



SYERSTON PROJECT

**NICKEL AND COBALT
SULPHATE**

FOR THE LITHIUM-ION
BATTERY INDUSTRY

SAM RIGGALL, CEO

MACQUARIE CONFERENCE
MAY 2017

DISCLAIMER

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Please refer to the back of this presentation for information concerning the calculation of reserves and resources referred to herein, and the consents provide the respective Competent Persons.

For further details on the content of this presentation, please refer to the ASX releases on the Company's website.

COMPANY OVERVIEW

CLEAN TEQ MISSION

We use hydrometallurgical innovation to produce metals that are highly geared to disruptive changes in technologies and markets, particularly in global energy and transport

Develop the Syerston Project to exclusively supply the rapidly expanding lithium-ion global battery industry

SYERSTON PROJECT OVERVIEW

Syerston is a laterite (iron-hosted) mineral resource, rich in nickel, cobalt and scandium, located 350km west of Sydney and 100% owned by Clean TeQ

Uniquely positioned as one of the largest and highest grade sources of cobalt outside Africa

Syerston is development ready and will be the first mine developed producing high-purity nickel and cobalt sulphate

CAPITAL STRUCTURE

ASX code	CLQ
Share Price (28 April 2017)	A\$0.755
Shares	572.1 M
Options	47.2 M
Performance Rights	4.9 M
Market Capitalisation (undiluted)	A\$432.0 M
Cash @ 31 Mar 2017	A\$92.7 M
Liabilities (Mar-18 notes)	A\$3.0 M

MAJOR SHAREHOLDERS

Robert Friedland	16.2%
Pengxin Mining	16.2%
Australian Super	5.0%
Board & Management ¹	5.7%



1. Excludes options and performance rights

INVESTMENT THESIS

CATHODE MARKET

LITHIUM-ION BATTERIES

High-purity nickel and cobalt sulphate are key raw material inputs for the rapidly growing lithium-ion battery industry

RAW MATERIAL CHALLENGES

Evolving supply constraints for high-purity nickel and cobalt sulphate, particularly with an auditable supply chain

SYERSTON PROJECT

A STRATEGIC SOURCE OF RAW MATERIALS FOR THE LITHIUM-ION BATTERY INDUSTRY

COBALT PLAY

A rare, large and high grade cobalt project outside Africa

STRATEGIC JURISDICTION

Customers require supply options outside Africa

ATTRACTIVE ECONOMICS

First quartile cost position with 39 year mine life

DEVELOPMENT READY

All key permits and infrastructure in place

RECENT DEVELOPMENTS

STRONG MOMENTUM TOWARDS DEVELOPMENT OF SYERSTON

- ✓ Pilot plant has processed ~20t of ore with customer samples progressing well *April 2017*
- ✓ ASX 300 Index inclusion *March 2017*
- ✓ Strategic partnership and A\$81m placement to Pengxin Mining *February 2017*
- ✓ A\$15m placement to Australian Super *November 2016*
- ✓ Maiden ore reserves announcement *October 2016*
- ✓ Pre-Feasibility Study completed *October 2016*
- ✓ Nickel and cobalt mineral resource upgrade *August 2016*

Clean TeQ Share Price

A\$ per share



Source: IRESS, as at 28 April 2017

NEAR-TERM OBJECTIVES

FAST TRACKING SYERSTON IS OUR IMMEDIATE PRIORITY

01

Build out project development and operational management team

02

Complete the Bankable Feasibility Study by Q4 2017

03

Sign binding offtake agreements with strategic counterparties during 2017

04

Continue progress towards fully financing the Syerston Project

CATHODE MARKET

BATTERY PACK COSTS ARE FALLING

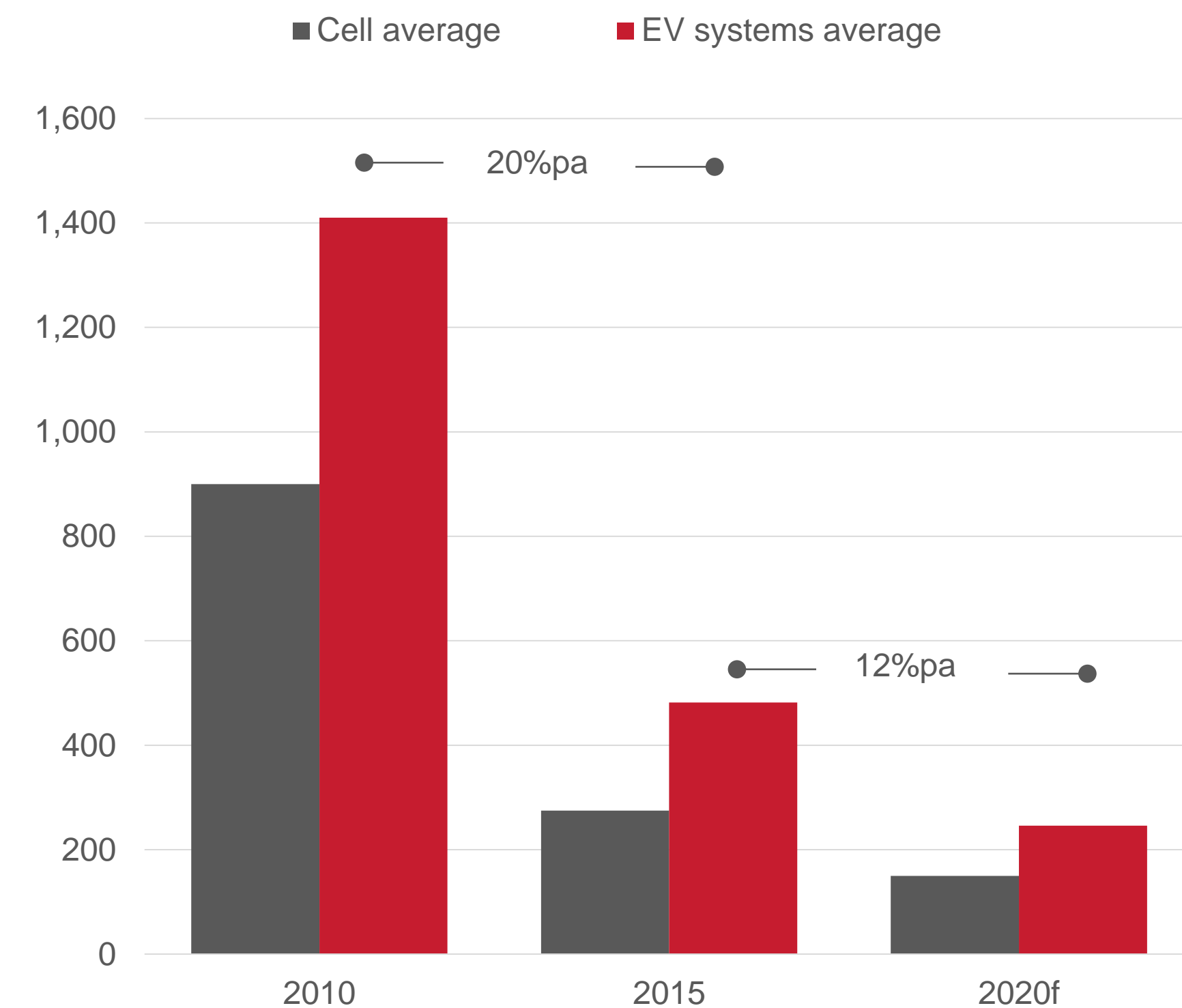
ECONOMIES OF SCALE AND THE EXPERIENCE CURVE



The last five years have seen a **20% pa cost reduction** in EV battery pack systems

At the current rate of improvement, EV drivetrains are **forecast to surpass the cost competitiveness of combustion engines** within five to ten years

Battery Costs Are Falling (US\$/kWh)



Source: Deutsche Bank, Lithium 101, May 2016

NEW BATTERY CAPACITY IS COMING

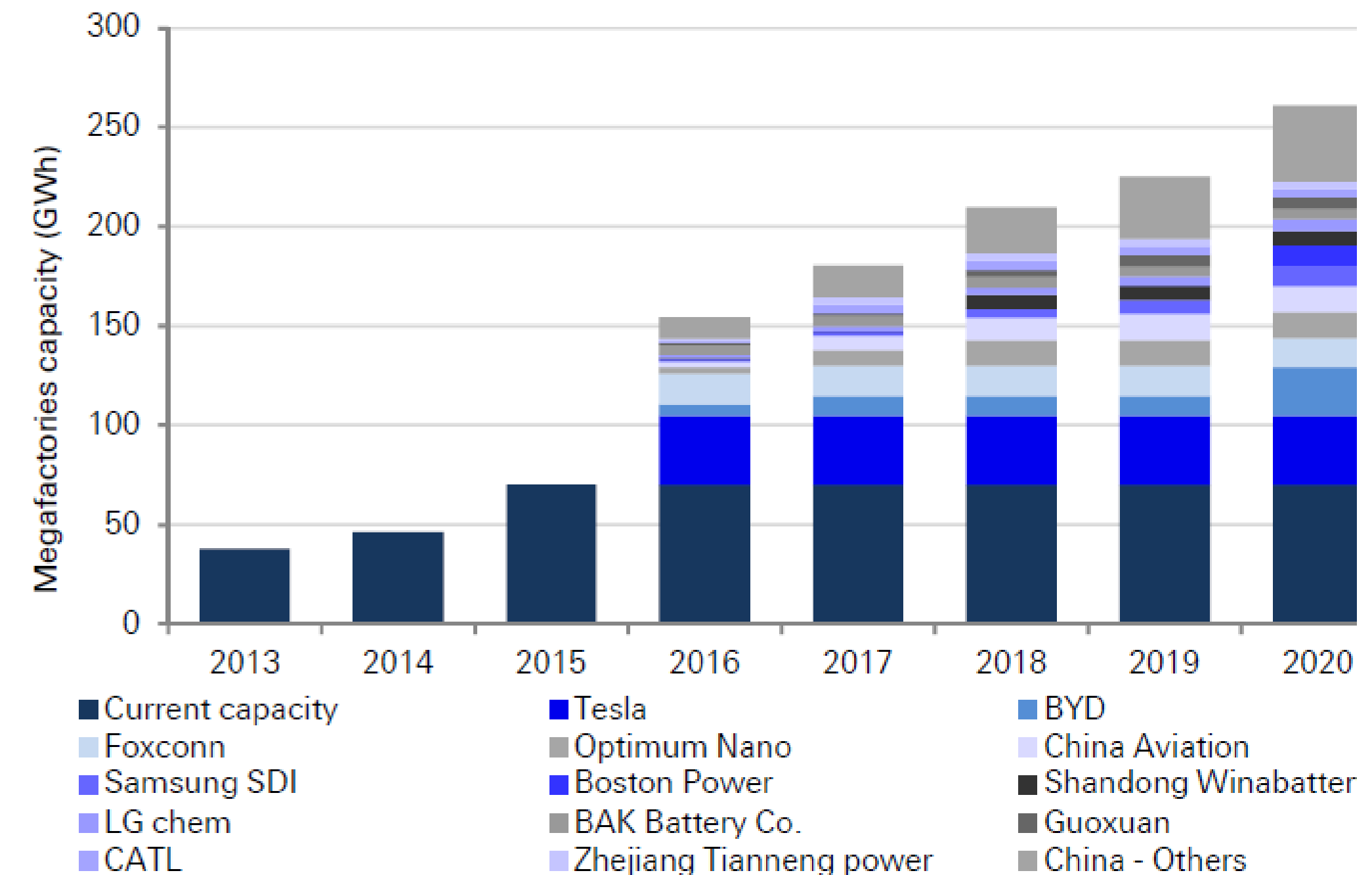
ALREADY ~US\$20B OF COMMITTED INVESTMENT

Tesla is important, but the **real growth story is in China**

China is now pushing for an aggressive California-style Zero Emission Vehicle (ZEV) program: **8% EV by 2018, 12% by 2020**

Given a 1% EV adoption rate in China today, that target translates to a **12x increase** in the number of electric cars to be sold in China

Chinese **technical capability** is fast approaching Japanese and Korean manufacturers

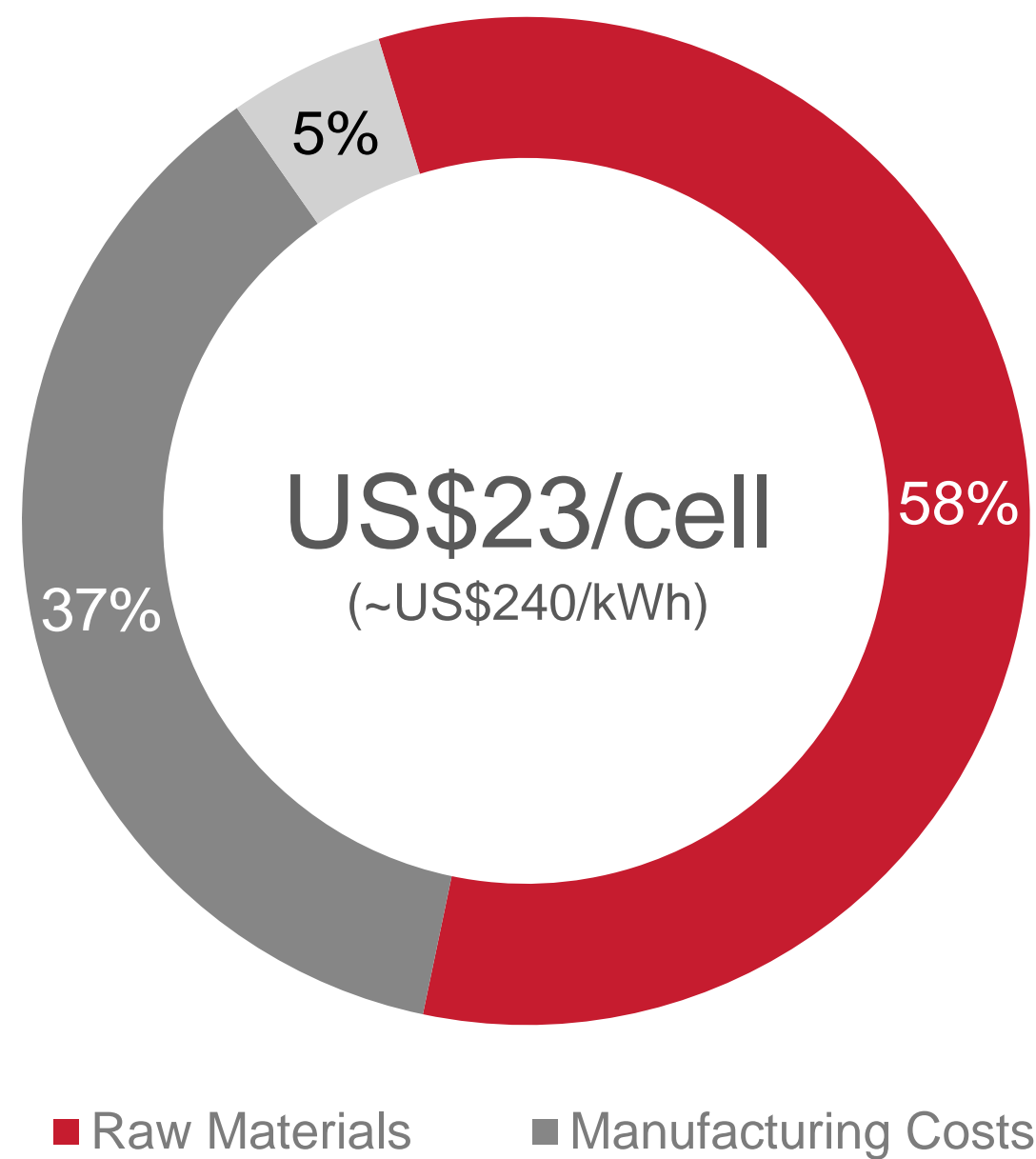


Source: Deutsche Bank, Lithium 101, May 2016

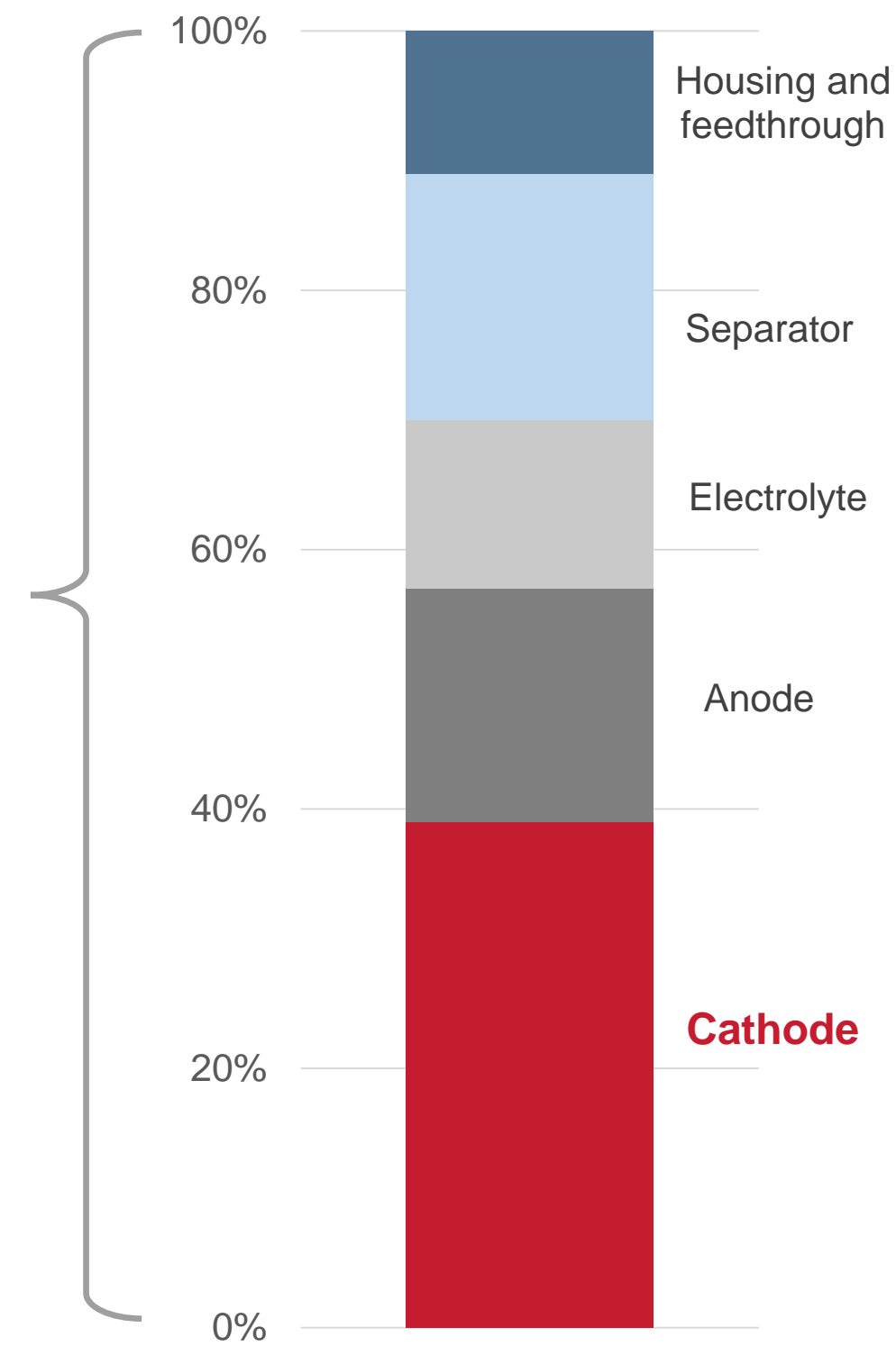
CATHODE IS THE KEY TO COST

NICKEL AND COBALT PRICES DRIVE CELL COST

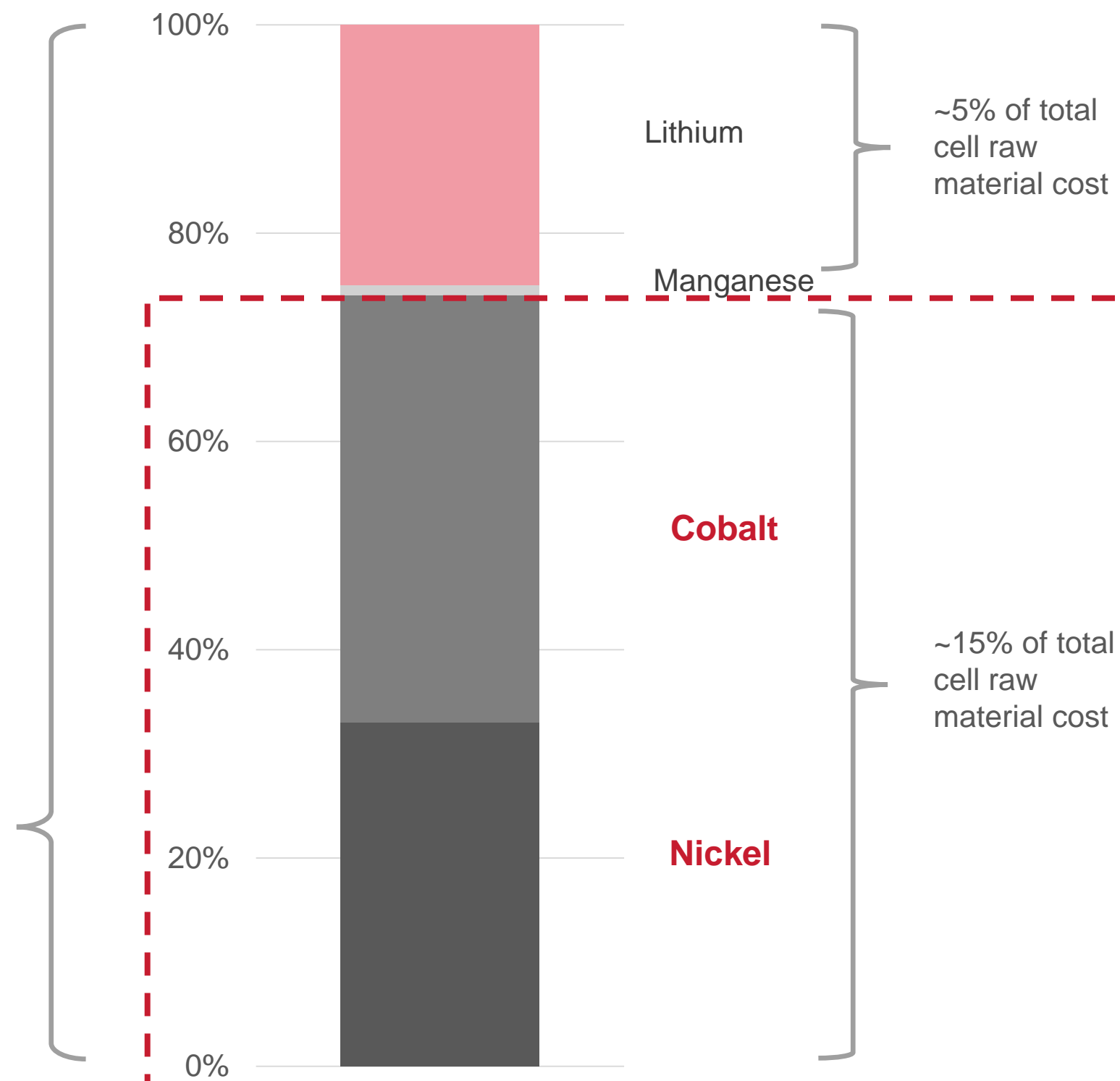
Battery Production Cost Breakdown



Raw Material Cost Breakdown



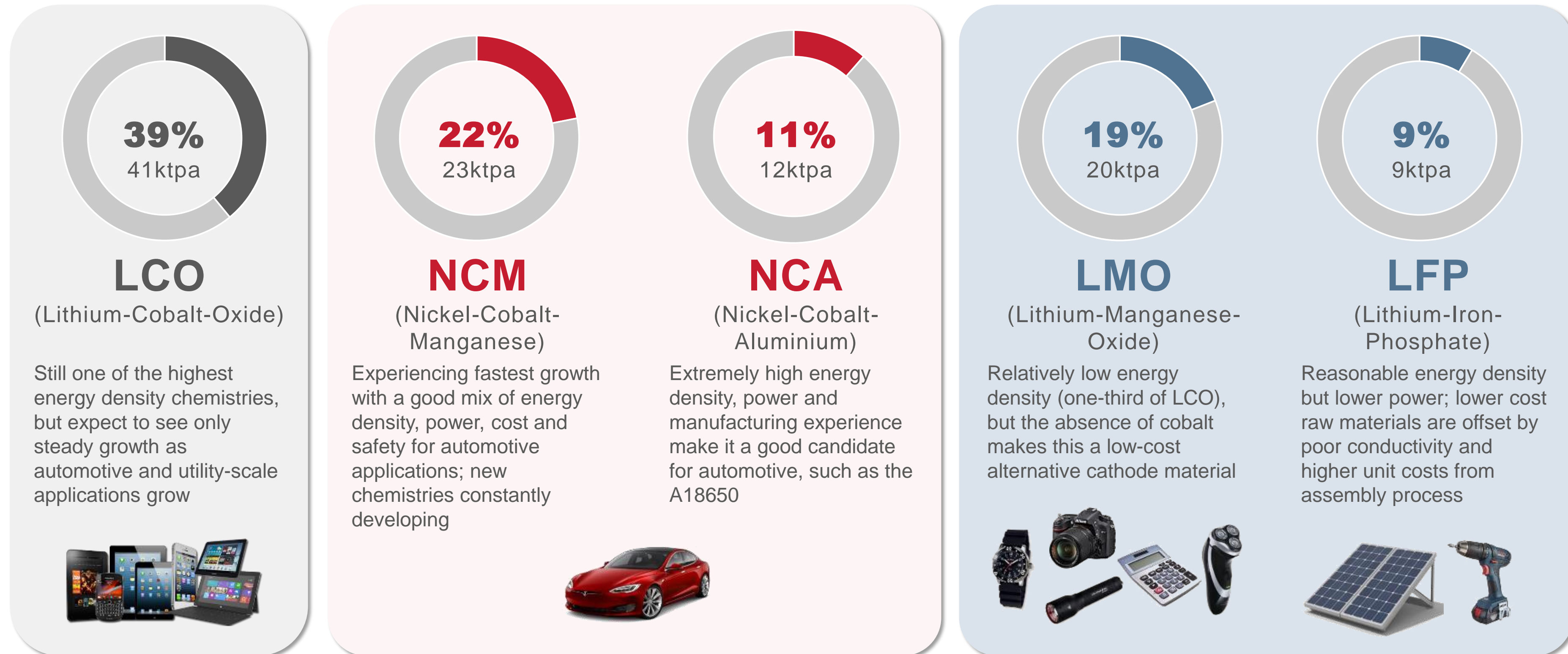
Metal Cost in Cathode Active Material



Source: Roland Berger (2012) and internal analysis. Assumes a 96Wh PHEV cell (26Ah, 3.7W) using NCM622 cathode chemistry. Cathode raw material cost includes non-metallic materials (carbon black, binder, foil). Internal assumptions concerning split of costs assumes spot prices of Ni US\$4.20/lb; Co US\$28.00/lb; Mn US\$1.00/lb; Li US\$9,000/t (as LCE)

CHEMISTRY BY MARKET

DOMINANT CHEMISTRIES FOR EV REQUIRE NICKEL AND COBALT



Source: Avicenne Energy Analysis 2014

CATHODE DEMAND FORECAST

EV IMPLICATIONS FOR CATHODE RAW MATERIAL DEMAND

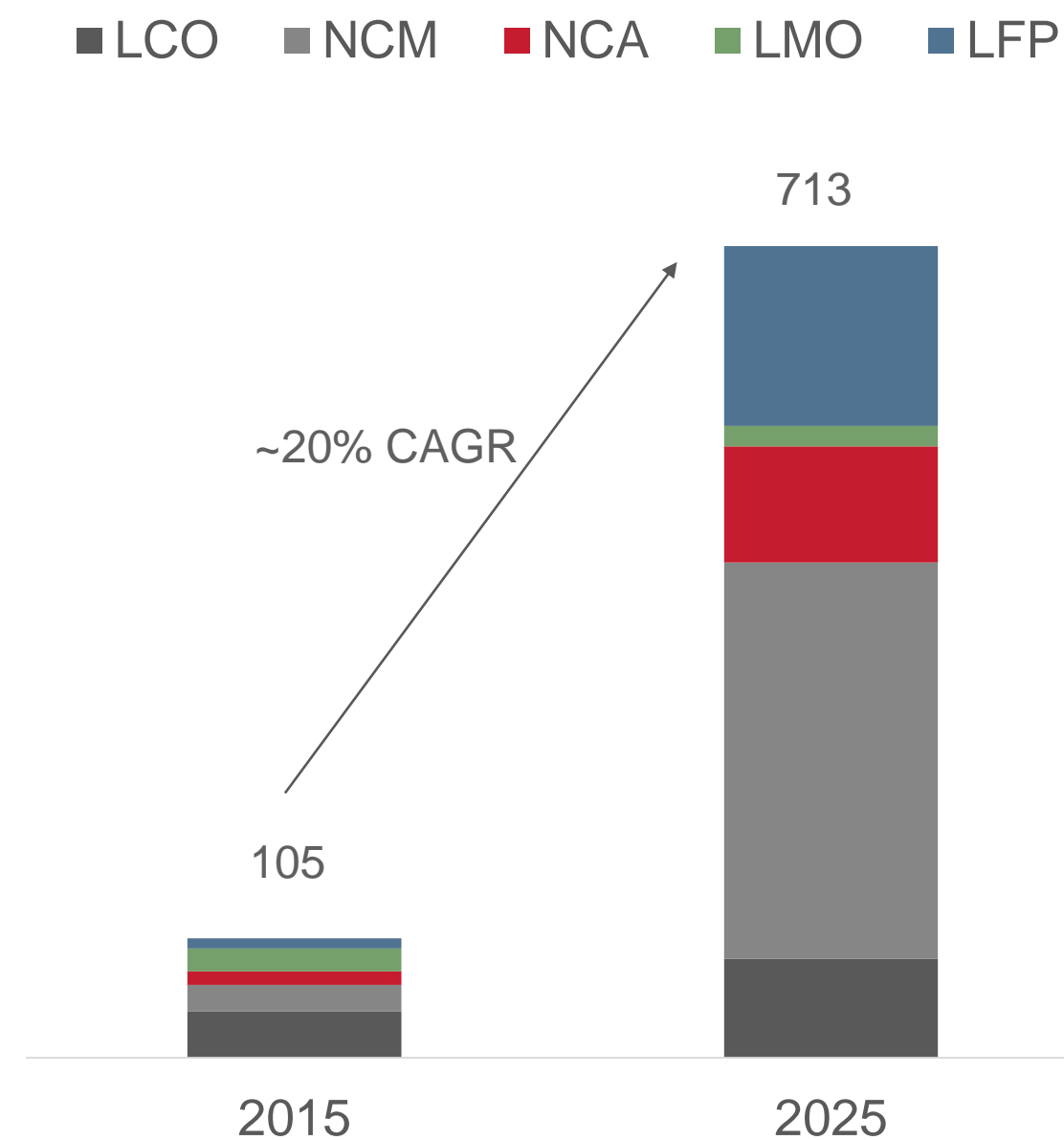
Use of nickel and cobalt dominant chemistries is accelerating in China

Of the 10 top selling Chinese EV's using LFP chemistry, six are already **converting to NCM**

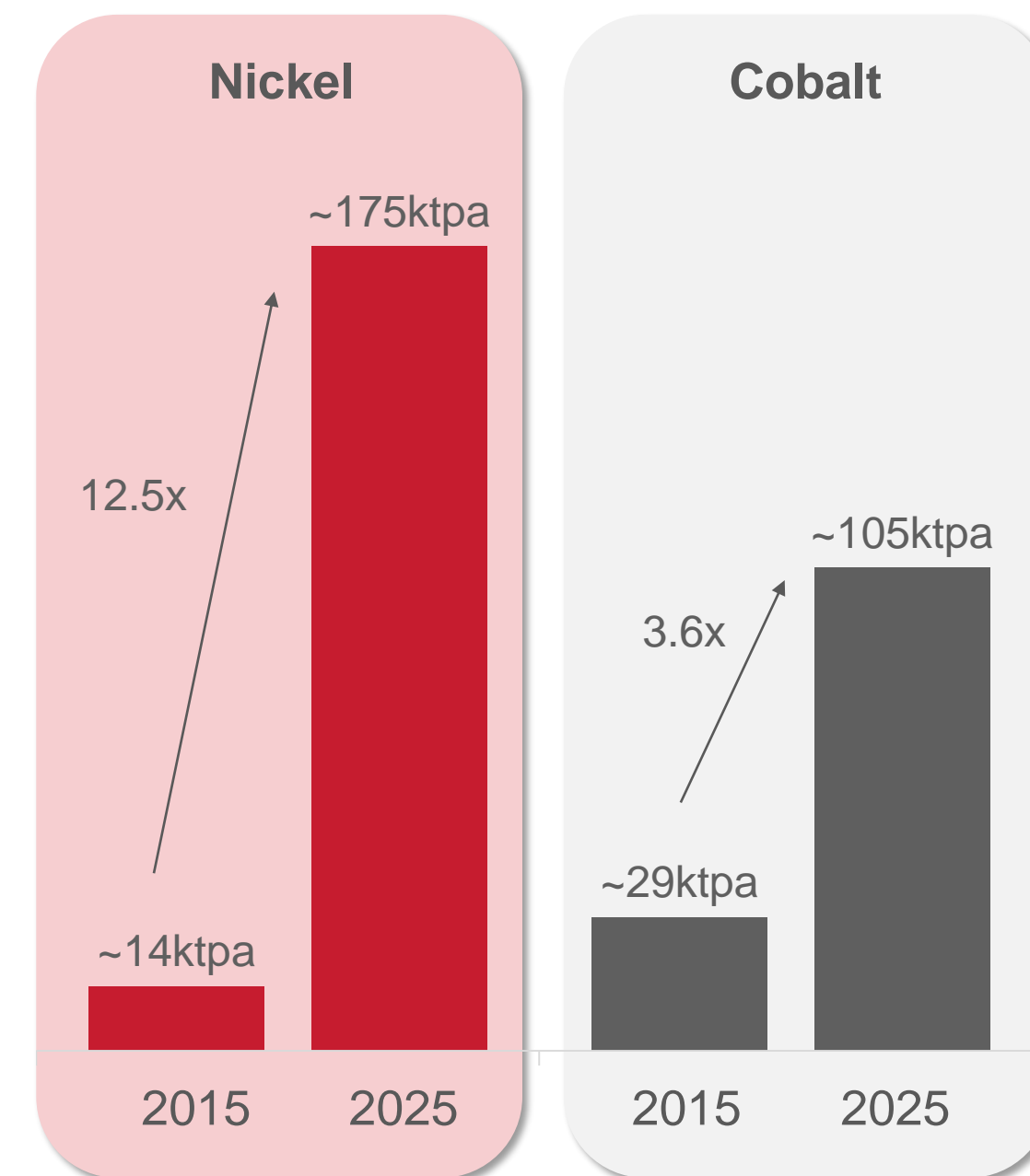
“We believe this potential [Chinese] subsidy plan would further promote the development of NMC over LFP in the next few years. The **NMC penetration rate should climb significantly faster than we previously expected.**”

Deutsche Bank, 2 Dec 2016

Cathode Raw Material Demand By Battery Type
(‘000 tonnes)



Implied Contained Metal Demand



Source: 2015 data based on Avicenne Energy Analysis. 2025 case based on internal company estimates, utilising an EV adoption rate based on the average from five banks and industry consultant forecasts: HEV 5.7m, PHEV 2.3m, BEV 5.1m. EV applications forecast at 289 GWh. Non-EV applications forecast at 135GWh. Assumes an average battery size of 50kWh/BEV. Chemistry adoption rates in 2025 for EVs are NCM₆₂₂ 60%, NCA 25% and LFP 15%. No allowance for yield losses or process inefficiencies at pack or cell level, nor metal recycling rates

INPUTS REQUIRED AS SULPHATES

EV BATTERIES NEED NICKEL AND COBALT IN SULPHATE FORM

The EV battery industry requires **metal to be supplied as salts**, usually as sulphates, to manufacture cathode precursors

The cost of converting metal units to sulphate form is often represented in the market price by a '**sulphate premium**' paid over and above the contained metal value



TESLA

“The main determinants on the cost of the cell are the price of the nickel **in the form that we need it** ... and the cost of the synthetic graphite with silicon oxide coating.”

- Elon Musk, Tesla CEO

Nickel Sulphate Premia



Source: Macquarie Research

A PROBLEMATIC SUPPLY CHAIN

MAJORITY OF CURRENT COBALT SUPPLY SOURCED FROM AFRICA

“The majority of the cobalt is heading **straight to China**. Their global hold is huge.”

- CRU, May 2016

“While the occasional [analyst] questions the availability of enough lithium or flake graphite to satisfy soaring demand from the battery industry, **everybody has overlooked or ignored the most critical mineral constraint – Cobalt**. It’s a truly gargantuan challenge. A Gigarisk!”

- investorintel.com, March 2016



CHILDREN MINING COLTAN, KIVU REGION, DRC

95%

Percentage of cobalt produced globally as by-product from copper and nickel mining

65%

Percentage of global cobalt production originating in the Democratic Republic of Congo

45%

Percentage of DRC cobalt mined artisanally

Source: Darton Cobalt Market Review 2015-2016

COBALT PRICE

COBALT WAS ONE OF THE BEST PERFORMING METALS OF 2016

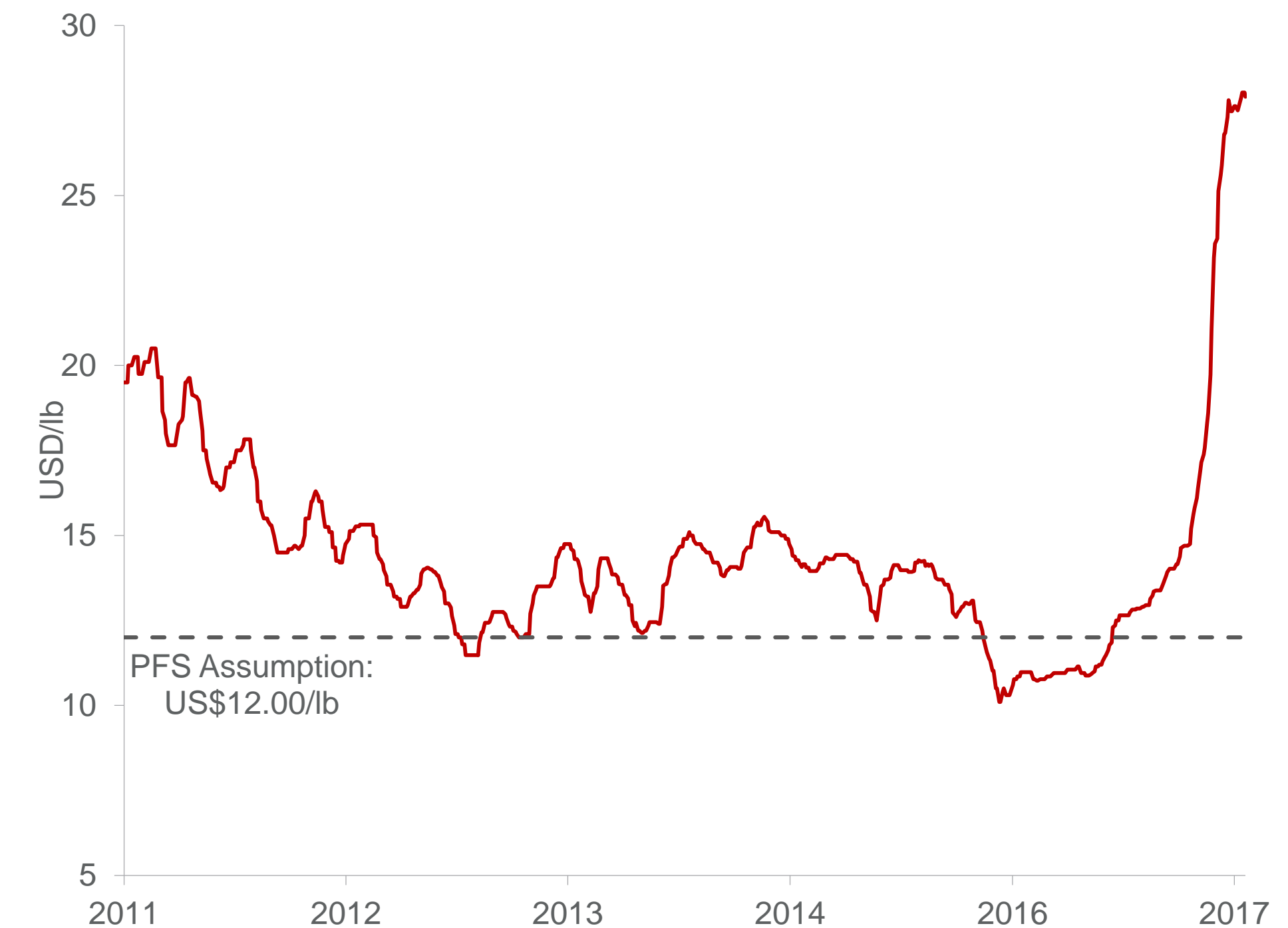
Cobalt has been one of the best performing metals with prices increasing by ~160% since the beginning of 2016

Significant **upside in the event of supply disruption**

Major end customers have declared cobalt a **'conflict' mineral** – supply must come from auditable sources and supply chains

At Syerston cobalt is **co-product, not by-product**: cobalt is **~55% of Syerston's revenues** at today's spot metal prices¹

Cobalt Price | 27.90 USD/lb | 28 April 2017



Source: Bloomberg

1. Spot nickel and cobalt prices as at 28 April 2017, scandium revenue has been excluded

SYERSTON PROJECT

SYERSTON PROJECT

FULLY PERMITTED DEVELOPMENT PROJECT LOCATED IN NSW

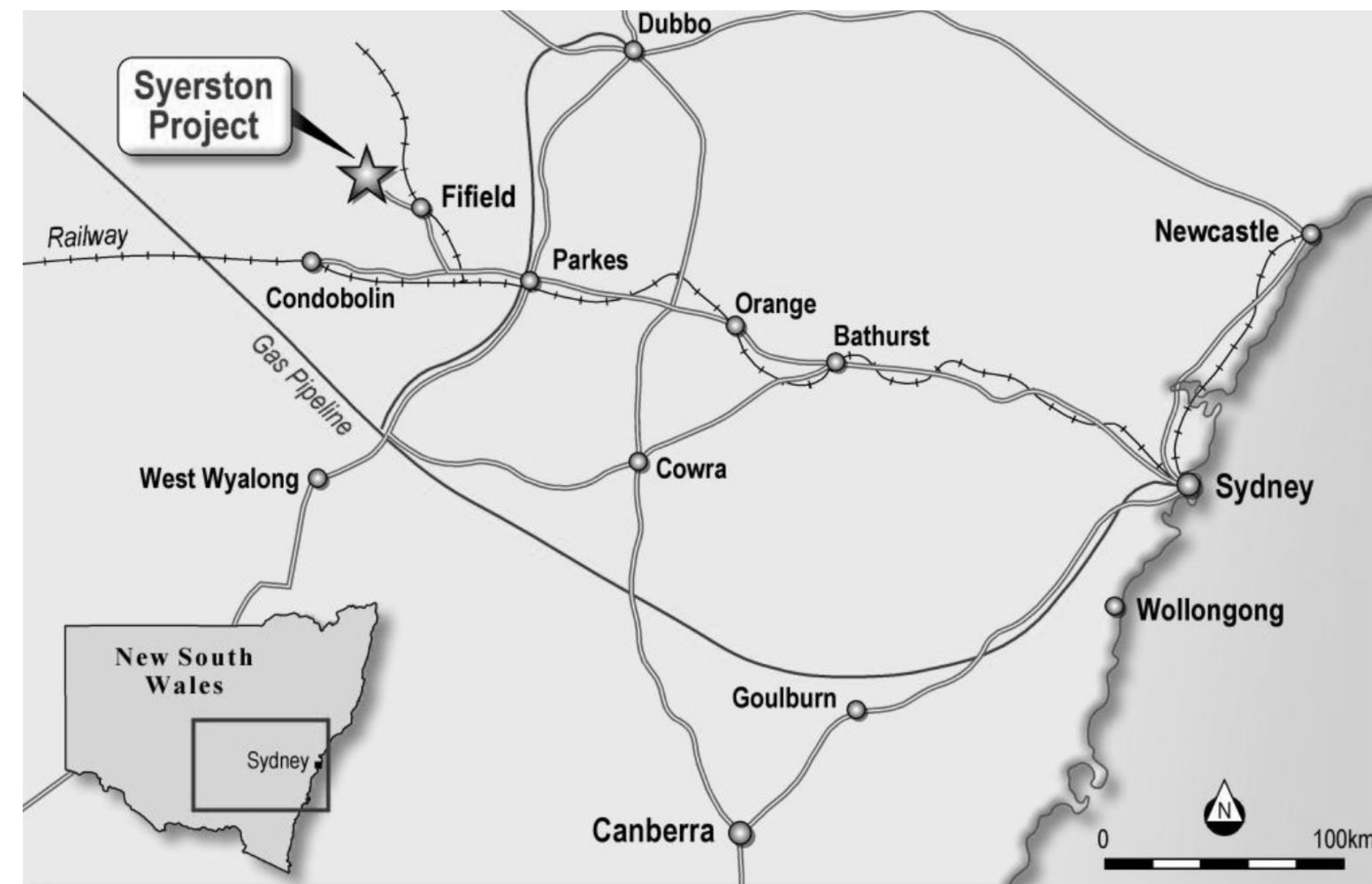
The Syerston Project is **100% owned by Clean TeQ** and located 350km west of Sydney

Laterite (iron-hosted) mineral resource, rich in **nickel, cobalt and scandium**

Uniquely positioned as one of the largest and highest grade sources of **cobalt outside Africa**

Fully permitted project targeting release of Bankable Feasibility Study in 4Q 2017

Seeking to directly supply the **lithium-ion battery industry** with high-purity nickel and cobalt sulphate, the key raw materials in the production of cathodes

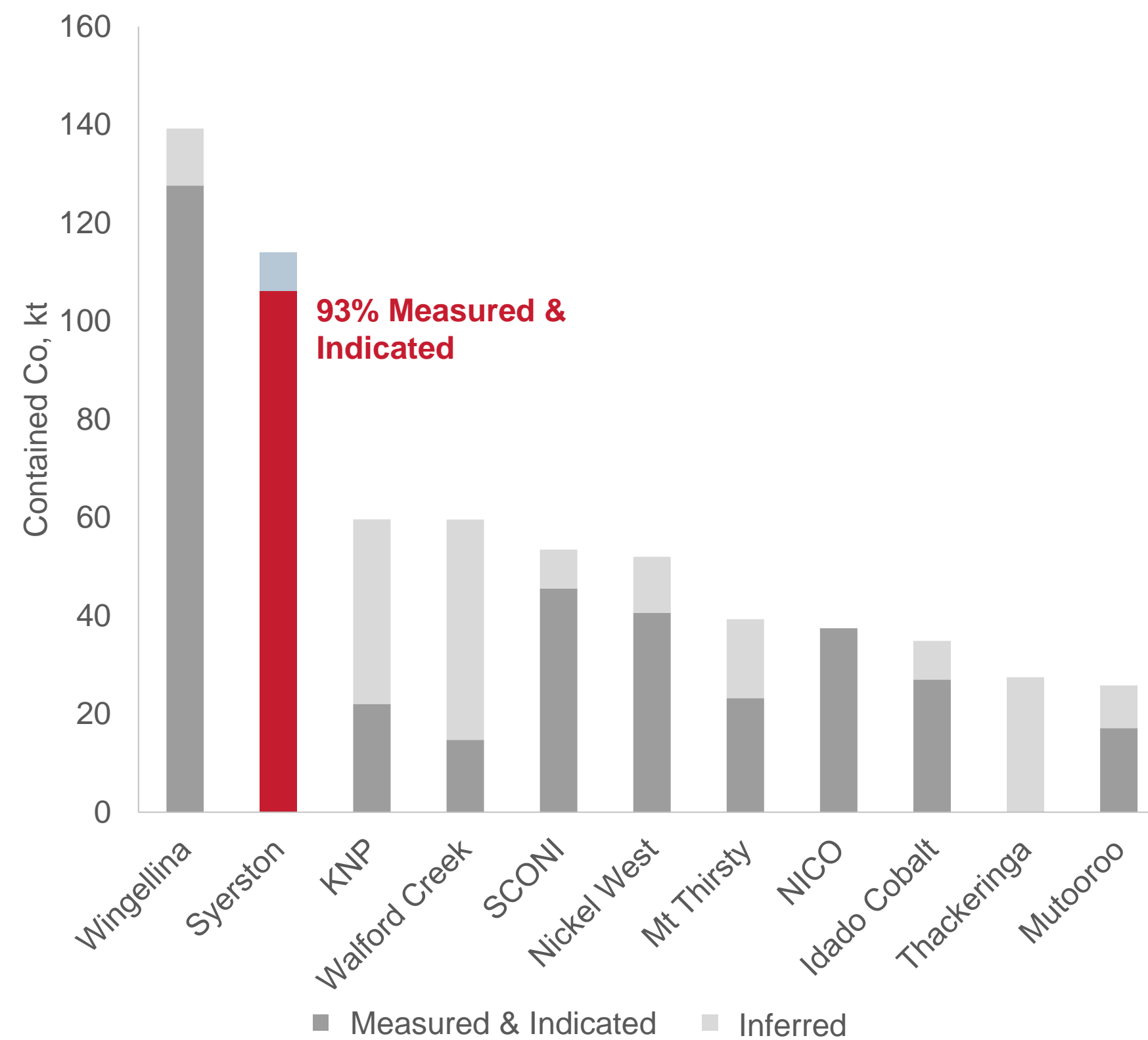


Syerston is located in an **established mining region**; other major projects include Cadia Valley, Northparkes and Cowal

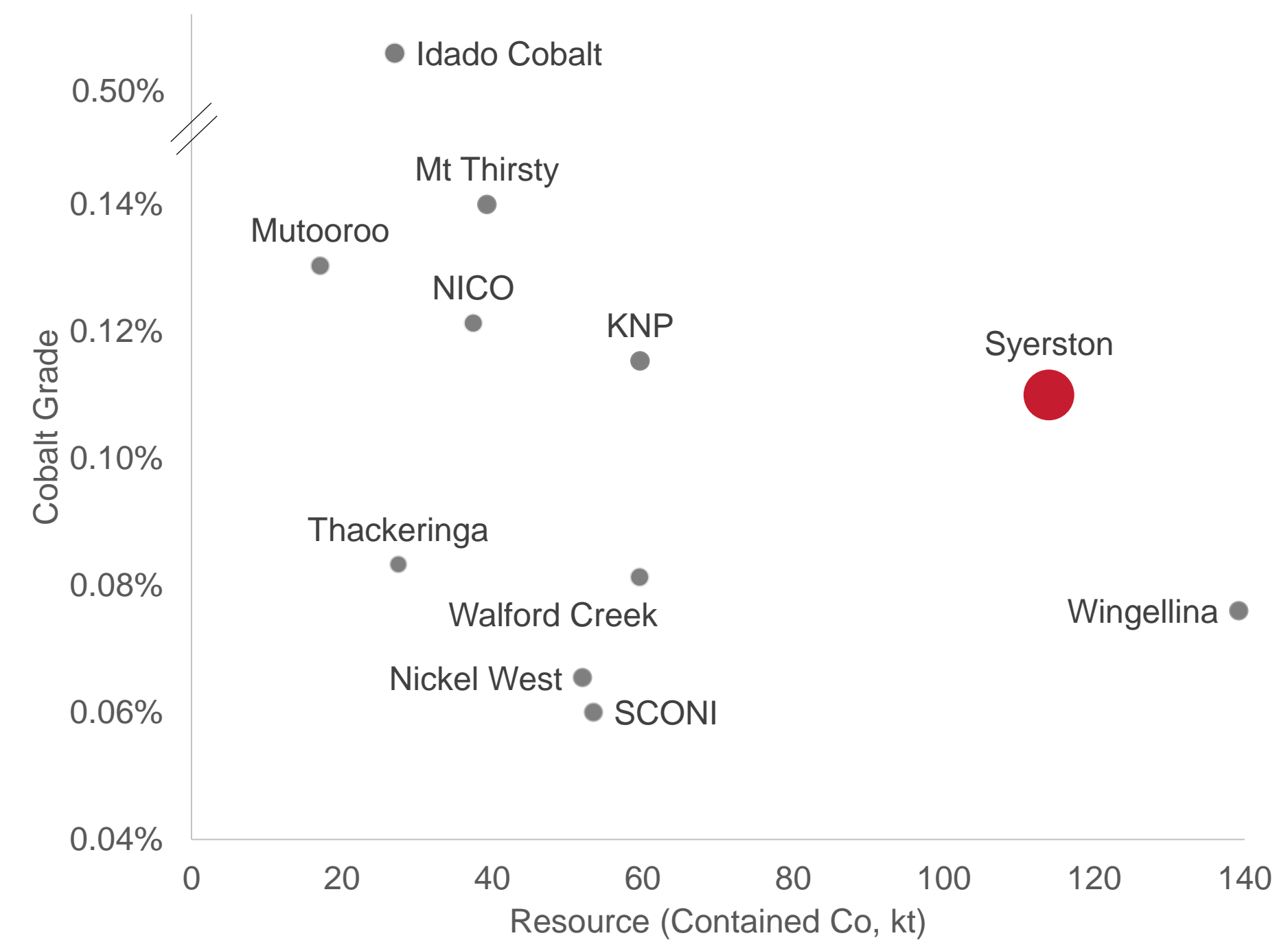
WORLD-CLASS COBALT RESOURCE

SYERSTON IS A PREMIER COBALT RESOURCE OUTSIDE AFRICA

Cobalt Resource Size & Category¹



Cobalt Grade vs Resource Size¹



1. Based on publicly released resource statements

KNOWN GEOLOGY

LARGE UNDEVELOPED NICKEL-COBALT RESOURCE

Over **1,300 drill holes** provide for strong geological understanding of the resource
700kt of contained nickel and 114kt of contained cobalt, making Syerston **one of Australia's largest undeveloped nickel-cobalt resources**

The resource is **shallow (5m to 40m)** and extends over a 2km horizon

Existing Ore Reserves sufficient for a 39 year mine life

Ore Reserves Estimate¹

Classification	Mt	Ni %	Co %
Proved	55	0.71	0.10
Probable	41	0.58	0.10
Total	96	0.65	0.10

Mineral Resource Estimate²

Classification	Mt	Ni %	Co %	Ni kt	Co kt
Measured	52	0.73	0.11	380	57
Indicated	49	0.58	0.10	280	49
Meas. & Ind.	101	0.65	0.10	660	106
Inferred	8	0.54	0.10	50	8
Total	109	0.65	0.10	700	114

Notes: Any apparent arithmetic discrepancies are due to rounding; NiEQ = nickel equivalent

1. Ore reserve is reported as autoclave feed tonnes

2. Based on 0.60% NiEQ cutoff. Calculated as $NiEQ\% = Ni\% + (Co\% \times 2.95)$, based on assumed metal prices of US\$4.00/lb Ni, US\$12.00/lb Co, at AUDUSD exchange rate of 0.70. NiEQ was calculated on Ni and Co only, with no consideration for scandium or platinum

SIMPLE MINING OPERATION

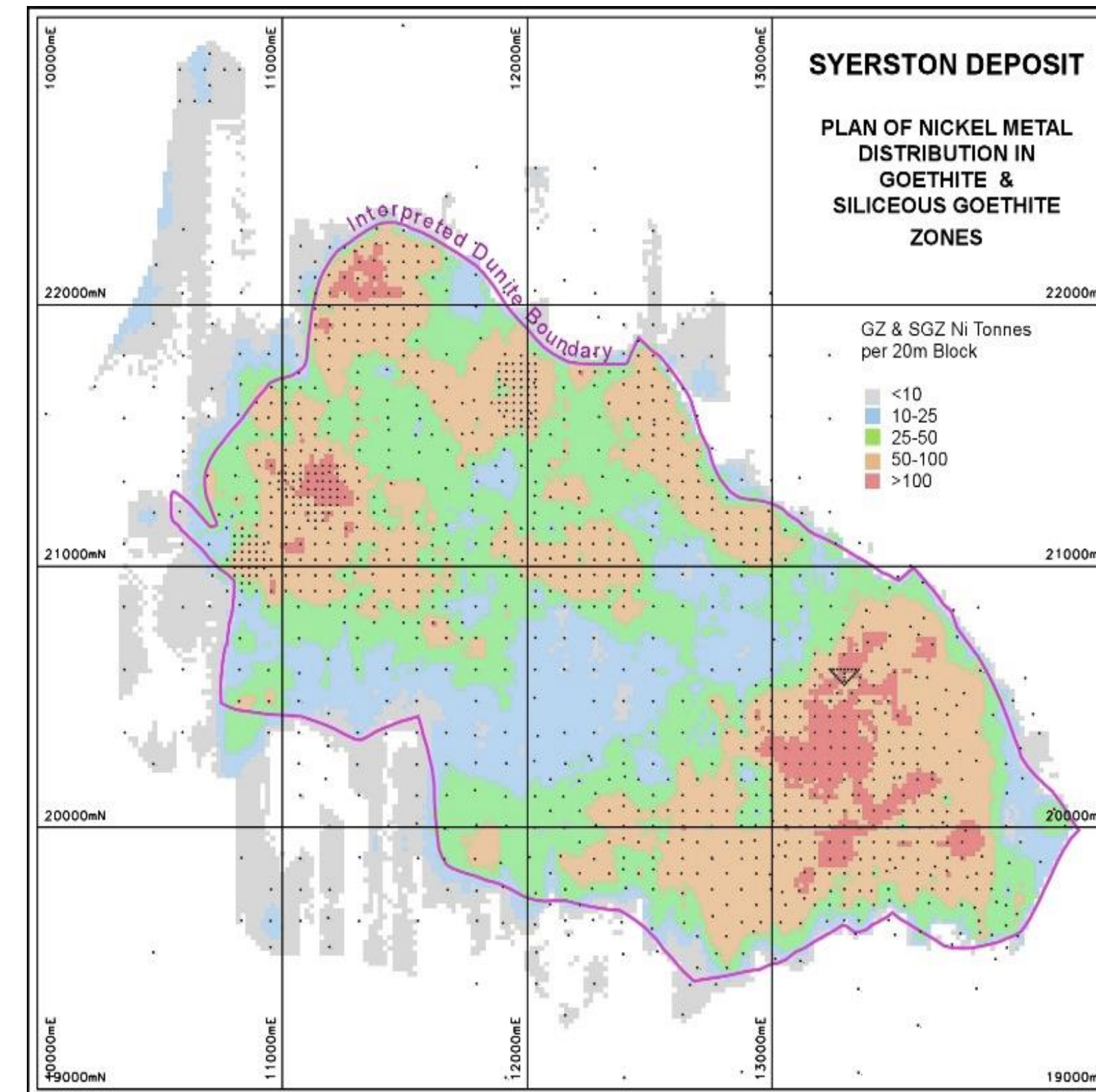
SIMPLE AND LOW COST OPEN-PIT MINING AT SHALLOW DEPTHS

Shallow deposit allows for **simple strip-mining method**, with minimal grinding and beneficiation

The ore is friable and **is amenable to free digging by excavators** with no blasting required

The **average strip ratio is 0.8x:1.0** (waste:ore) (i.e. there is more ore than waste)

Average C1 operating cash cost in years 3-20 of US\$2.96/lb nickel or **US\$0.89/lb** nickel after cobalt co-product credits



2016 PFS HIGHLIGHTS

LARGE, LOW-COST AND WITH ATTRACTIVE ECONOMICS

PFS completed in September 2016 and demonstrated **highly favourable economics**

Processing of 2.5Mtpa ore over an initial 20-year period with existing Reserves available for up to 19-years of additional mine life extension

Project designed to produce **high purity nickel sulphate and cobalt sulphate** products targeted solely for the lithium-ion battery market

Spot cobalt price of US\$27.90/lb is **well above** PFS assumption of US\$12.00/lb

Potential for **significantly reduced C1 cash costs** after co-credits if spot cobalt prices are assumed

✓ Nickel sulphate production ¹	85.1ktpa
✓ Contained nickel production ¹	18.7ktpa
✓ Cobalt sulphate production ¹	15.3ktpa
✓ Contained cobalt production ¹	3.2ktpa
✓ Autoclave throughput ²	2.5mtpa
✓ Life of Mine	39 Years
✓ C1 cash costs (after Co-credits) ³	US\$0.89/lb Ni
✓ Total capital cost ⁴	US\$680m
✓ NPV ⁸ (post tax) ⁵	US\$891m
✓ IRR (post tax)	25%

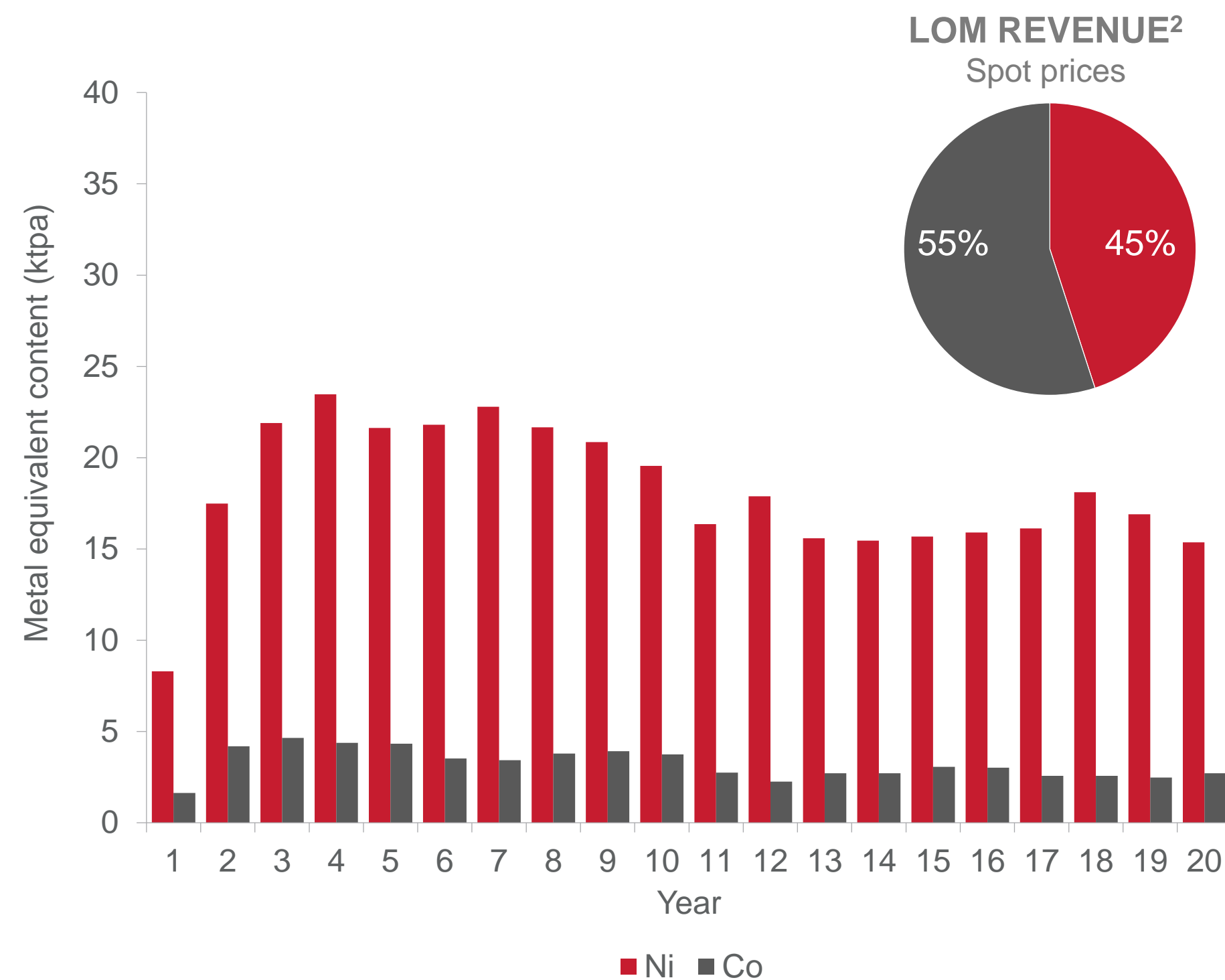
PFS assumptions: nickel price US\$7.50/lb, cobalt price US\$12.00/lb, AUDUSD 0.75

1. Years 3-20 average. 2. Designed processing throughput rate following a 24-month commissioning and ramp-up period. 3. C1 cash cost excludes potential by-product revenue from scandium oxide sales and royalties. 4. Includes US\$62m contingency. 5. Post tax, 8% discount rate, 100% equity, real terms

2016 PFS HIGHLIGHTS (CONT.)

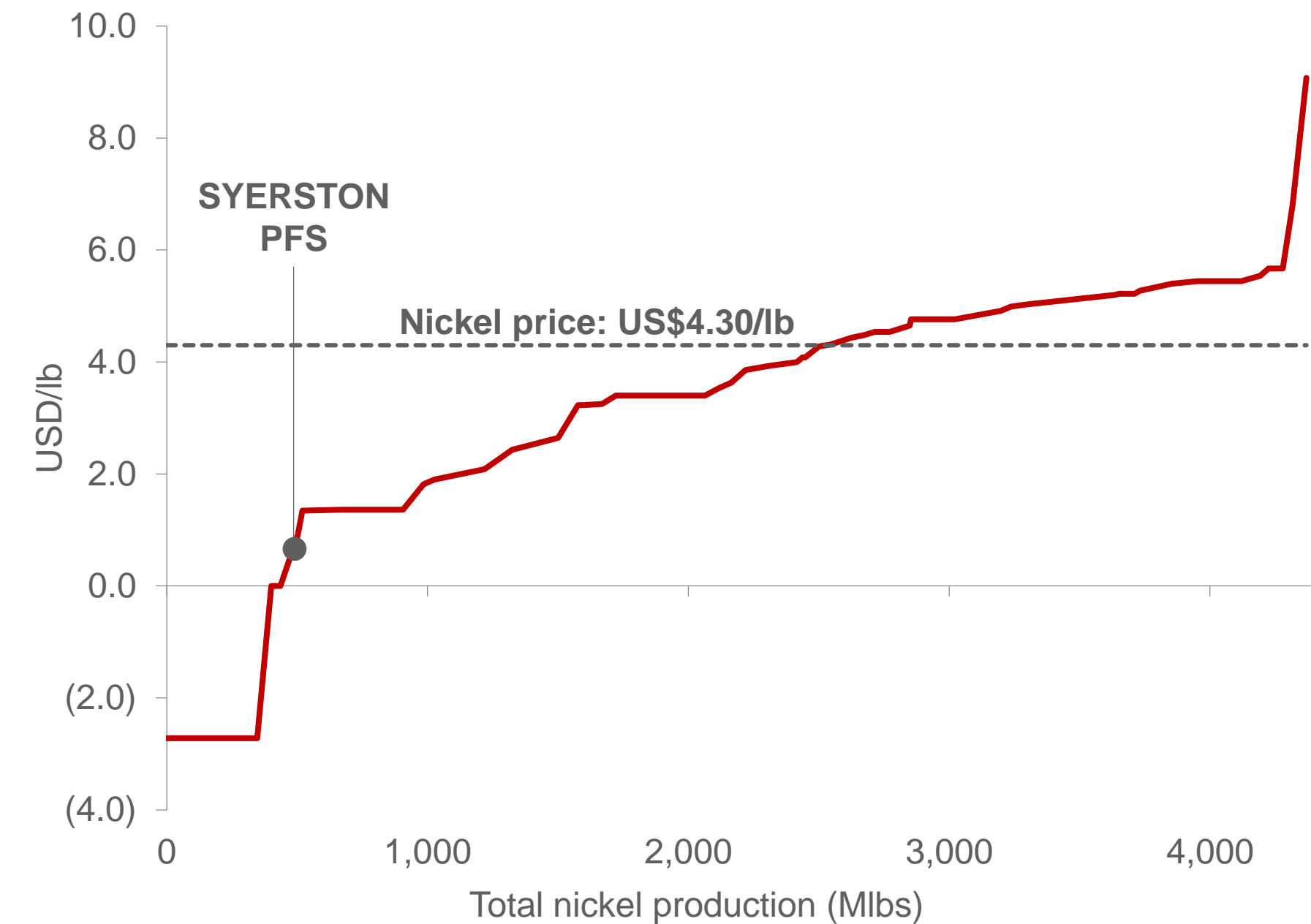
Q1 COST POSTION WITH MEANINGFUL EXPOSURE TO CO AND NI

Production Profile¹



Global Nickel C1 Cash Cost Curve³

After co-credits



1. Per September 2016 PFS
 2. Spot nickel and cobalt prices as at 28 April 2017, scandium revenue has been excluded
 3. Macquarie Research, as at Q1 2017. Nickel price as at 28 April 2017

CLEAN-IX® PROCESSING

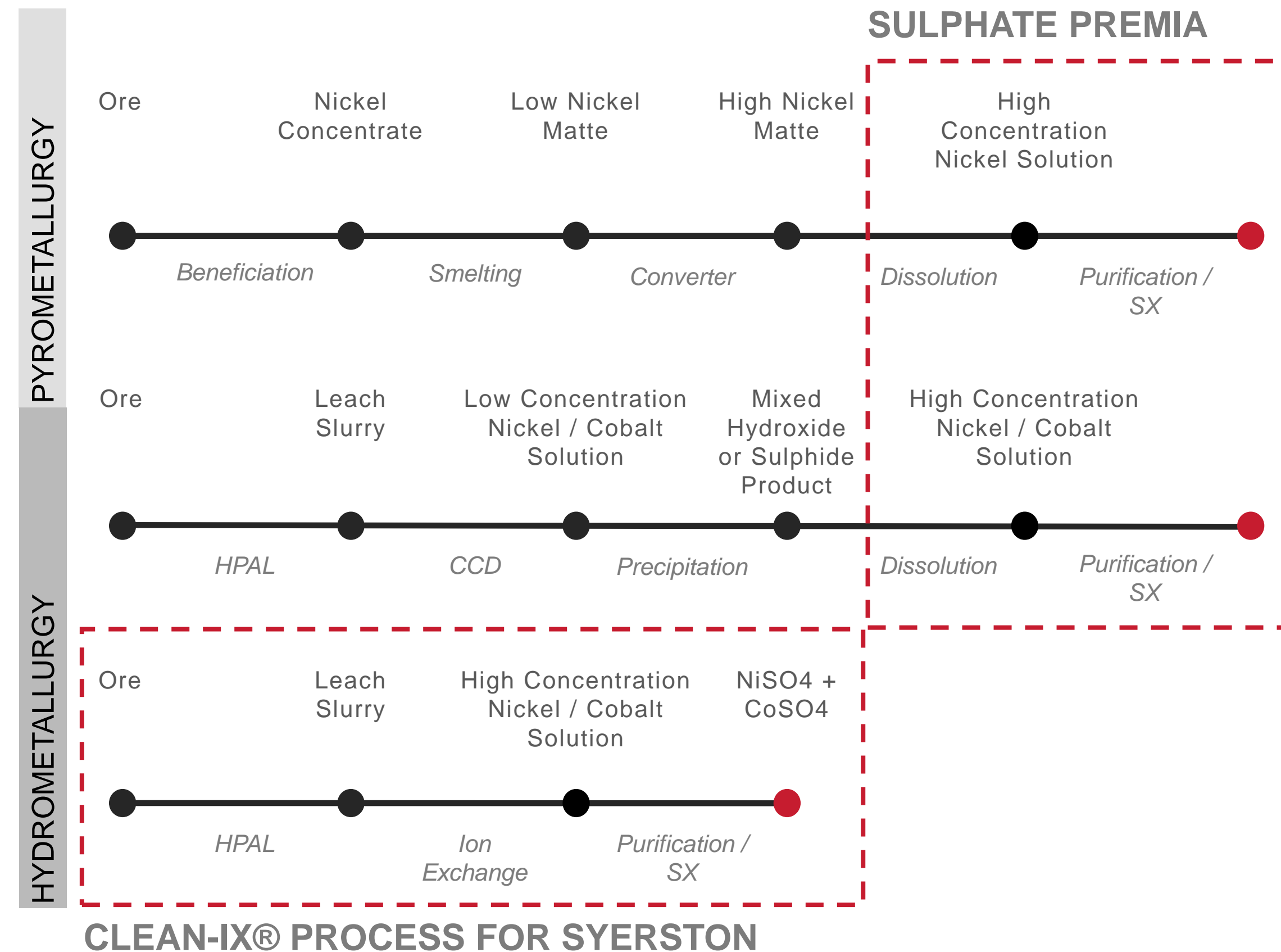
SULPHATE FROM PRIMARY ORE PROCESSING

Large scale pilot plant located in Perth to simulate the entire leaching and RIP extraction process at scale

A pilot campaign in late 2016 processed ~20 tonnes of Syerston ore to produce **nickel and cobalt sulphate customer samples**

Good progress is being made on purification of **nickel and cobalt eluate to battery-grade specification**

Customers to be supplied with samples for product testing and qualification



CUSTOMER STRATEGY

FEEDBACK FROM POTENTIAL CUSTOMERS TO DATE IS VERY POSITIVE

Clean TeQ's objective is to agree **binding long term nickel and cobalt sulphate sales contracts** with a small number of strategic counterparties during **2017** while the BFS is being completed

Received **strong expressions of interest** for offtake from a number of parties, including signing MOUs and participating in site visits

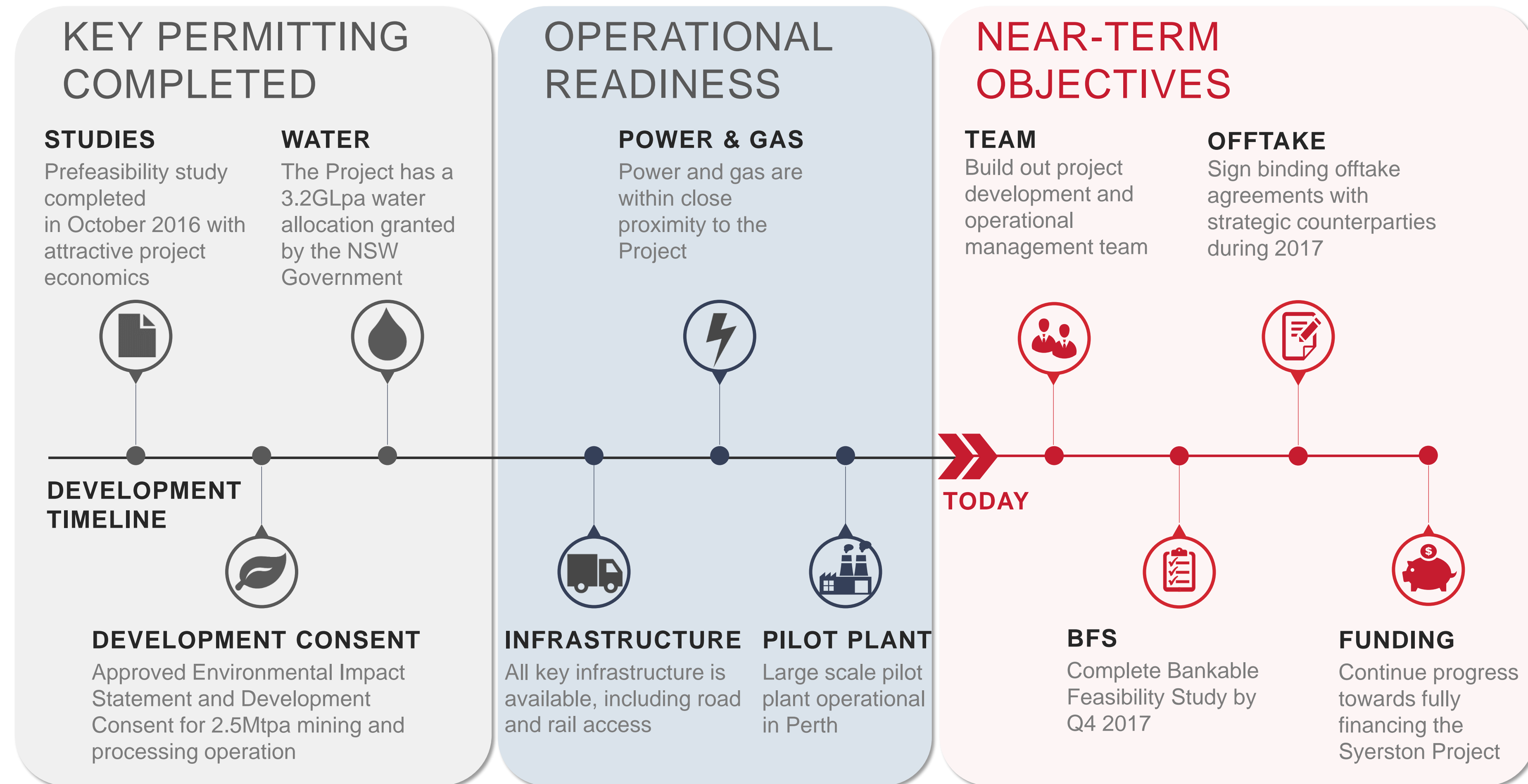
Customers are receiving **samples** of nickel sulphate and cobalt sulphate with **product certification** process progressing well

Customers are very aware of **impending raw material supply shortage** and seeking certainty of supply



NICKEL & COBALT SULPHATE

PROJECT IS DEVELOPMENT READY



INVESTMENT THESIS

CATHODE MARKET

LITHIUM-ION BATTERIES

High-purity nickel and cobalt sulphate are key raw material inputs for the rapidly growing lithium-ion battery industry

RAW MATERIAL CHALLENGES

Evolving supply constraints for high-purity nickel and cobalt sulphate, particularly with an auditable supply chain

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COBALT PLAY

A rare, large and high grade cobalt project outside Africa

STRATEGIC JURISDICTION

Customers require supply options outside Africa

ATTRACTIVE ECONOMICS

First quartile cost position with 39 year mine life

DEVELOPMENT READY

All key permits and infrastructure in place

APPENDIX

2016 PREFEASIBILITY STUDY

LARGE, LOW-COST AND WITH HIGH COBALT CREDITS

Parameter		Assumption / Output
Autoclave Throughput		2.5Mtpa ¹
Life of Mine		39 years
Initial operating period		20 years
Autoclave Feed Grade ² (Year 3-20 average)	Nickel	0.80%
	Cobalt	0.14%
Production (Years 3-20 average)	Nickel sulphate	85,135tpa
	Cobalt sulphate	15,343tpa
Production (Years 3-20 average)	Contained nickel	18,730tpa
	Contained cobalt	3,222tpa
Recovery (Years 3-20 average)	Nickel	94.2%
	Cobalt	93.0%
Nickel price assumption ³		US\$7.50/lb
Cobalt price assumption ³		US\$12.00/lb
Exchange Rate		AUD/USD 0.75
Total Capital Cost ⁴		US\$680M (A\$906M)
C1 Cash Cost (Year 3-20 average) ⁵	before Co credits	US\$2.96/lb Ni
	after Co credits	US\$0.89/lb Ni
Net Present Value (NPV ₈) – post tax ⁶		US\$891M
Internal Rate of Return (IRR) – post tax		25%

¹ Designed processing throughput rate following a 24-month commissioning and ramp up period.

² Includes pit selection, dilution and mining factors

³ Based on bank/broker long-term consensus market pricing for metal content only. Does not include premiums that are typically paid in the market for battery-grade nickel and cobalt sulphate

⁴ Includes a US\$62M (A\$83M) contingency on capital costs

⁵ C1 cash cost excludes potential by-product revenue from scandium oxide sales and royalties

⁶ Post tax, 8% discount, 100% equity, real terms

26-28

GWh p.a. #

500,000

Electric Vehicles p.a.*

Definitive Feasibility Study due for completion in Q4 2017

Significant scandium credits modelled separately

Assumes NCA chemistry with Ni and Co content by wt% within cathode active material of 48% and 9% respectively, and energy density at 1.39kg/kWh

* Assumes average energy density per battery pack of 50kWh

SCANDIUM OPPORTUNITY

EV DEMAND TO DRIVE GROWTH FOR LIGHT WEIGHT ALUMINIUMS

Scandium is used to provide next generation **lightweight aluminium alloys** for key transportation markets

Clean TeQ continues to **promote the use** of scandium alloys with ultimate aim of securing **offtake agreements** for scandium oxide

In Dec-16, Clean TeQ entered into a collaboration agreement with **Airbus**

The Syerston Project has one of the **world's largest** and **highest grade scandium** deposits

In Aug-16, Clean TeQ completed a **Feasibility Study** to produce **scandium-oxide by-product** alongside nickel and cobalt sulphate products

Capital Cost of US\$75m and would significantly enhance Syerston project economics¹

1. Syerston Scandium Project Feasibility Study, released to ASX on 30 August 2016.

Airbus Group's Light-rider



The world's first 3D printed electric bike aluminium-scandium frame makes it lighter and stronger

The bike weighs 35kg, contains a 6kWh battery, has a top speed of 80km/h and a range of 60km

CONTACT



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RESERVES AND RESOURCES

COMPETENT PERSON CONSENTS

The information in this document that relates to nickel-cobalt Mineral Resources is based on information compiled by Diederik Speijers and John McDonald, who are Fellows of The Australasian Institute of Mining & Metallurgy and employees of McDonald Speijers. There was no clear division of responsibility within the McDonald Speijers team in terms of the information that was prepared – Diederik Speijers and John McDonald are jointly responsible for the preparation of the Mineral Resource Estimate. Diederik Speijers and John McDonald have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Diederik Speijers and John McDonald, who are consultants to the Company, consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this document that relates to scandium Mineral Resources is based on information compiled by Sharron Sylvester, who is a Member and Registered Professional of the Australian Institute of Geoscientists and is an employee of OreWin Pty Ltd. Sharron Sylvester has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Sharron Sylvester, who is a consultant to the Company, consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this document that relates to Ore Reserves is based on information compiled by Michael Ryan, MAusIMM (109558), who is a full time employee of Preston Valley Grove Pty Ltd, trading as Inmett Projects. Michael Ryan has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Michael Ryan, who is a consultant to the Company, consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Michael Ryan holds options in Clean TeQ Holdings Limited, the ultimate parent entity of Scandium21 Pty Ltd, the owner of the Project.

For further details on the content of this presentation, please refer to the ASX releases on the Company's website.