### INDEPENDENCE GROUP NL

**Lithium & Battery Metals Conference** 

Andrew Eddowes, Head of Corporate Development



**Discovery and Delivery** 

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- Any references to IGO Mineral Resource and Ore Reserve estimates, except the Tropicana Mineral Resource and Ore Reserve, should be read in conjunction with IGO's 2017 Mineral Resource and Ore Reserve announcement dated 23 October 2017 and lodged with the ASX, which is available on the IGO website.
- References to Mineral Resource and Ore Reserves at Tropicana should be read in conjunction with IGO's Tropicana JV Commits to Long Island and Increased Mill Rate update, dated 7 December 2017 and lodged with the ASX, and is available on the IGO website.
- · All currency amounts in Australian Dollars unless otherwise noted.
- Cash Costs are reported inclusive of Royalties and after by-product credits on per unit of payable metal basis, unless otherwise stated.
- IGO reports All-in Sustaining Costs (AISC) per ounce of gold for its 30% interest in the Tropicana Gold Mine using the World Gold Council guidelines for AISC. The World Gold Council guidelines publication was released via press release on 27 June 2013 and is available from the World Gold Council's website.
- Underlying EBITDA is a non-IFRS measure and comprises net profit or loss after tax, adjusted to exclude tax expense, finance costs, interest income, asset impairments, redundancy and restructuring costs, depreciation and amortisation, and once-off transaction costs.
- Underlying NPAT comprises net profit (loss) after tax adjusted for; post tax effect of acquisition and integration costs, and impairments.
- Free Cash Flow (FCF) comprises Net Cash Flow from Operating Activities and Net Cash Flow from Investing Activities. Underlying adjustments exclude acquisition costs, proceeds from investment sales and payments for investments.

#### **Presentation Focus**

- Strong first half result
- Commitment to people, ESG and exploration
- Tropicana
- Nova
- Nova and Fraser Range exploration
- IGO alignment to EV mega trend



# Robust balance sheet as focus shifts from construction to delivery and discovery

ASX	IGO
Base	Perth, WA
Market Cap <sup>(1)</sup>	A\$3 Billion
Cash <sup>(2)</sup>	A\$51M
Debt <sup>(2)</sup>	A\$171M
Revolver <sup>(1)</sup>	A\$200M (undrawn)
<b>Dividend Policy</b>	>30% NPAT



Share Ownership							
Substantial Holde	ers <sup>(1)</sup>	Institutional Ownership <sup>(3)</sup>					
Mark Creasy	16%	Australia	62%				
FIL	9%	USA	25%				
T Rowe Price	8%	UK & Europe	10%				
CBA	6%	ROW	3%				
Ausbil	5%						



<sup>1)</sup> As at market close 20 Mar 2018

<sup>2)</sup> As at 31 Dec 2017

<sup>3)</sup> As at 27 Feb 2018

### **Strong First Half Financial Results**

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#### Balance sheet continues to strengthen with net debt reduced to A\$120M

	Units	1H18	1H17	Inc/(Dec)
Revenue and Other Income	A\$M	354.8	223.1	59%
Underlying EBITDA <sup>(1)</sup>	A\$M	133.4	81.8	63%
Profit After Tax	A\$M	3.2	20.2	(84%)
Net Cash from Operating Activities	A\$M	111.4	25.6	335%
Underlying Free Cash Flow <sup>(2)</sup>	A\$M	40.6	(49.3)	n/a
Cash	A\$M	51.3	109.2	(53%)
Debt	A\$M	171.4	200.0	(14%)

Net cash flow from operating activities increased by 335% driven by:

- The inclusion of Nova operating cash flows
- Increased gold sales from Tropicana
- 1H17 was impacted by the payment of stamp duties to WA State government of A\$58.2M

Underlying EBITDA is a non-IFRS measure (refer to Disclaimer page).

<sup>2)</sup> Underlying Free Cash Flow comprises Net Cash Flow from Operating Activities and Net cash Flow from Investing Activities, together with certain adjustments. Underlying Free Cash Flow in 1H18 excludes A\$11M in partial proceeds received from the divestment of the Stockman Project (1H17: excludes stamp duty payments to Western Australian State Government, payments for investments and mineral interests and payment for the acquisition of Windward Resources, net of cash received)



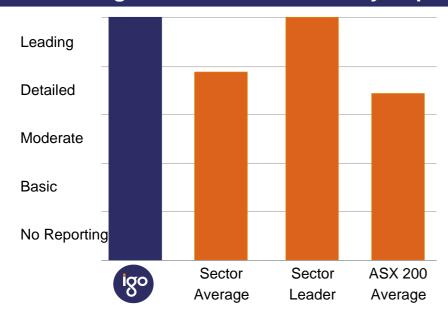


# Right people in the right place at the right time

- Shaping the right culture
- Nurturing the IGO Way
- Developing the next generation of industry leaders

## **Embedded ESG** performance & reporting in the business

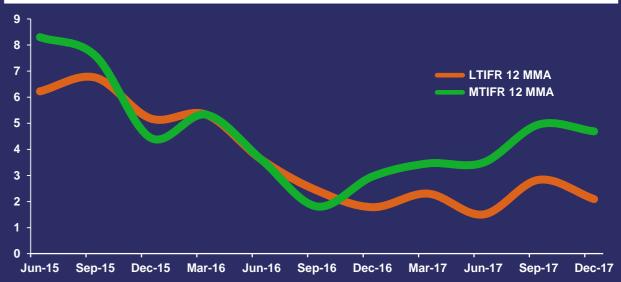
#### ACSI Rating of ASX200 Sustainability Reporting<sup>(5)</sup>



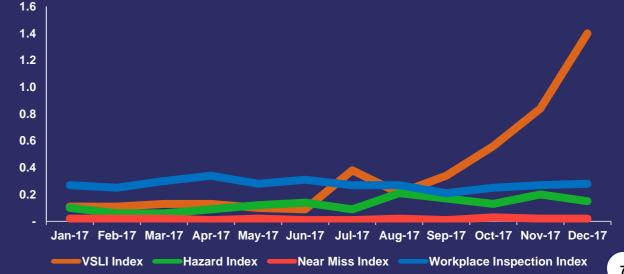
- 1) 12 month moving average MTIFR Medically Treated Injury Frequency Rate: calculated as the number of medically treated injuries x 1,000,000 divided by the total number of hours worked
- 2) 12 month moving average LTIFR Lost Time Injury Frequency Rate: calculated as the number of Lost Time injuries x 1,000,000 divided by the total number of hours worked
- 3) Sep-17 LTIFR rate has increased from 2.75 to 2.83 as a result of the reclassification of a single injury from 29 Jul
- 4) VSLI: Visual Safety Leadership Interaction
- 5) Department of Mines, Industry Regulation and Safety



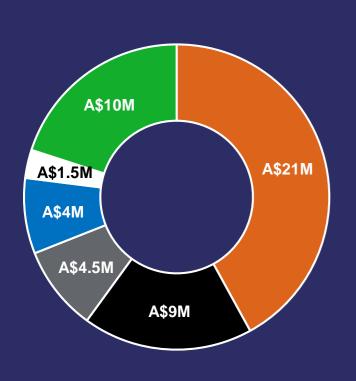




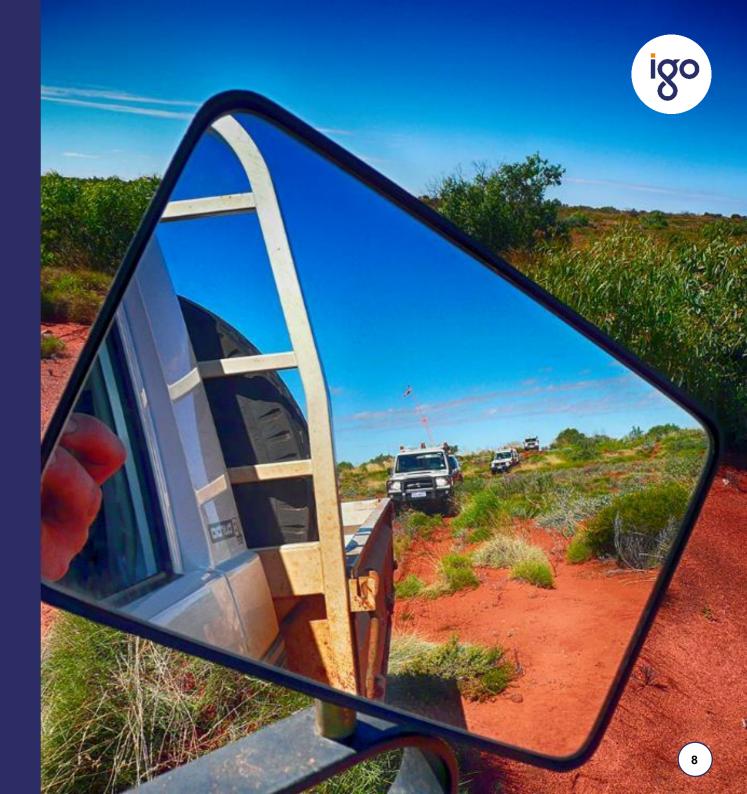
#### **Key Lead Safety Metrics**<sup>(4)</sup>

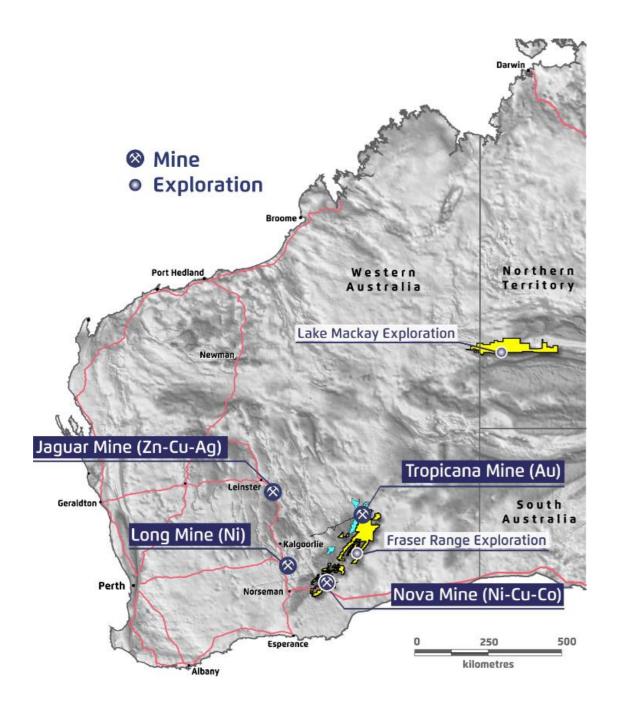


# A\$50M Commitment to Discovery in FY18



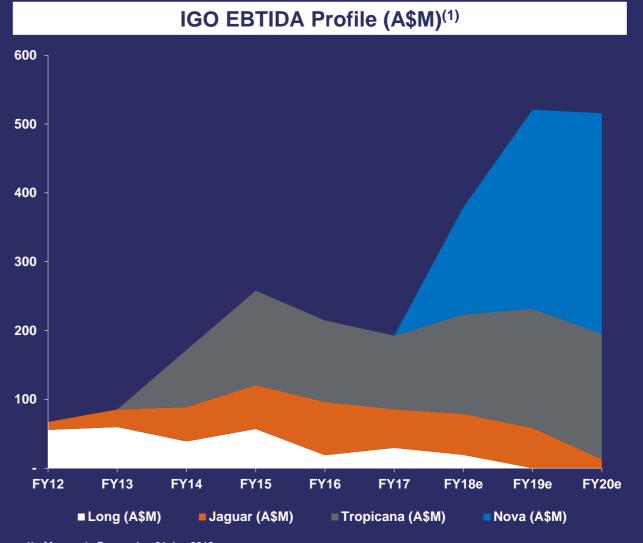
- **■** Fraser Range
- □Nova
- □Tropicana
- ■Jaguar
- **■**Long
- □ Lake Mackay & Other





### A Focus on Projects that Create a Solid Foundation



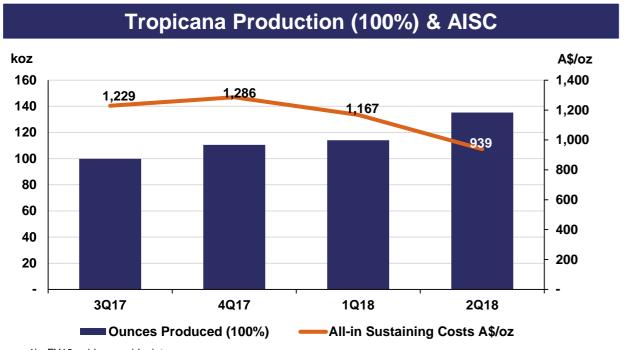


<sup>1)</sup> Macquarie Research - 31 Jan 2018

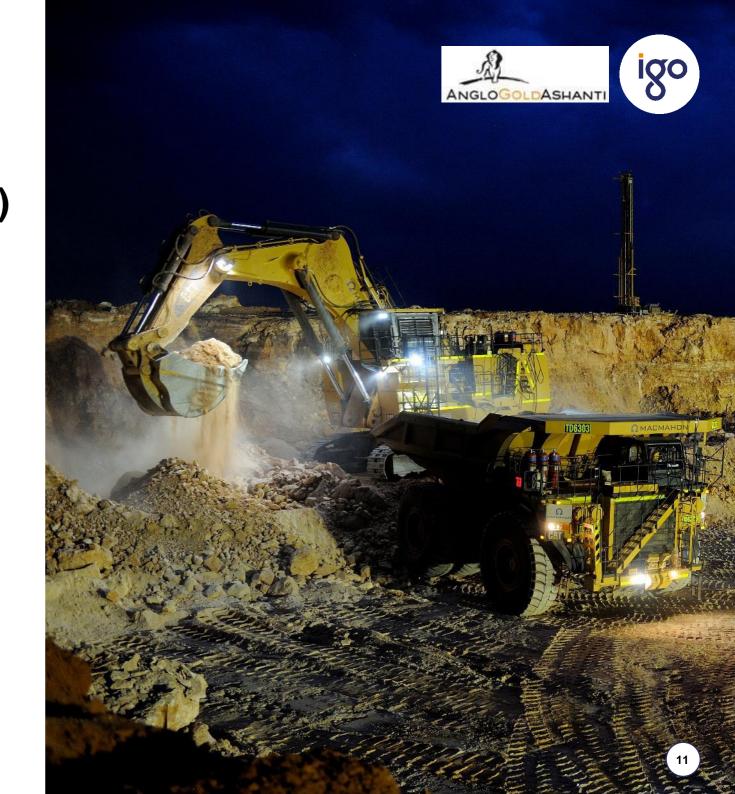


### **Tropicana**

- 330km NE of Kalgoorlie
- 465,000oz gold production (100%) at \$1,115/oz AISC<sup>(1)</sup>
- 10 year mine life remaining
- Upside potential

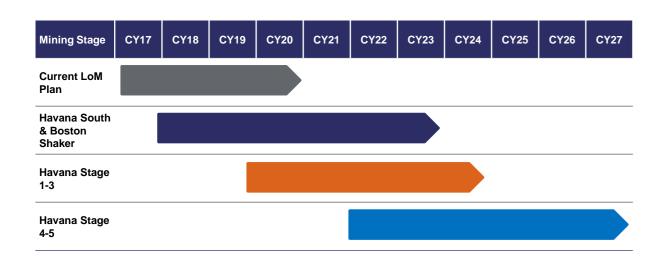


- 1) FY18 guidance midpoint
- 2) AISC is All-in Sustaining Costs

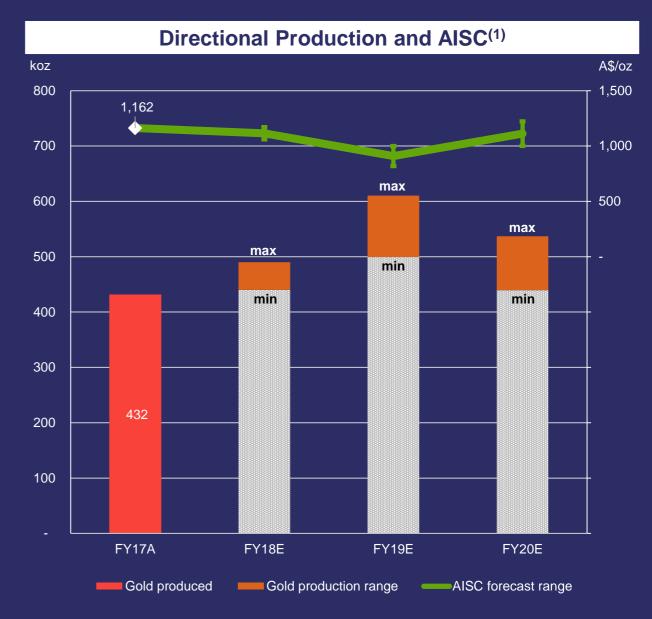


### Tropicana value drivers

- Grade streaming drives FY18 20 gold production and costs
- Long Island underpins mine life
- Additional ball mill delivers lift in scale and gold recovery

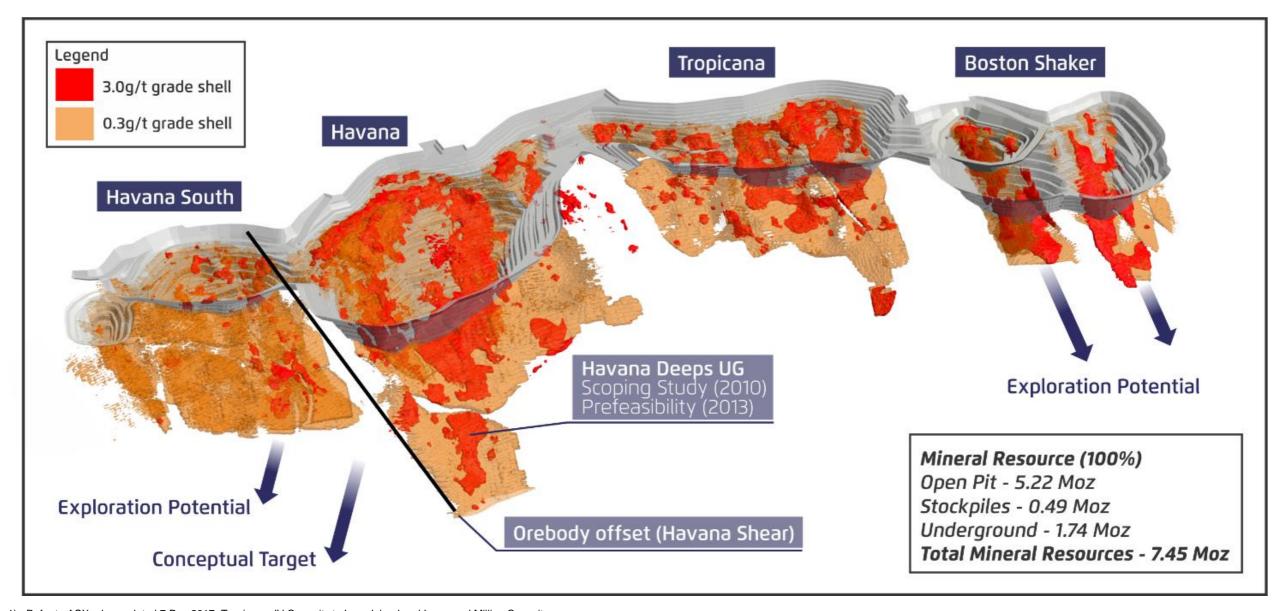






### **Tropicana – 5km strike of mineralisation**

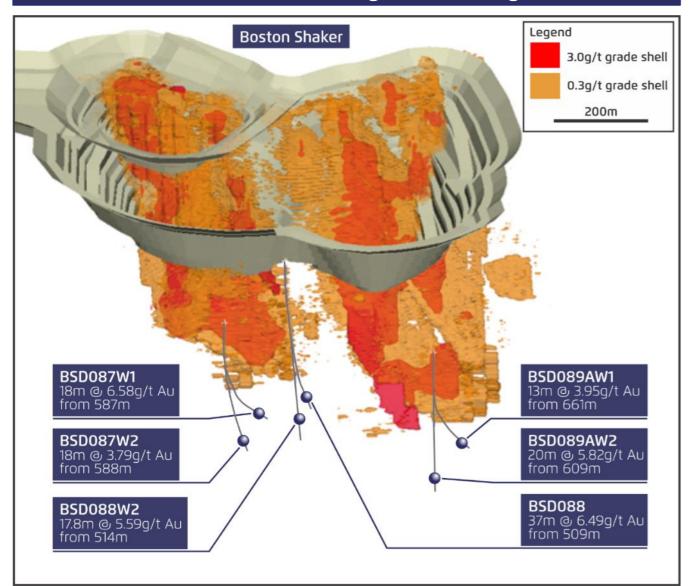




<sup>1)</sup> Refer to ASX release dated 7 Dec 2017: Tropicana JV Commits to Long Island and Increased Milling Capacity

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#### Boston Shaker Underground Drilling (1)



## **Upside opportunities**

- Boston Shaker underground study during CY18
- Future underground assessment at Havana and Havana South
- Regional exploration along 160km of strike on 3,660km²

# Nova





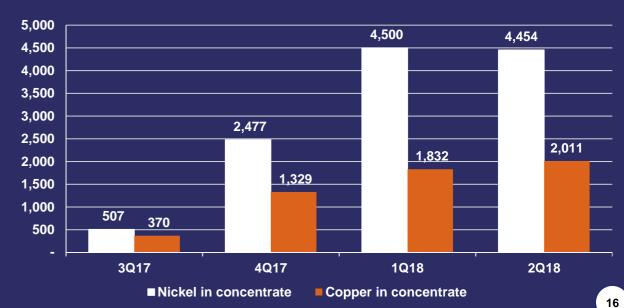


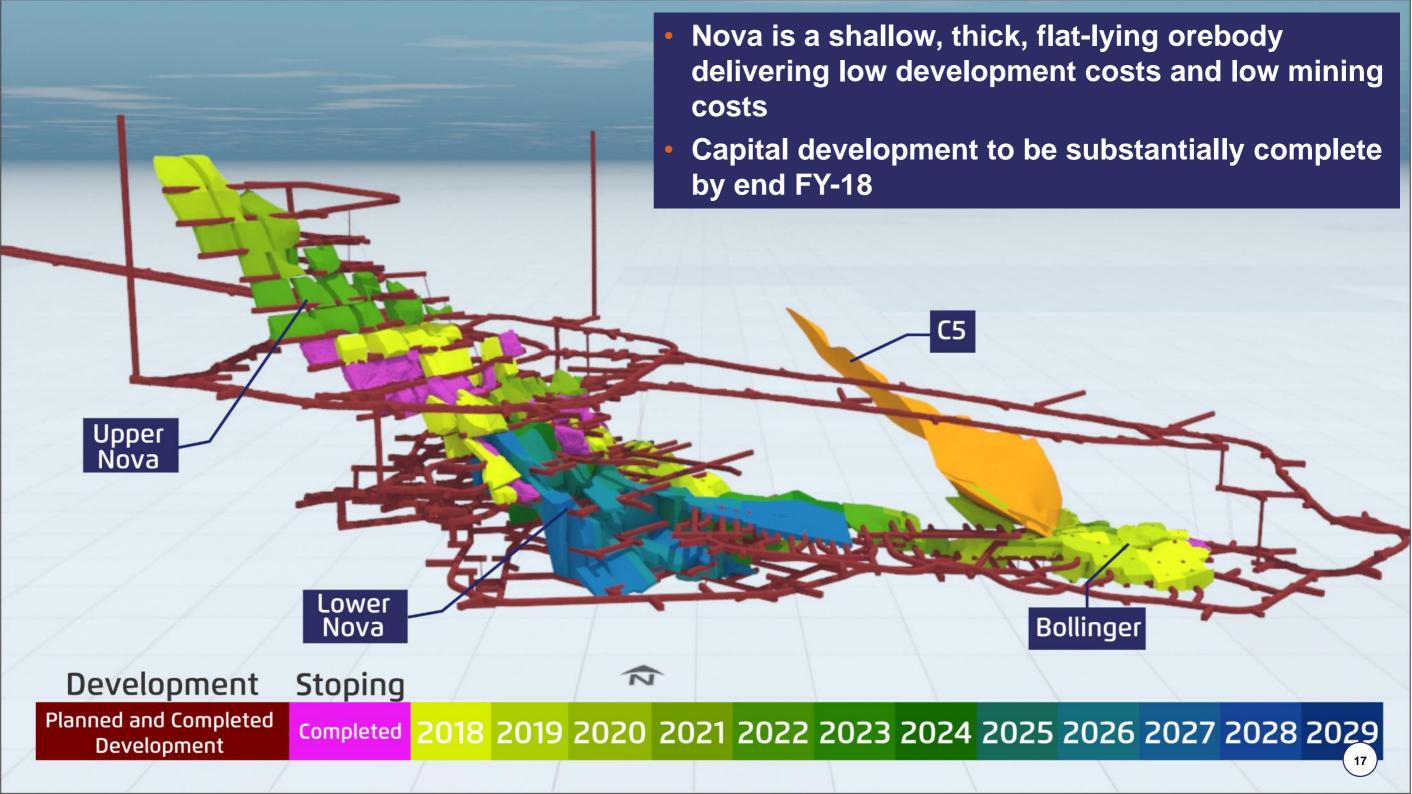
### Nova

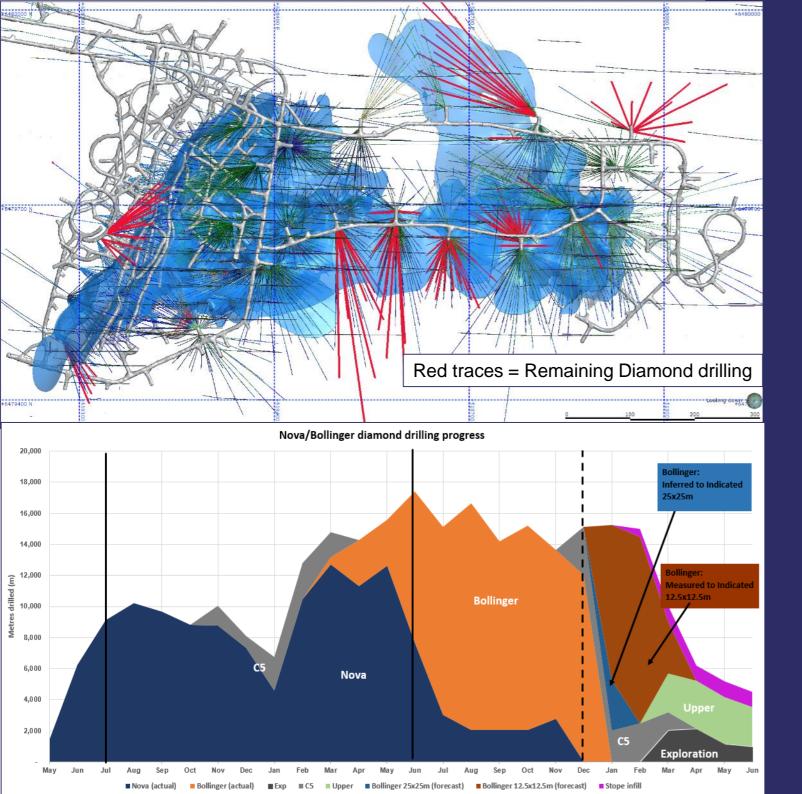


- Delivers scale, low cost, long mine life and exploration upside
- Commercial production from 1 July 2017
- Five years from discovery







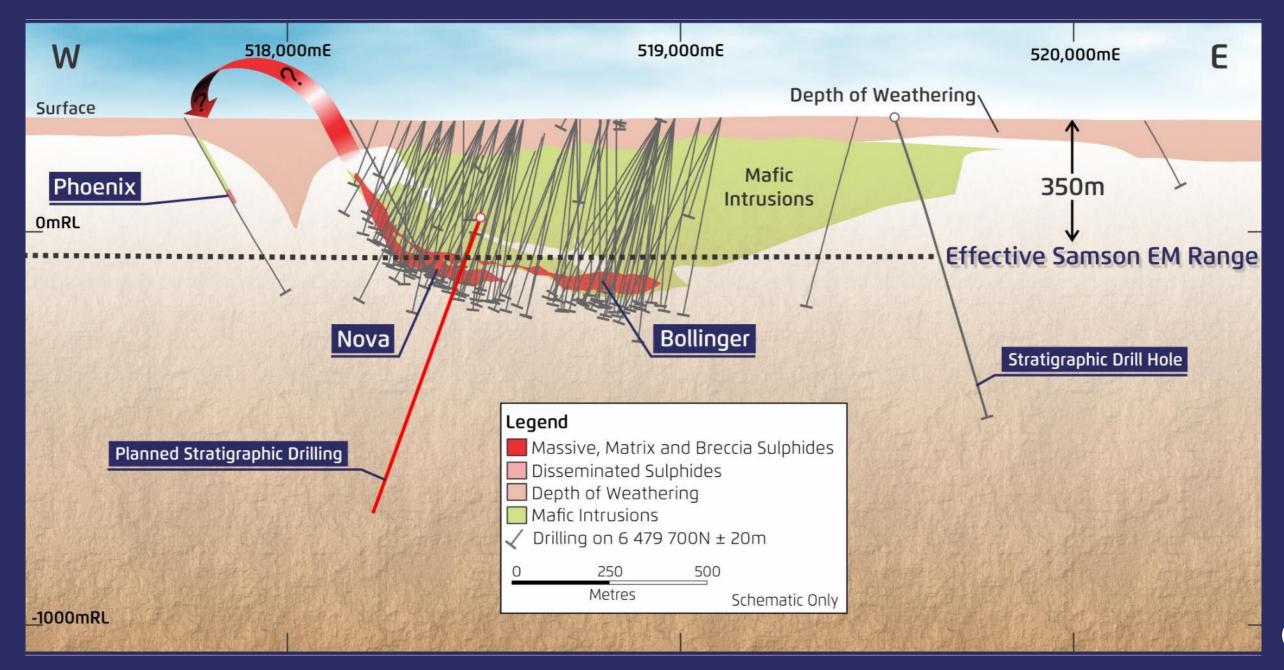




Resource model being de-risked with grade control drilling at Nova and **Bollinger to be** completed by end-**FY18** 

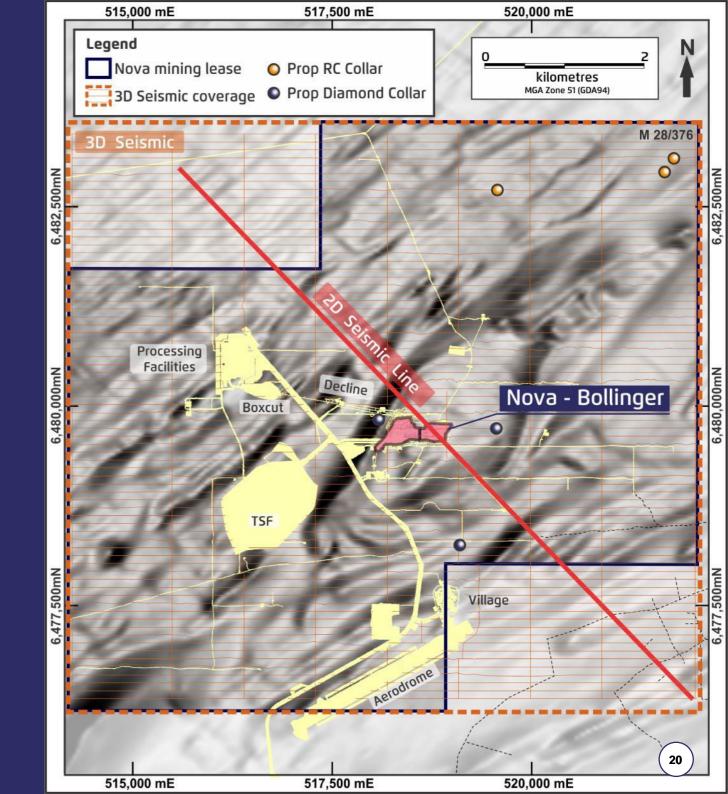
# Nova near mine exploration search space is wide open with focus to date on Nova/Bollinger resource envelope





# Understanding the potential extensions of the Nova intrusive

- 58km² 3D seismic program over mining lease
- Drilling 3D seismic targets in FY19
- Continued drilling of extension to intrusive to the NW of Nova



#### September 2015 LAVERTON 700,000 mE Legend IGO 100% Creasy Joint Venture Tropicana (Au) (IGO 70%) Tropicana Joint Venture (AGG 70% and IGO 30%) Salt Creek Joint Venture 12m @ 0.21% Ni, 0.11% Cu 10m @ 0.14% Ni, 0.07% Cu Mine In-development kilometres MGA Zone 51 (GDA94) Area N(5) 4m @ 0.14% Ni, 0.06% Cu Trans Australian Railway Mammoth<sup>6</sup> Zanthus(6): 6m @ 0.35% Ni, 0.38% Cu 12m @ 0.12 Ni% 1m @ 0.37% Ni, 0.45% Cu 23m @ 0.17% Ni. 0.08% Cu 4m @ 0.44% Cu, 0.14% Zn 5m @ 0.47% Cu. 0.18% Zn 1m @ 1.95% Cu. 0.11% Zn 6,500,000 mN Nova (Ni-Cu-Co) 0.15m @ 0.81% Ni, 0.31% Cu Eyre Highway 27m @ 0.31% Ni, 0.01% Cu Gnama South 28m @ 0.57% Ni. 0.03% Cu 700,000 mE

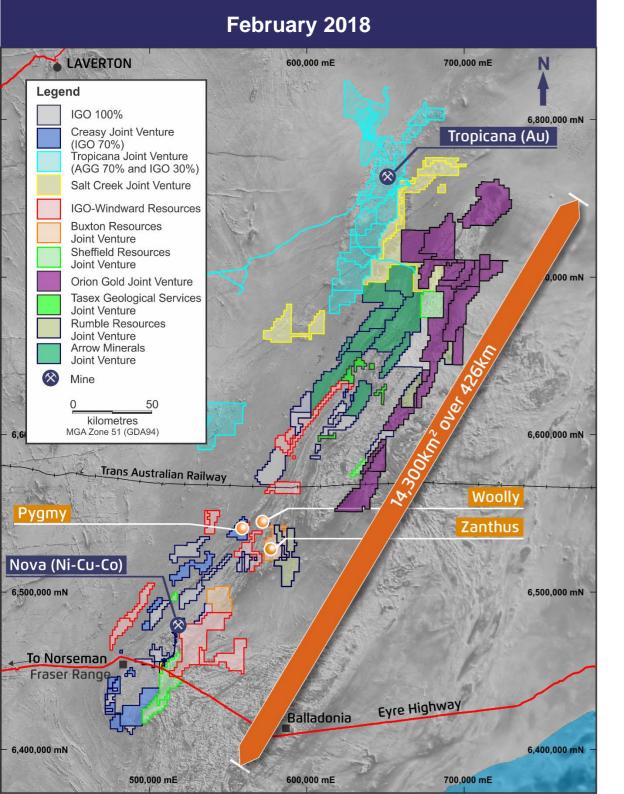


# Why explore the Fraser Range?

- Multiple magmatic intrusions
- Ni/Cu anomalism reported by multiple explorers along belt
- Disseminated and blebby sulphides

#### **Empirical evidence demonstrates belt is fertile**

- 1) Classic Minerals ASX Releases: 29 Aug 2013, 12 Dec 2013 and 17 Dec 2016
- 2) Sirius Resources ASX Release: June 2015 Quarterly
- 3) Enterprise Metals EIS Final Drilling Report to DMP: 25 Jul 2014
- 4) Orion Gold ASX Release 17 Mar 2014
- 5) Legend Mining ASX Release 6 Jun 2017
- Buxton Resources ASX Release: 15 Dec 2014
- Newmont report to DMP, 1968
- 8) Arrow Minerals ASX Release: 5 Feb 2018





# Systematic exploration over 14,300km<sup>2</sup> of consolidated tenure

- Multiple EM platforms
- Bedrock geochem using Aircore
- Gravity survey & mapping
- Follow up RC/DDH

#### LME Nickel Versus Nickel Sulphate (US\$/t)(1,2)



# Downstream processing potential

- Produce nickel and cobalt sulphates for EV batteries
- Metallurgical testwork commencing in 3Q18
- Targeting PFS completion around end-CY18
- Delivers potential for higher payability, premium price and higher concentrator recoveries

Source: Asian Metals

<sup>)</sup> Nickel Sulphate price converted to per unit of nickel

#### **Lithium Ion Batteries**



#### Batteries with nickel-based chemistries have higher energy densities

#### NMC (Nickel, Manganese, Cobalt)

- Current favourite for EV's
- High energy density
- Different variations with different chemical ratios, i.e. NMC 111, 433, 811

#### NCA

(Nickel, Cobalt, Aluminium)

- Uses: medical devices, industrial applications, high end BEV's (Tesla)
- High energy density
- Low safety profile, high cost

#### LFP

(Lithium, Iron, Phosphate)

- Used in most Chinese EV's and buses
- Low energy density
- Very stable with a long life span

#### **LMO**

(Lithium, Manganese, Oxide)

- Uses: power tools, medical devices
- Low energy density
- Very stable, however very low life span

#### LCO

(Lithium, Cobalt, Oxide)

- Uses: smartphones, laptops, cameras
- High energy density
- Very low safety profile too explosive in EV's



# Changing EV battery chemistry will boost Ni demand

 24kg nickel, 24kg cobalt & 91kg copper

in a 2017 Chevy Bolt<sup>(1)</sup>
For 811 NMC chemistry in a Bolt<sup>(2)</sup>

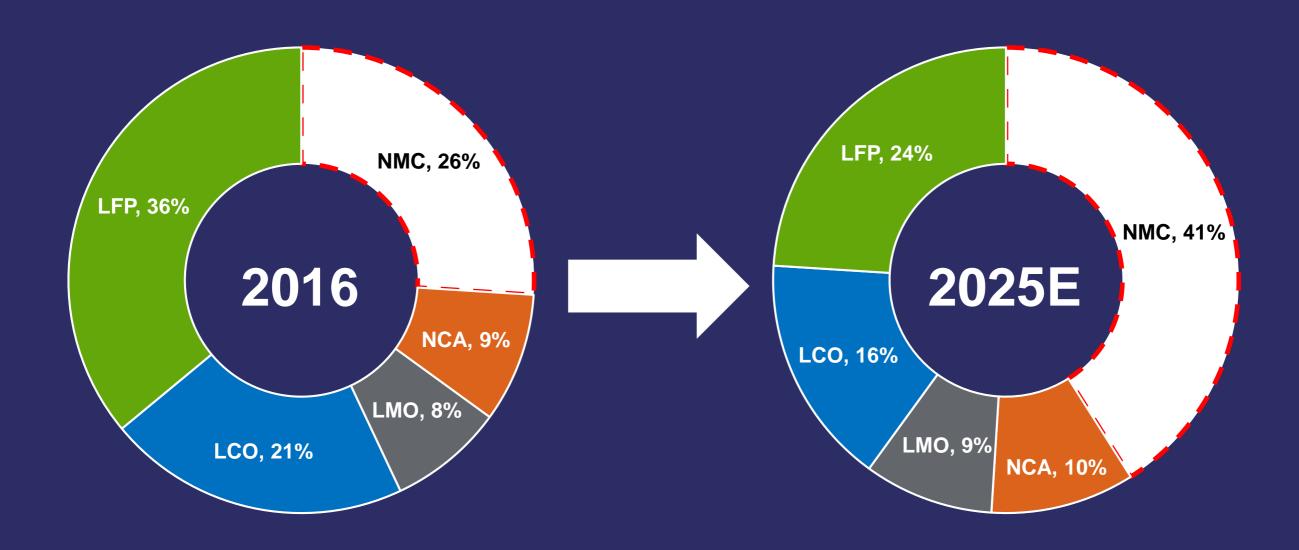
- Nickel increases by 15kg
- Cobalt decreases by 17kg

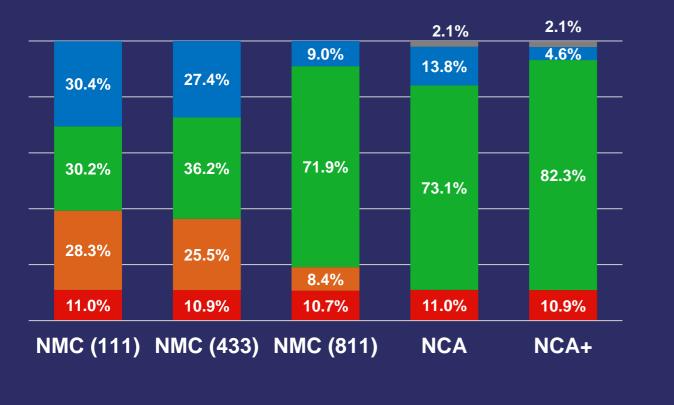
<sup>1)</sup> Source data: UBS Research titled Electric Car Teardown – Disruption Ahead dated 18 May 2017

<sup>2)</sup> Source data: UBS Research titled Nickel: Electric Vehicle Demand Refinements dated 1 Nov 2017

## Cathode active materials allocation is expected to be mostly NMC by 2025







■ Aluminium ■ Cobalt ■ Nickel ■ Manganese

# **Evolving EV battery chemistry designed to**

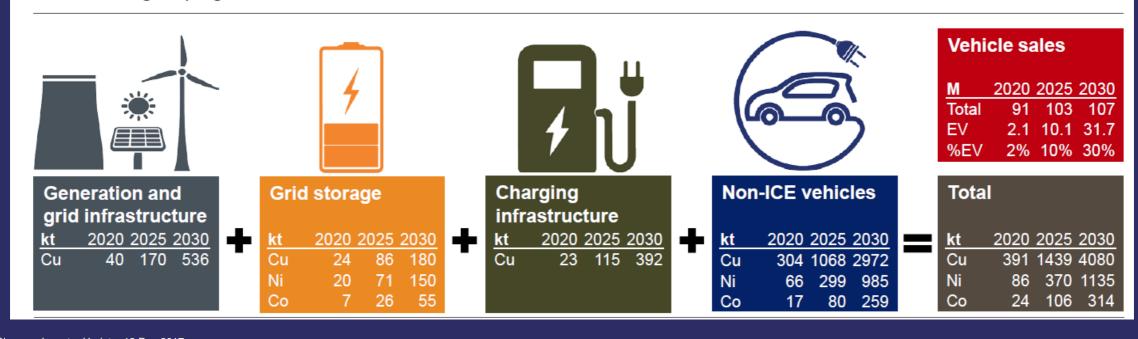
- Improve battery performance
- Reduce overall cost
- Cathode component ~18% of battery cost<sup>(1)</sup>
- Enhance EV penetration

### The world is changing: electric vehicles will be a disruptive force



### How much metal is required to realise the Electric Vehicles Initiative target<sup>(1)</sup> of 30 million electric vehicle sales by 2030?

- We commissioned CRU to model the metal requirements across the supply chain, from generation and grid infrastructure through to storage, charging and vehicles
- In 2030, forecast metal requirements are c.4.1Mt of copper (18% of 2016 supply), c.1.1Mt of nickel (56% of 2016 supply) and 314kt of Cobalt (314% of 2016 supply)
- As early as 2020, forecast EV related metal demand is becoming material, requiring an additional c.390kt of copper, c.85kt of nickel and 24kt of cobalt
- Transportation/mobility will be transformed driven by environmental pressures, political mandates, consumer experience and technological progress



1) Source: Glencore Investor Update: 12 Dec 2017



#### Nickel Mine Supply by Product (kt)<sup>(1)</sup> 2018E supply Ni ktpa Ni ktpa deficit of 3,500 3,500 167kt<sup>(2)</sup> 3.000 3.000 2,500 2,500 2,000 2.000 1,500 1.500 1.000 1.000 500 500 2016 2019 2024 2017 2021 2022 Alloy Steel Other Plating Stainless Steel Non-Ferrous Alloys Foundry Battery / Evs Supply

# Nickel to be a big winner from EV demand disruption

- Market in deficit in 2016 & 2017
- Synchronous growth in USA, Europe and Asia
- 300-900kt of additional nickel required by 2025<sup>(1)</sup>

<sup>1)</sup> Source: UBS Research dated 1 Nov 2017 Nickel: Electric Vehicle Demand Refinements

<sup>2)</sup> Source: UBS Research dated 18 Jan 2018: Battery Raw Material Update

