Lithium Market

June 2019

WARATAH

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Overview

Electrification of Transportation is a once in a hundred year change thematic

The EV ecosystem is developing faster than expected – EV penetration and Lithium demand estimates are continually being revised upwards.

Range anxiety is diminishing as new EVs are launched with 500km+ in range

Unprecedented levels of capital investment to-date in the EV supply chain

More than $215bn in capital has been committed for battery factories, conversion of car plants, and to secure raw materials

Demand projections imply the lithium market needs to grow 4x by 2025 to satisfy demand

New supply ramps have disappointed

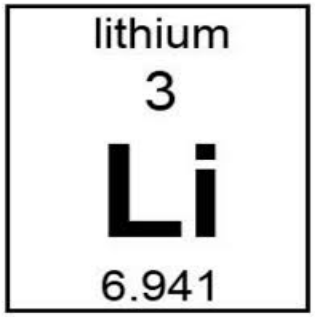
New Lithium supply will arrive later than expected, cost more and be smaller than projected

Lithium

Demand

Supply

Why Lithium



Lightest metal on the periodic table

Highest electrochemical potential

Relative stability

Long cycle life

Ideal material for Electric Vehicle Batteries

Not in Pure Elemental Form: mineralized or in solution

Economically Scarce: Low Grade / High Cost / Impurities

Complex Chemistry: difficult to process to “battery grade” purity

Geography: Argentina, Chile, Brazil, Canada, Australia, China

Lithium supply, to meet the rapid electrification of global transportation, is challenged

Next Generation Li-ion Batteries

a) Nickel-rich cathodes (from NMC111 to NMC622/811/9,0.5,0.5)

b) Solid-state electrodes

c) Graphene coatings

Next-Gen batteries increase energy density and lithium content

Lithium

Demand

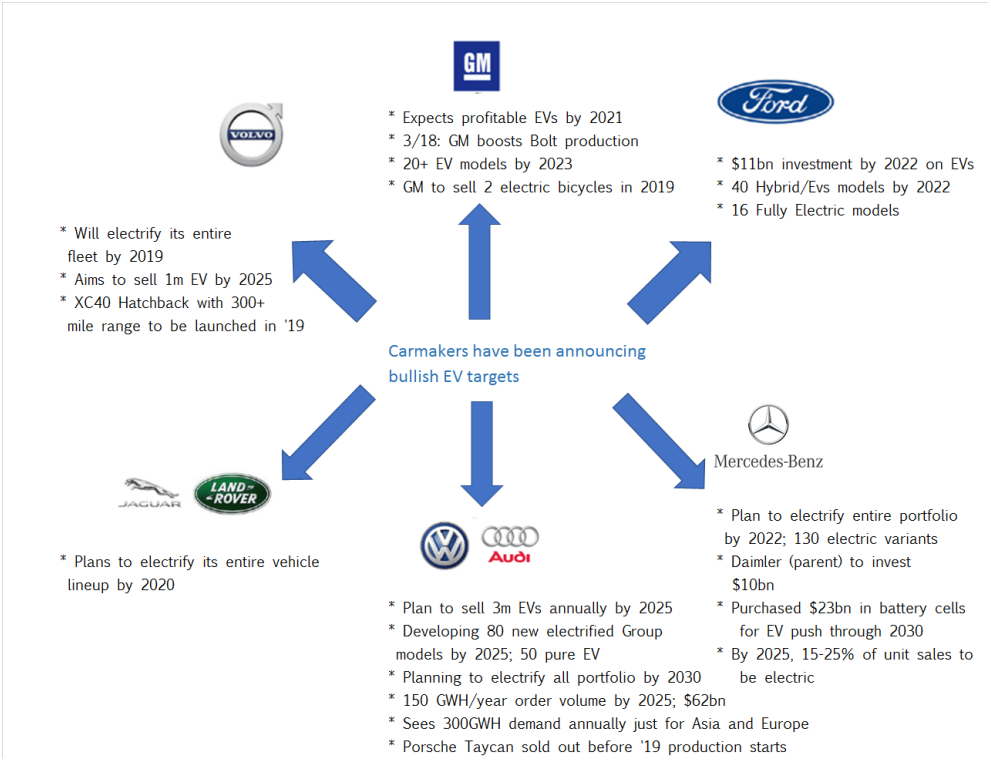
Supply

Policy

Government policy and technological innovation are increasing Electric Vehicle ("EVs") penetration of global automotive volume

Currently +2% of all passenger vehicles are EVs. Consensus amongst consultants, investors, OEMs and investment dealers ranges from 10% to 25% EV penetration by 2025

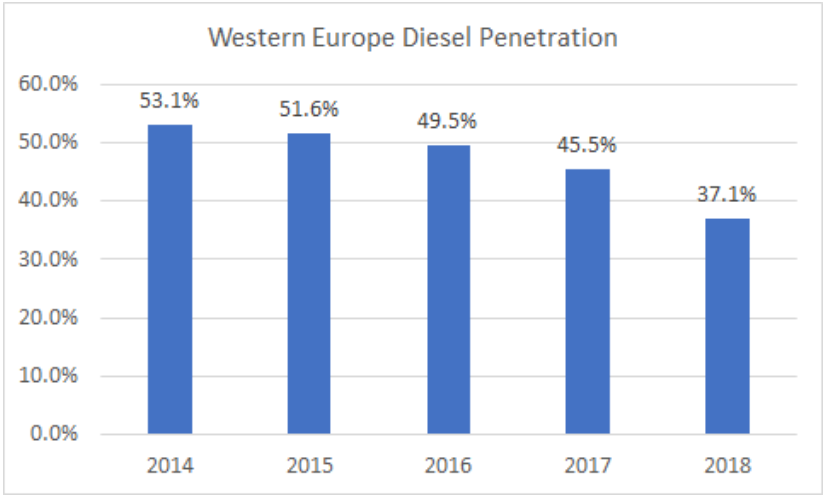
- China is in the process of banning internal combustion engines ("ICE") by 2040
- Norway is banning ICE by 2025
- France is banning ICE by 2040
- United Kingdom is banning ICE by 2040
- India is banning ICE by 2040
- Israel to ban import of gasoline based cars by 2030
- Germany is in discussions to ban ICE by 2030
- California is considering a ban on gas and diesel-powered cars

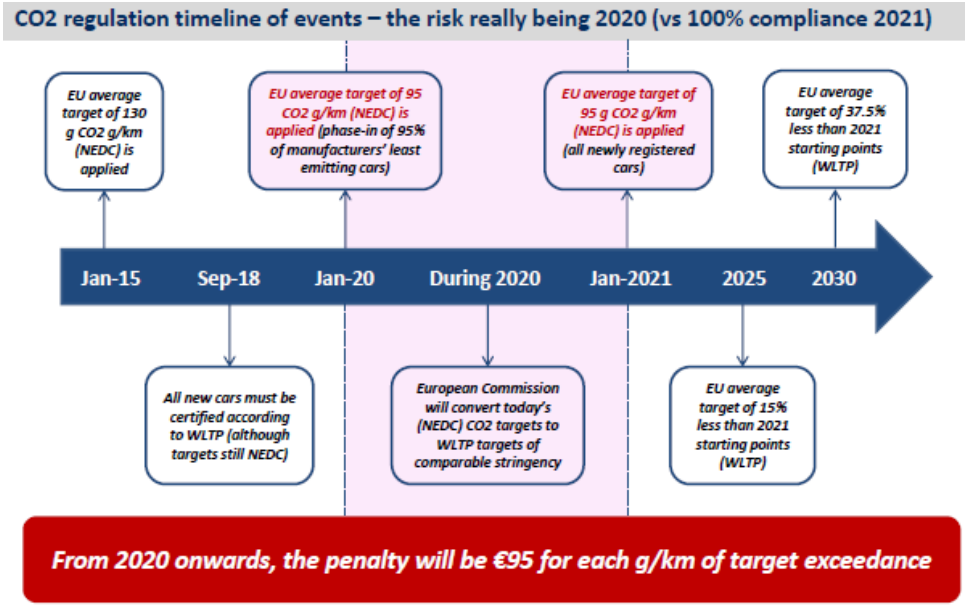


Emission Standards & Financial Penalties

Tightening global emission standards and the "Diesel Scandal" have caused OEMs to embrace EVs to meet emission compliance

- Diesel's market penetration, as a solution to increasingly stringent emission regulations, expanded from 0% in 1990 to over 50% of vehicles in Europe
- Diesel is now in structural decline in Europe
- Diesel > 1/5th CO2 of gasoline;
- Diesel > +30% Nitric Oxide (NOx) levels of gasoline





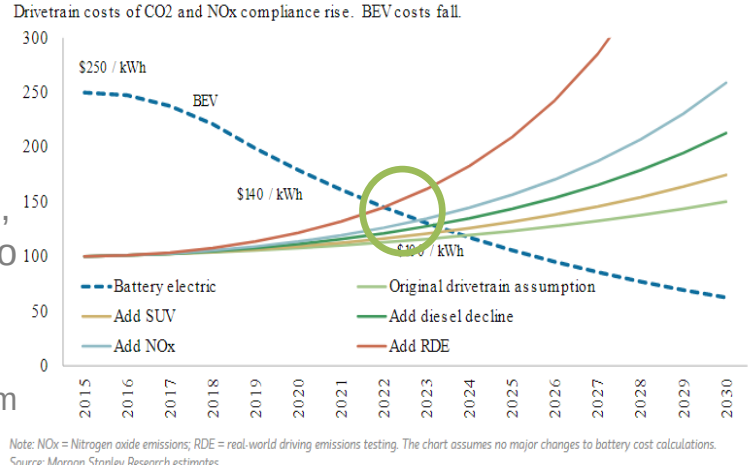
- Evercore ISI estimates EU manufacturers would face up to €33bn in fines in 2020/2021 relative to 2018 levels
- VW CEO estimates latest 2030 EU targets translate into more than 40% of total VW sales needing to be electric in order to comply

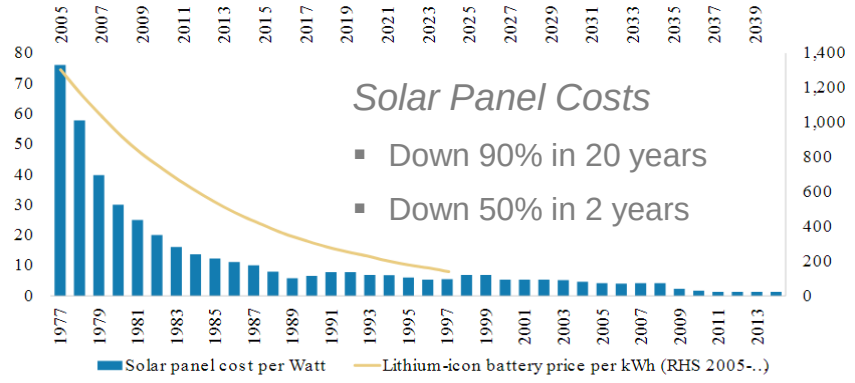
Innovation: Cost Parity

Scale and innovation are driving down battery pack costs (currently 40% of total EV cost) and increasing energy density (additional power/range without additional weight)

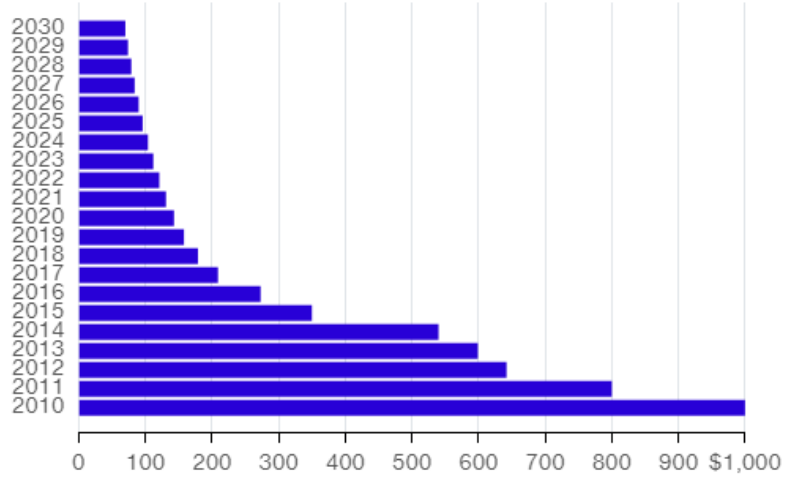
Total cost parity (capital, operating, insurance, tax, service, fuel/energy costs) is expected near term. EV cost could go below ICE as compliance costs, scale, innovation, taxes and model withdrawals occur

- Battery packs costs have fallen at a 20% CAGR since 2010 from US$750/kWh to less than US$150/kWh post the launch of the Telsa/Panasonic Giga factory
- **300% increase in lithium cost = 2.1% increase in battery pack costs** (Bloomberg New Energy Finance)
- Several sub $40,000 EV launches in 2018 (Renault, VW, Tesla, BMW, Nissan, Kia)





$/kwh battery costs continue to decline



Innovation: Extended Range & Fast Charging

"Range anxiety" has been a hurdle to consumer adoption

Average driver in the United States travels less than 30km per day

Model	Battery Size (kWh)	Range (km)
VW I.D. VIZZION	111	665
BYD Tang SUV EV	83	600
Tesla Model S	100	539
Tesla Model 3	75	500
Porsche Taycan	95	440
Jaguar I-Pace	90	386
Chevy Bolt	60	383
Audi E-Tron	95	375
Mercedes EQC	80	375
Nissan Leaf	60	362
NIO ES8	70	355
VW E-Golf	36	201
Audi A3 E-Tron Hybrid	9	26
BMW X5 Hybrid	9	23

Porsche Mission E
2019 deliveries
440km range
80% charge within **15 minutes**
China = 27% of Porsche's sales and 43% of total growth
At the L.A. Auto Show on 12/7/2018, Porsche N.A. CEO "If all the people (who preordered) buy this car, then we are sold out for the first year"

New Battery Capacity

Global Lithium-ion battery capacity is expanding rapidly – **these factories are fiercely competing for lithium resources**

Capacity expected to grow at 18% CAGR through 2028

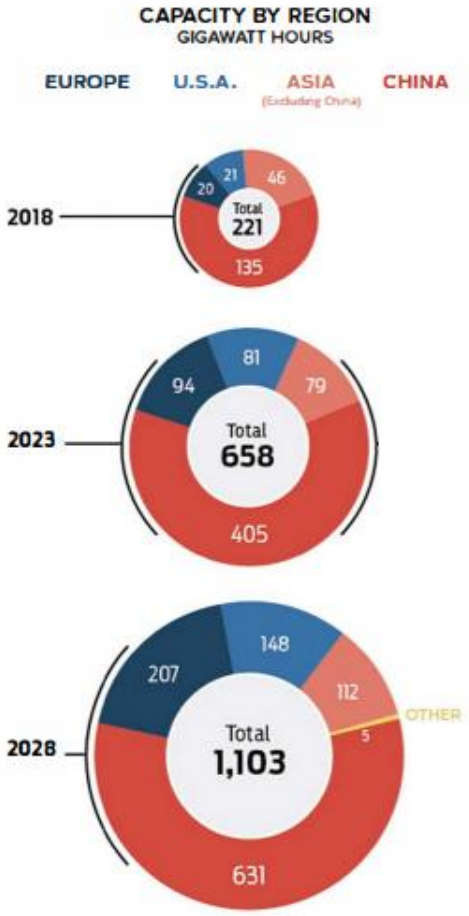
- Global capacity to expand by 400% through 2028
- Factories planned for USA, Poland, Hungary, South Korea and China
- Chinese capacity to grow 7x through 2028

China to dominate battery production

- China currently 64% of market and likely to have ~60% share in 2028

Significant investment from the industry

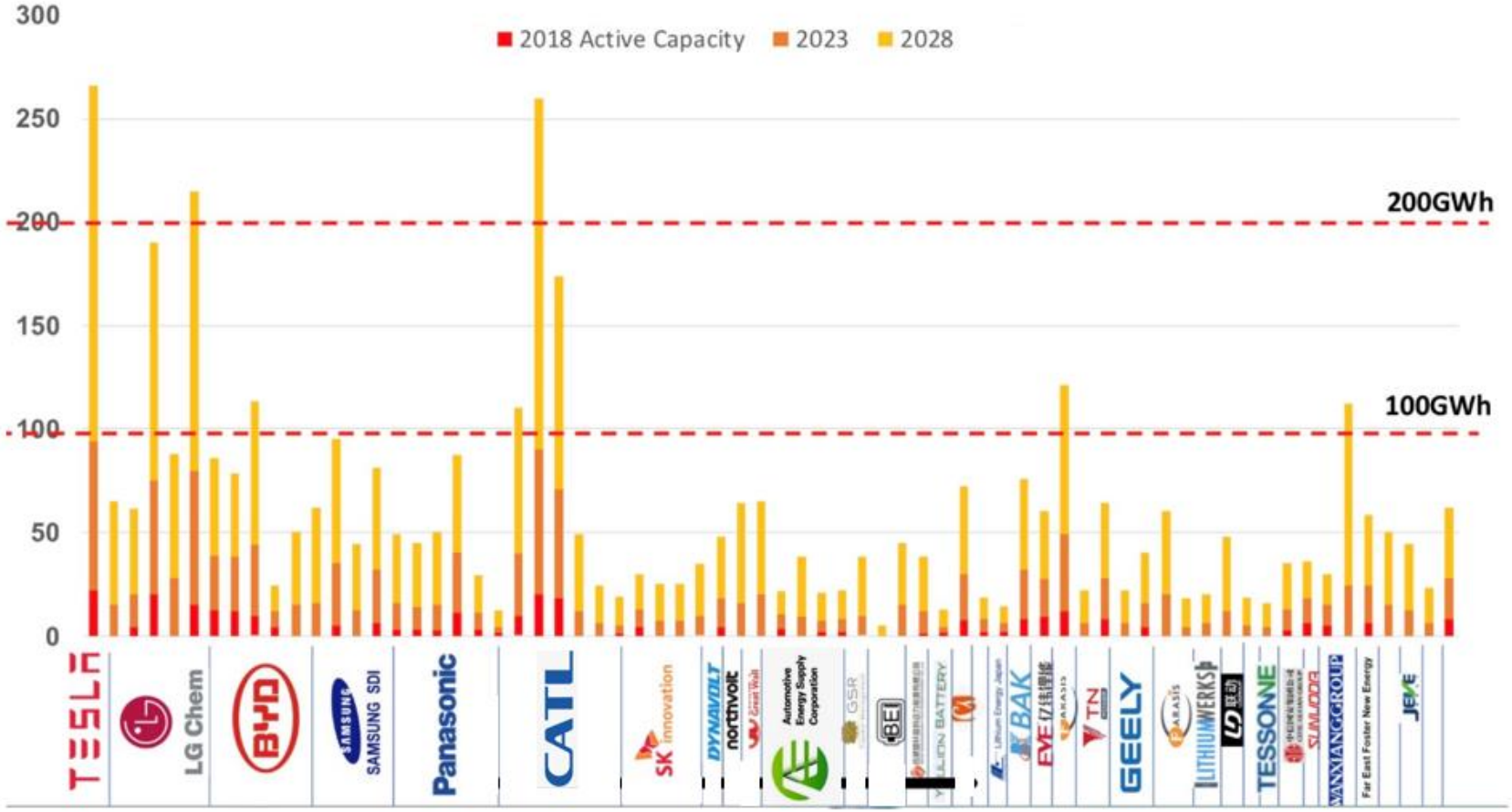
- Samsung is investing $358m for a plant in Hungary
- LG Chem is investing $387m for a plant in Poland
- CATL is raising $2bn via an IPO to drive its expansion plans for battery capacity



New Battery Capacity by the Numbers

Battery expansions are happening across the globe with Chinese players leading the charge

- 1,456 GWh of battery capacity announced to the market by 2028
- Implies 1.2-1.3m tonnes of lithium carbonate equivalent



Source: Benchmark Minerals Intelligence, 1/19

Sunk Capital Expenditures

$215B of capital has been committed for lithium resource development and lithium batteries

USD, mm

Strategic Activity		OEM Announcements		"Gigafactories"	
Strategic Invesment in LAC	25	Toyota	13,000	Dyson	1,400
SQM Investment in LAC Capex	213	VW	99,600	Tesla Nevada	5,000
SQM Investment in KDM	30	Ford	11,000	VW	20,000
SQM Investment in KDM Capex	80	Daimler	23,000	Toray	1,080
Ganfeng Investment in LAC	172	Nissan-Dongfeng	10,000	Boston Power	600
Bangchak Investment in LAC	112			Samsung	358
NextView Acquisition of LIX	186			LG Chem	387
Greenbushes Expansion	256			SK Innovation	784
Talison Kwinana Converter	320			Lishen	800
Altura Capital Expenditure	144			LG/Huayou	224
Pilbara Capital Expenditure	220			SK Innovation Atlanta	1,670
FMC Argentina Expansion	275			Wanxiang 123	8,500
Albermale Wave I (ex. Greenbushes)	720			Tesla Shanghai	2,000
SQM Atacama Expansion	170			Germany Subsidy	1,200
POSCO Investment in Pilbara	63			Indonesian Battery Plant	4,000
Tianqi 24% Stake in SQM	4,066			Samsung Detroit Plant	63
Softbank Investment in Nemaska	79			Samsung China Plant	1,500
Albemarle Wodgina JV	1,150			Guoxuan Battery Capex	300
Sigma Mitsui Offtake	30				
PlusPetrol Acquires LSC Lithium	85				
Wesfarmers bid for Kidman	550				
Ganfeng Investment in BCN	28				
Total	8,974		156,600		49,866

Strategic Activity	8,974
OEM Announcements	156,600
"Gigafactories"	49,866
Total	215,440

Growth of EVs and Lithium Demand

Multiples of current lithium supply is needed to reach near-term OEMs and Government EV goals

- Diesel replacement will require 250% of current supply
- Meeting 2030 EU emission targets implies 50% EV penetration or 200% of current supply
- China's and India's long term goals will require 400% of current supply

	tonnes of LCE Required/Year	% of Total 2018E Production
100% Diesel	658,125	244%
EU Emission Proposal (50% Evs)	541,627	201%
15-25% of Daimler Sales	29,250	11%
25% of VW Sales	121,875	45%
25% of Big 3 German OEMs	187,688	70%
Tesla Gigafactory - Phase 1	24,375	9%
Tesla Gigafactory - All Four Phases	97,500	36%
China, Current Goals	97,500	36%
China, @15% EV Penetration	176,963	66%
China, @40% EV Pentration	471,900	175%
India, 7m vehicles by 2020	341,250	126%

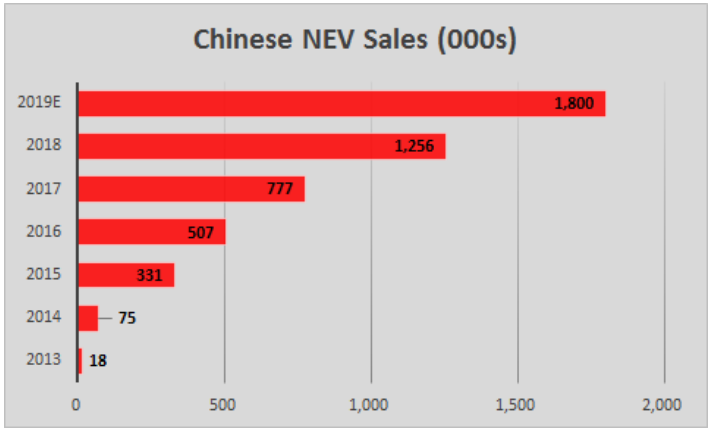
Assumptions: 75kWh battery pack, 0.65kg LCE/kWh, global car fleet growing at 3% pa

* European Commission and European Council have agreed to reduce avg. CO2 emissions by 37.% in new cars by 2030; implying 50% EV penetration

China – Transformation Velocity

EVs are a strategic industry under "Made in China 2025"

- Industry of the future
- License restrictions on Tier 1 Cities for non NEV
- Shanghai license plate auction reached 87,400 Yuan (USD $12,650)
- Nearly impossible to add new ICE capacity as of 1/10/2019
- Subsidies shifting to long range NEV, >300 km
- E-bus dominance domestically and internationally
- Shenzhen's reaches 99% e-taxi penetration at 2018 Year end (21,689 e-taxis)
- **Up 61% in 2018 reaching 5.4% NEV penetration in 2018 and 10.3% in December**



Importance Globally

- China accounts for 29% of global auto sales, 80% of global auto sales growth
- 160mm autos, doubling auto fleet every five years

Chinese companies acquiring lithium resources

- Gangfeng invests C$174m in Lithium Americas
- Tianqi for Nutrien's 32/$4.5b stake in SQM

Impact on Oil

- $160b of annual oil consumption, 70% imported
- Auto penetration at 15%, Japan at 60%, West at 80%
- China at 60% = $1.7 trillion of annual oil consumption (=53% increase to global oil production)
- Taiwan Strait, Sea of Japan, East China Sea become bigger geo-political issues
- Growing dependence on Russia, Middle East and US

"War on Pollution"

- 1mm premature deaths per year
- Pollution is growing risk to political stability (Chengdu protest/Under the Dome)

Growth of EVs and Lithium Demand

Estimates from analysts/consultants range from 10% to 25% EV penetration by 2025; this would require +300-400% more lithium supply

Long-term estimates call for EV penetration to increase to 60-80% levels, requiring 4x 2018 supply

	Year	LCE Demand k tonnes	Size of 2018E LCE Market
Goldman Sachs Est	2025	1,000	3.7x
UBS Est	2025	1,115	4.1x
BAML Est.	2025	800	3.0x
Morgan Stanley Est.	2025	727	2.7x
Roskill Est.	2027	1,200	4.4x
Benchmark Minerals Est.	2028	1,214	4.5x
Average		**1,009**	**3.7x**

Livent

Livent (previously FMC Lithium) estimates 12% EV penetration by 2025, equivalent to **1 MM tpa LCE demand** based on a car by car model in consultation with global OEMs

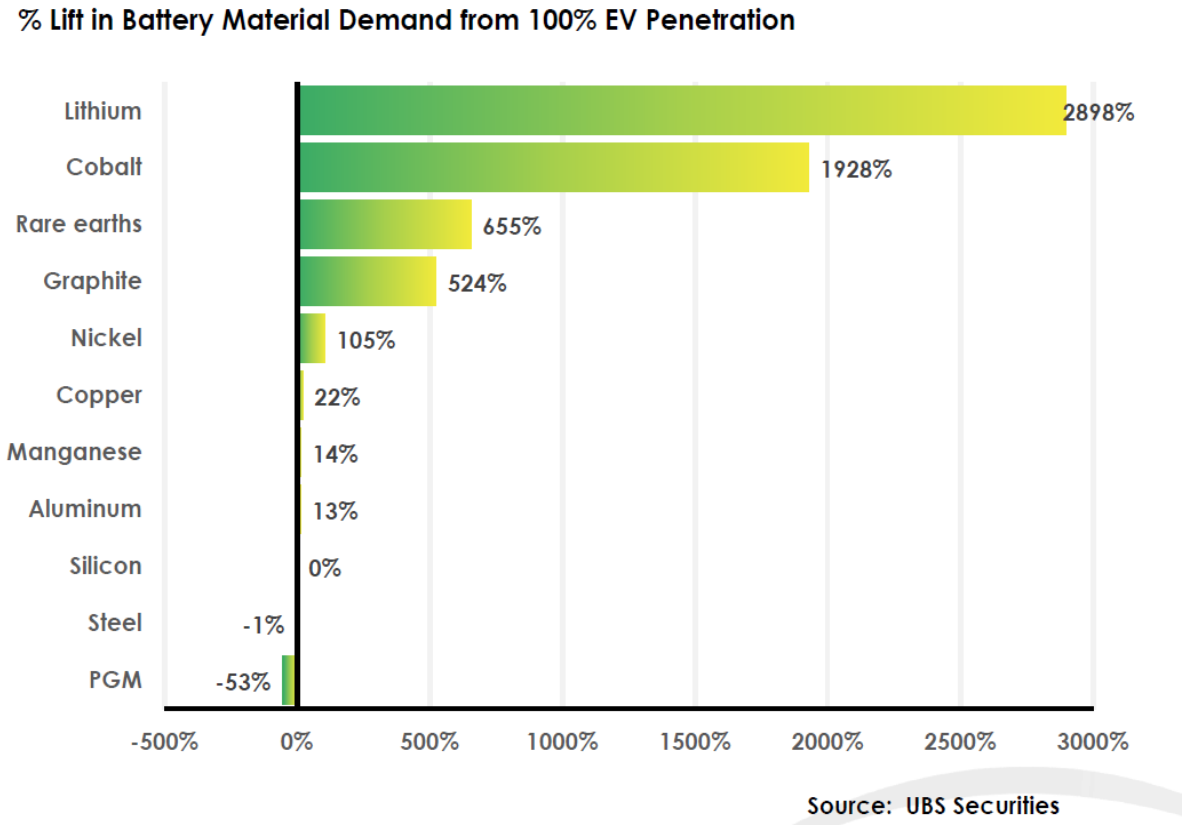
Assumptions: 75kWh battery pack, 0.65kg LCE/kWh, global car fleet growing at 3% pa

UBS on Lithium Demand

Per November 2018 report, UBS estimates **17.5m** electric vehicles in 2025 or 1.15m LCE tonnes

Lithium is the Commodity most-Impacted by Growth in EVs…

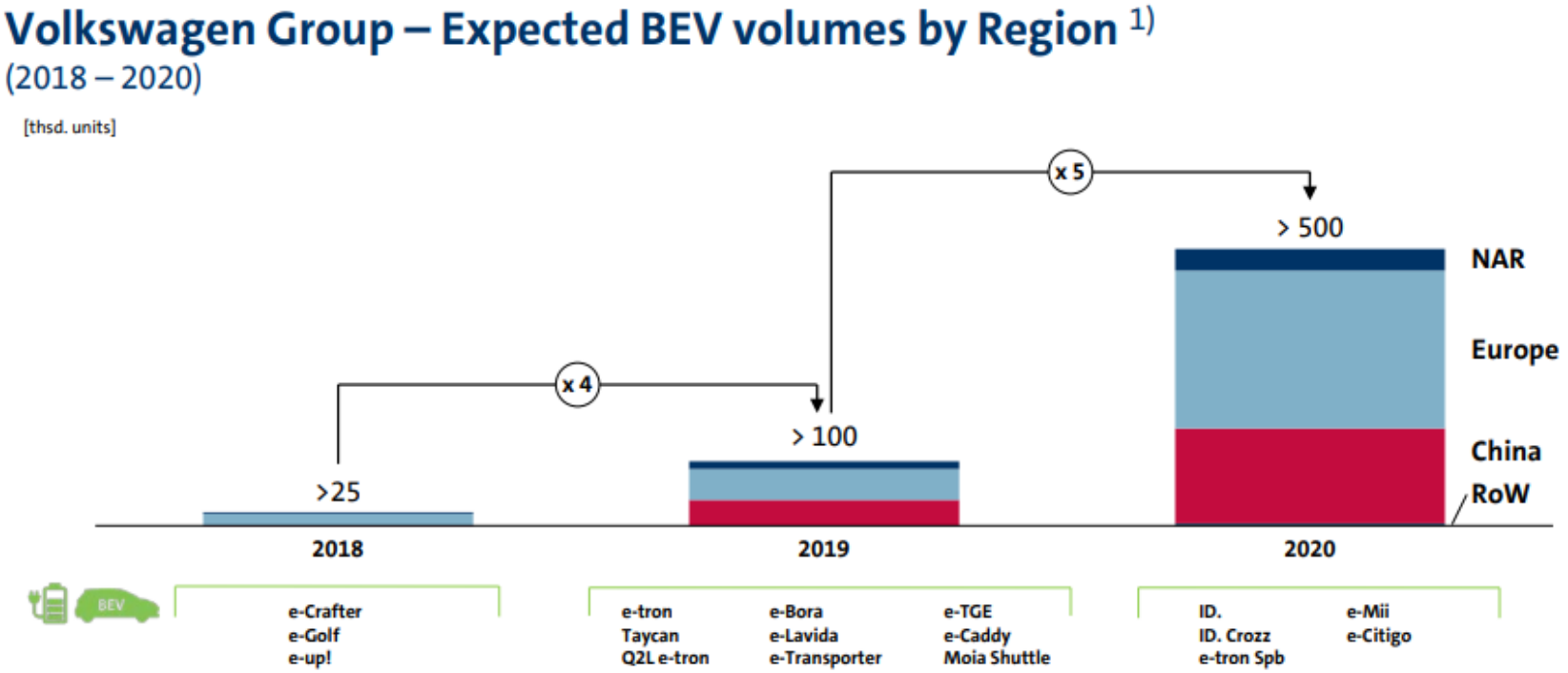
Lithium supply must increase 30x in a 100% EV world



Deconstructing Volkswagen's Demand

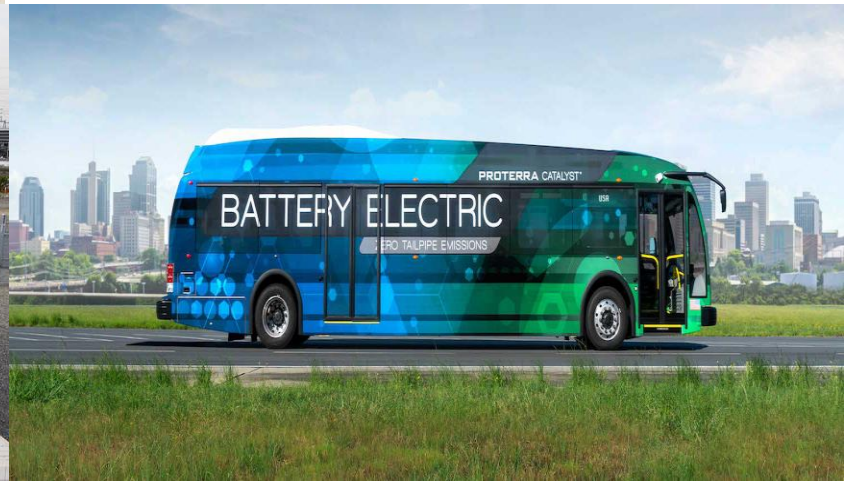
Volkswagen is the #1 automaker in the world and fully committed to EVs

- Has secured 150 GWH of battery capacity annually by 2025 via a €50 billion procurement order
- VW foresees annual demand of 300GWH+ from Asia and Europe alone
- Demand to increase ~10x from 2020 to 2025; company forecasts imply at least 20k tonnes of LCE demand in 2020 vs. ~1k in 2018



Source: VW 1Q19 Presentation, Company data

Additional Sources of Demand



Urban Mobility an Overlooked Growth Driver

- Urban mobility encompasses two wheeled vehicles such as scooters, bicycles and motorcycles
- As of December 2017, there were 700 million urban mobility vehicles in China almost exclusively powered by lead-acid batteries
- 27m urban mobility vehicles were sold in China in 2017
- Lithium-Ion technology represented 2.6% of all urban mobility vehicle sales in 2017 but it is quickly displacing lead

Lithium has many advantages over lead acid such as:

- Three times longer battery life
- Weight convenience
- Environmental friendly and easily recyclable

Converting the existing Chinese urban mobilit Vehicle fleet equates to

~500k tonnes of demand or nearly 200% of 2018E demand

Assumptions: 75kWh battery pack, 0.65kg LCE/kWh

Source: CIC

Corporate Interest Level High

Albemarle announces 50% joint venture with Mineral Resources for Wodgina for USD$1.15bn

Daimler to buy $23 billion of battery cells in EV push

VW announces it will spend $50 bn on electrification, digitalization, autonomous, and new mobility from 2019-2023. VW announces it has sourced batteries for 50 million electric cars.

Mitsui and Co. of Japan provides $30mm off-take financing for Sigma Lithium Resources

Albemarle acquires 50% interest in Mineral Resources Wodgina project for $1.15 billion

BMW announces option to acquire USD425 million shares in Chinese battery manufacturer CATL (largest electric vehicle battery manufacturer globally) following reports of BMW's USD 4.7b battery procurement contract with CATL in July 2018

LG Chem announces $2 billion investment in Car Battery Plant in China

CATL Raises USD $840 million in initial public offering as it seeks to increase battery capacity to 50GWH by 2020 from 12GWH

BYD Signs agreement to build 20GWH battery plant in Chongqing, China for USD $1.4 billion

Softbank invests $100 million into Nemaska Wabouchi project (Quebec)

Toyota fully funds $361 million Orocobre phase 2 production (Argentina)

VW announces $48 billion in battery purchase contracts

SQM acquires 50% stake in Kidman Bald Hill project (Australia)

Posco pays $280 million for assets from Galaxy Resources (Argentina)

Kidman signs take-or-pay off-take agreement with Tesla for 25% of production ($165 million per year)

BMW signs lithium-ion battery contract with CATL for $1.1 billion

Tianqi announces agreement to acquire 32% of SQM from Nutrien (Potash Corp) for $4.5 billion

Gangfeng, Posco, Great Wall Motors and General Lithium all sign long term off-take agreements for $100 to $150 million per year from Pilbara Minerals

Gangfeng invests $174 million in Lithium Americas

Nextview (Chinese SOE) acquires Lithium X for $232 million

Lithium

Demand

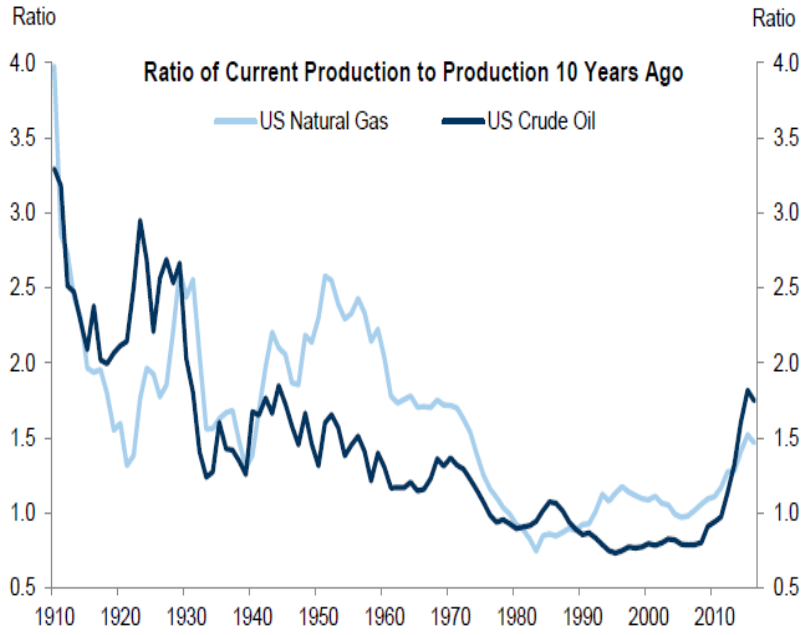
Supply


lithium
3
Li
6.941
5x - 10x
increase in
production over
10 years

Quadrupling?

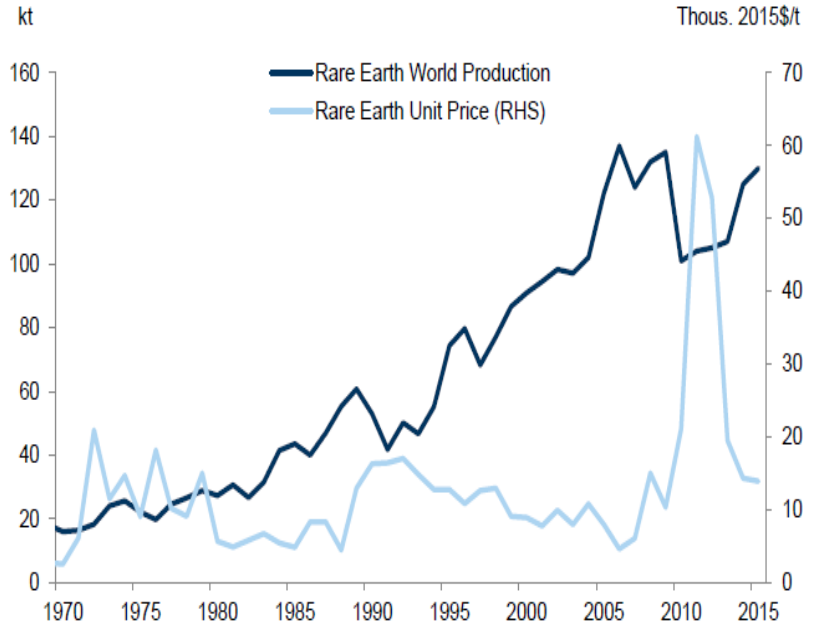
Quadrupling of supply can occur but is uncommon, capital intensive - **without precedent**

Quadrupled; 100 Years Ago



Source: EIA, Goldman Sachs Global Investment Research

Quadrupled; Over 30 Years Ago



Source: USGS, Goldman Sachs Global Investment Research

Past Supply Shortfalls

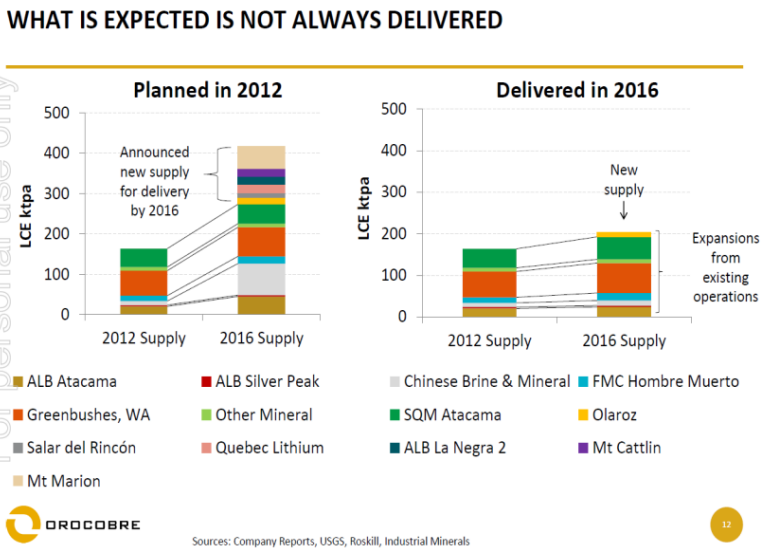
US Geological Survey indicates 14mm tonnes of global reserves; equivalent to 80 years of current production

Lithium is abundant but economically scarce due to low grade and prevalence of impurities

Purification for battery grade applications is complex, capital intensive and expensive

Roskill production estimated released **in 2012 called for 690kt Lithium Carbonate (LCE)** production by 2017

- 2016 actual production was 175kt
- Current 2017 production estimates are **210kt (30% of original forecast)**
- Reasons: low quality resource, un-delineated resource, inadequate pre-engineering, brine brownfield difficult



Supply Growth is Challenging

Universal Mining Constraints

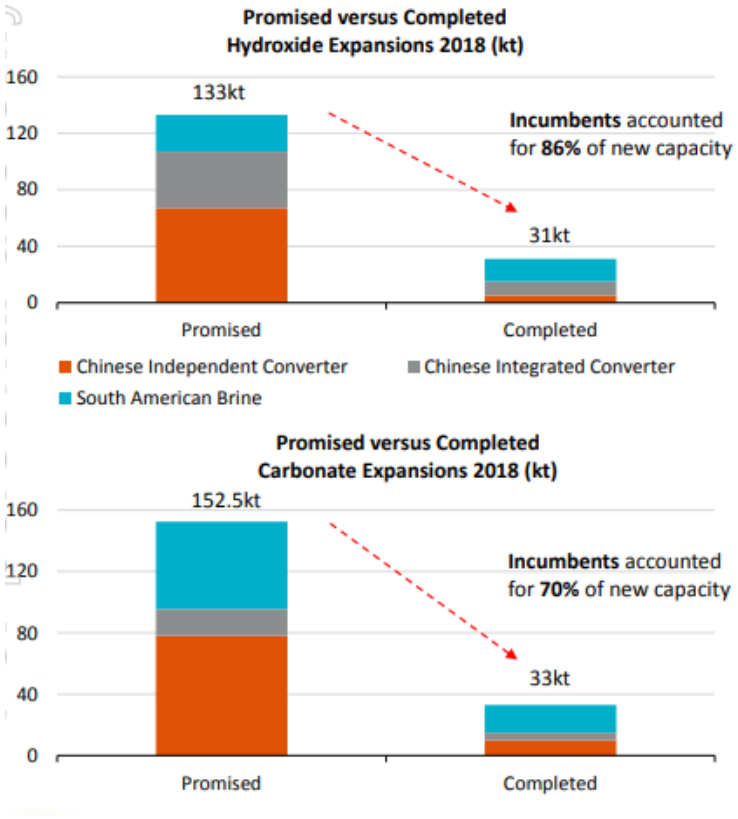
- Capital
- Labour
- Cost increases
- Bottlenecks

Specific to Lithium

- Technical issues
- Resource inconsistency
- Geopolitical risk
- Environmental issues
- Lack of expertise
- Complex chemistries
- Elevation (14,000 ft)

Recent Supply Shortfalls

- Industry is still facing issues ramping up supply in a timely manner
- Incumbent advantage evident in ratio of capacity successfully ramped up
- New entrants are required to satisfy demand growth as ~15-30% of the market in 2018 was supplied by new entrants



Source: Orocobre

Ramping Up is Difficult in Lithium

Albemarle - La Negra II

- February 2012 – Rockwood announces $140m investment to expand production at La Negra; expects to increase annual production from ~25k tonnes to 50k tonnes by the end of 2013 (Source: Rockwood Sustainability Report
- July 2015 – Announces commissioning of 20k tonnes La Negra II carbonate plant; expects commercial quantities by 3Q15
- February 2016 – Announces permission to increase extraction rates from the Salar de Atacama
- 2017 – Delivered ~2-3k tonnes of material from La Negra II
- 2018 – Estimated to have produced up to 40% of nameplate capacity

5 years to deliver first commercial quantities

Min Res / NeoMetals – Mt. Marion

- October 2010 – Project approved for development
- September 2015 – Announce the start of construction phase; expect first production from the project in mid-2016
- November 2016 – Announces commissioning of the plant
- February 2017 – Delivers first lithium concentrate shipment
- FY2018 – 55% of product is high grade (6% concentrate) and 45% is low grade (4% concentrate)
- CY1Q19 – MIN produces 6% material for 66% of production, remainder is 4% product

3 years from first construction and production is still producing low grade material

Orocobre - Olaroz

- April 2009– JORC compliant Scoping Study calls for 15k tonnes of production at capex of $80-100m USD
- October 2010– Anticipates 2012 production start
- May 2011– DFS updates capex to $207m USD and operating cost of $1,512/tonne (for 16.4k tonnes)
- December 2013 – Announces project construction is 70% complete
- November 2014– First primary lithium carbonate production
- CY 4Q15 – Produces 937 tonnes
- April 2018 – Lowers production guidance from 14k tpa to ~12.5k tpa (71% operating rate). Cost of production at $4,356/tonne
- FY2019- still operating at close to ~12,500tpa; 72% of nameplate

8 **years to reach 50-75% operating rate**

Operating costs ~3x initial expectation

New Supply

Salar de Atacama is the largest lithium mine in the world, 28% of total global production

75,000 tpa of expected production

Incremental LCE demand of 500,000 or 1,000,000 tonnes per year is equivalent to 7 to 15 new Atacama's over the next 7 to 10 years

The Atacama evaporation ponds are 1,700 hectares or 4,200 acres in aggregate

- Central Park = 349 ha, 840 acres
- 1 Atacama = 5x Central Parks

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Supply In Context - Salar de Atacama

500k – 1,000k tpa would require 7-15 new Atacama's to meet coming demand

= 35 – 75 Central Parks or ~2.5x Manhattans

= US$6 bn to $13 bn billion of capex @ $15,000/tonne capital intensity

Project Status Updates

Takeaways from recent project developments

- Operating costs increase by 25-50% from initial feasibility studies
- Capex 50%-100% higher than initial projections
- Delays common
- Environmental and political risk is increasing, likely to lend to further delays and less new production
- 484,000 tonnes of expected new supply is either delayed or facing material increase in costs or both

Name	Country	Company	Status	Capex Change	Opex Change	Op Cost Current	Op Cost Expected	% Change	MS Start Date	LRC Start Date	Est. Nameplate Capacity (LCE)
Cauchari - Phase 1	Argentina	Lithium Americas	Delay: +1 Year	No Change	No Change	$2,495/t	$2,900/t	16%	2019	2020	25,000
Cauchari - Phase 2	Argentina	Lithium Americas	Delay: +1-2 Years	No Change	No Change	$2,495/t	$2,900/t	16%	2020	2022	25,000
Sal de Vida	Argentina	Galaxy	Delay: +1 Year	Increase: +26%	Increase: +1%	$3,410/t	$3,760/t	10%	2020	2022	25,000
Salar de los Angeles	Argentina	NextView	Delay: +1-2 Years	No Change	No Change	-	-	-	2020	2022+	20,000
Olaroz Expansion	Argentina	Orocobre	Delay: +6 Months	No Change	Increase: +25%	$4,640/t	$4,500/t	-3%	2019	2020	25,000
Salar del Rincon	Argentina	Rincon	Delay: +1-2 Years	Increase: +81%	Increase: +93%	$4,000/t	$5,500/t	38%	2021	2022+	25,000
Bald Hill	Australia	Tawana	Producing: 6 Months Delayed	No Change	Increase: +50%	$660/t	$600/t	-9%	2018	2018	20,000
Mt. Holland	Australia	Kidman	Delay: + 3-6 Months	Increase: +107%	Increase: +43%	$293/t	$365/t	25%	N/A	2021	45,000
Pilgangoora - Phase 1	Australia	Altura	Producing: 1 Year Delayed	Increase: +17%	Increase: +20%	$330/t	$350/t	6%	2018	2018	27,500
Pilgangoora - Phase 1	Australia	Pilbara	Producing: 9 Months Delayed	Increase: +54%	No Change	$205/t	$350/t	71%	2018	2018	39,000
Wodgina - Phase 1	Australia	Mineral Resources	Delay: +3-6 Months	No Change	No Change	$296/t	$375/t	27%	2018	2019	31,000
Whabouchi	Canada	Nemaska	Delay: +1 Year	Increase: +40%	Increase: +25%	$245/t	$295/t	20%	2020	2021	33,000
Authier	Canada	Sayona	Delay: + 6 Months	Increase: +36%	No Change	$350/t	$375/t	7%	N/A	2021	11,000
Rose	Canada	Critical Elements	Delay: Environmental Permit Issues	No Change	No Change	$373/t	$390/t	5%	N/A	2022+	30,000
Atacama Expansion	Chile	SQM	Delay: +1 Year	No Change	No Change	$2,500/t	$6,000/t	140%	2018	2019	20,000
Atacama Yield Expansion	Chile	Albemarle	In Question	No Change	No Change	$2,500/t	$5,300/t	112%	-	-	65,000
Sonora	Mexico	Bacanora	Delay: Failed Equity Financing	Increase: +91%	Increase: +46%	$3,930/t	$4,900/t	25%	2020	2021	17,500
							Average	**32%**		**Total**	**484,000**

Galaxy Resources

Supply – The Rhetoric Vs. Reality

Supply side response continues to lag – delays in project construction, commissioning and capacity expansions, as well as product quality issues remain a challenge

- Supply growth continues to disappoint
  - — Combination of operational, execution and financing challenges
- Development assets coming online late and are facing continued ramp-up and commissioning challenges
  - — Operating costs higher than anticipated in study work
- Environmental, licensing and execution challenges have led to delays in several greenfield project expansions
- Highly leveraged balance sheets and expensive cost of capital pose high risk in a lower commodity price environment
- Australian concentrate or DSO out of the ground **does not necessarily translate to effective chemical LCE's supplied into the China market**

Delays in Key Project Constructions and Expansions

Project	First Production Guidance	Actual First Shipment	2018E Sales (LCE)	2018TD Sales[1] (LCE)
Atacama	na	na	55kt	30.5kt
Pilgangoora[3]	Q1 2018	Q4 2018	11kt	1.1kt[2]
Pilgangoora[3]	Q4 2017	Q4 2018	16kt	0.7kt[2]
Bald Hill[3]	Q1 2018	Q2 2018	17kt	4.7kt[2]
Olaroz	na	na	17kt	8.9kt
La Negra 2[4]	2016	2017	14kt	Est. 6kt
Wodgina[3,4]	Q4 2018	na	85kt DSO 6kt	22kt DSO -

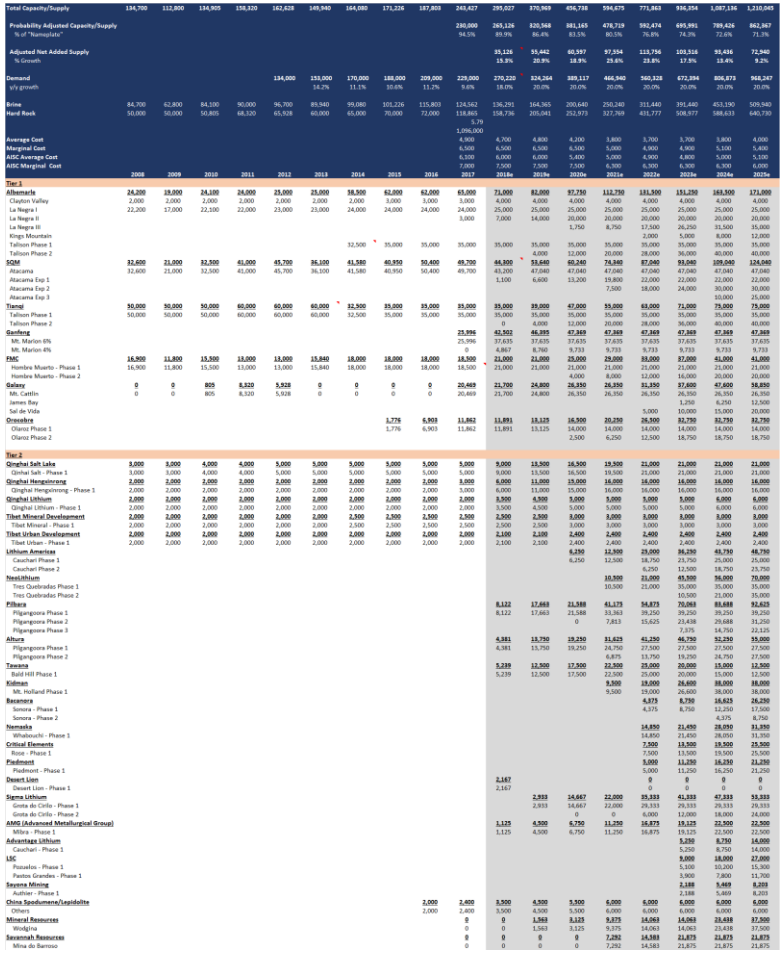
Source: Investment Banking Research, Company disclosure
Notes:
1. As at 30 September 2018
2. Includes shipments completed in early October
3. Assumes 8 tonnes of lithium concentrate per 1 tonne of LCE
4. Analyst estimates

Supply Response

LRC Global Supply Model

1. 30% of 2012-2017 estimated supply came online
   - Must risk adjust new capacity additions
2. Marginal cost of production is going from $6,500 to $9,000
   - Operating costs are understated, do not include royalties or sustaining capex
3. Low impurity, high grade resource is limited
4. Technical expertise is limited
5. Greenfield and Brownfield brine projects are capital intensive, complicated non-uniform chemistry and extended timelines
6. New process flow sheets and process technologies will be challenged
7. Direct Shipping Ore will come out of market due to processing issues and high cost ($14,800/T)
8. Scale of supply response to meet demand is massive
   - 10 new Atacamas required, 1 every year for 10 years
   - Equivalent of $9b capex
9. LRC estimates 500k+ tonnes of expected supply as extremely high risk to come into production
   - Challenges such as high costs, high reliance on by-products, low grade, jurisdiction risk, new technology/flowsheet

Supply	2017	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e
Base Case	243,427	295,027	370,969	456,738	594,675	771,863	936,354	1,087,136	1,210,045
LRC Risk Adjusted	230,000	265,126	320,568	381,165	478,719	592,474	695,991	789,426	862,367
Morgan Stanley	215,000	253,000	345,000	437,000	517,000	577,000	623,000	679,000	727,000

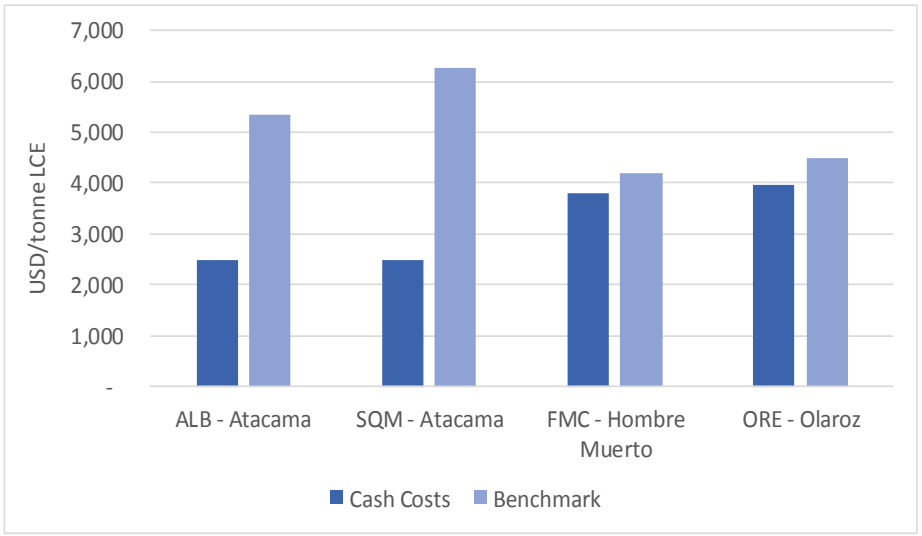


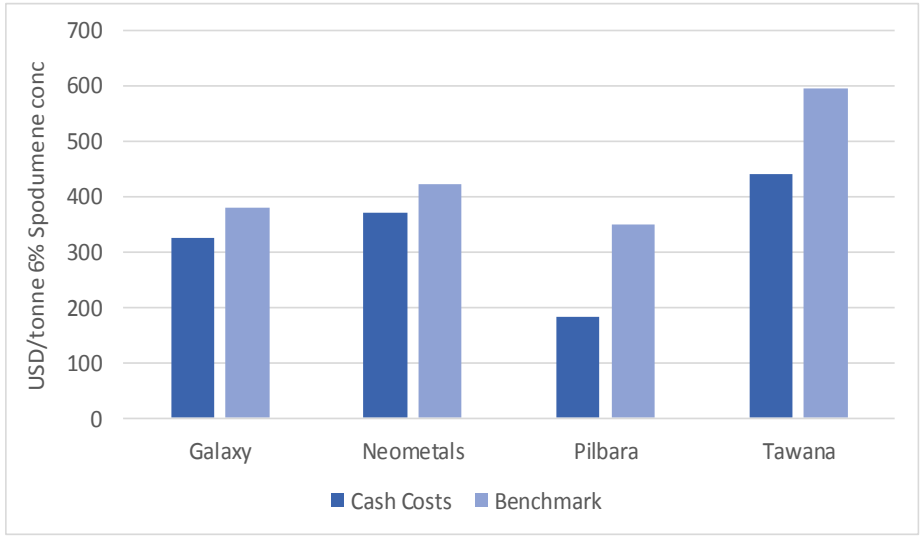
Benchmarking Costs

LRC Global Supply Model – Normalized Costs

1. Add government royalties, privately owned royalties
2. Add marketing fees
3. Exclude by-product credits
4. Add sustaining capital costs

Typically, costs are 14-18% higher than reported cash costs and as high as 90-150% for others





Spodumene and DSO Economics

	Australia Integrated	Australia Non-Integrated	China Integrated	China Non-Integrated
Cost for 6% Concentrate ($ USD)	325	325	650	650
Conversion Ratio	8	8	8	8
Feedstock Cost ($/tonne)	2,600	2,600	5,200	5,200
10% Feedstock Margin	0	260	0	520
Costs for Feedstock ($ tonne)	2,600	2,860	5,200	5,720
Freight/Insurance/Other ($/tonne)	500	500	500	500
Conversion Costs ($/tonne)	2,750	2,750	2,750	2,750
Costs for Conversion/Other ($ tonne)	3,250	3,250	3,250	3,250
LCE Costs, Pre-Converter Margin	5,850	6,110	8,450	8,970
15% Converter Margin	878	917	1,268	1,346
Total LCE Costs, $/tonne	**6,728**	**7,027**	**9,718**	**10,316**

DSO Economics

Tonnes of DSO Ore	2,000,000
Price/ore ($ USD)	130
Costs for Ore ($ m)	260
Ore Grade	1.40%
Lithium Content	28,000
Concentrate Grade	5.00%
Total Spodumene	560,000
Recovery	45.00%
Recovered spodumene	252,000
Concentrate Processing Cost/tonne	200
Concentrate Processing Costs ($ m)	50
Concentrate Recoveries	85.00%
Concentrate	214,200
Conversion to LCE	8.5
LCE Tonnes	25,200
Conversion to LCE Cost/tonne	2,500
Conversion to LCE Cost ($ m)	63
Total Costs	373.40
Costs per tonne of LCE	**14,817**

Source: Company Data, LRC estimates
China cost based on CRU estimates for Yichun and Maerkang mines.

Conclusion

With greater scale and innovation battery costs are continuing to decline making EV's cheaper and longer range

EVs are set to reach cost parity with internal combustion engines in the early 2020s

EV ranges of 500km+ are increasingly common eliminating range anxiety as a concern for consumers

Industry investment is accelerating with over $215bn of sunk capital

2025 demand targets imply supply must grow 4x the 2018 market

Market requires near perfect execution of high grade projects to satisfy demand in 2025

The lithium market has consistently seen production shortfalls

Supply will be higher cost and arrive later than the market expects