

Battery Component Price Report

February 2024

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Top movers (month on month average)

↓ NMC Cells	-3.1%	↑ NiSO4	+2.8%
↓ MnO2	-2.8%	↑ Synth. Graphite	+1.1%
↓ LFP Cells	-2.6%	↑ Nat. Graphite	+0.7%

Cell costs

Table 1. Monthly average prismatic EV cell cost summary


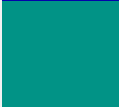
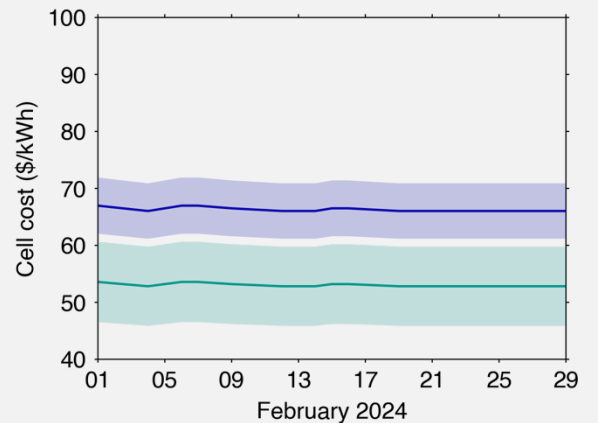
EV Battery	Price (\$/kWh)	+/- (\$/kWh)	M/M %	Legend
NMC	66	4.9	-3.1	
LFP	53	7.0	-2.6	

Figure 1. Prismatic EV cell cost time series



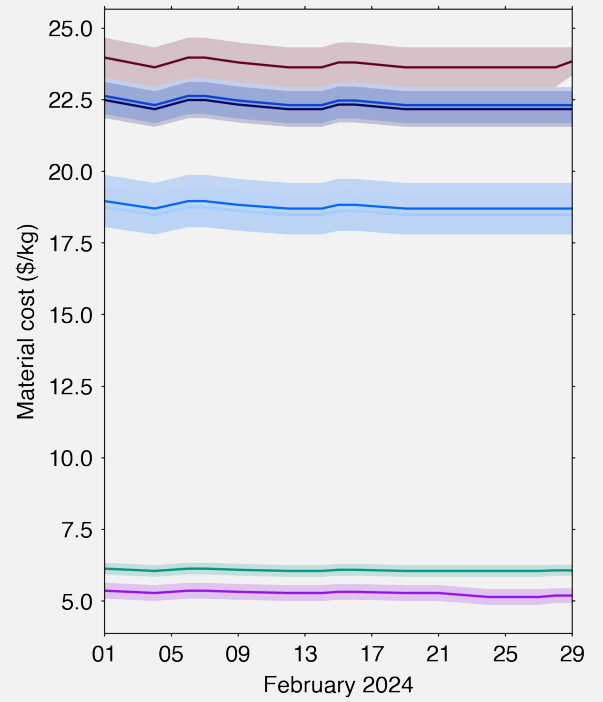
LFP and NMC cell prices remain relatively stable across the month, falling by ~3%. LFP cells reach average monthly cost below \$60/kWh, with NMC cells a ~25% cost premium above LFP.

Cathodes

Table 2. Monthly average cathode active material cost summary

Cathode material	Price (\$/kg)	+/- (\$/kg)	M/M %	Legend
LFP	6	0.2	-0.3	
NMC811	22	0.6	0.0	
NCA	22	0.6	0.0	
NMC622	18	0.9	0.0	
NMC532	18	0.7	0.0	
LCO	23	0.7	+0.2	
LMO	5	0.3	-0.6	

Figure 2. Cathode cost time series



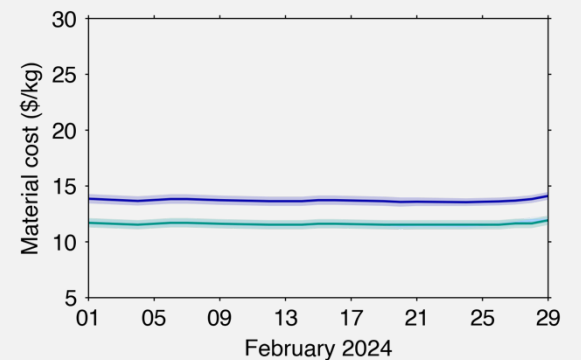
Cathode active material costs remain stable across the month for all lithium chemistries, including phosphate and layered oxide chemistries.

Lithium

Table 3. Monthly average raw lithium cost summary

Lithium material	Price (\$/kg)	+/- (\$/kg)	M/M %	Legend
Li ₂ CO ₃ , battery 99.5%	13	0.4	-0.6	
Li ₂ CO ₃ , industrial 99.0%	11	0.3	-0.2	
LiOH, coarse 56.5%	11	0.4	-0.7	

Figure 3. Lithium cost time series



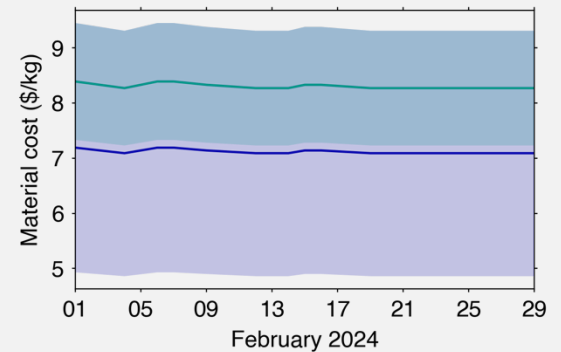
Lithium prices stabilize with minimal change across the month. Previous month on month changes have been over 10% in magnitude, likely February impact stems from Chinese Lunar New Year activity.

Anodes

Table 4. Monthly average graphite anode cost summary

Graphite	Price (\$/kg)	+/- (\$/kg)	M/M %	Legend
Synthetic	7	2.2	+1.1	
Natural	8	1.0	+0.7	

Figure 4. Graphite cost time series



Synthetic graphite maintains larger spread of supplier prices when compared to natural graphite. Both materials again priced at \$7-8/kg this month.

Electrolytes

Table 5. Monthly average electrolyte material cost summary









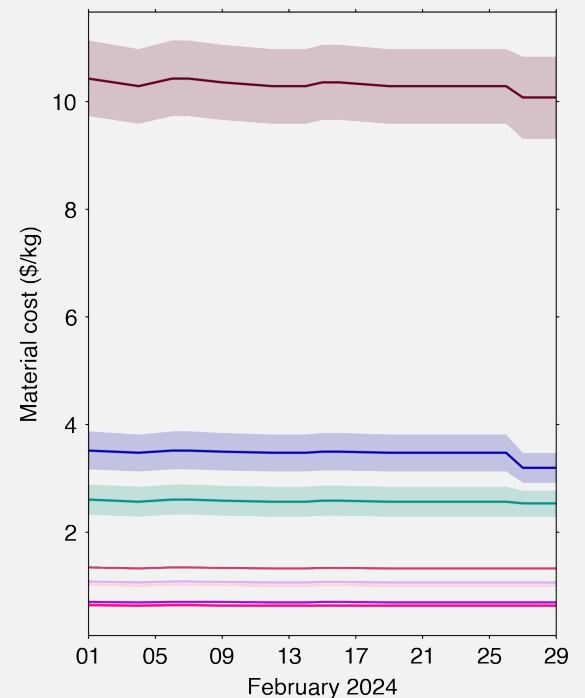
Electrolyte	Price (\$/kg)	+/- (\$/kg)	M/M %	Legend
LFP blend	2.0	0.3	-0.8	
NMC blend	3.0	0.3	-1.7	
LiPF6 salt	10.0	0.7	-1.0	
EC solvent	0.7	0.02	-1.2	
DMC solvent	0.6	0.03	0.0	
DEC solvent	1.3	0.02	0.0	
EMC solvent	1.0	0.01	-1.8	
PC solvent	1.1	0.03	0.0	

Figure 5. Electrolyte cost time series



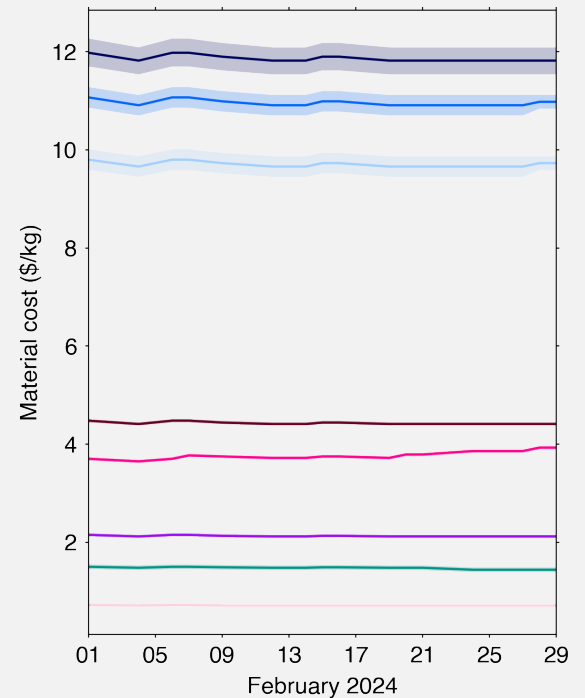
Electrolytes costs markedly stabilize compared to previous months decreasing less than 2% across the month. This is driven by flat LiPF6 salt costs.

Precursors

Table 6. Monthly average precursor material cost summary

Precursor	Price (\$/kg)	+/- (\$/kg)	M/M %	Legend
FePO4	1.5	0.05	-2.1	
811 PCAM	11.0	0.3	0.0	
622 PCAM	11.0	0.2	+0.1	
532 PCAM	9.0	0.2	+0.1	
MnO2	2.1	0.03	-2.8	
NiSO4, battery grade	3.8	0.03	+2.8	
CoSO4, >20.5%	4.0	0.0	-0.2	
MnSO4, battery grade	0.7	0.01	0.0	

Figure 6. Precursor cost time series



Precursor price levels remain flat for key materials. NiSO4 nickel sulfate material prices rose across the month nearing \$4.8.

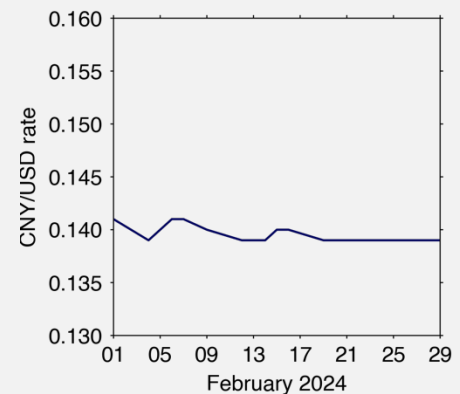
Other materials

Table 7. Monthly average other material cost summary

Material	Price	+/-	M/M %	Units
Separator, pp/pe/ceramic	0.2	0.02	-5.8	\$/m2
Cu foil, 6um	12.0	—	—	\$/kg
Al foil, 12um	5.0	—	—	\$/kg
Al-laminated pouch	2.0	0.3	0.0	\$/m2
PVDF	26.0	12.6	0.0	\$/kg

Exchange rates

Figure 7. USD-CNY exchange rates



About

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Data provenance

Material costs represents China-centric market pricing. Intercalation analyses aggregates price data across 10+ independent platform resources and augments with industry expert input to produce this bespoke monthly battery component pricing service. Pricing ranges presented are indicative of the variability across suppliers. Individual component specification changes such as the ceramic coating on separators, single/poly crystallinity of NMC cathodes, or copper foil thickness, can dictate significantly higher or lower material costs than those reported. Similar uncertainty in variability applies across geographic regions. While information sources are reliable and representative, Intercalation does not guarantee the accuracy or completeness of this information. See disclaimer for full details.

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Glossary

Al: Aluminum

CNY: Chinese yuan

CoSO4: Cobalt sulfate

Cu: Copper

DEC: Diethyl carbonate

DMC: Dimethyl carbonate

EC: Ethylene carbonate

EMC: Ethyl methyl carbonate

EV: Electric vehicle

FePO4: Iron phosphate precursor

kWh: Kilowatt-hour

LCO: Lithium cobalt oxide cathode

LFP: Lithium iron phosphate cathode

Li2CO3: Lithium carbonate

LiOH: Lithium hydroxide

LiPF6: Lithium hexafluorophosphate

LMO: Lithium manganese oxide

M/M: Month-on-month

MnO2: Manganese dioxide

MnSO4: Manganese sulfate

NCA: Nickel cobalt aluminum cathode

NiSO4: Nickel sulfate

NMC: Nickel manganese cobalt cathode

PC: Propylene carbonate

PCAM: cathode-active-material precursor

PVDF: Polyvinylidene fluoride

USD: US dollar