
NaatBatt Lithium Materials Forecast

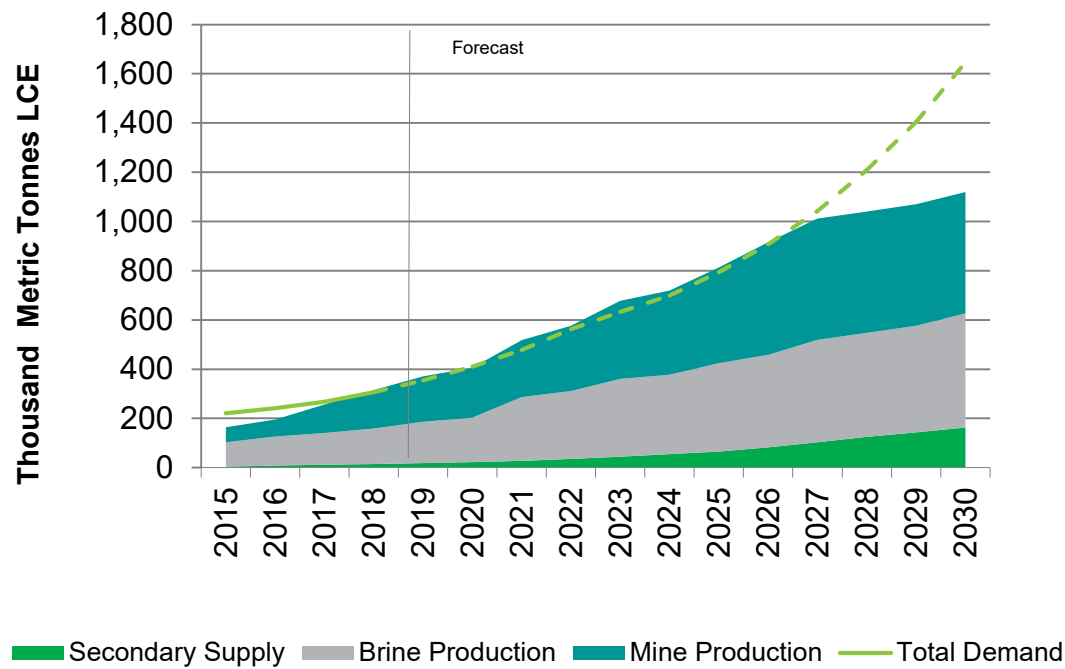
12 February 2020

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Lithium Supply and Demand

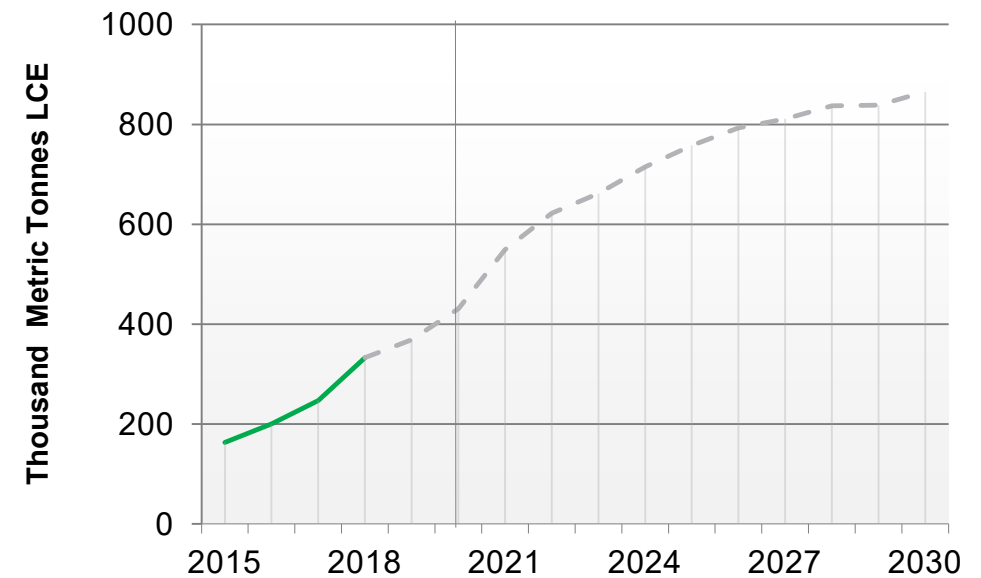
Global Lithium Supply & Demand Balance Forecast



Source: IHS Markit

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Lithium Raw Material Production

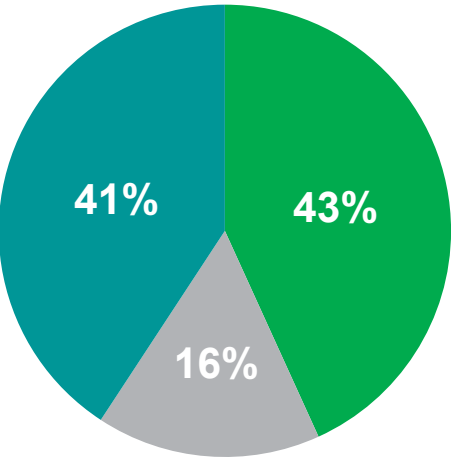


Source: IHS Markit

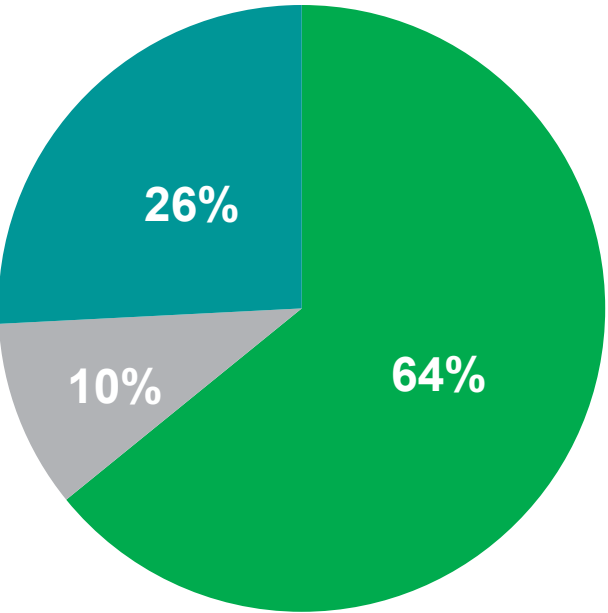
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Electric Vehicle Share of Lithium demand 2019 - 2026

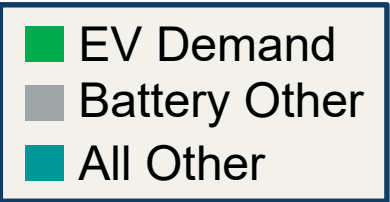
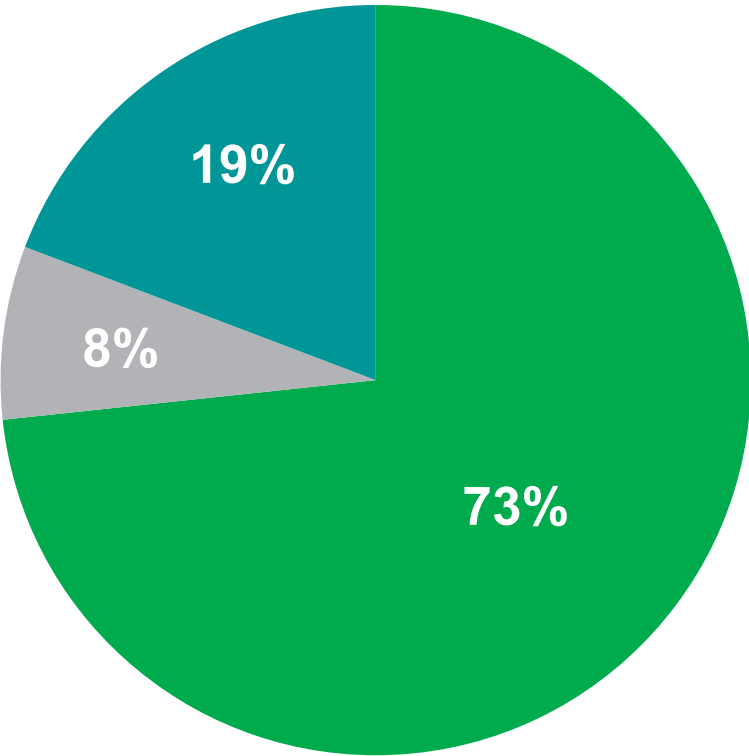
2019 Lithium Demand



2023 Lithium Demand



2026 Lithium Demand



The Quality Issue!

Lithium Hydroxide Monohydrate from Spodumene

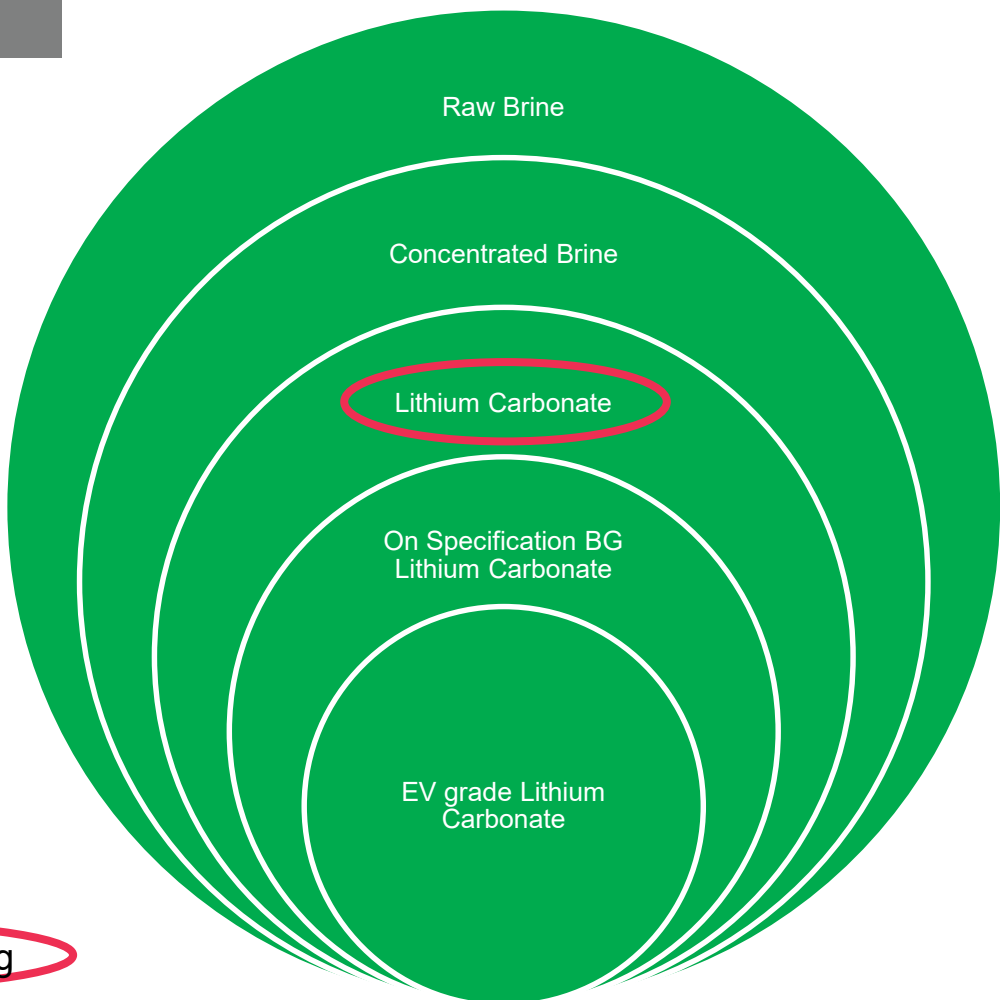


Conversion Ratio

135%	180%
120%	125%
100%	100%
85%	75%
60%	60%

Typical Capacity Rating

Lithium Carbonate from Brine

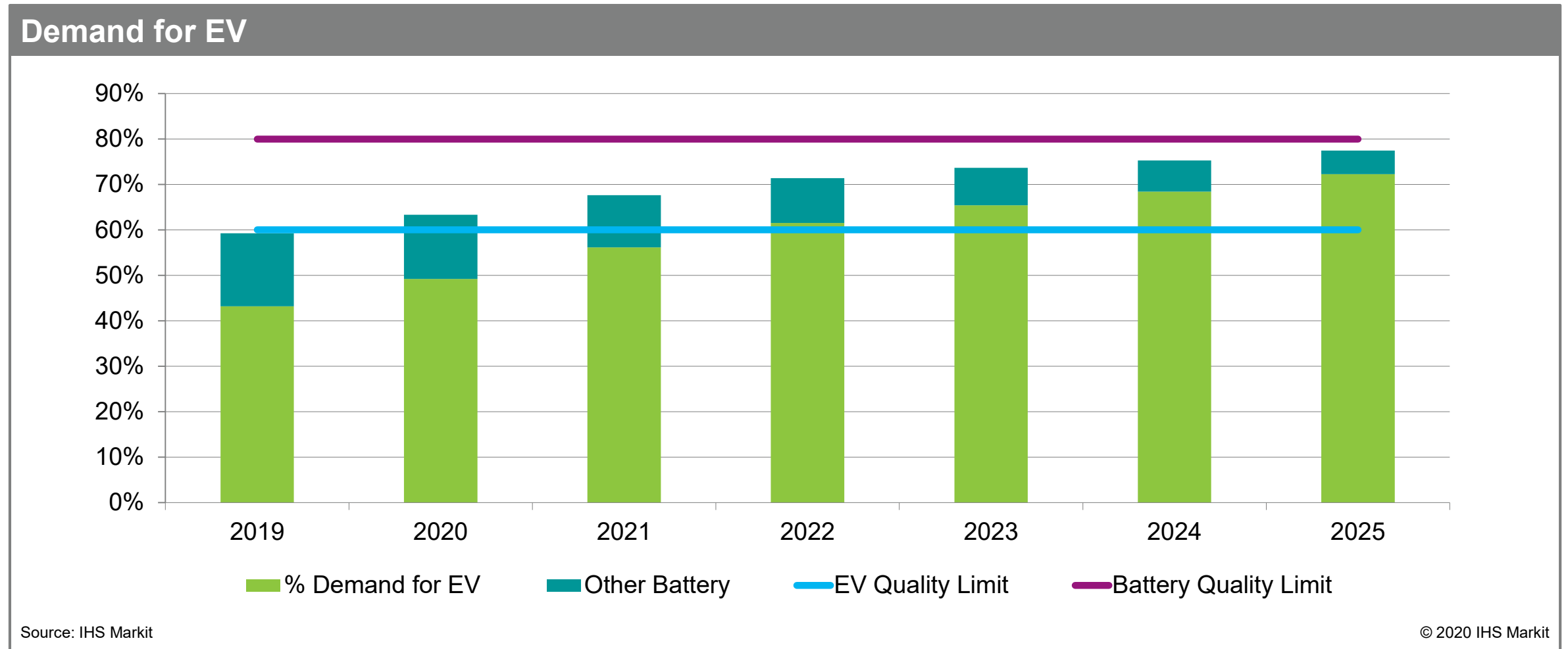


What is EV Grade Lithium?

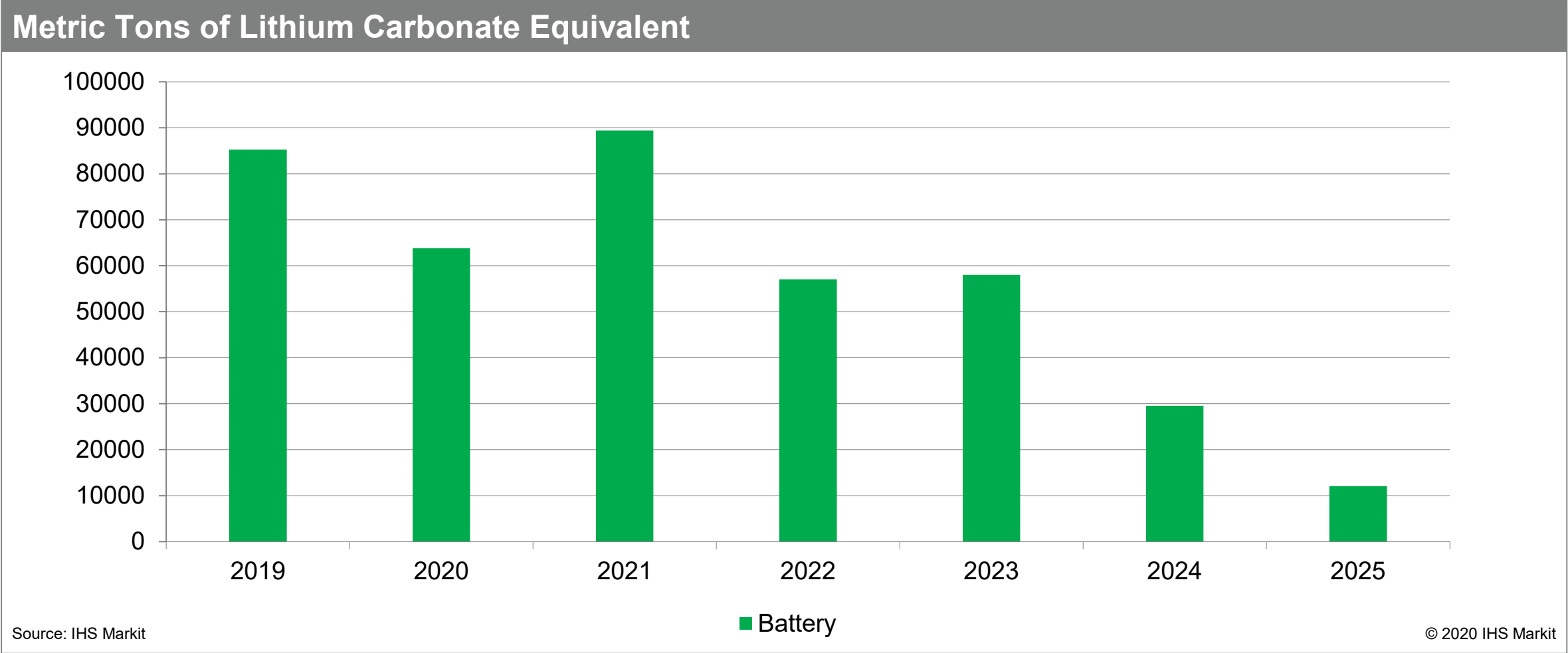
- Plant should be operating a minimum of six months for a legacy producer and twelve months for a new entrant
- Meets agreed upon specification
- Demonstrates consistency of operations defined as all measured parameters being stable and within specification over a defined number of lots usually 20 days of operation or longer



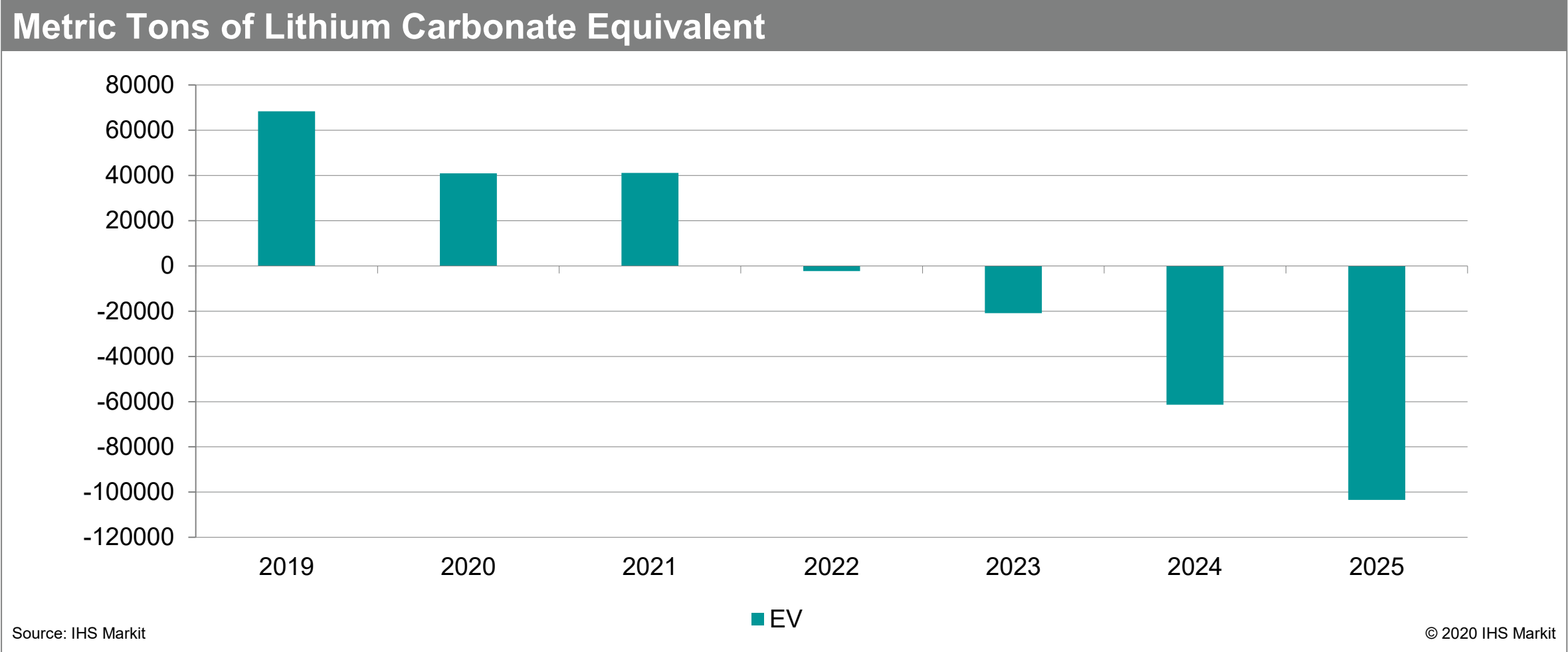
How much Lithium can be used in EV applications



Surplus / Deficit of Capacity of Battery Quality Lithium Salts



Surplus / Deficit of Capacity of EV grade Lithium Salts



How do you overcome the EV supply deficit

Relax the needs for EV Grade

- Consumer led
- Open specifications
- Threatens warranty at end use level
- Manage QC at Cathode level

Upgrade BG Material

- Supplier led
- Requires higher prices to cover
- Threatens competitiveness
- CAPEX requirements

Accelerate overall Supply

- Supplier led
- Open specifications
- Increases risk of lower prices
- Manage QC at Cathode level

All approaches require greater commitment at every level of the supply chain reducing competitiveness

Conclusion

I believe that the growth in demand tied to Electric Vehicles will create shortfalls in supply in the near term even though the overall picture would suggest that ample supply is in place in the coming years.