill Lake <sup>[15]</sup>	----	----	0.515
Chile, Aguilar <sup>[97]</sup>	----	0.05	----

Chile, Parinas <sup>[97]</sup>	----	0.11	----
China. East Taijaner Salt Lake <sup>[20]</sup>	----	----	----
China, Lake Qarchan <sup>[20]</sup>	----	----	----
China. Zabuye Salt Lake <sup>[20]</sup>	----	----	----
China. Zhacang Kaca Salt Lake <sup>[20]</sup>	----	----	----
China, Sichuan Abe <sup>[20]</sup>	----	----	----
China, Jaijika <sup>[20]</sup>	----	----	----
China, Maerkang <sup>[20]</sup>	----	----	----
China, Ningdu <sup>[20]</sup>	----	----	----
USA, Great Salt Lake <sup>[15]</sup>	----	133.33	0.2 – 0.3

**Table S10.** List of 145 named lithium minerals [15, 37, 43, 119].

Lithium mineral	chemical formula
Aleksandrovite	KCa <sub>7</sub> Sn <sub>2</sub> Li <sub>3</sub> Si <sub>12</sub> O <sub>36</sub> F <sub>2</sub>
Alumino-ottoliniite	NaLi(Mg <sub>3</sub> Al <sub>2</sub> ) Si <sub>8</sub> O <sub>22</sub> (OH) <sub>2</sub>
Amblygonite	(LiNa)AlPO <sub>4</sub> (FOH)
Balestraite	KLi <sub>2</sub> V <sup>5+</sup> Si <sub>4</sub> O <sub>12</sub>
Balipholite	BaLiMg <sub>2</sub> Al <sub>3</sub> (Si <sub>2</sub> O <sub>6</sub> ) <sub>2</sub> (OH) <sub>4</sub>
Baratovite	KCa <sub>7</sub> (Ti, Zr) <sub>2</sub> Li <sub>3</sub> Si <sub>12</sub> O <sub>36</sub> F <sub>2</sub>
Berezanskite	K <sub>2</sub> Li <sub>3</sub> (Ti, Zr, Sn) <sub>2</sub> (Si <sub>12</sub> O <sub>30</sub> )
Bertossaite	(Li, Na) <sub>2</sub> (Ca, Fe <sup>2+</sup> , Mn <sup>2+</sup> )Al <sub>4</sub> (PO <sub>4</sub> ) <sub>4</sub> (OH, F) <sub>4</sub>
Bikitaite	(LiAlSi <sub>2</sub> ) <sub>6</sub> ·H <sub>2</sub> O
Bityite	LiCaAl <sub>2</sub> (AlBeSi <sub>2</sub> O <sub>10</sub> ) (OH) <sub>2</sub>
Borocookeite	LiAl <sub>4</sub> (BSi <sub>3</sub> O <sub>10</sub> ) (OH) <sub>8</sub>
Brannockite	(K, Na) <sub>2</sub> Li <sub>3</sub> (Sn, Zr, Ti) <sub>2</sub> (Si <sub>12</sub> O <sub>30</sub> )
Bulgakite	Li <sub>2</sub> (Ca, Na) Fe <sup>2+</sup> Ti <sub>2</sub> (Si <sub>4</sub> O <sub>12</sub> ) <sub>2</sub> O <sub>2</sub> (OH) <sub>4</sub> (F, O) (H <sub>2</sub> O) <sub>2</sub>
Ciprianiite	Ca <sub>4</sub> [(Th, U) (Li) <sub>2</sub> (Al) <sub>2</sub> (Si <sub>4</sub> B <sub>4</sub> O <sub>22</sub> ) (OH, F) <sub>2</sub>
Clino-ferri-holmquistite	Li <sub>2</sub> (Mg <sub>3</sub> Fe <sup>3+</sup> ) (Si <sub>8</sub> O <sub>22</sub> ) (OH) <sub>2</sub>
Clino-ferro-ferri-holmquistite	Li <sub>2</sub> (Fe <sup>3+</sup> Fe <sup>2+</sup> ) (Si <sub>8</sub> O <sub>22</sub> ) (OH) <sub>2</sub>
Clinoferroholmquistite	(Li <sub>2</sub> Fe <sup>++</sup> 3Al <sub>2</sub> ) Si <sub>8</sub> O <sub>22</sub> (OH) <sub>2</sub>
Clinoholmquistite	(Li <sub>2</sub> Mg <sub>3</sub> Al <sub>2</sub> ) Si <sub>8</sub> O <sub>22</sub> (OH) <sub>2</sub>
Colquiriite	Ca Li(AlF <sub>6</sub> )
Cookeite	LiAl <sub>14</sub> Si <sub>3</sub> O <sub>10</sub> (OH) <sub>8</sub>
Cryolithionite	Na <sub>3</sub> Li <sub>3</sub> (AlF <sub>6</sub> ) <sub>2</sub>
Darapiosite	K (Na, K) <sub>2</sub> (Li, Zn, Fe) <sub>3</sub> (Mn, Zr, Y) <sub>2</sub> (Si <sub>12</sub> O <sub>30</sub> )
Darrellhenryite	Na(LiAl <sub>2</sub> ) Al <sub>6</sub> (BO <sub>3</sub> ) <sub>3</sub> Si <sub>6</sub> O <sub>18</sub> (OH) <sub>3</sub> O
Dellaventuraite	Na <sub>3</sub> (Mg <sub>2</sub> , Mn, Li, Ti) Si <sub>8</sub> O <sub>24</sub>
Dilithium	Li <sub>2</sub> Te
Diomignite	Li <sub>2</sub> B <sub>4</sub> O <sub>7</sub>
Dusmatovite	K (Na, O) <sub>2</sub> (Zn, Li) <sub>3</sub> (Mn <sup>2+</sup> , Y, Zr) <sub>2</sub> (Si <sub>12</sub> O <sub>30</sub> )
Elbaite	Na (Li Al) <sub>3</sub> Al <sub>6</sub> Si <sub>6</sub> O <sub>18</sub> (BO) <sub>3</sub> (OH) <sub>4</sub>
Eliseevite	LiNa <sub>1.5</sub> Ti <sub>2</sub> (H <sub>1.5</sub> Si <sub>4</sub> O <sub>12</sub> ) O <sub>2</sub> · 2H <sub>2</sub> O
Emeleusite	Li <sub>2</sub> Na <sub>4</sub> Fe <sub>2</sub> Si <sub>12</sub> O <sub>30</sub>
Ephesite	LiNaAl <sub>2</sub> (Al <sub>2</sub> Si <sub>2</sub> O <sub>10</sub> ) (OH) <sub>2</sub>
Eucryptite	(LiAlSiO <sub>4</sub> )
Faizievite	K <sub>2</sub> Na(Ca <sub>6</sub> Na) Ti <sub>4</sub> Li <sub>6</sub> Si <sub>24</sub> O <sub>66</sub> F <sub>2</sub>

Ferri-clinoferroholmquistitee	$\text{Li}_2(\text{Fe}^{2+}\text{Fe}^{3+}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Ferri-fluoro-leakeite	$\text{Na}(\text{Na}_2) (\text{Mg}_2\text{Fe}^{2+}\text{Li}) (\text{Si}_8\text{O}_{22}) \text{F}_2$
Ferri-leakeite	$\text{Na}(\text{Na}_2) (\text{Mg}_2\text{Fe}^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Ferri-ottoliniite	$(\text{Na}, \text{Li}) (\text{Mg}_3\text{Fe}^{3+}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Ferripedizite	$\text{NaLi}_2(\text{Fe}^{3+}2\text{Mg}_2\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Ferrisicklerite	$\text{Li}_{1-x}(\text{Fe}_x^{3+}\text{Fe}^{2+}_{1-x}) \text{PO}_4$
Ferriwhittakerite	$\text{Na}(\text{NaLi}) (\text{Mg}_2\text{Fe}^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Ferro-ferri-fluoro-leakeite	$\text{Na}(\text{Na}_2) (\text{Fe}^{2+}\text{Fe}^{3+}\text{Li}) (\text{Si}_8\text{O}_{22}) (\text{F})_2$
Ferro-ferri-pedrizite	$\text{Na} (\text{Li}_2) (\text{Fe}^{2+}\text{Fe}^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
'Ferro-fluoro-leakeite'	$\text{NaNa}_2(\text{Fe}^{2+}\text{Al}_2\text{Li}) (\text{Si}_8\text{O}_{22}) \text{F}_2$
Ferro-holmquistite	$\text{Li}_2(\text{Fe}^{3+}\text{Al}_2) (\text{Si}_8\text{O}_{22}) (\text{OH})_2$
Ferroleakeite	$\text{NaNa}_2(\text{Fe}^{2+})_3(\text{Fe}^{3+})_2\text{Li}(\text{Si}_8\text{O}_{22}) (\text{OH})_2$
Ferro-pedrizite	$\text{NaLi}_2(\text{Fe}^{2+}\text{Al}_2\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Fluor-elbaite	$\text{Na}(\text{Li}_{1.5}\text{Al}_{1.5}) \text{Al}_6(\text{Si}_6\text{O}_{18}) (\text{BO}_3)_3(\text{OH})_3\text{F}$
Fluor-liddicoatite	$\text{Ca}(\text{Li}_2\text{Al}) \text{Al}_6(\text{Si}_6\text{O}_{18}) (\text{BO}_3)_3(\text{OH})_3\text{F}$
Fluoro-ferroleakeite	$\text{NaNa}_2(\text{Fe}^{2+}\text{Fe}^{3+}\text{Li}) \text{Si}_8\text{O}_{22}\text{F}_2$
Fluoro-leakeite	$\text{NaNa}_2(\text{Mg}_2\text{Al}_2\text{Li}) (\text{Si}_8\text{O}_{22}) \text{F}_2$
Fluoro-Liddicoatite	$\text{Ca}(\text{Li}_2\text{Al}) \text{Al}_6(\text{BO}_3)_3\text{Si}_6(\text{OH})_{18}(\text{OH})_3\text{F}$
Fluoro-sodic-pedrizite	$\text{NaLi}_2(\text{Mg}_2\text{Al}_2\text{Li}) \text{S}_5\text{Si}_8\text{O}_{22}\text{F}_2$
Footmineite	$\text{Ca}_2\text{Mn}^{2+}\text{Mn}^{2+}2\text{Mn}^{2+}2\text{Be}_4(\text{PO}_4)_6(\text{OH})_4 \bullet 6\text{H}_2\text{O}$
Gainesite	$\text{Na} (\text{Na}, \text{K}) (\text{Be}, \text{Li}) \text{Zr}_2(\text{PO}_4)_4 \cdot 1.5\text{-}2\text{H}_2\text{O}$
Garmite	$\text{CsLiMg}_2(\text{Si}_4\text{O}_{10}) \text{F}_2$
Gorbunovite	$\text{CsLi}_2(\text{Ti}, \text{Fe}) \text{Si}_4\text{O}_{10}(\text{F}, \text{OH}, \text{O})_2$
Griceite	$\text{LiF}$
Griphite	$\text{Na}_4\text{Li}_2\text{Ca}_6(\text{Mn}^{2+}, \text{Fe}^{2+}, \text{Mg})_{19}\text{Al}_8(\text{PO}_4)_{24}(\text{F}, \text{OH})_8$
Hectorite	$(\text{Na}_{0.3}(\text{Mg}, \text{Li})_3\text{Si}_4\text{O}_{10}(\text{OH})_2)$
Holmquistite	$\text{Li}_2(\text{Mg}_3\text{Al}_2) (\text{Si}_8\text{O}_{22}) (\text{OH})_2$
Hsianghualite	$\text{Ca}_3\text{Li}_2(\text{Be}_3\text{Si}_3\text{O}_{12}) \text{F}_2$
Jadarite	$(\text{Na}_2\text{OLi}_2\text{O}(\text{SiO}_2)_2(\text{B}_2\text{O}_3)_3\text{H}_2\text{O})$
Katayamalite	$\text{KLi}_3\text{Ca}_7\text{Ti}_2(\text{SiO}_3)_{12}(\text{OH})_2$
Kupletskite-(Cs)	$(\text{Cs}, \text{K})_2 \text{Na} (\text{Mn}, \text{Fe}^{2+}, \text{Li})_7(\text{Ti}, \text{Nb})_2\text{Si}_8\text{O}_{26}(\text{OH})_4\text{F}$
Lavinskyite	$\text{K} (\text{Li} \text{Cu}) \text{Cu}_6(\text{Si}_4\text{O}_{11})_2(\text{OH})_4$
Leakeite	$\text{NaNa}_2(\text{Mg}_2\text{Fe}^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Lepidolite	$\text{K} (\text{Li} \text{Al})_3(\text{Al} \text{Si})_4\text{O}_{10}(\text{FOH})_2$
Liberite	$\text{Li}_2\text{BeSiO}_4$
Liddicoatite	$\text{Ca}(\text{Li}_2\text{Al}) \text{Al}_6(\text{Si}_6\text{O}_{18}) (\text{BO}_3)_3(\text{OH})_3(\text{OH})$
Lintisite	$\text{LiNa}_3\text{Ti}_2(\text{Si}_2\text{O}_6)_2\text{O}_2 \cdot 2\text{H}_2\text{O}$
Lithiomagnesite	$\text{Li}_2\text{Mg}(\text{CO}_3)_2$
Lithiomarsturite	$\text{LiCa}_2\text{Mn}_2\text{Si}_5\text{O}_{14}(\text{OH})$
Lithiophilite	$\text{LiMnPO}_3$
Lithiophorite	$(\text{Al}, \text{Li}) \text{Mn} \text{O}_2(\text{OH})_2$
Lithiophosphate	$\text{Li}_3\text{PO}_4$
Lithiotantite	$\text{Li} (\text{Ta}, \text{Nb})_3\text{O}_8$
Lithiowodginitite	$\text{LiTa}_3\text{O}_8$
Luanshiweiite	$\text{KLiAl}_{1.5}(\text{Si}_{3.5}\text{Al}_{0.5}) \text{O}_{10}(\text{OH}, \text{F})_2$

Lunijianlaite	$\text{Li}_{0.7}\text{Al}_{6.2}(\text{AlSi}_7\text{O}_{20}) (\text{OH}, \text{O})_{10}$
Magnesioclinoholmquistite	$\text{Li}_2(\text{Mg}, \text{Fe}^{2+})_3\text{Al}_2\text{Si}_8\text{O}_{22}(\text{OH})_2$
Magnesioclinoholmquistite	$\text{Li}_2(\text{Mg}, \text{Fe}^{2+})_3\text{Al}_2\text{Si}_8\text{O}_{22}(\text{OH})_2$
Magnesianeptunite	$\text{KNa}_2\text{Li} (\text{Mg}, \text{Fe})_2\text{Ti}_2\text{Si}_8\text{O}_{24}$
Magnesiostauroilite	$\text{Mg} (\text{Mg}, \text{Li})_3(\text{Al}, \text{Mg})_{18}\text{Si}_8\text{O}_{44}(\text{OH})_4$
Manandonite	$\text{Li}_2\text{Al}_4(\text{Si}_2\text{AlB}) \text{O}_{10}(\text{OH})_8$
Mangani-dellaventuraite	$\text{Na}(\text{Na}_2) (\text{MgMn}_2^{3+}\text{LiTi}^{4+}) \text{Si}_8\text{O}_{22}\text{O}_2$
Manganoneptunite	$\text{Na}_2\text{KLiMn}_2^{2+}\text{Ti}_2\text{Si}_8\text{O}_{24}$
Masutomilite	$(\text{K}, \text{Rb}) (\text{Li}, \text{Mn}^{3+}, \text{Al})_3(\text{AlSi}_3\text{O}_{10}) (\text{F}, \text{OH})_2$
Mccrillisite	$\text{Na Cs} (\text{Be}, \text{Li}) \text{Zr}_2(\text{PO}_4)_4 \cdot 1-2\text{H}_2\text{O}$
Montebrasite	$(\text{Li Al}(\text{PO}_4)) (\text{OH})$
Murakamiite	$\text{Ca}_2\text{LiSi}_3\text{O}_8(\text{OH})$
Nalipoite	$\text{NaLi}_2\text{PO}_4$
Nalivkinite	$\text{Li}_2\text{Na} (\text{Fe}^{2+}, \text{Mn}^{2+})_7\text{Ti}_2\text{Si}_8\text{O}_{26}(\text{OH})_4\text{F}$
Nambulite	$(\text{LiNa})\text{Mn}_4\text{Si}_5\text{O}_{14}(\text{OH})$
Nanlingite	$\text{Na} (\text{Ca}_5\text{Li}) \text{Mg}_{12}(\text{AsO}_3)_2[\text{Fe}(\text{AsO}_3)_6] \text{F}_{14}$
Nanpingite	$\text{Cs} (\text{Al}, \text{Mg}, \text{Fe}^{2+}, \text{Li})_2(\text{Si}_3\text{Al}) \text{O}_{10}(\text{OH}, \text{F})_2$
Natromontebrasite	$(\text{Na}, \text{Li}) \text{Al}(\text{PO}_4) (\text{OH}, \text{F})$
Natronambulite	$(\text{Na}, \text{Li}) (\text{Mn}, \text{Ca})_4\text{Si}_5\text{O}_{14}\text{OH}$
Neptunite	$\text{Na}_2\text{KLiFe}_2^{2+}\text{Ti}_2\text{Si}_8\text{O}_{24}$
Norrishite	$\text{KLiMn}_2^{3+}(\text{Si}_4\text{O}_{10}) \text{O}_2$
Olympite	$\text{Na}_5\text{Li}(\text{PO}_4)_2$
Orlovite	$\text{KLi}_2\text{Ti}(\text{Si}_4\text{O}_{10}) \text{OF}$
Oxo-mangani-leakeite	$\text{NaNa}_2(\text{Mn}_4^{3+}\text{Li}) \text{Si}_8\text{O}_{22}\text{O}_2$
Pahasapaite	$\text{Li}_8(\text{Ca}, \text{Li}, \text{K})_{10.5}\text{Be}_{24}(\text{PO}_4)_{24} \cdot 38\text{H}_2\text{O}$
Palermoite	$(\text{Li}, \text{Na})_2(\text{Sr}, \text{Ca}) \text{Al}_4(\text{PO}_4)_4(\text{OH})_4$
Peatite-(beta)	$\text{Li}_4\text{Na}_{12}\text{Y}_{12}(\text{PO}_4)_{12}(\text{CO}_3)_4(\text{F}, \text{OH})_8$
Petalite	$\text{LiAlSi}_4\text{O}_{10}$
Pezzottaite	$\text{Cs}(\text{Be}_2\text{Li}) \text{Al}_2\text{Si}_6\text{O}_{18}$
Piergorite	$(\text{Al}_{0.5}, \text{Fe}^{3+0.5}) (\text{Li}, \text{Be})_2\text{Si}_6\text{B}_8\text{O}_{36}(\text{OH}, \text{F})_2$
Polyolithionite	$\text{KLi}_2\text{Al}(\text{Si}_4\text{O}_{10}) (\text{F}, \text{OH})_2$
Potassiccarpholite	$\text{K} (\text{Li}, \text{Mn}^{2+})_2\text{Al}_4(\text{Si}_2\text{O}_6)_2(\text{OH}, \text{F})_8$
Potassic-ferri-leakeite	$\text{K}(\text{Na}_2) (\text{Mg}_2\text{Fe}_2^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Potassicleakeite	$\text{KNa}_2\text{Mg}_2\text{Fe}_2^{3+}\text{LiSi}_8\text{O}_{22}(\text{OH})_2$
Potassic-mangani-leakeite	$(\text{Na}, \text{K}) (\text{Na}_2) (\text{Mg}_2\text{Mn}_2^{3+}\text{Li}) \text{Si}_8\text{O}_{22}(\text{OH})_2$
Punkaruavite	$\text{LiTi}_2(\text{HSi}_4\text{O}_{12}) (\text{OH})_2 \cdot \text{H}_2\text{O}$
Ramikite-(beta)	$\text{Li}_4(\text{Na}, \text{Ca})_{12}\text{Y}_6\text{Zr}_6(\text{PO}_4)_{12}(\text{CO}_3)_4\text{O}_4[(\text{OH}), \text{F}]_4$
Rankamaite	$(\text{Na}, \text{K}, \text{Pb}, \text{Li})_3(\text{Ta}, \text{Nb}, \text{Al})_{11}(\text{O}, \text{OH})_{30}$
Rossmannite	$(\text{LiAl}_2) \text{Al}_6(\text{Si}_6\text{O}_{18}) (\text{BO}_3)_3(\text{OH})_3(\text{OH})$
Salitotite	$(\text{Li}, \text{Na}) \text{Al}_3(\text{AlSi}_3\text{O}_{10}) (\text{OH})_5$
Sicklerite	$(\text{Li} (\text{Mn}, \text{Fe}) \text{PO}_4)$
Silinaite	$\text{NaLiSi}_2\text{O}_5 \cdot 2\text{H}_2\text{O}$
Simferite	$\text{Li} (\text{Mg}, \text{Fe}^{3+}, \text{Mn}^{3+})_2(\text{PO}_4)_2$
Simmonsite	$\text{Na}_2\text{LiAlF}_6$
Sodic-ferri-clinoferroholmquistite'	$\text{Na}_{0.5}(\text{Li}_2) (\text{Fe}_3^{2+}\text{Fe}_2^{3+}) (\text{Si}_8\text{O}_{22}) (\text{OH})_2$

Sodic-ferripedrizite	Na(LiNa) (Fe <sup>3+</sup> 2Mg <sub>2</sub> Li) Si <sub>8</sub> O <sub>22</sub> (OH, F) <sub>2</sub>
Sogdianite	K(Na) <sub>2</sub> Li <sub>3</sub> (Zr, Fe, Ti) <sub>2</sub> [Si <sub>12</sub> O <sub>30</sub> ]
Sokolovaite	CsLi <sub>2</sub> Al(Si <sub>4</sub> O <sub>10</sub> ) F <sub>2</sub>
Soliotite	(LiNa)Al <sub>3</sub> (AlSi <sub>3</sub> O <sub>10</sub> ) (OH) <sub>5</sub>
Spodumene	Li Al (SiO <sub>3</sub> ) <sub>2</sub>
Sugilite	KNa <sub>2</sub> (Fe Mn Al) <sub>2</sub> Li <sub>3</sub> Si <sub>12</sub> O <sub>3</sub>
Swinefordite	Li (Al, Li, Mg) <sub>4</sub> (Si, Al) <sub>4</sub> O <sub>10</sub> ) <sub>2</sub> (OH, F) <sub>4</sub> · nH <sub>2</sub> O
Tainiolite	KLiMg <sub>2</sub> (Si <sub>4</sub> O <sub>10</sub> ) F <sub>2</sub>
Tancoite	LiNa <sub>2</sub> Al (PO <sub>4</sub> ) (HPO <sub>4</sub> ) (OH)
Tanohataite	LiMn <sub>2</sub> (HSi <sub>3</sub> O <sub>9</sub> )
Tavorite	(LiFe <sup>3+</sup> (PO <sub>4</sub> ) (OH))
Tiptopite	K <sub>2</sub> (Na, Ca) <sub>2</sub> Li <sub>3</sub> Be <sub>6</sub> (PO <sub>4</sub> ) <sub>6</sub> (OH) <sub>2</sub> · H <sub>2</sub> O
Trilithionite	K(Li <sub>1.5</sub> Al <sub>1.5</sub> ) (AlSi <sub>3</sub> O <sub>10</sub> ) (F, OH) <sub>2</sub>
Triphylite	(LiFe <sup>2+</sup> PO <sub>4</sub> )
Virgilite	LiAlSi <sub>2</sub> O <sub>6</sub>
Voloshinite	Rb (LiAl <sub>1.5</sub> ) (Al <sub>0.5</sub> Si <sub>3.5</sub> ) O <sub>10</sub> F <sub>2</sub>
Walkerite	Ca <sub>16</sub> (Mg, Li) <sub>2</sub> (B <sub>13</sub> O <sub>17</sub> (OH) <sub>12</sub> ) <sub>4</sub> Cl <sub>6</sub> ·28H <sub>2</sub> O
Watatsumiite	Na <sub>2</sub> K Li (Mn <sup>2+</sup> , Fe <sup>2+</sup> ) <sub>2</sub> V <sub>2</sub> <sup>4+</sup> (Si <sub>8</sub> O <sub>24</sub> )
Wilancookite	(Ba, K, Na) <sub>8</sub> (Ba, Li) <sub>6</sub> Be <sub>24</sub> P <sub>24</sub> O <sub>96</sub> ·32H <sub>2</sub> O
Zabuyelite	(Li <sub>2</sub> CO <sub>3</sub> )
Zektzerite	Li Na (Zr Ti H F) Si <sub>6</sub> O <sub>15</sub>
Zinnwaldite	K Li Fe Al (AlSi <sub>3</sub> ) O <sub>10</sub> (OHF) <sub>2</sub>

**Table S11.** Location and parameters of some lithium pegmatites mines globally.

Description	Main Mineral	%Li <sub>2</sub> O	Li reserve (Mt)
Afghanistan, Drumgal, Parun <sup>[12]</sup>	Spodumene	1.38 – 1.58	0.235
Afghanistan, Jamanak <sup>[91]</sup>	-----	1.83	0.45
Afghanistan, Lower Pasghusta <sup>[91]</sup>	-----	2.2 – 2.31	0.124
Afghanistan, Nilaw, Laghman <sup>[91]</sup>	Spodumene	3	1.5 – 2.5
Afghanistan, Parun, Badakhshan <sup>[91]</sup>	Spodumene	1.5	3
Afghanistan, Pasghusta <sup>[91]</sup>	-----	2.14	-----
Afghanistan, paskhi <sup>[91]</sup>	-----	1.46 – 1.56	0.127
Afghanistan, Tsamgal <sup>[91]</sup>	-----	1.5 – 2.32	0.1875
Afghanistan, Yaryhgul <sup>[91]</sup>	-----	1	0.124
Afghanistan, Yorigal <sup>[91]</sup>	-----	----	----
Australia, Broken Hill region <sup>[97]</sup>	Amblygonite	10	-----
Australia, Greenbushes pegmatite mine <sup>[5]</sup>	Spodumene	1.2 – 3.9	0.3 – 0.7
Australia, Londonderry <sup>[97]</sup>	Petalite	5	-----
Australia, Mt Cattlin <sup>[12]</sup>	Spodumene	7 – 8.4	0.07
Australia, Mt Marion <sup>[97]</sup>	Spodumene	1.3	0.0198
Australia, Pilgangoora <sup>[97]</sup>	Spodumene	1.25	156.3
Brazil, Ceará <sup>[5]</sup>	Lepidolite	3.5-4.2	0.139
Brazil, Minas Gerais <sup>[5]</sup>	Spodumene	1.56	0.085
Canada, Big Bird / Curlew <sup>[12]</sup>	Spodumene	1.2 – 1.7	-----
Canada, English River Greenstone <sup>[12]</sup>	Spodumene	-----	-----
Canada, Gods Lake <sup>[12]</sup>	Spodumene	-----	-----
Canada, James Bay, Whabouchi <sup>[12]</sup>	Spodumene	1.54	0.18



Canada, La Motte <sup>[5]</sup>	Spodumene	0.5	0.023
Canada, Lac du Bonnet mine <sup>[12]</sup>	Spodumene	1.85	----
Canada, LaCorne <sup>[12]</sup>	Spodumene	0.85	0.08
Canada, Manitoba, Bernic Lake <sup>[12]</sup>	Spodumene	0.64 – 1.28	0.2
Canada, McAvoy <sup>[12]</sup>	Spodumene	3.3 – 4.5	----
Canada, Moblan <sup>[12]</sup>	Spodumene	1.7	0.04
Canada, Moose 2 <sup>[12]</sup>	Spodumene	---	0.016
Canada, Nama Creek <sup>[12]</sup>	Spodumene	1.1	2.4
Canada, Niemi Lake <sup>[12]</sup>	Spodumene	----	0.001
Canada, Ontario, Nakima mine <sup>[12]</sup>	Eucryptite	----	----
Canada, Quebec, Barraute <sup>[5]</sup>	Spodumene	0.2 – 0.5	0.09 – 0.3
Canada, Quebec, Val d'Or <sup>[12]</sup>	Spodumene	1.02	10.2
Canada, Rose <sup>[12]</sup>	----	----	----
Canada, Separation Rapids <sup>[5]</sup>	Petalite	0.7	0.056
Canada, Shawinigan, Quebec <sup>[12]</sup>	Spodumene	6	27.3
Canada, Sirmac Lake <sup>[12]</sup>	----	----	0.003
Canada, Sirmac Lake <sup>[12]</sup>	----	----	----
Canada, Snow Lake <sup>[122]</sup>	----	----	0.026
Canada, Snow Lake <sup>[12]</sup>	----	----	----
Canada, Thompson Brothers <sup>[5]</sup>	----	----	0.026
Canada, Wekusco <sup>[12]</sup>	Spodumene	0.79	0.028
Canada, Wekusko Lake <sup>[12]</sup>	Spodumene	0.79	0.028
Canada, Yellowknife <sup>[5]</sup>	Spodumene	0.66	0.1
Chin, Sichuan Dexin's mine <sup>[97]</sup>	----	0.05	0.05
China, Altai Mountains <sup>[97]</sup>	Spodumene	1.5	----
China, Daoxian <sup>[97]</sup>	Lepidolite	0.552	0.125
China, Gajika <sup>[5]</sup>	Spodumene	0.3	0.591
China, Hunan, Lushi <sup>[97]</sup>	----	0.47	0.009
China, Hupei <sup>[97]</sup>	Petalite	----	0.042
China, Jiajika <sup>[5]</sup>	----	0.59	0.204
China, Jinchuan <sup>[97]</sup>	Petalite	----	----
China, Lijiagou <sup>[97]</sup>	Petalite	----	0.06
China, Maerkang <sup>[5]</sup>	Spodumene	0.125	0.225
China, Ningdu <sup>[97]</sup>	Petalite	----	----
China, Sichuan, Jaijika <sup>[97]</sup>	Spodumene	1.28	0.480
China, Yichun <sup>[97]</sup>	Lepidolite	2	0.325
D.R. Congo, Katanga <sup>[12]</sup>	----	----	----
D.R. Congo, Kinshasa <sup>[12]</sup>	----	----	1
D.R. Congo, Kitotolo <sup>[12]</sup>	Spodumene	0.6	0.8
D.R. Congo, Manono <sup>[12]</sup>	Spodumene	0.6	2.3
Mexico, Sonora <sup>[8]</sup>	----	----	----
Russia, Achivansky / Uchastok <sup>[87]</sup>	----	----	0.05
Russia, Alti mountains, Alakhinskoe <sup>[87]</sup>	Spodumene	0.8	1.74
Russia, Diturskoe <sup>[87]</sup>	----	----	----
Russia, Knyazheskoe <sup>[12]</sup>	----	----	----
Russia, Kolmorzerskoe <sup>[12]</sup>	----	----	0.288
Russia, Ohmylk <sup>[12]</sup>	----	----	----
Russia, Olondinskoe <sup>[12]</sup>	----	----	----
Russia, Otboninoe <sup>[12]</sup>	----	----	----
Russia, Pellapahik <sup>[12]</sup>	----	----	----
Russia, Podgorskoe <sup>[12]</sup>	----	----	----

Russia, Raduga <sup>[12]</sup>	----	----	----
Russia, Suglugsкое <sup>[12]</sup>	Spodumene	----	----
Russia, Tala <sup>[12]</sup>	----	----	----
Russia, Tuva Republic Tastyg <sup>[12]</sup>	Spodumene	1.86	0.05
Russia, Архангельская область, Voznesenskoe <sup>[87]</sup>	----	----	0.14
Russia, Белореченск <sup>[87]</sup>	Spodumene	----	0.05
Russia, Бѣлу-Тагнинское <sup>[97]</sup>	----	----	----
Russia, Большой Потчеварек <sup>[87]</sup>	----	----	----
Russia, Забайкалье, Etykinsкое <sup>[12]</sup>	Lepidolite	0.23	0.046
Russia, Иркутская область <sup>[87]</sup>	----	0.49	0.2
Russia, Иркутская область, Goltsovoe <sup>[12]</sup>	Spodumene	0.8	----
Russia, Иркутская область, Uriksкое <sup>[87]</sup>	Spodumene	----	0.1 – 0.3
Russia, Иркутская область, Vishnyakovskoe <sup>[87]</sup>	----	0.49	0.21
Russia, Кривой Рог <sup>[87]</sup>	Spodumene	----	0.130
Russia, Мурманская область <sup>[12]</sup>	----	----	0.4
Russia, Олений Хребет <sup>[12]</sup>	----	----	----
Russia, Орловское <sup>[12]</sup>	Lepidolite	----	0.05
Russia, Пограничное <sup>[12]</sup>	----	----	0.05
Russia, Северный Vystup <sup>[12]</sup>	----	----	----
Russia, Улуг-Танзек <sup>[87]</sup>	----	----	0.3
Russia, Читинская область, Zavitinskoe <sup>[87]</sup>	----	----	0.14
USA, Arizona, Yavapai county <sup>[8]</sup>	Clay	0.01	----
USA, Alabama, Bessemer <sup>[12]</sup>	----	0.67	0.42
USA, South Dakota, Black Hills <sup>[15]</sup>	Spodumene	0.5-3 Li	----
USA, California <sup>[12]</sup>	Lepidolite	0.2	----
USA, California, Hector <sup>[8]</sup>	Hectorite	0.27 – 0.53	2
USA, California, Kramer <sup>[8]</sup>	Clay	0.19	----
USA, California, San Diego, Stewart mine <sup>[8]</sup>	----	----	----
USA, Connecticut, Branchville <sup>[8]</sup>	Eucryptite	----	----
USA, Arkansas, Magnolia <sup>[8]</sup>	----	----	----
USA, Nevada, Humboldt County <sup>[8]</sup>	Spodumene	0.69	----
USA, Nevada, NYclaims <sup>[8]</sup>	----	----	----
USA, Nevada, Kings Valley <sup>[43]</sup>	Hectorite	0.04 - 0.7	0.015
USA, Nevada, Paymaster <sup>[8]</sup>	----	----	----
USA, New Mexico, Harding mine <sup>[15]</sup>	Eucryptite	----	----
USA, North Carolina, Cherryville <sup>[5]</sup>	Spodumene	1.2	----
USA, North Carolina, Foote <sup>[97]</sup>	Eucryptite	----	0.15
USA, North Carolina, Kings Mt <sup>[5]</sup>	Spodumene	0.07 - 2	0.083
USA, Utah's Spor Mountain <sup>[43]</sup>	----	0.11	----
Zimbabwe, Barkam <sup>[12]</sup>	----	----	0.22
Zimbabwe, Bikita <sup>[126]</sup>	Spodumene	1.4 – 3.6	0.0567
Zimbabwe, Harare <sup>[126]</sup>	----	----	----
Zimbabwe, Hwange <sup>[126]</sup>	----	----	----
Zimbabwe, Insiza <sup>[126]</sup>	----	----	----
Zimbabwe, Kamativi <sup>[12]</sup>	Spodumene	0.28	0.28
Zimbabwe, Masvingo <sup>[8]</sup>	Spodumene	1.4	0.057
Zimbabwe, Matobo <sup>[126]</sup>	----	----	----
Zimbabwe, Mazoe <sup>[126]</sup>	----	----	----

**Table S12.** Comparison between current LIB technologies and previous battery technology [96, 107, 132].

<b>Lithium ion Technology</b>	<b>Voltage</b>	<b>Specific Energy</b>
Li Cobalt Oxide (LiCoO <sub>2</sub> )	3.65 V	150–200 Wh/kg
Li Manganese Oxide (LiMn <sub>2</sub> O <sub>4</sub> )	3.8 V	100–150 Wh/kg
Li Nickel Manganese Cobalt Oxide (LiNiMnCoO <sub>2</sub> )	3.7 V	150–220 Wh/kg
Li Iron Phosphate (LiFePO <sub>4</sub> )	3.2 V	90–120 Wh/kg
Li Nickel Cobalt Aluminium Oxide (LiNiCoAlO <sub>2</sub> )	3.67 V	200–260 Wh/kg
Li Titanate (Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> )	2.4 V	50–80 Wh/kg
<b>Other Battery Technology</b>	<b>Voltage</b>	<b>Specific Energy</b>
Nickel Metal Hydride Battery	1.2 V	60–120 Wh/kg
Sodium Nickel Chloride Battery	2.58 V	100–120 Wh/kg
Zinc – Air Battery	1.35 – 1.4 V	430 Wh/kg
Lead Acid Battery	2.1 V	33–42 Wh/kg
Nickel Cadmium	1.2 V	40–60 Wh/kg
Nickel-zinc battery	1.65 V	100 Wh/kg
Nickel-iron battery	1.2 V	19–25 Wh/kg