



# Lithium: Challenges and Opportunities

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25 May 2011

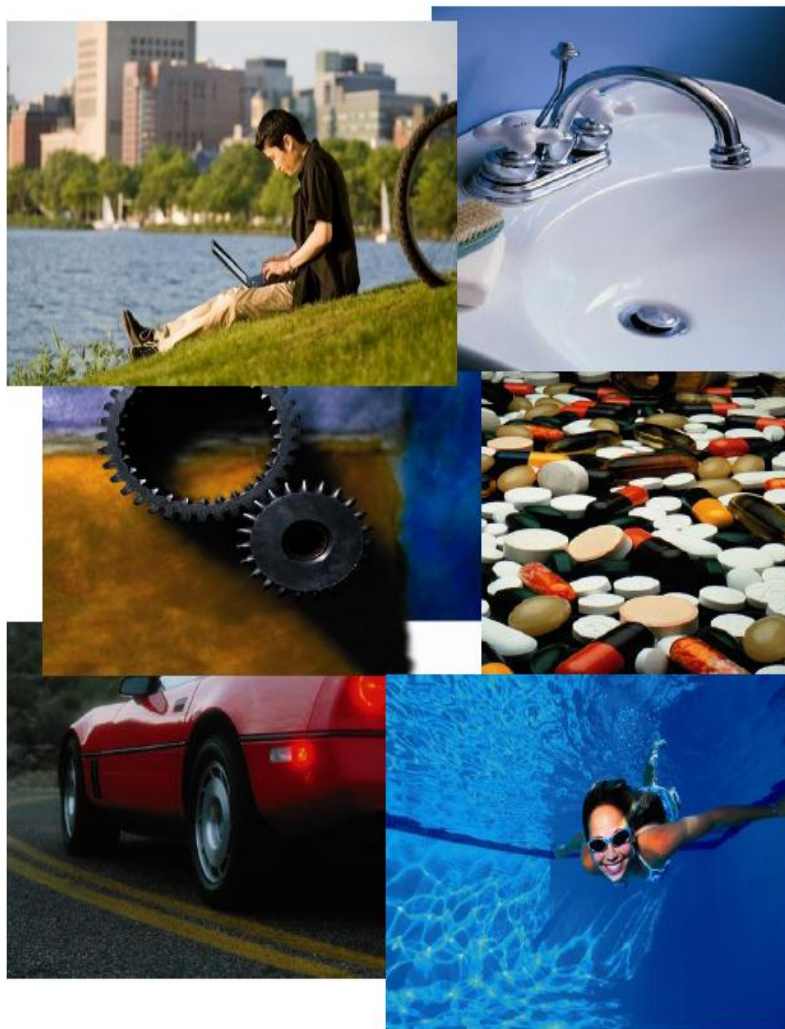
# Lithium: The Big Picture

- ❖ What do we use Lithium for?
- ❖ How much do we use?
- ❖ Where does it come from?
- ❖ How big is the resource?
- ❖ How much will we need in the future?
- ❖ Are future uses likely to be constrained by the availability of supply?

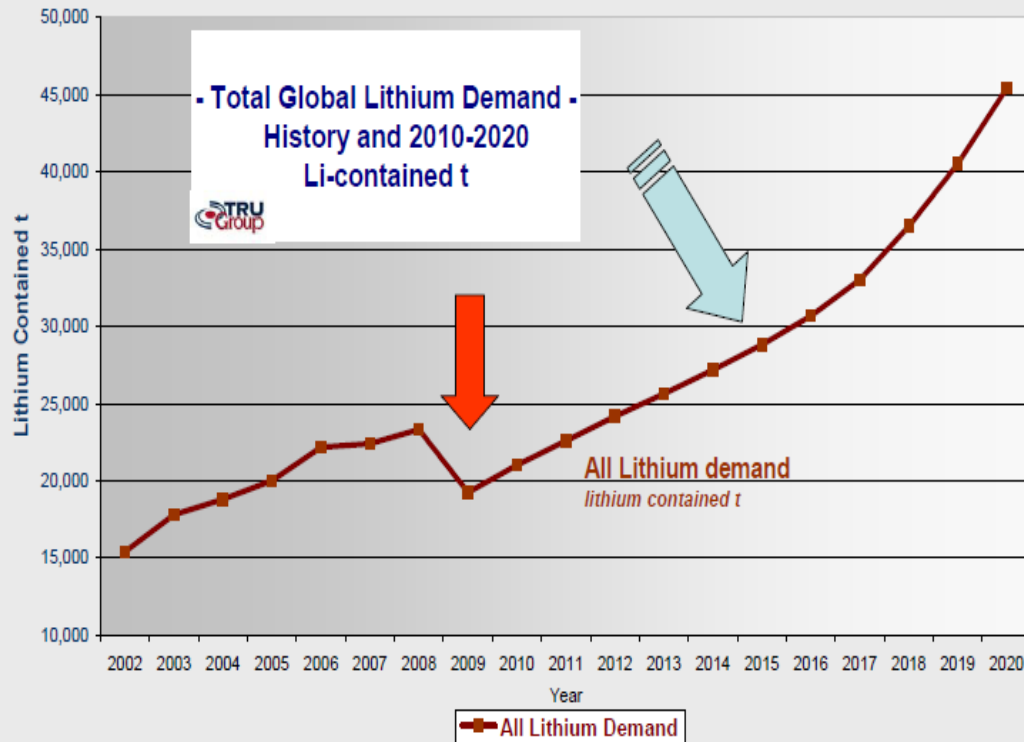


## Lithium's Current Markets

- Air Treatment
- Aluminum
- Construction
- Battery & Electronics
- Glass & Ceramics
- Greases & Lubricants
- Pharmaceuticals
- Polymers & Plastics
- Pool Water Treatment



# How much Li do we need?

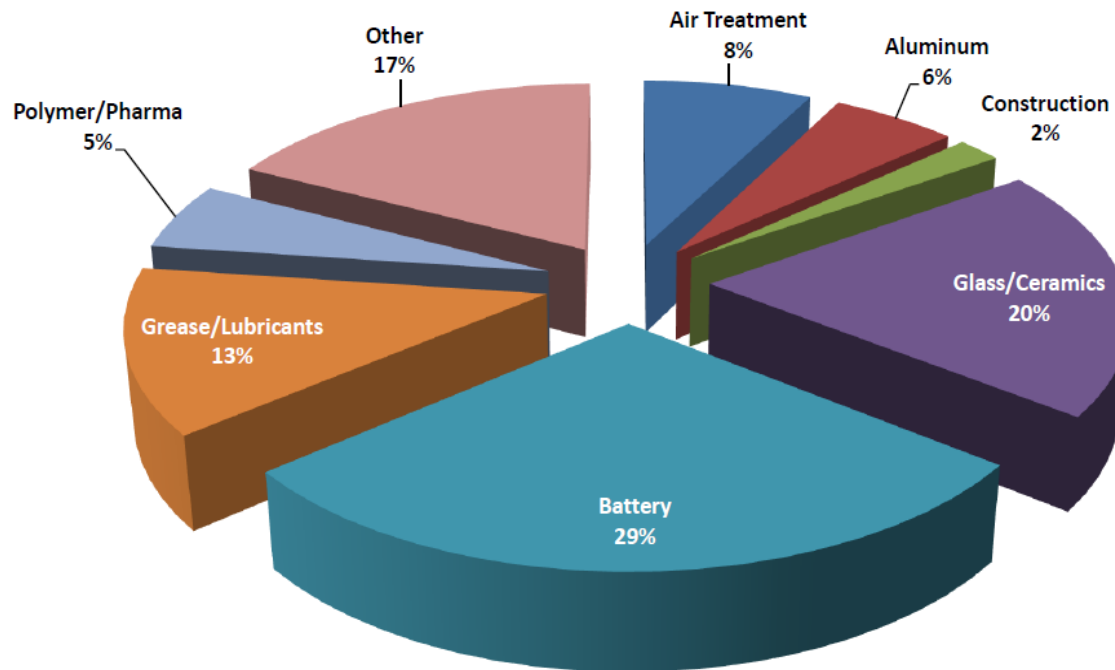


# How do we use Li today?



FMC Lithium

Estimated Lithium Market Demand<sup>1</sup>

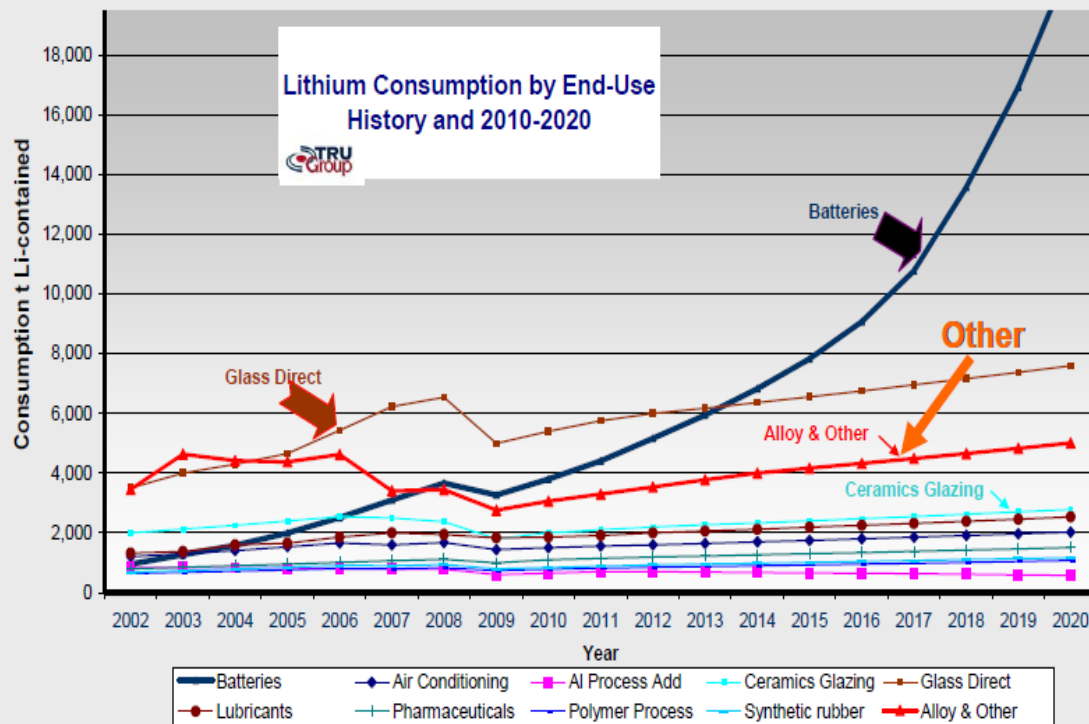


Estimated 2009 Market Demand by Industry









<sup>1</sup> FMC Estimate



# How much will we need?



# Where will demand grow?

USE SEGMENT - t Li-contained	2005	2010	2020	% Growth pa	
	% total	% total	% total	05 - 10	10 - 20
 Air Conditioning	8%	7%	4%	-0.4%	3.1%
 Aluminium Process Add	4%	3%	1%	-4.5%	-1.2%
 Batteries	10%	18%	47%	13.8%	18.7%
 Ceramics Glazing	12%	10%	6%	-3.5%	3.4%
 Glass/Ceramic Li Add	23%	26%	17%	3.0%	3.5%
 Lubricants	8%	9%	6%	2.4%	3.1%
Pharmaceuticals	5%	5%	3%	2.9%	3.2%
Polymer Process	4%	4%	2%	0.7%	3.2%
Synthetic rubber	4%	4%	3%	-0.2%	3.4%
 Other Plus Alloy	22%	15%	11%	-6.9%	5.1%
 ALL USES Li-contained	100%	100%	100%	1.0%	8.0%
Chemical Uses Demand	77%	74%	83%	0.3%	9.3%
Glass/Ceramics Direct	23%	26%	17%	3.0%	3.5%

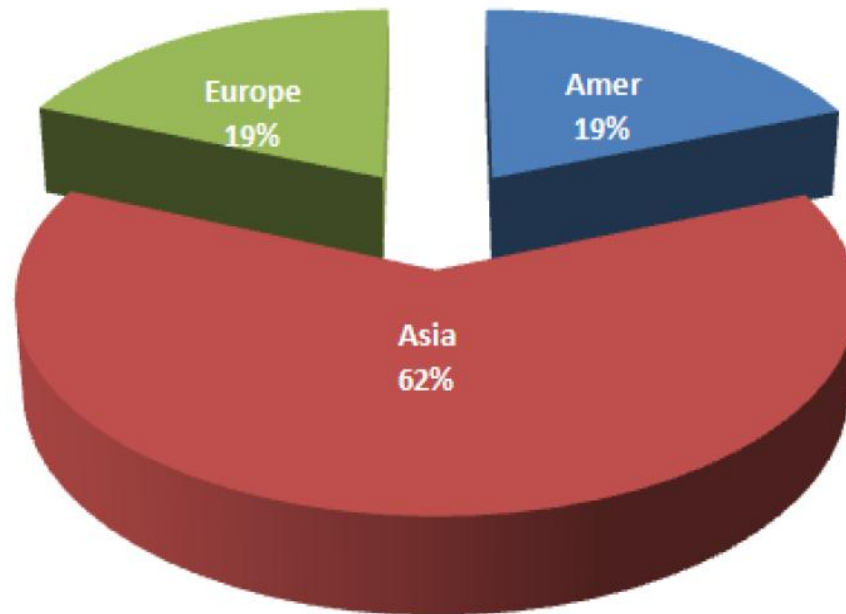


# Where does Li come from today?



FMC Lithium

2009 Lithium Consumption<sup>1</sup>



<sup>1</sup> FMC Estimate



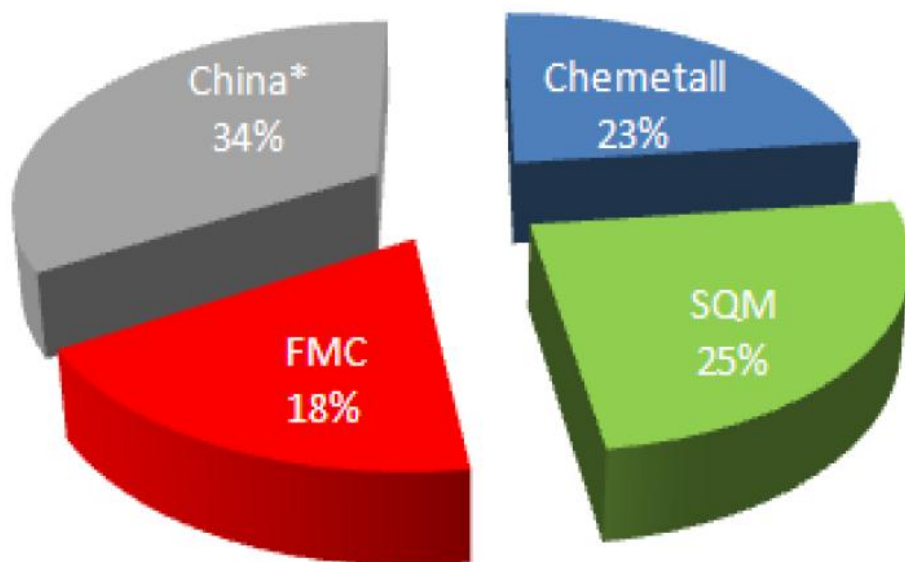


# Who brings Li to market?



FMC Lithium

## 2009 Market Supply<sup>1</sup>



\*Tailson out of Australia also provides ore to China for lithium chemical conversion

<sup>1</sup> FMC Estimate



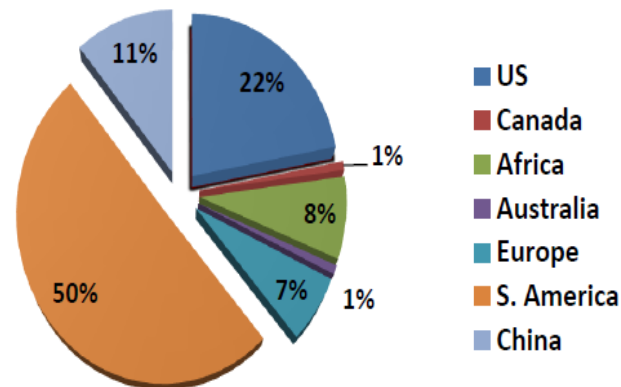
# How big is the resource?

## Total Worldwide Lithium Reserves and Resources

(29,843 KMT as Li or 157,571 KMT as lithium carbonate, LCE)

### Worldwide Reserves By Region and Resource Type

KMT Li	US	Canada	Africa	Australia	Europe	S. America	China	Total
Pegmatites	2,830	255	2,357	262	1,114	85	750	7,653
Continental Brines	40					14,950	2,600	17,590
Geothermal Brines	1,000							1,000
Oilfield Brines	750							750
Hectorites	2,000							2,000
Jadarite					850			850
	6,620	255	2,357	262	1,964	15,035	3,350	29,843
*KMT LCE	34,954	1,346	12,445	1,383	10,370	79,385	17,688	157,571

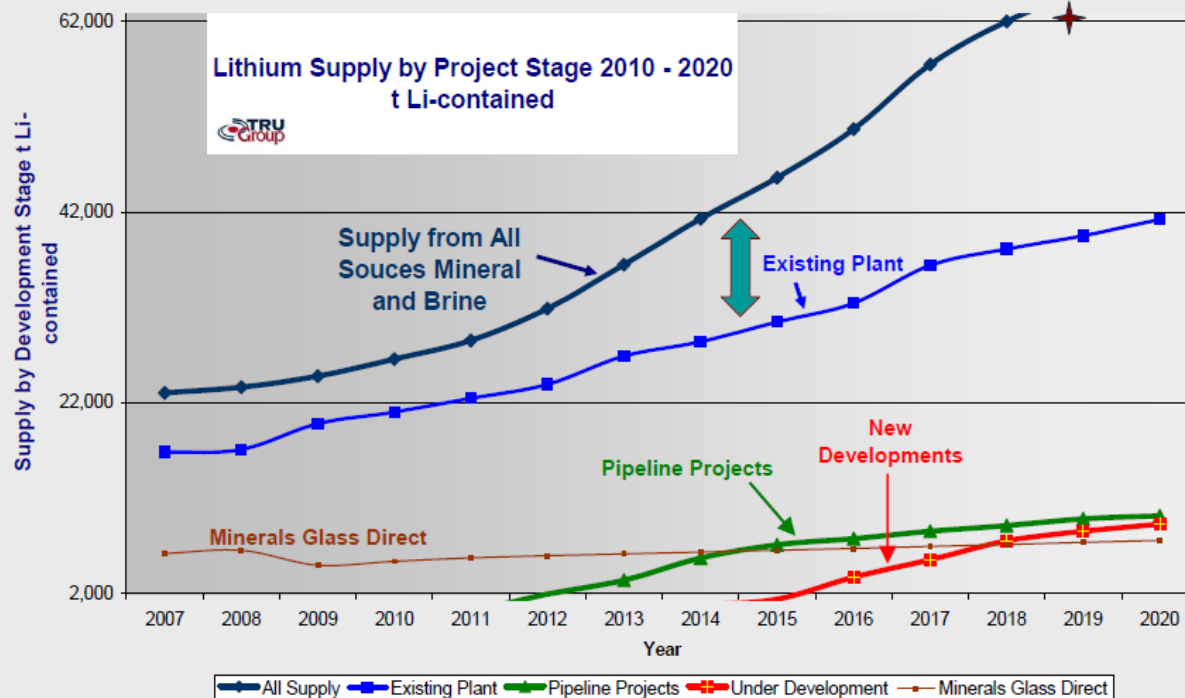


K. Evans Estimate, 2009



# Where will Li come from tomorrow?

## All Grades Supply Pattern



# What does that suggest about Li market dynamics?

- ❖ Continuing Lithium over-supply to 2020
- ❖ Of 60+ projects currently in play, few will survive
- ❖ If demand escalates more rapidly than expected in the future, additional resources could be developed
- ❖ Nonetheless, non-economic considerations could lead to strategic surprises

