

CRITICAL RAW MATERIALS
FOR THE BATTERY
REVOLUTION

INVESTOR PRESENTATION
JANUARY 2018



### DISCLAIMER

### IMPORTANT INFORMATION

This presentation has been prepared by the management of Clean TeQ Holdings Limited (the 'Company') in connection with meetings with investors and potential investors and not as specific advice to any particular party or person. The information is based on publicly available information, internally developed data and other sources. Where any opinion is expressed in this presentation, it is based on the assumptions and limitations mentioned herein and is an expression of present opinion only.

Certain statements in this presentation are forward looking statements. By their nature, forward looking statements involve a number of risks, uncertainties or assumptions that could cause actual results or events to differ materially from those expressed or implied by the forward looking statements. These risks, uncertainties or assumptions could adversely affect the outcome and financial effects of the plans and events described herein. Forward looking statements contained in this presentation regarding past trends or activities should not be taken as representation that such trends or activities will continue in the future. You should not place undue reliance on forward looking statements, which apply only as of the date of this presentation.

Actual results and developments of projects and nickel, cobalt and scandium market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors.

This presentation does not constitute or form part of any offer or invitation to sell, or any solicitation of any offer to purchase any shares in the Company, nor shall it or any part of it or the fact of its distribution form the basis of, or be relied on in connection with, any contract or commitment or investment decisions relating thereto, nor does it constitute a recommendation regarding the shares of the Company. Past performance cannot be relied upon as a guide to future performance.

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.





# SENIOR MANAGEMENT

### EXPERTISE WHERE HIGH-TECH MEETS RESOURCE DEVELOPMENT





# INVESTMENT HIGHLIGHTS

#### Clean-iX® ION EXCHANGE TECHNOLOGY

#### **WATER**

Apply innovative and low-cost solutions to treat waste water streams for potable use and recycling applications

#### **METALS**

Accelerate development of the Sunrise Ni-Co-Sc project to supply the rapidly expanding lithium-ion battery industry

#### **TECHNOLOGY**

Continue to develop our core capabilities in research and technology, and assess opportunities for new applications

#### **CLEAN TEQ SUNRISE PROJECT**

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

#### PROPRIETARY TECHNOLOGY

Unique processing enables delivery of sulphates

#### SIGNIFICANT COBALT PLAY

A rare, large and high grade cobalt project

#### STRATEGIC JURISDICTION

Customers require supply options outside Africa

#### MANAGEMENT TEAM

Highly credentialed in project development and financing

#### **DEVELOPMENT READY**

All key approvals and infrastructure in place

#### **OFFTAKE SECURED**

Binding five year offtake providing for sulphate premia

#### **ATTRACTIVE ECONOMICS**

First quartile cost position with 39 year mine life

#### **FUTURE UPSIDE**

Scandium represents potential for additional growth



# RECENT DEVELOPMENTS

### ACCELERATING THE DEVELOPMENT OF CLEAN TEQ SUNRISE



for Sunrise

### **Clean TeQ Share Price** A\$ per share \$1.80 \$1.60 \$1.40 \$1.20 \$1.00 \$0.80 \$0.60 \$0.40 \$0.20 \$0.00 Jan-16

Powering innovation

October 2016

Source: NASDAQ, as at 9 January 2018

# NEAR-TERM OBJECTIVES

### FAST-TRACK SUNRISE TO MEET DEMAND FOR CATHODE MATERIALS

- Complete the Definitive Feasibility Study in Q1 2018
- Secure further offtake agreements with strategic counterparties during 2018
- Continue progress towards fully financing Sunrise
- Optimise development plan to accelerate Sunrise execution
- Target commencement of construction in mid-late 2018





# CATHODE MARKET

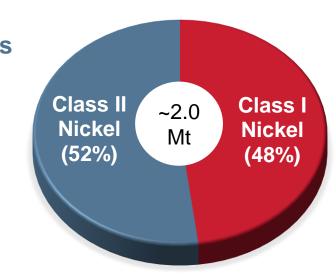
### SIGNIFICANT RAW MATERIALS SHORTAGE FOR BATTERY SECTOR

- The outlook for Electric Vehicles (Evs) is compelling, with significant investment in the Chinese and European production capacity
- Dominant chemistries for EV batteries require nickel and cobalt as key components
- Less than 50% of current global nickel production is suitable for battery applications (Class I nickel)
- Cobalt has been one of the best performing metals with prices increasing by ~170% since the beginning of 2016
- Major end customers have declared cobalt a 'conflict' mineral - supply must come from auditable sources and supply chains

#### **2017 Global Nickel Production**

#### Low grade nickel products

- Ferro Nickel
- Nickel Pig Iron
- Nickel Oxide Sinters

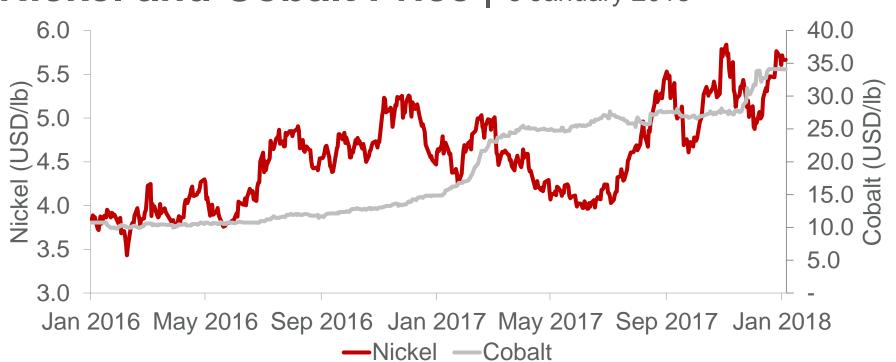


#### High purity (+99% Ni) nickel products

- Cathode
- Powders
- Briquette
- Pellets

Source: Vale

### Nickel and Cobalt Price | 8 January 2018



Source: Bloomberg



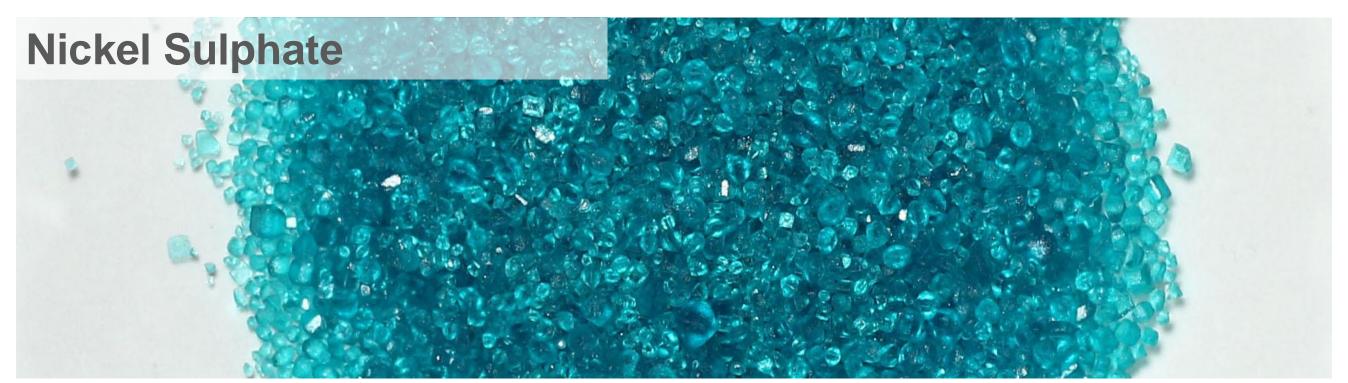
# INDUSTRY DEMANDING METAL SALTS

### SULPHATES ARE THE KEY RAW MATERIALS

 High purity cobalt sulphate and nickel sulphate in demand from cathode precursor manufacturers



 Clean TeQ Sunrise has the ability to produce high purity sulphate products without costly intermediate processing





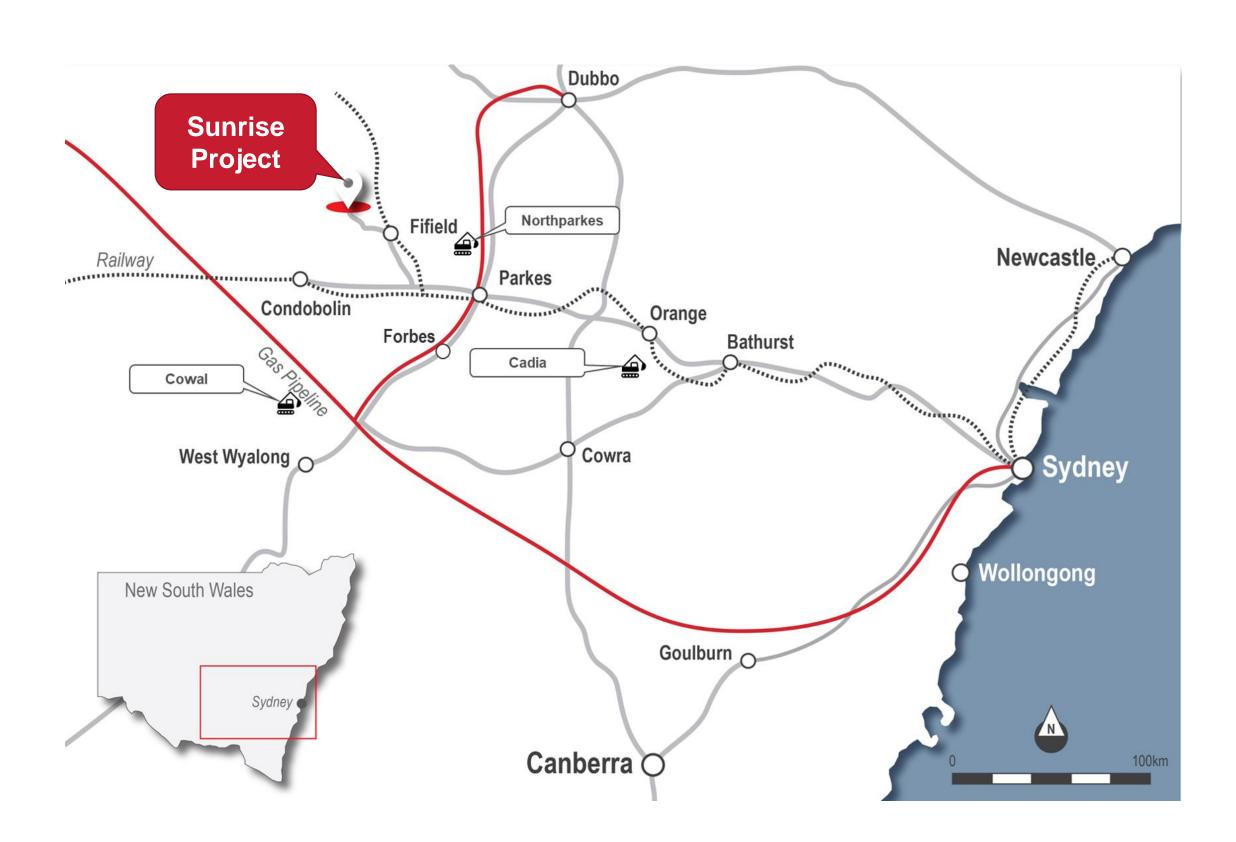
# CLEAN TEQ SUNRISE

CLEAN TEQ Powering innovation

# CLEAN TEQ SUNRISE PROJECT

### ADVANCED DEVELOPMENT PROJECT LOCATED IN NSW

- 100% owned by Clean TeQ and located 350km west of Sydney in an established mining region
- 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
- Key permits obtained and project targeting release of Definitive Feasibility Study in Q1 2018
- Only mine in the world seeking to directly supply the lithium-ion battery industry
- High-purity nickel and cobalt sulphate are key raw materials in the production of cathodes



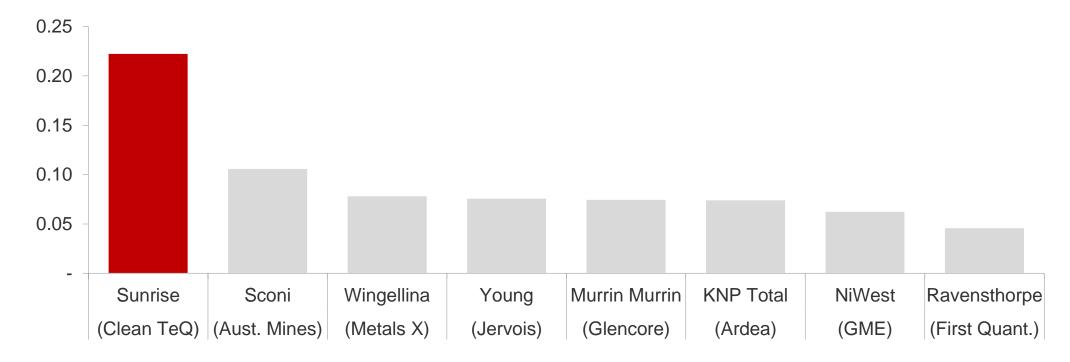


# KNOWN GEOLOGY

### ONE OF AUSTRALIA'S LARGEST UNDEVELOPED NICKEL-COBALT RESOURCES

- Over 1,300 drill holes provide for strong geological understanding of the resource
- The resource is shallow (5m to 40m) and extends over a 2km horizon
- Existing Ore Reserves sufficient for a +20 year mine life
- Significant cobalt content (relative to nickel) compared to other traditional nickel deposits

#### Cobalt / Nickel Ratios of Australian Laterite Resources



Source: Company Filings

### Ore Reserves Estimate<sup>1</sup>

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

#### 2017 Mineral Resource Estimate<sup>2</sup>

Classification	Mt	Ni %	Co %	Ni kt	Co kt
Measured	40	0.75	0.15	299	59
Indicated	47	0.55	0.12	259	58
Meas. & Ind.	87	0.64	0.13	558	116
Inferred	14	0.24	0.11	35	16
Total	101	0.59	0.13	593	132

Notes: Any apparent arithmetic discrepancies are due to rounding;

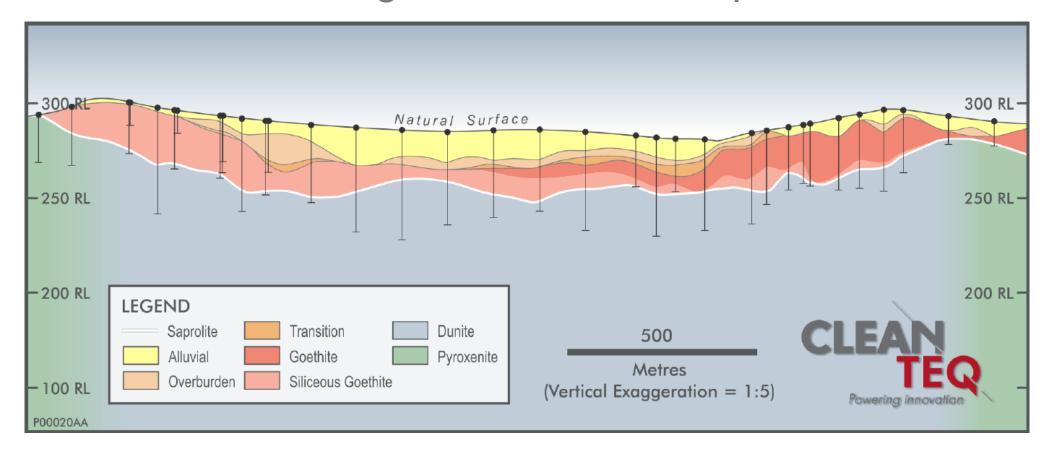
- 1. Ore reserve is based on the 2016 PFS as announced to the ASX on 5 October 2016. Reported as autoclave feed tonnes.
- 2. 2017 Mineral Resource; Based on 0.06% Co cutoff

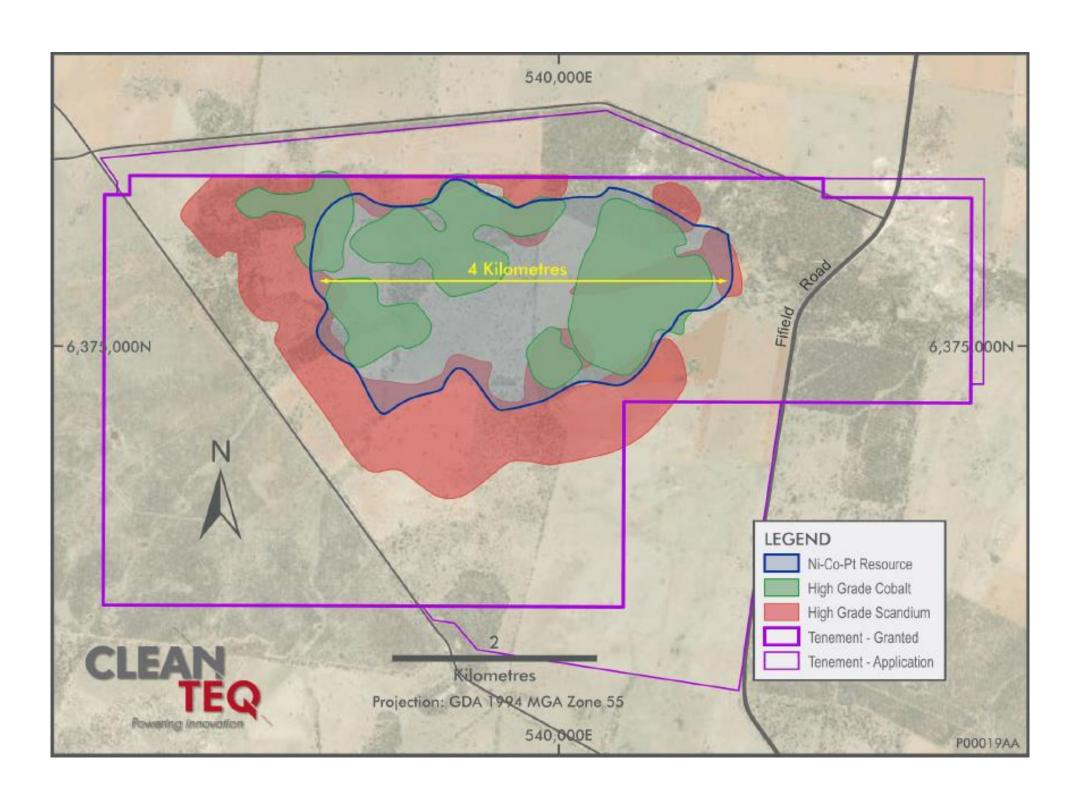


# SIMPLE LOW RISK MINING OPERATION

### SIMPLE AND LOW COST OPEN-PIT MINING AT SHALLOW DEPTHS

- Shallow deposit allows for simple strip-mining method and is amenable to free digging, with minimal grinding and beneficiation
- Low average strip ratio
- Average C1 operating cash cost of US\$3.86/lb nickel or US\$1.40/lb nickel after cobalt co-product credits, assuming US\$14/lb Cobalt price<sup>1</sup>





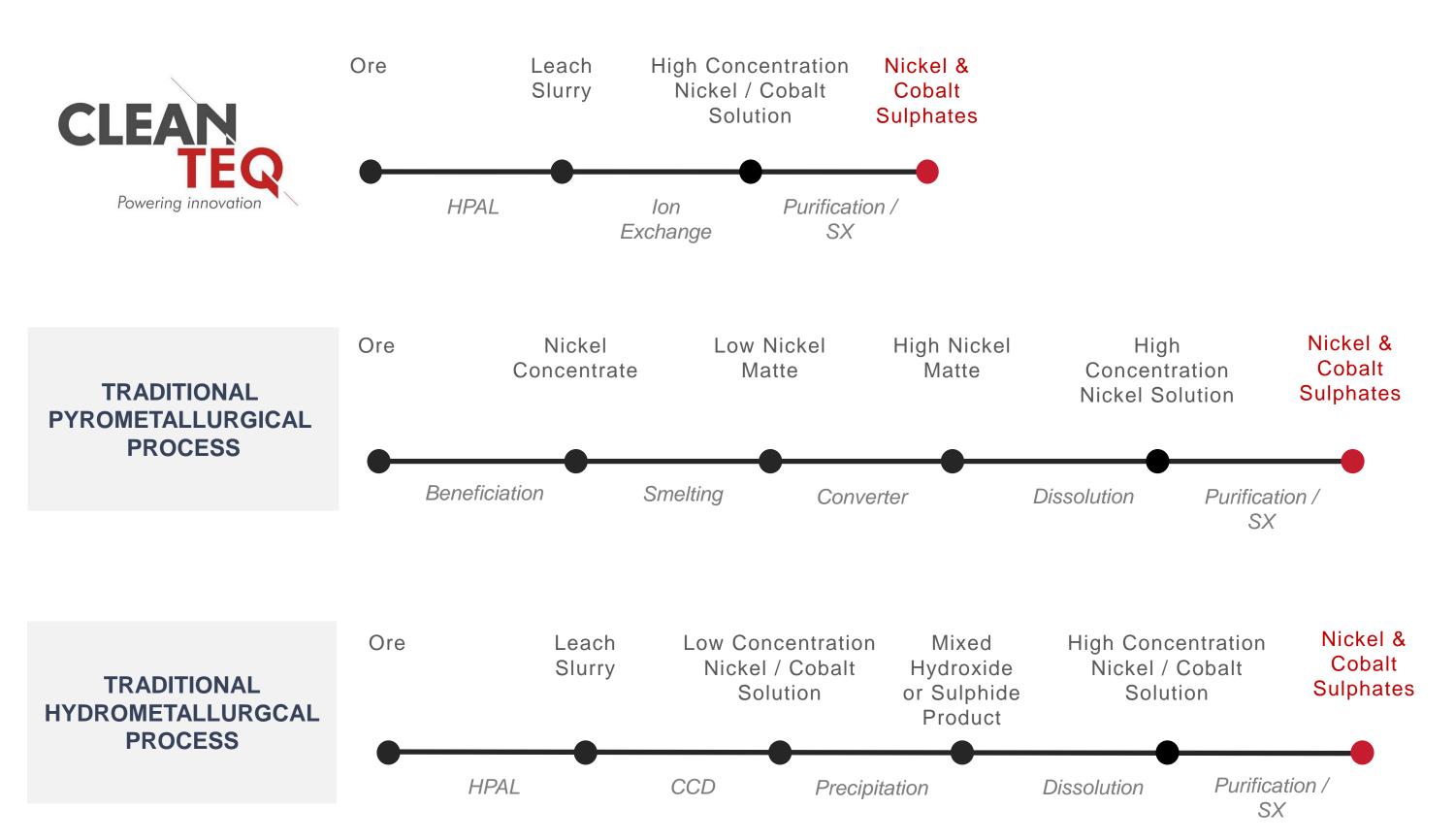




# CLEAN-IX® PROCESSING

### SULPHATE FROM PRIMARY ORE PROCESSING

- Clean –iX® process removes intermediate processing steps
- Large scale pilot plant located in Perth to simulate the entire leaching and RIP extraction process at scale
- ~20 tonnes of Sunrise ore processed to produce nickel and cobalt sulphate customer samples
- Customers have been supplied with samples for product testing and qualification





# 2016 PFS HIGHLIGHTS

### LARGE, LOW-COST AND WITH ATTRACTIVE ECONOMICS

- NI 43-101 Technical Report completed in November 2017 demonstrated highly favourable economics
- Processing of 2.5Mtpa ore over an initial 20year 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\$36.30/lb is well above NI 43-101 assumption of US\$14.00/lb
- Potential for significantly reduced C1 cash costs after co-credits at spot cobalt prices
- October 2017 Mineral Resource estimate confirmed a 30% increase in cobalt grade

<b>✓</b>	Nickel sulphate production <sup>1</sup>	85.1ktpa
<b>✓</b>	Contained nickel production <sup>1</sup>	18.7ktpa
<b>✓</b>	Cobalt sulphate production <sup>1</sup>	15.3ktpa
<b>✓</b>	Contained cobalt production <sup>1</sup>	3.2ktpa
<b>✓</b>	Autoclave throughput <sup>2</sup>	2.5mtpa
<b>✓</b>	Life of Mine	39 Years
<b>✓</b>	C1 cash costs (after Co-credits) <sup>3</sup>	US\$1.40/lb Ni
<b>✓</b>	Total capital cost <sup>4</sup>	US\$784m
$\checkmark$	NPV <sup>8</sup> (post tax) <sup>5</sup>	US\$748m
$\checkmark$	IRR (post tax)	21%

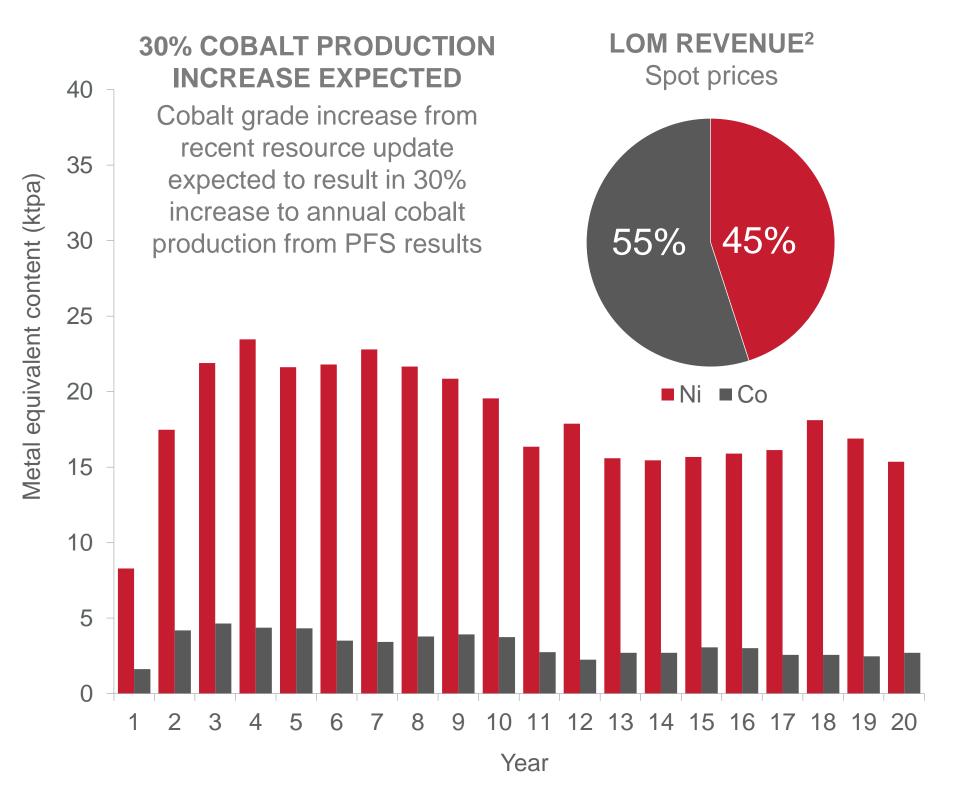


<sup>1.</sup> Years 3-20 average. NI 43-101 assumptions: nickel price US\$7.50/lb, cobalt price US\$14.00/lb, AUD/USD 0.75. 2. Designed processing throughput rate following a 24-month commissioning and ramp-up period. 3. C1 cash cost excludes potential by-product revenue from scandium oxide sales and royalties. 4. Includes US\$102m contingency. 5. Post tax, 8% discount rate, 100% equity, real terms. Refer to PFS details as announced by Clean TeQ on 5 October 2016.

# 2016 PFS HIGHLIGHTS (CONT.)

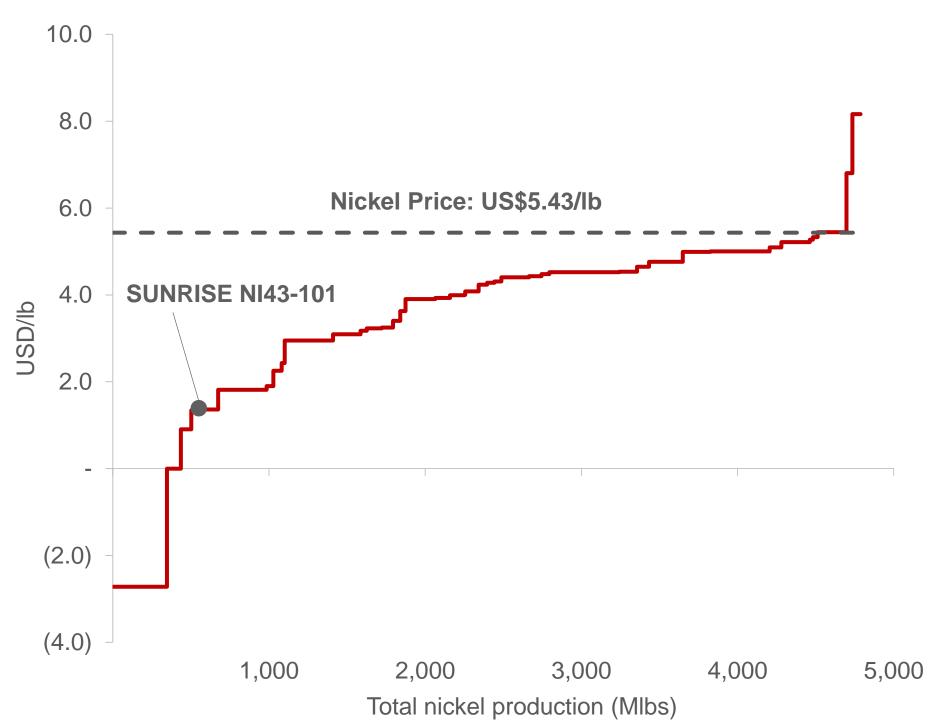
### Q1 COST POSTION WITH MEANINGFUL EXPOSURE TO CO AND NI

#### Production Profile<sup>1</sup>



### Global Nickel C1 Cash Cost Curve<sup>3</sup>





- 1. Per November 2017 NI 43-101 announced on 2 November 2017.
- 2. Spot nickel and cobalt prices as at 24 November 2017, scandium revenue has been excluded
- 3. Macquarie Research, as at July 2017. Nickel price as at 24 November 2017



# OFFTAKE / CUSTOMER STRATEGY

# RECENTLY SECURED BINDING OFFTAKE AGREEMENT – SEEKING ADDITIONAL CONTRACTS IN 2018

- Clean TeQ has agreed a binding five year
   offtake with Beijing Easpring for 20% of
  - Easpring is a leading Chinese NCM / LCO battery cathode manufacturer

future production

- Received strong expressions of interest for offtake from a number of parties, including signing MOUs and participating in site visits
- Aim to secure additional binding agreements over the course of 2018
- Customers are very aware of impending raw material supply shortage and seeking certainty of supply





- Binding five-year offtake agreement for 20% of cobalt and nickel sulphate production from Sunrise
- Transparent pricing mechanism with sulphate premia decided quarterly
- Offtake converts to LOM supply with project level investment by Easpring in Sunrise (discussions ongoing)
- Parties to investigate potential for partnership in downstream precursor and possibly battery cathode production at site

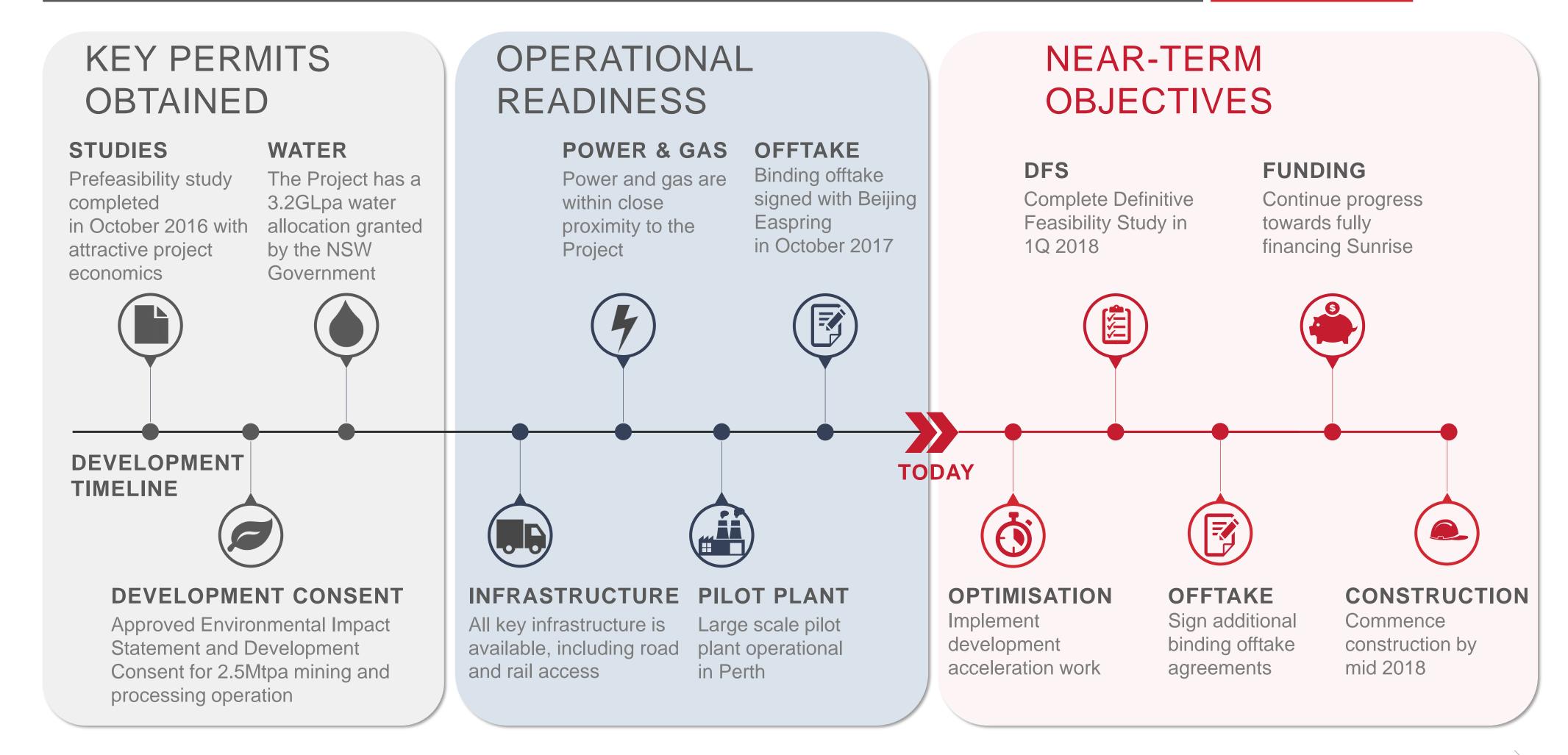




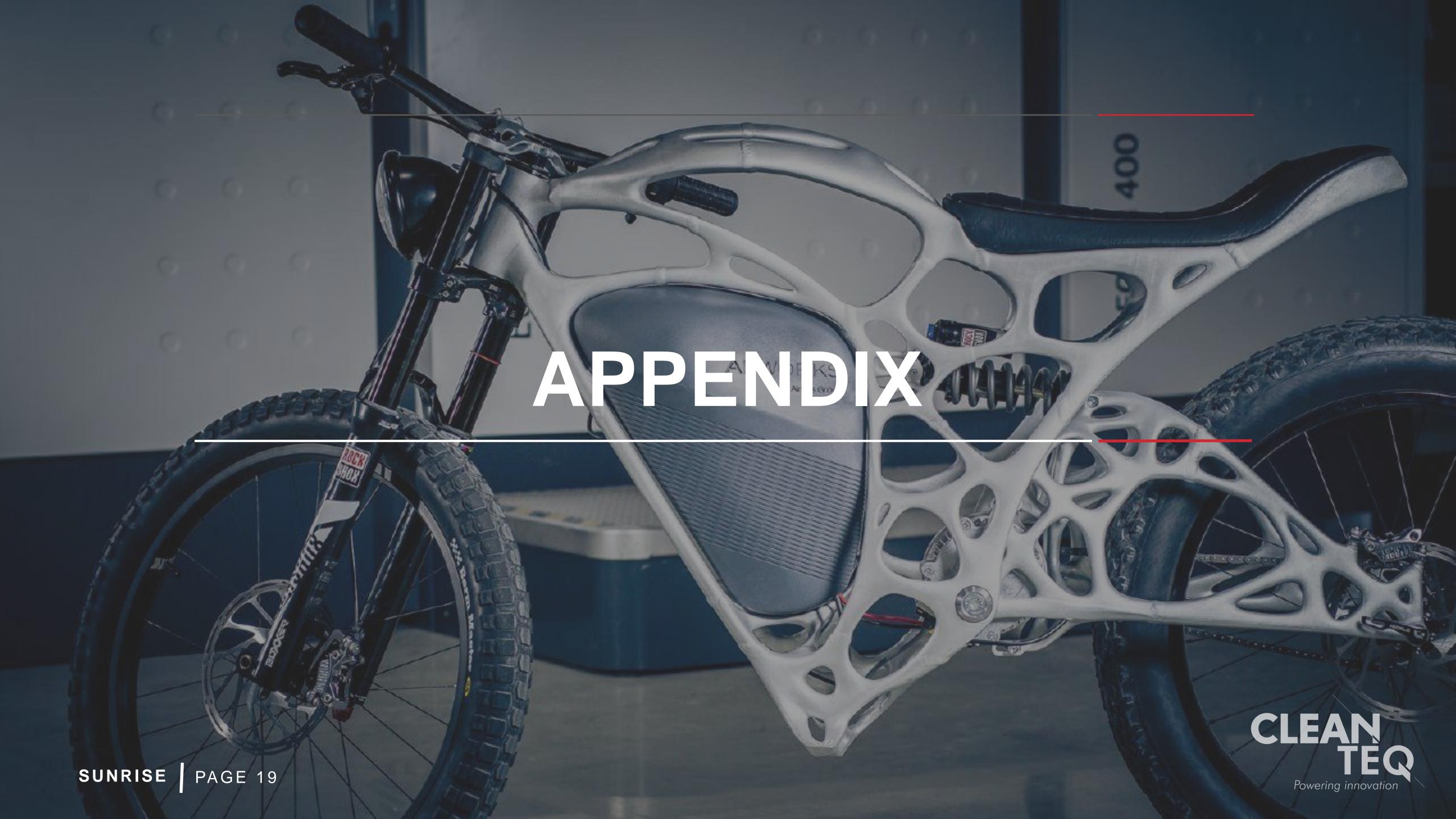
**NICKEL & COBALT SULPHATE** 



# PROJECT IS DEVELOPMENT READY







# COMPANY OVERVIEW

### **CLEAN TEQ MISSION**

Clean TeQ seeks to own, joint venture or develop assets where the application of our technical approach unlocks significant value

Clean TeQ targets metals that are highly geared to disruptive changes in technologies and markets, particularly in global energy and transport

The Clean-iX® process will efficiently produce high-purity nickel and cobalt sulphates from the Sunrise project to supply the rapidly expanding lithium-ion global battery industry

#### SUNRISE PROJECT OVERVIEW

Sunrise 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

Sunrise is development ready and is accelerating towards commercial production of high-purity nickel and cobalt sulphate

CAPITAL STRUCTURE		
ASX/TSX code	CLQ	
Share Price (9 January 2017)	A\$1.58	
Shares	578.9 M	
Options	41.7 M	
Performance Rights	6.6 M	
Market Capitalisation (undiluted)	A\$915 M	
Cash @ 30 September 2017	A\$62.9 M	
Liabilities (Mar-18 notes)	A\$3.0 M	

MAJOR SHAREHOLDERS	
Robert Friedland	16.3%
Pengxin Mining	16.0%
Australian Super	5.0%



Board & Management<sup>1</sup>



5.8%



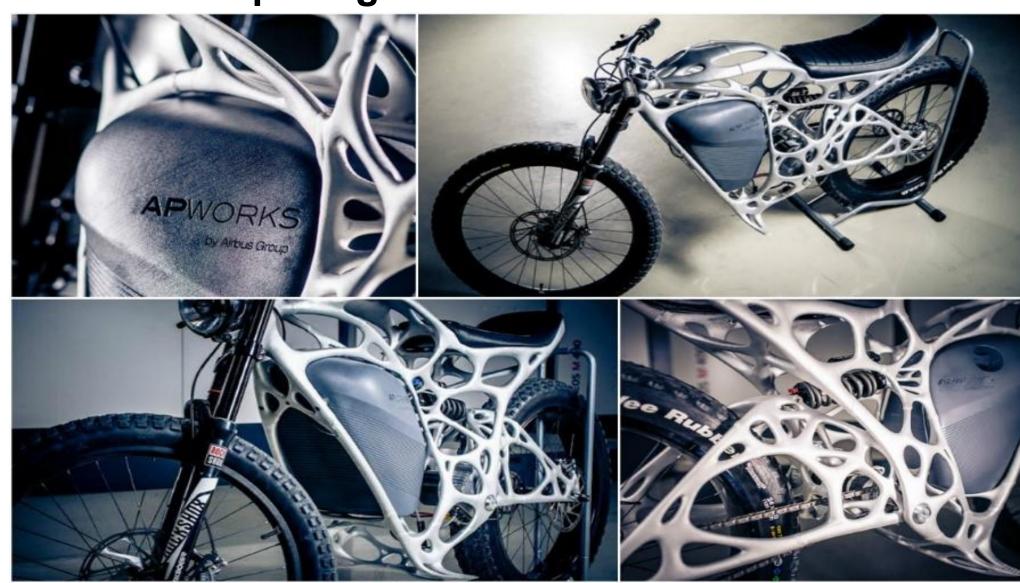


# SCANDIUM

### A NEW GENERATION OF LIGHTWEIGHT ALLOYS

- Sunrise is one of the world's largest and highest grade scandium resources
- Scandium is used to provide next generation lightweight aluminium alloys for key transportation markets
- Clean TeQ continues to promote the use and development of new scandium alloys
- Current development plan is to extract scandium oxide as a by-product of cobalt and nickel sulphate production, at very low cost
- Sunrise is uniquely positioned to benefit from two key imperatives facing the global transport industry: electrification and light weighting

### **Airbus Group's Light-rider**



The world's first 3D printed electric bike aluminiumscandium 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



# RESERVES AND RESOURCES

### COMPETENT PERSON CONSENTS

The information in this document that relates to nickel-cobalt Mineral Resources from the 2016 Pre Feasibility Study 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 ore reserves from the 2016 Pre Feasibility Study 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.

The information in this report that relates to the 2017 Mineral Resource update is based on information compiled by Mr Lynn Widenbar, a member of the Australasian Institute of Mining and Metallurgy. Mr Widenbar is a full-time employee of Widenbar and Associates. Mr Widenbar is a consultant to Clean TeQ and has sufficient experience which is relevant to the style of mineralisation and type of Deposit and to the activity which they are 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". Mr Widenbar consent to the inclusion in this 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.

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







Sam Riggall Chief Executive Officer

M: +61 3 9797 6700

E: sriggall@cleanteq.com



**Clean TeQ Holdings Limited** 12/21 Howleys Rd Notting Hill VIC 3000

www.cleanteq.com

AUSTRALIA

