



# Heron Resources Limited

## ASX's next zinc producer about to fly

Sixteen months ago, Heron Resources (ASX:HRR) secured A\$240m in funding – via a \$140m equity issue and a US\$76m debt package – to develop the Woodlawn Zinc-Copper Project (50km NE of Canberra). As at end-August 2018, the processing plant (1Mtpa capacity underground ore – 1.5Mtpa reclaimed tailings) and associated infrastructure was nearly 75% complete with commissioning scheduled to commence by the end of 2018. In late September 2018, mining contractor Pybar commenced underground activities, while contracts for all key activities – tails mining, concentrate offtake (3 years), port and haulage logistics, power and water treatment etc, are in place. **In 1Q 2019, we forecast that HRR will be one of only four zinc-focused producers listed on the ASX.** Although prices for zinc – primarily used to galvanise steel – have softened in recent months, Zn has comfortably outperformed its base metal peer group over the past five years. We expect that continued robust demand from China and developing economies in SE Asia, in conjunction with historically low stockpiles and a lag in new supplies, will help to support prices at current spot price levels as HRR enters first production.

### Valuation: A\$1.40ps with upside potential

Our base-case scenario assumes a mining inventory of 12.3Mt – equivalent to the 2016 estimated Mineral Reserves – and a 10-year LOM, with 77% of ore sourced from Reclaimed Tailings (6% ZnEq) and 23% of ore sourced from Underground (14% ZnEq). Predicated on our mining schedule we forecast average post ramp-up output of 32ktpa Zn, 5ktpa Cu, 10ktpa Pb, and 10kozpa AuEq (Au+AuEq from silver), with metal output split almost 50/50 between the two ore sources. Note: LOM metal output between the two ore sources is equal with relatively higher ZnEq grade underground ore offsetting lower u/g tonnage.

Predicated on a flat (real) spot metal price environment, we forecast Woodlawn generating average post ramp-up revenues of A\$220m per annum and average post-ramp up EBITDA of A\$113m per annum (EBITDA margin of 51%). Our estimated NPV<sub>10</sub> for the Woodlawn Project is A\$508m. Attaching a 33% project-risk discount for timing and operating forecasts (commissioning slippage, ramp-up profile, grade, recovery, unit costs etc.) and adjusting for investments, Resource value outside of mining inventory, exploration upside and FY19E net debt, we calculate HRR's equity value at A\$352m or A\$1.40 per diluted share.

At current share price levels, we believe that HRR offers significant upside potential. **We initiate coverage on HRR with a Speculative Buy (Higher Risk) recommendation.** In addition, we see scope for our valuation to increase.

- Assuming zero project slippage, and if revenues and margins materialise as forecast during 2019, we see scope for our 33% risk-discount to unwind.
- Not surprisingly, our valuation is sensitive to the underlying base metal price environment – and Zn in particular. Our base-case scenario assumes base metal prices at current spot price levels (real). In a 10% lower/higher base metal price environment, our valuation decreases/increases by 14%.
- Our base-case LOM for the Woodlawn Project incorporates a 5.5 year LOM for the Underground operations. Management sees “significant untapped potential” to increase this LOM. We estimate that each additional 1Mt of underground ore (~ one additional year to the Woodlawn Project LOM) could increase our Project NPV<sub>10</sub> by ~A\$75m, or A\$0.30ps.

29 October 2018

Share Price: A\$0.65

Target Price: A\$1.40

Recommendation  
**Speculative Buy**

Risk Assessment  
**Higher**

### Resources – Zinc/Copper/Lead/Silver/Gold

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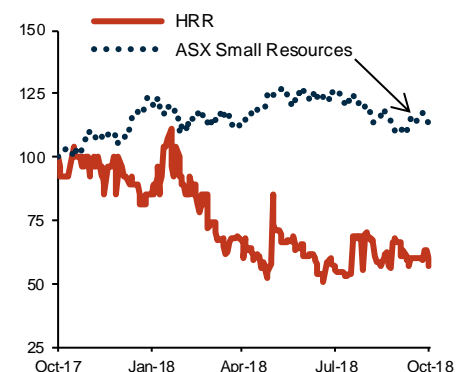
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### Heron Resources Limited

ASX Code	HRR
52- week range	A\$0.53-A\$0.83
Market Cap (A\$m)	149
Shares Outstanding (m)	241.7
Av Daily Turnover (shares)	22k
ASX All Ordinaries	6,002
2019E BV per share (A\$)	0.77
2019E EPS (A\$)	0.09
2019E Net Cash/(Debt) (A\$m)	-6

### Relative price performance



Source: Iress

## Financial Statements

### Heron Resources Limited

Year ending June

Profit & Loss Statement (A\$M)	FY18A	FY19E	FY20E	FY21E	FY22E
Revenue (net of TC/RC)	0.0	63.0	163.0	224.0	268.6
Mining	0.0	(10.2)	(21.1)	(38.5)	(42.6)
Processing	0.0	(7.8)	(19.6)	(25.7)	(26.4)
Corporate/Royalty/Other	(6.5)	(12.0)	(23.1)	(29.9)	(35.0)
<b>EBITDA</b>	<b>(6.5)</b>	<b>33.0</b>	<b>99.2</b>	<b>129.9</b>	<b>164.6</b>
Depreciation & Amortisation	(0.1)	(7.5)	(15.0)	(15.0)	(15.0)
<b>Operating profit</b>	<b>(6.5)</b>	<b>25.5</b>	<b>84.2</b>	<b>114.9</b>	<b>149.6</b>
NOI	(0.5)	0.0	0.0	0.0	0.0
<b>EBIT</b>	<b>(7.0)</b>	<b>25.5</b>	<b>84.2</b>	<b>114.9</b>	<b>149.6</b>
Interest income	1.4	2.0	2.2	3.2	4.5
Interest expense	(0.2)	(5.1)	(6.5)	(3.9)	(1.3)
Tax expense	0.0	0.0	0.0	0.0	(45.9)
<b>Reported NPAT</b>	<b>(5.8)</b>	<b>22.4</b>	<b>79.9</b>	<b>114.3</b>	<b>107.0</b>
<b>Normalised NPAT</b>	<b>(5.3)</b>	<b>22.4</b>	<b>79.9</b>	<b>114.3</b>	<b>107.0</b>
EBITDA Margin (%)	na	52%	61%	58%	61%
Operating profit margin (%)	na	41%	52%	51%	56%
EPS Reported (A\$)	(0.02)	0.09	0.32	0.46	0.43
<b>EPS Normalised (A\$)</b>	<b>(0.02)</b>	<b>0.09</b>	<b>0.32</b>	<b>0.46</b>	<b>0.43</b>
EPS growth (%)	nm	nm	nm	43%	-6%
DPS - Declared (A\$)	0.00	0.00	0.00	0.14	0.13
Avg. no. of fully-diluted shares (m)	211	248	248	248	248
YE no. of fully-diluted shares (m)	248	248	248	248	248

Cash Flow Statement (A\$M)	FY18A	FY19E	FY20E	FY21E	FY22E
EBITDA	(6.5)	33.0	99.2	129.9	164.6
Investment in working capital	2.7	(8.4)	(8.2)	(4.6)	(3.3)
Tax expense	0.0	0.0	0.0	0.0	(45.9)
<b>Operating Cash Flow</b>	<b>(3.8)</b>	<b>24.6</b>	<b>91.0</b>	<b>125.3</b>	<b>115.4</b>
Capex	(121.5)	(60.0)	(21.0)	(15.0)	(22.0)
Other investments	(0.1)	(2.1)	0.0	0.0	0.0
<b>Investing Cash Flow</b>	<b>(121.6)</b>	<b>(62.1)</b>	<b>(21.0)</b>	<b>(15.0)</b>	<b>(22.0)</b>
Net interest received / (paid)	1.2	(3.1)	(4.3)	(0.7)	3.2
Debt draw down / (repayment)	24.9	55.0	(26.6)	(26.6)	(26.6)
Dividends paid	0.0	0.0	0.0	(34.3)	(32.1)
Equity raised / (repaid)	135.7	0.0	0.0	0.0	0.0
<b>Financing Cash Flow</b>	<b>161.8</b>	<b>51.9</b>	<b>(30.9)</b>	<b>(61.6)</b>	<b>(55.5)</b>
Non-operating & Other	17.4	(5.6)	(5.6)	(5.6)	(5.6)
<b>Inc/(Dec) in Cash</b>	<b>53.7</b>	<b>8.8</b>	<b>33.4</b>	<b>43.2</b>	<b>32.3</b>

Balance Sheet (A\$M)	FY18A	FY19E	FY20E	FY21E	FY22E
Cash & Equivalents	65.5	74.2	107.6	150.8	183.1
Receivables	2.6	6.3	16.3	22.4	26.9
Inventories	0.0	4.7	12.2	16.8	20.1
Other Current Assets	0.0	0.0	0.0	0.0	0.0
PPE and Exploration & Development	166.0	218.5	224.5	224.5	231.5
Deferred tax asset	0.0	0.0	0.0	0.0	0.0
Other Non Current Assets	5.9	8.0	8.0	8.0	8.0
<b>Total Assets</b>	<b>240.0</b>	<b>311.7</b>	<b>368.6</b>	<b>422.5</b>	<b>469.6</b>
Payables and other current Liabilities	7.5	7.5	16.8	23.0	27.4
Short Term Debt	0.0	0.0	0.0	0.0	0.0
Long Term Debt	24.9	79.9	53.3	26.6	0.0
Other Liabilities (incl silver stream)	38.5	33.0	27.4	21.8	16.1
<b>Total Liabilities</b>	<b>71.0</b>	<b>120.4</b>	<b>97.5</b>	<b>71.3</b>	<b>43.5</b>
<b>Total Equity</b>	<b>169.0</b>	<b>191.3</b>	<b>271.2</b>	<b>351.1</b>	<b>426.0</b>
Net Cash / (Debt)	40.6	(5.7)	54.4	124.2	183.1

Substantial Shareholders	%	Date
Citicorp Nomness Limited	28.4%	
CastleLake	19.4%	Sep-18
Greenstone Management LLC	18.7%	

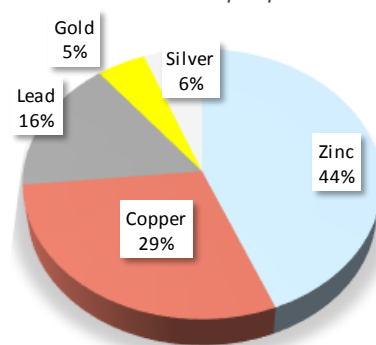
Source: Company, IRESS, State One Stockbroking forecasts

Woodlawn NPV assumptions	FY18A	FY19E	FY20E	FY21E	FY22E
Mill throughput (kt)	na	400	1,000	1,250	1,250
...from reclaimed tailings (kt)	na	250	250	700	700
...from underground (kt)	na	150	300	550	600
Zinc production (kt)	na	11	31	38	51
Copper production (kt)	na	1	4	8	6
Lead production (kt)	na	4	9	10	16
Gold production (oz)	na	1,371	3,944	4,797	2,531
Silver production (koz)	na	309	748	844	962
Zinc equivalent production (kt)	na	19	53	71	84
...from reclaimed tailings (kt)	na	7	21	21	20
...from underground (kt)	na	12	32	51	64
Operating Costs (US\$/lb Zn Eq)	na	0.53	0.45	0.57	0.46
AISC Costs (US\$/lb Zn Eq)	na	0.73	0.79	0.81	0.69

Price assumptions	FY18A	FY19E	FY20E	FY21E	FY22E
Zinc price (US\$/t)	na	2,600	2,652	2,705	2,759
Copper price (US\$/t)	na	6,175	6,299	6,424	6,553
Lead price (US\$/t)	na	2,000	2,040	2,081	2,122
Gold price (US\$/oz)	na	1,200	1,250	1,275	1,301
Silver price (US\$/oz)	na	14.5	15.0	15.3	15.6
AUD:USD exchange rate	na	0.70	0.75	0.75	0.75

Woodlawn Project Mineral Resources (excluding gold and silver) as at Nov 2017	Mt	ZnEq (%)	Zn (%)	Cu (%)	PB (%)
Tailings	10.9	6.2	2.3	0.5	1.3
Underground	7.2	16.0	6.3	1.9	2.3
<b>Total</b>	<b>18.1</b>	<b>10.1</b>	<b>3.9</b>	<b>1.1</b>	<b>1.7</b>

Woodlawn Project Ore Reserves (excluding gold and silver) as at Nov 2017	Mt	ZnEq (%)	Zn (%)	Cu (%)	PB (%)
Tailings	9.5	6.0	2.2	0.5	1.3
Underground	2.8	14.0	5.5	1.6	1.9
<b>Total</b>	<b>12.3</b>	<b>9.2</b>	<b>3.5</b>	<b>0.9</b>	<b>1.5</b>

 In-situ value of Reserve : US\$3.31bn  
 Note: based on spot prices


SOTP Valuation	(A\$m)	(A\$/share)	Comment
Woodlawn Project mine inventory	508	2.05	NPV
Woodlawn Resource not in inventory	19	0.08	-5% of ZnEq inventory NPV
Total Resource	528	2.13	
<b>Project discount</b>	<b>33%</b>		<b>Timing, operational, costs</b>
<b>Woodlawn Project value (risked)</b>	<b>354</b>	<b>1.43</b>	
Exploration upside (nominal)	10	0.04	A\$10m nominal
Investments (FY 19E)	6	0.02	Listed stocks
Net debt plus silver stream (FY 19E)	(23)	(0.09)	
<b>SOTP valuation</b>	<b>347</b>	<b>1.40</b>	

Note: Per share valuation based on 248 million shares (diluted)

## Valuation

### Estimated NPV for Woodlawn Project

Our estimated NPVs<sub>10</sub> (un-risked) for the Woodlawn Project is A\$508m.

Woodlawn Project NPV :  
A\$508m

**Figure 1: NPV for the Woodlawn Zn-Cu Project**

Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	LOM
Revenue (A\$m)	72.4	187	258	309	274	231	169	185	177	174	2,036
TC+RC Costs (as % revenue)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	
<b>Net revenue (A\$m)</b>	<b>63.0</b>	<b>163</b>	<b>224</b>	<b>269</b>	<b>238</b>	<b>201</b>	<b>147</b>	<b>161</b>	<b>154</b>	<b>151</b>	<b>1,771</b>
Costs - Mining (A\$m)	(10.2)	(21)	(38)	(43)	(43)	(44)	(3)	(3)	(3)	(3)	(212)
Costs - Ore Processing (A\$m)	(7.8)	(20)	(26)	(26)	(27)	(27)	(30)	(31)	(32)	(30)	(257)
Costs - Logistics (A\$m)	(5.1)	(13)	(18)	(22)	(19)	(16)	(12)	(13)	(12)	(12)	(143)
Costs - Admin/Corporate (A\$m)	(5.0)	(5)	(5)	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(55)
Costs - Royalty (A\$m)	(1.9)	(5)	(7)	(8)	(7)	(6)	(4)	(5)	(5)	(5)	(53)
<b>Total cash costs (A\$m)</b>	<b>(29.9)</b>	<b>(64)</b>	<b>(94)</b>	<b>(104)</b>	<b>(102)</b>	<b>(100)</b>	<b>(55)</b>	<b>(58)</b>	<b>(58)</b>	<b>(56)</b>	<b>(720)</b>
<b>EBITDA (A\$m)</b>	<b>33.0</b>	<b>99</b>	<b>130</b>	<b>165</b>	<b>136</b>	<b>102</b>	<b>92</b>	<b>103</b>	<b>96</b>	<b>95</b>	<b>1,052</b>
Tax (A\$m)	-	-	-	(49)	(41)	(31)	(28)	(31)	(29)	(29)	(237)
<b>EAT (A\$m)</b>	<b>33.0</b>	<b>99</b>	<b>130</b>	<b>115</b>	<b>95</b>	<b>71</b>	<b>64</b>	<b>72</b>	<b>67</b>	<b>67</b>	<b>815</b>
Equity funding (A\$m)	140	-	-	-	-	-	-	-	-	-	140
Debt funding (A\$m)	100	-	-	-	-	-	-	-	-	-	100
Project capex (A\$m)	(175)	-	-	-	-	-	-	-	-	-	(175)
Sustaining capex (incl. expl) (A\$m)	-	(21.0)	(15.0)	(22.0)	(16.0)	(1.0)	(1.0)	(1)	(1)	(10)	(88)
<b>Project cashflow (A\$m)</b>	<b>98.0</b>	<b>78</b>	<b>115</b>	<b>93</b>	<b>79</b>	<b>70</b>	<b>63</b>	<b>71</b>	<b>66</b>	<b>57</b>	<b>792</b>
Discount rate	10%										
<b>PV of cash flow (A\$m)</b>	<b>508</b>										

Source: Company, State One Stockbroking forecasts

Note: For NPV calculations, we have included historical (i.e., FY18) project capex and funding in FY19E

### Target price, recommendation and risks

Attaching a 33% project-risk discount for timing and operating forecasts (commissioning slippage, ramp-up profile, grade, recovery, unit costs etc.) and adjusting for investments, Resource value outside of mining inventory, exploration upside and FY19E net debt, we calculate HRR's equity value at A\$352m or A\$1.40 per diluted share.

**Figure 2: SOTP equity valuation**

SOTP Valuation	(A\$m)	(A\$/share)	Comment
Woodlawn Project mine inventory	508	2.05	NPV
Woodlawn Resource not in inventory	19	0.08	~5% of ZnEq inventory NPV
Total Resource	528	2.13	
<i>Project discount</i>	<i>33%</i>		<i>Timing, operational, costs</i>
<b>Woodlawn Project value (risked)</b>	<b>354</b>	<b>1.43</b>	
Exploration upside (nominal)	10	0.04	A\$10m nominal
Investments (FY19E)	6	0.02	Listed stocks
Net debt plus silver stream (FY19E)	(23)	(0.09)	
<b>SOTP valuation</b>	<b>347</b>	<b>1.40</b>	

Note: Per share valuation based on 248 million shares (diluted)

Source: Company, State One Stockbroking forecasts

At current share price levels of A\$0.65, we calculate that HRR offers significant upside potential to our risk-adjusted target price of A\$1.40.

**We initiate coverage on Heron Resources Limited with a Speculative Buy (Higher risk) recommendation.**

Target price:  
A\$1.40ps

Recommendation:  
Speculative Buy  
(Higher risk)

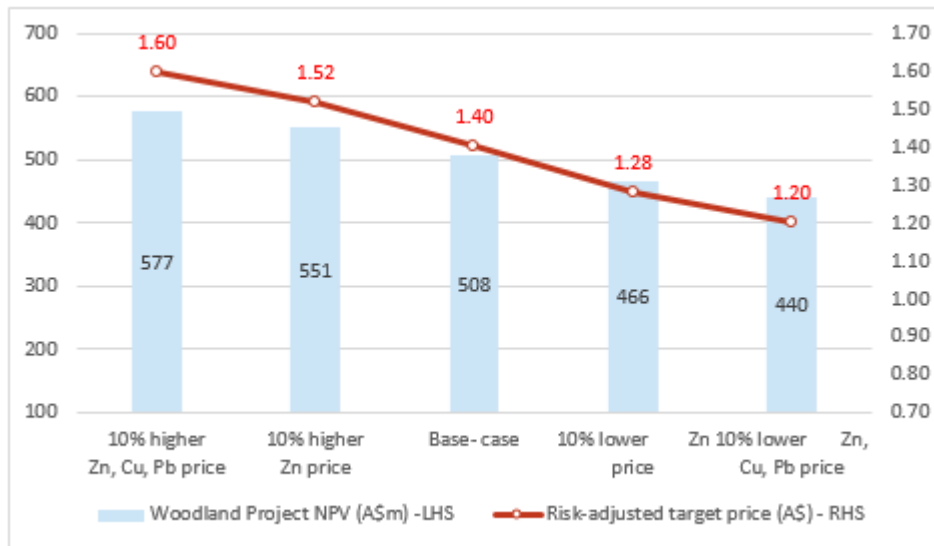
Risks to our earnings profile and target price include, but are not limited to:

- Commodity price (zinc, copper, lead, silver, gold) and AUD:USD exchange rate volatility,
- Grade volatility and/or lower than expected grades and estimated Resource tonnage, ore body characteristics, metallurgy and recovery rates - particularly at the high-grade underground operations,
- Commissioning, production start-date and ramp-up profile,
- Offtake: HRR has secured off-take for three years with Swiss-based metals trader *IXM* for 100% of Woodlawn’s three base metal concentrates (Zn, Cu, Pb). Offtake agreements will need to be secured for the balance of the 10-year Project life-of-mine (LOM).
- Capital and operating cost (mining and processing) risks and integrating activities between the under-ground and reclaimed tailings contractors.

### Sensitivity to metal prices

Over our base-case 10-year project LOM, we calculate that Zn will contribute some 55% of revenues, Cu 20% of revenues, and Pb some 13% of revenues, with precious metals Au/Ag contributing the balance (12%). Not surprisingly, our valuation is sensitive to the underlying base metal price environment – and Zn in particular. Our base-case scenario assumes base metal prices at current spot price levels (real). In a 10% lower/higher zinc price environment, our valuation decrease/increases by 8%. In a 10% lower/higher base metal price environment, our valuation decrease/increases by 14%.

**Figure 3: Target price sensitivity to base metal prices**



Source: Company, State One Stockbroking forecasts

Our sensitivity analysis indicates that base metal prices would have to be some 40% lower than current spot price environment in order to obtain a target share price approximating to HRR’s current share price levels of ~A\$0.65.

While metal prices have weakened recently, we believe that with prices at or close to their long-term average a 40% fall from here is unlikely. Rather, we believe our sensitivity supports our view that HRR offers significant upside potential for speculative investors as the Woodlawn Project is de-risked over the next 6 -12 months.

## LOM extension upside

Our base-case LOM for the Woodlawn Project is (a relatively short) ten years i.e. from FY19E-FY28E and assumes a mining inventory equivalent to the current Mineral Reserve Estimate of 12.3Mt (9.5Mt Reclaimed Tailings + 2.8Mt Underground).

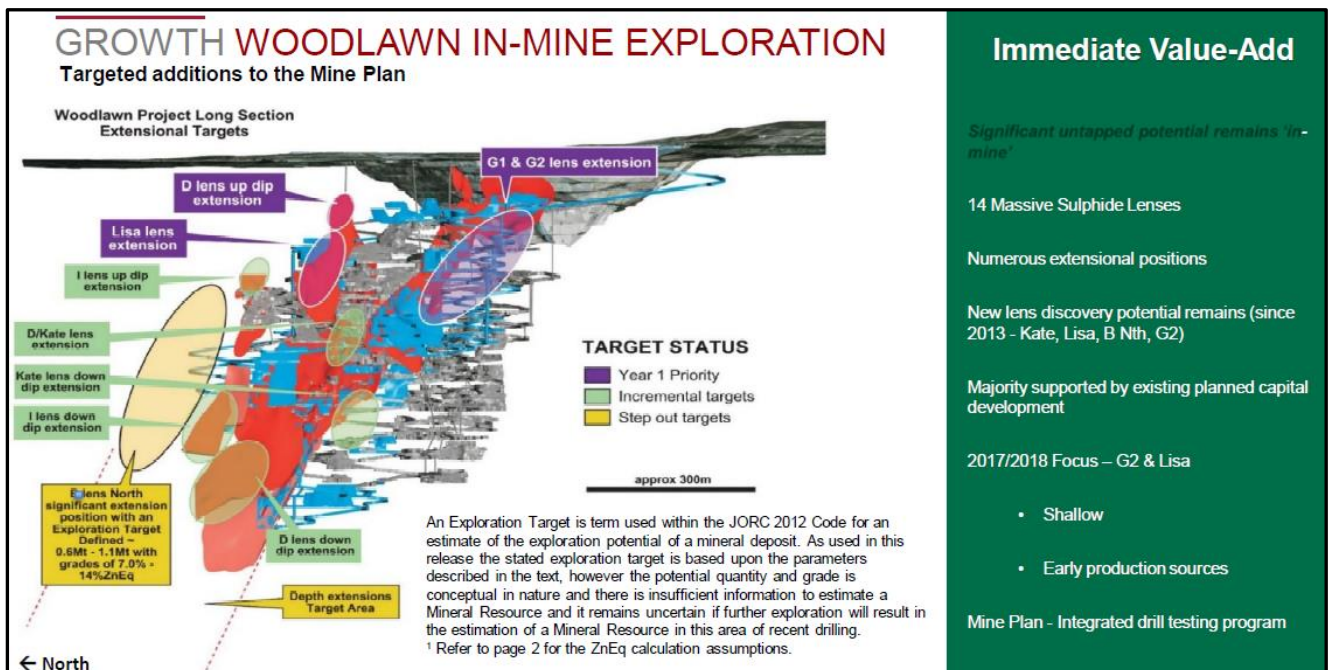
However, some 4.4Mt of additional ore lies in Underground Mineral Resources. As underground mining progresses, management is targeting to extend the current 5.5 year Underground LOM via conversion of existing Resources to Reserve status via confirmatory drilling programmes, and to find new Resources/Reserves via an in-mine exploration programme. Management believes that the Woodlawn Underground operations have “significant untapped potential” and our understanding is that HRR would be disappointed if they were not able to extend underground mining operations by an additional five years (on top of the current 5.5 year Underground LOM). Note: an additional five years LOM would imply discovering an additional 5Mt of ore – assuming 100% underground ore feedstock and underground ore processing rates of 1Mtpa). An additional value uplift is that underground LOM extensions would not come at the end of the current mining schedule but would push out the lower-grade tailings feedstock, increasing margins and nearer-term cash flows.

Regional exploration, particularly at historical satellite production sources could also add to the Project Resource/Reserve base. Currawang, some 10km NW of Woodlawn mined 0.5Mt @ 13% Zn between 1992-1996. A 2017 five-hole drilling program completed by HRR at the historic Currawang mine intercepted semi-massive zinc and copper sulphides including 6.4m @ 14.6% ZnEq from 485m and 2.9m @ 13.5% ZnEq from 567m.

**We estimate that each additional 1Mt of underground ore (= one additional year to the Woodlawn Project LOM) could increase our Project NPV<sub>10</sub> by ~A\$75m, or A\$0.30ps. This adds considerable upside potential to our risk-adjusted target price of A\$1.40 per share.**

Each addition year to underground LOM = additional A\$0.30ps to Woodlawn Project NPV

Figure 4: Woodlawn underground mine showing LOM extension potential

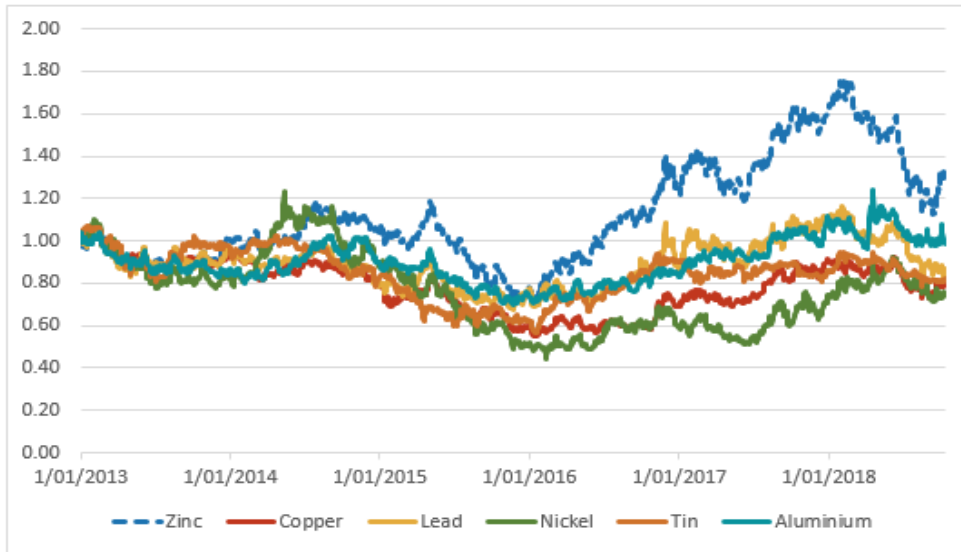


Source: Company

### Peer group comparison

Over the past (nearly) six years, the zinc price has comfortably outperformed its base metal peer group. We suspect that in a 14Mtpa market, the 2015 closure of major zinc mines Century (MMG, Mount Isa, 450ktpa) and Lisheen (Vedanta, Ireland, 165ktpa) has impacted the global supply/demand balance. Importantly, LME zinc stocks at 192kt are at their lowest level since 2007, with spot treatment costs falling as smelters compete for concentrate.

**Figure 5: Base metal prices 2013-Present (base Jan 2013= 1.00)**



Source: IRESS, compiled by State One Stockbroking

**Figure 6: LME zinc stock levels ('000t) 2008-2018**

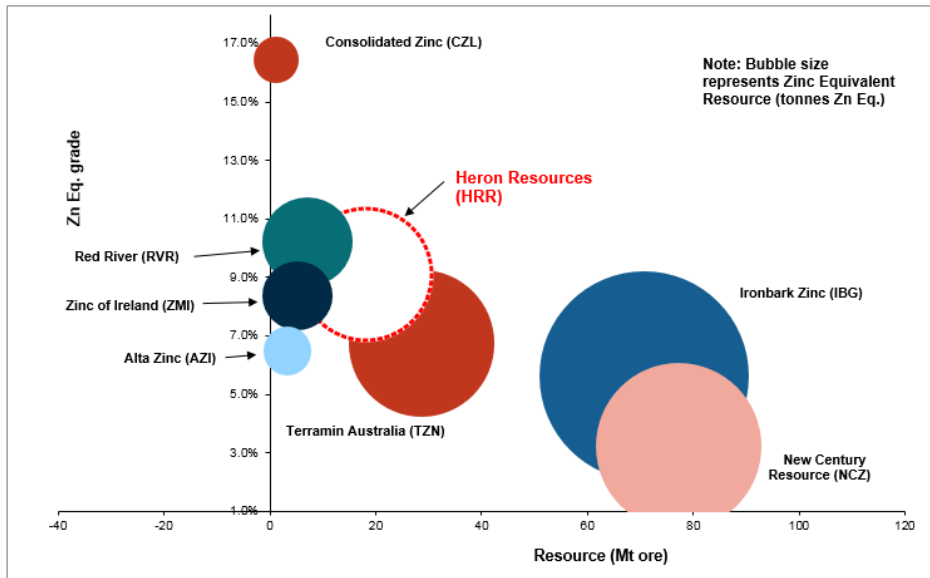


Source: IRESS

Unfortunately, there are limited opportunities for ASX investors to get meaningful exposure to a potentially buoyant zinc price environment. The large McArthur River, Cannington, and Broken Hill operations are housed within Glencore, South32 (ASX:S32), and (delisted) Perilya respectively, with the Jaguar Zn mine forming (an ever smaller) component of the Ni-Au focused Independence Group (ASX:IGO).

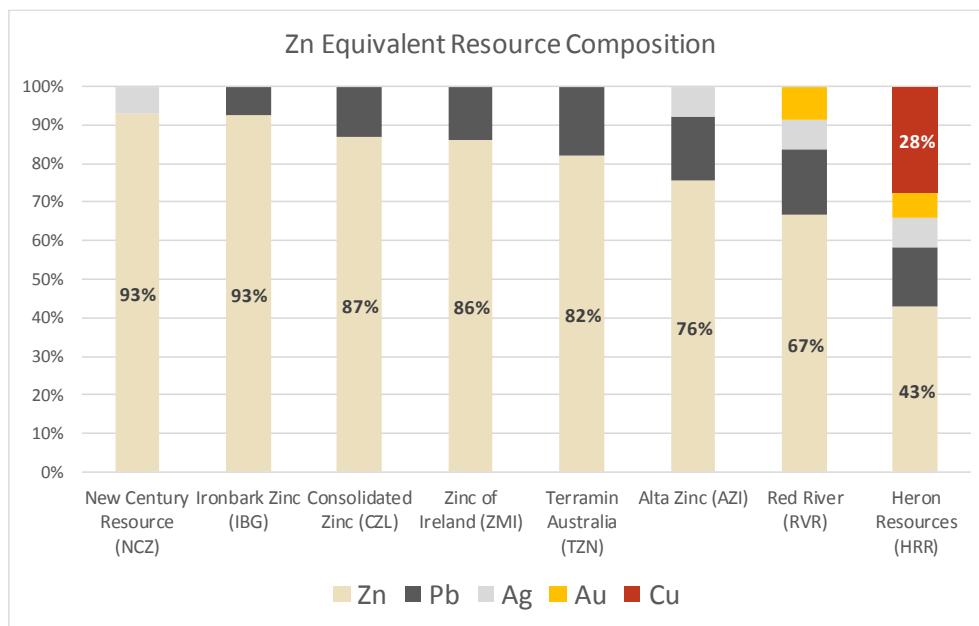
Zinc-focused producers / soon-to-be producers on the ASX include **Red River** (ASX:RVR) – Thalanga Project [QLD], **New Century Resources** (ASX:NCZ) – Century Tailings Project [QLD], **Consolidated Zinc** (ASX:CZL) – Plomosas Project [Chile], and **Heron Resources** (ASX:HRR) – Woodlawn Project [NSW]. Other companies with significant zinc-dominant projects in the exploration/development stage include Terramin Australia (ASX:TZN) – Tala Hamza Project [Algeria], Ironbark Zinc (ASX:IBG) – Citronen Project [Greenland], Alta Zinc (ASX:AZI) – Gorno Project [Italy], and Zinc of Ireland (ASX:ZMI) – Kildare Project [Ireland]. Amongst the above projects, HRR’s Woodlawn Project is one of the largest in terms of ZnEq Resource, with its copper component a differentiating factor compared to the typical Zn-Pb mix.

**Figure 7: Selected zinc focused projects (showing ZnEq Resource)**



Source: Companies, IRESS, compiled by State One Stockbroking

**Figure 8: ZnEq Resource composition**

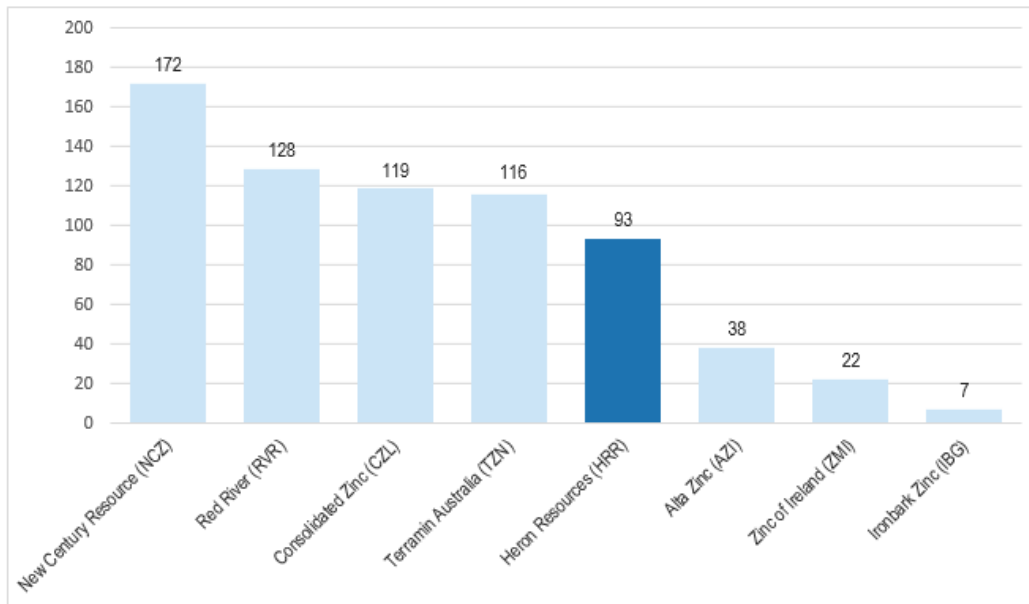


Source: Companies, IRESS, compiled by State One Stockbroking

Comparing unit Resource ounce values between projects is problematic due to projects being at different stages of development and funding (producing versus non-producing), location (sovereign risk), differences in mining (underground versus open-pit, mechanised vs non-mechanised), processing (metallurgy), capex and infrastructure requirements, and (most critically) grade. However, companies with producing or near-producing assets are typically valued at a significantly higher rating (in terms of Resource unit value) than non-producing companies.

We calculate that while HRR is indeed valued at a significant premium to less-advanced peers, it is trading at a discount to its producing peers. We attribute this to first production at Woodlawn still being some 4-6 months away. We believe this 40%+ discount should close assuming the commissioning and first-production milestones are met between now and early 2019.

**Figure 9: Market capitalisation per tonne of ZnEq Resource (A\$/t)**



Source: Companies, IRESS, compiled by State One Stockbroking



## Operational assumptions

### Woodlawn Project - Mining Inventory

Our assumed mining inventory for the Woodlawn Project equates to the 2016 estimated Mineral Reserves of 12.3Mt; 9.5Mt (77%) from 6% ZnEq Tailings and 2.8Mt (23%) from the higher-grade (14% ZnEq) Underground. Note: the assumed mining inventory is some 68% of the Project's 2016 Estimated Mineral Resource of 18.1Mt.

**Figure 10: Woodlawn Project – Tailings and Underground Reserves**

#### Woodlawn Tailings Mineral Reserve Estimate 2016

Reported with no cut-off grade applied

Reserve Category	Quantity (Mt)	ZnEq(%)	Zn(%)	Cu(%)	Pb(%)	Au(g/t)	Ag(g/t)
Proven	6.4	6.0	2.2	0.5	1.3	0.29	31
Probable	3.2	6.0	2.1	0.5	1.3	0.33	32
<b>Total (Proven + Probable)</b>	<b>9.5</b>	<b>6.0</b>	<b>2.2</b>	<b>0.5</b>	<b>1.3</b>	<b>0.31</b>	<b>31</b>

#### Woodlawn Underground Mineral Reserve Estimate 2016

Type	Reserve Category	Quantity (Mt)	ZnEq(%)	Zn(%)	Cu(%)	Pb(%)	Au(g/t)	Ag(g/t)
Polymetallic	Proven	0						
Polymetallic	Probable	1.8	16	8.1	1.2	2.9	0.56	57
Copper	Proven	0						
Copper	Probable	0.96	8.8	0.61	2.4	0.13	0.23	14
<b>Total</b>	<b>Probable</b>	<b>2.8</b>	<b>14</b>	<b>5.5</b>	<b>1.6</b>	<b>1.9</b>	<b>0.45</b>	<b>42</b>

Source: Company

### Mining/processing schedule

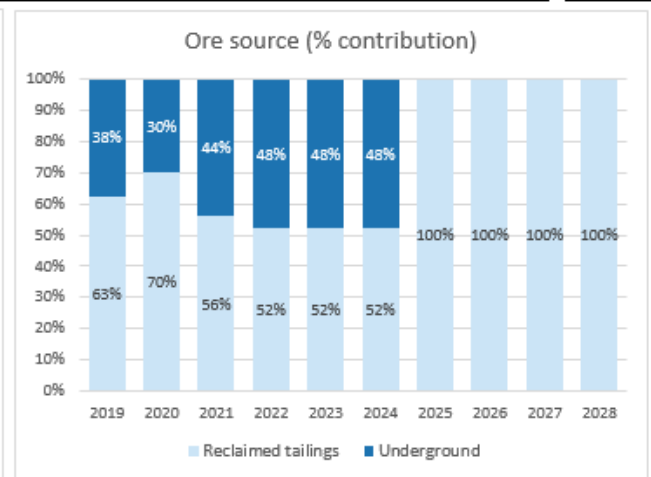
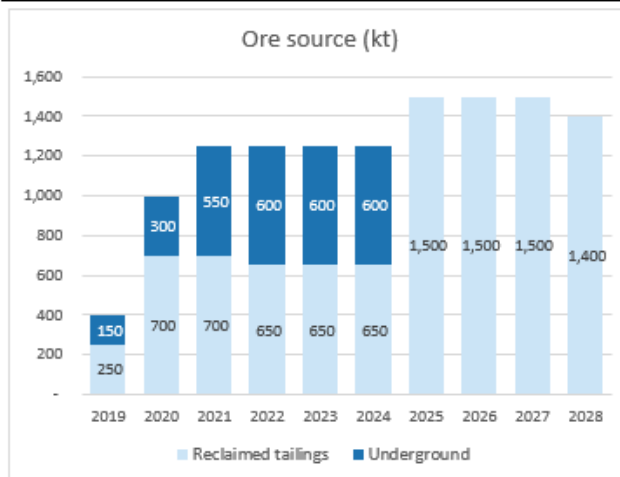
Our forecast mining/processing schedule is based on the July 2016 Woodlawn Zinc-Copper Project Feasibility Study. Over a 10-year LOM we forecast an average mill throughput of 1.23Mtpa, with processing commencing in FY19E.

**Figure 11: Forecast mining/processing schedule by ore source**

Ore mined /processed (Kt)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	LOM
Reclaimed tailings	250	700	700	650	650	650	1,500	1,500	1,500	1,400	9,500
Underground	150	300	550	600	600	600	-	-	-	-	2,800
<b>Total</b>	<b>400</b>	<b>1,000</b>	<b>1,250</b>	<b>1,250</b>	<b>1,250</b>	<b>1,250</b>	<b>1,500</b>	<b>1,500</b>	<b>1,500</b>	<b>1,400</b>	<b>12,300</b>

Ore mined /processed (% con	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	LOM
Reclaimed tailings	63%	70%	56%	52%	52%	52%	100%	100%	100%	100%	77%
Underground	38%	30%	44%	48%	48%	48%	0%	0%	0%	0%	23%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



Source: Company, State One Stockbroking forecasts

## Metal output

Our forecast metal production profile - per Tailings and Underground - is based on the estimated grade and recovery profiles per individual metals in the July 2016 FS.

**Figure 12: Forecast production profile: Reclaimed Tailings**

Year	1	2	3	4	5	6	7	8	9	10	Project Total
Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
<b>Reclaimed Tailings</b>											
Mine inventory - opening ('000t)	9,500	9,250	8,550	7,850	7,200	6,550	5,900	4,400	2,900	1,400	-
Mine inventory - closed ('000t)	9,250	8,550	7,850	7,200	6,550	5,900	4,400	2,900	1,400	-	-
Ore mined & processed ('000t)	250	700	700	650	650	650	1,500	1,500	1,500	1,400	9,500
Zn grade (%)	2.4%	2.5%	2.3%	2.4%	2.1%	1.9%	1.8%	2.0%	2.2%	2.3%	2.1%
Zn contained ('000t)	6	17.2	15.9	15.7	13.5	12.3	27.5	30.0	32.7	31.8	203
Recovery (%)	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%	-
<b>Zn recovered ('000t)</b>	<b>5</b>	<b>13.1</b>	<b>12.1</b>	<b>12.0</b>	<b>10.3</b>	<b>9.3</b>	<b>20.9</b>	<b>22.8</b>	<b>24.9</b>	<b>24.2</b>	<b>154</b>
Cu grade (%)	0.43%	0.46%	0.48%	0.43%	0.62%	0.61%	0.61%	0.53%	0.42%	0.40%	0.51%
Cu contained ('000t)	1	3.2	3.4	2.8	4.0	4.0	9.2	8.9	6.3	5.6	48
Recovery (%)	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%	-
<b>Cu recovered ('000t)</b>	<b>0</b>	<b>1.3</b>	<b>1.3</b>	<b>1.1</b>	<b>1.6</b>	<b>1.5</b>	<b>3.6</b>	<b>3.5</b>	<b>2.5</b>	<b>2.2</b>	<b>19</b>
Pb grade (%)	1.09%	1.15%	1.23%	1.20%	1.26%	1.41%	1.39%	1.45%	1.23%	1.30%	1.30%
Pb contained ('000t)	3	8.1	8.6	7.8	8.2	9.2	20.9	21.8	18.5	18.2	124
Recovery (%)	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%	-
<b>Pb recovered ('000t)</b>	<b>1</b>	<b>3.4</b>	<b>3.6</b>	<b>3.3</b>	<b>3.4</b>	<b>3.8</b>	<b>8.8</b>	<b>9.1</b>	<b>7.7</b>	<b>7.6</b>	<b>52</b>
Gold grade (g/t Au)	0.25	0.25	0.22	0.26	0.31	0.38	0.35	0.41	0.30	0.27	0.31
Contained ounces (oz Au)	2,010	5,627	4,952	5,434	6,479	7,942	16,881	19,775	14,469	12,154	95,723
Recovery (%)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	-
<b>Gold recovered (oz Au)</b>	<b>502</b>	<b>1,407</b>	<b>1,238</b>	<b>1,359</b>	<b>1,620</b>	<b>1,986</b>	<b>4,220</b>	<b>4,944</b>	<b>3,617</b>	<b>3,039</b>	<b>23,931</b>
Silver grade (g/t Ag)	26	26	27	26	27	33	33	37	32	34	31
Contained ounces (koz Ag)	209	578	599	552	564	692	1,568	1,780	1,529	1,549	9,619
Recovery (%)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	-
<b>Silver recovered (koz Ag)</b>	<b>125</b>	<b>347</b>	<b>359</b>	<b>331</b>	<b>339</b>	<b>415</b>	<b>941</b>	<b>1,068</b>	<b>917</b>	<b>929</b>	<b>5,771</b>

Source: Company, State One Stockbroking forecasts

**Figure 13: Forecast production profile: Underground**

Year	1	2	3	4	5	6	7	8	9	10	Project Total
Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
<b>Underground</b>											
Mine inventory - opening ('000t)	2,800	2,650	2,350	1,800	1,200	600	-	-	-	-	-
Mine inventory - closed ('000t)	2,650	2,350	1,800	1,200	600	-	-	-	-	-	-
Ore mined & processed ('000t)	150	300	550	600	600	600	-	-	-	-	2,800
Zn grade (%)	4.8%	6.7%	5.4%	7.4%	6.3%	3.7%	n/a	n/a	n/a	n/a	5.8%
Zn contained ('000t)	7	20.2	29.5	44.6	38.0	22.4	-	-	-	-	162
Recovery (%)	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	-
<b>Zn recovered ('000t)</b>	<b>6</b>	<b>17.7</b>	<b>26.0</b>	<b>39.3</b>	<b>33.4</b>	<b>19.7</b>	-	-	-	-	<b>142</b>
Cu grade (%)	1.12%	1.42%	1.99%	1.32%	1.39%	2.06%	n/a	n/a	n/a	n/a	1.63%
Cu contained ('000t)	2	4.3	11.0	7.9	8.3	12.4	-	-	-	-	46
Recovery (%)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	-
<b>Cu recovered ('000t)</b>	<b>1</b>	<b>2.6</b>	<b>6.6</b>	<b>4.8</b>	<b>5.0</b>	<b>7.4</b>	-	-	-	-	<b>27</b>
Pb grade (%)	0	2.72%	1.63%	2.98%	1.98%	0.81%	n/a	n/a	n/a	n/a	1.98%
Pb contained ('000t)	4	8.2	8.9	17.9	11.9	4.8	-	-	-	-	56
Recovery (%)	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	-
<b>Pb recovered ('000t)</b>	<b>3</b>	<b>5.7</b>	<b>6.3</b>	<b>12.5</b>	<b>8.3</b>	<b>3.4</b>	-	-	-	-	<b>39</b>
Gold grade (g/t Au)	1	1.05	0.81	0.24	0.05	0.07	n/a	n/a	n/a	n/a	0.39
Contained ounces (oz Au)	3,473	10,148	14,238	4,688	1,003	1,350	-	-	-	-	34,900
Recovery (%)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	-
<b>Gold recovered (oz Au)</b>	<b>868</b>	<b>2,537</b>	<b>3,559</b>	<b>1,172</b>	<b>251</b>	<b>338</b>	-	-	-	-	<b>8,725</b>
Silver grade (g/t Ag)	64	69	46	54	28	17	n/a	n/a	n/a	n/a	41
Contained ounces (koz Ag)	306	668	808	1,051	549	327	-	-	-	-	3,710
Recovery (%)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	-
<b>Silver recovered (koz Ag)</b>	<b>184</b>	<b>401</b>	<b>485</b>	<b>631</b>	<b>329</b>	<b>196</b>	-	-	-	-	<b>2,226</b>

Source: Company, State One Stockbroking forecasts

Our combined (Tailings and Underground) production profile is tabulated and graphed below.

**Figure 14: Forecast production profile: combined Tailings & Underground**

Year	1	2	3	4	5	6	7	8	9	10	Project
Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
<b>Total</b>	-	-	-	-	-	-	-	-	-	-	-
Mine inventory - opening ('000t)	12,300	11,900	10,900	9,650	8,400	7,150	5,900	4,400	2,900	1,400	-
Mine inventory - closed ('000t)	11,900	10,900	9,650	8,400	7,150	5,900	4,400	2,900	1,400	-	-
Ore mined & processed ('000t)	400	1,000	1,250	1,250	1,250	1,250	1,500	1,500	1,500	1,400	12,300
Zn grade (%)	3.3%	3.7%	3.6%	4.8%	4.1%	2.8%	1.8%	2.0%	2.2%	2.3%	3.0%
Zn contained ('000t)	13	37.4	45.4	60.4	51.5	34.7	27.5	30.0	32.7	31.8	364
Recovery (%)	83%	82%	84%	85%	85%	84%	76%	76%	76%	76%	-
<b>Zn recovered ('000t)</b>	<b>11</b>	<b>30.8</b>	<b>38.0</b>	<b>51.2</b>	<b>43.7</b>	<b>29.1</b>	<b>20.9</b>	<b>22.8</b>	<b>24.9</b>	<b>24.2</b>	<b>296</b>
Cu grade (%)	0.69%	0.75%	1.14%	0.86%	0.99%	1.31%	0.61%	0.53%	0.42%	0.40%	0.76%
Cu contained ('000t)	3	7.5	14.3	10.7	12.4	16.3	9.2	8.9	6.3	5.6	94
Recovery (%)	52%	51%	55%	55%	53%	55%	39%	39%	39%	39%	-
<b>Cu recovered ('000t)</b>	<b>1</b>	<b>3.8</b>	<b>7.9</b>	<b>5.9</b>	<b>6.6</b>	<b>9.0</b>	<b>3.6</b>	<b>3.5</b>	<b>2.5</b>	<b>2.2</b>	<b>46</b>
Pb grade (%)	1.63%	1.62%	1.40%	2.06%	1.61%	1.12%	1.39%	1.45%	1.23%	1.30%	1.46%
Pb contained ('000t)	7	16.2	17.6	25.7	20.1	14.0	20.9	21.8	18.5	18.2	179
Recovery (%)	58%	56%	56%	62%	59%	52%	42%	42%	42%	42%	-
<b>Pb recovered ('000t)</b>	<b>4</b>	<b>9.1</b>	<b>9.9</b>	<b>15.8</b>	<b>11.8</b>	<b>7.2</b>	<b>8.8</b>	<b>9.1</b>	<b>7.7</b>	<b>7.6</b>	<b>91</b>
Gold grade (g/t Au)	0.42	0.49	0.48	0.25	0.19	0.23	0.35	0.41	0.30	0.27	0.33
Contained ounces (oz Au)	5,482	15,775	19,190	10,122	7,482	9,293	16,881	19,775	14,469	12,154	130,624
Recovery (%)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	-
<b>Gold recovered (oz Au)</b>	<b>1,371</b>	<b>3,944</b>	<b>4,797</b>	<b>2,531</b>	<b>1,871</b>	<b>2,323</b>	<b>4,220</b>	<b>4,944</b>	<b>3,617</b>	<b>3,039</b>	<b>32,656</b>
Silver grade (g/t Ag)	40	39	35	40	28	25	33	37	32	34	34
Contained ounces (koz Ag)	515	1,246	1,407	1,603	1,113	1,019	1,568	1,780	1,529	1,549	13,328
Recovery (%)	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	-
<b>Silver recovered (koz Ag)</b>	<b>309</b>	<b>748</b>	<b>844</b>	<b>962</b>	<b>668</b>	<b>611</b>	<b>941</b>	<b>1,068</b>	<b>917</b>	<b>929</b>	<b>7,997</b>

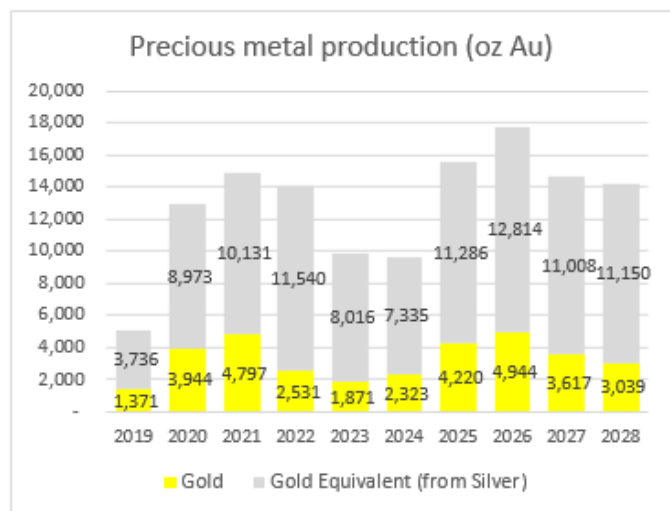
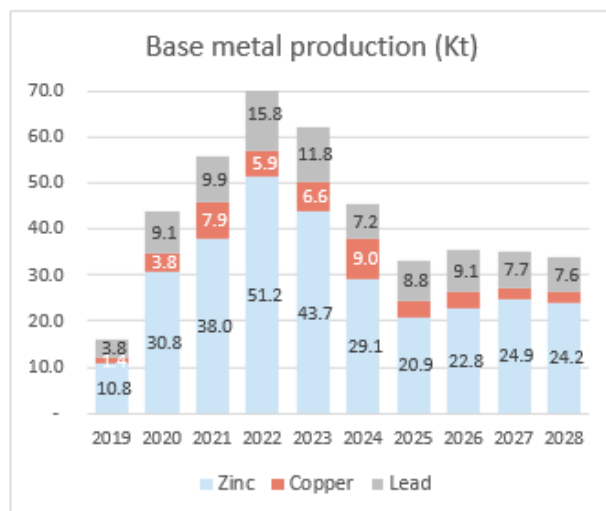
Source: Company, State One Stockbroking forecasts

**Figure 15: Metal production summary**

Base metal production (kt)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Zinc	10.8	30.8	38.0	51.2	43.7	29.1	20.9	22.8	24.9	24.2
Copper	1.4	3.8	7.9	5.9	6.6	9.0	3.6	3.5	2.5	2.2
Lead	3.8	9.1	9.9	15.8	11.8	7.2	8.8	9.1	7.7	7.6

Precious metal production	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Gold	1,371	3,944	4,797	2,531	1,871	2,323	4,220	4,944	3,617	3,039
Gold Equivalent (from Silver)	3,736	8,973	10,131	11,540	8,016	7,335	11,286	12,814	11,008	11,150



Source: Company, State One Stockbroking forecasts

On a zinc equivalent (ZnEq) basis, we calculate LOM production of 549kt of zinc, with contribution to production split relatively even between the Reclaimed Tailings (53%) and Underground (47%) operations.

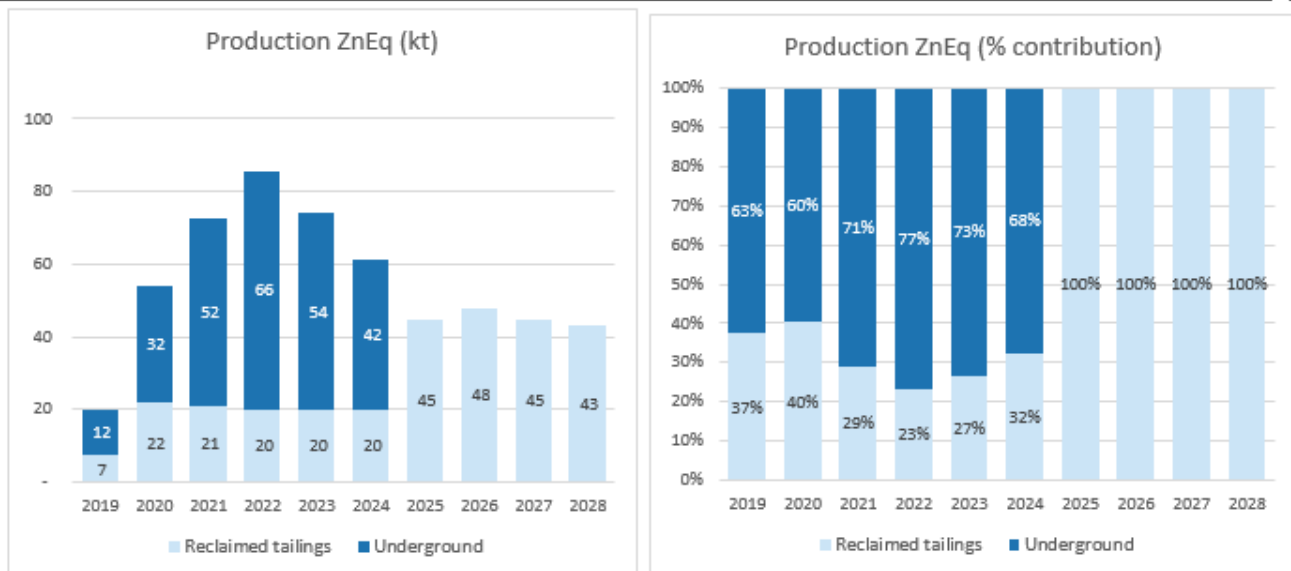
However, with the mining schedule “front-loaded” with higher-grade feed ore from the underground operations, we forecast that the underground operations will account for nearly 70% of metal output between 2019-2024.

**Figure 16: Zn Eq metal production**

Production (ZnEq) (Kt)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	LOM
Reclaimed tailings	7	22	21	20	20	20	45	48	45	43	291
Underground	12	32	52	66	54	42	-	-	-	-	258
<b>Total</b>	<b>20</b>	<b>54</b>	<b>73</b>	<b>86</b>	<b>74</b>	<b>61</b>	<b>45</b>	<b>48</b>	<b>45</b>	<b>43</b>	<b>549</b>

Production (ZnEq) (contribution)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	LOM
Reclaimed tailings	37%	40%	29%	23%	27%	32%	100%	100%	100%	100%	53%
Underground	63%	60%	71%	77%	73%	68%	0%	0%	0%	0%	47%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



Source: Company, State One Stockbroking forecasts

### Forecast metal prices and AUD:USD exchange rate

We maintain base metal prices at current real spot price levels over our forecast period, i.e., prices are escalated at 2%pa (equivalent to forecast long-term global inflation) to keep prices constant in real terms. We forecast a slight uplift in the gold price after FY19E, with prices then escalated at 2%pa. We forecast an unchanged long-term exchange rate of US\$0.75 from FY20E.

**Figure 17: Forecast metal prices and A\$ exchange rate**

Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Zinc (US\$/t)	2,600	2,652	2,705	2,759	2,814	2,871	2,928	2,987	3,046	3,107
Copper (US\$/t)	6,175	6,299	6,424	6,553	6,684	6,818	6,954	7,093	7,235	7,380
Lead (US\$/t)	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Gold (US\$/oz)	1,200	1,250	1,275	1,301	1,327	1,353	1,380	1,408	1,436	1,465
Silver (US\$/oz)	15	15	15	16	16	16	17	17	17	18
AUD:USD exchange rate	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75

Source: IRESS, State One Stockbroking forecasts

Note: metal price and exchange rate forecasts are average per financial year

## Forecast revenue profile

Predicated on our forecast production and commodity price assumptions, we forecast metal revenues (pre-treatment and refining charges) increasing from A\$72m in FY19E – HRR’s maiden production year - to an average of A\$218m per annum between FY20E and FY28E.

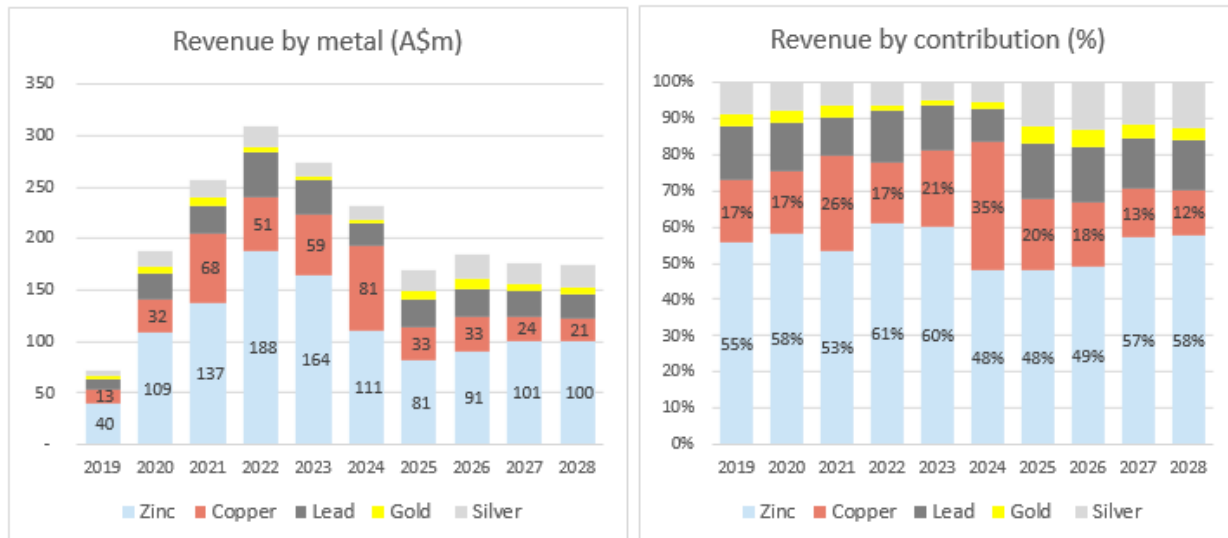
Over the 10-year LOM, we calculate that zinc contributes some 55% of revenue, copper 20% and lead 13%, with precious metals (Au, Ag) contributing a combined 12%.

**Figure 18: Revenue by metal**

Revenue (A\$m)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Zinc	40	109	137	188	164	111	81	91	101	100
Copper	13	32	68	51	59	81	33	33	24	21
Lead	11	25	27	45	34	21	26	28	24	24
Gold	2	7	8	4	3	4	8	9	7	6
Silver	6	15	17	20	14	13	21	24	21	22
<b>Total</b>	<b>72</b>	<b>187</b>	<b>258</b>	<b>309</b>	<b>274</b>	<b>231</b>	<b>169</b>	<b>185</b>	<b>177</b>	<b>174</b>

Revenue contribution (%)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Zinc	55%	58%	53%	61%	60%	48%	48%	49%	57%	58%
Copper	17%	17%	26%	17%	21%	35%	20%	18%	13%	12%
Lead	15%	13%	11%	14%	12%	9%	16%	15%	14%	14%
Gold	3%	4%	3%	1%	1%	2%	5%	5%	4%	3%
Silver	9%	8%	7%	6%	5%	6%	12%	13%	12%	13%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



Source: Company, State One Stockbroking forecasts

In terms of operational contribution, we calculate that the higher-grade underground operations at Woodlawn will account for the bulk (70%) of group revenue during the first six-years of the Woodlawn Project.

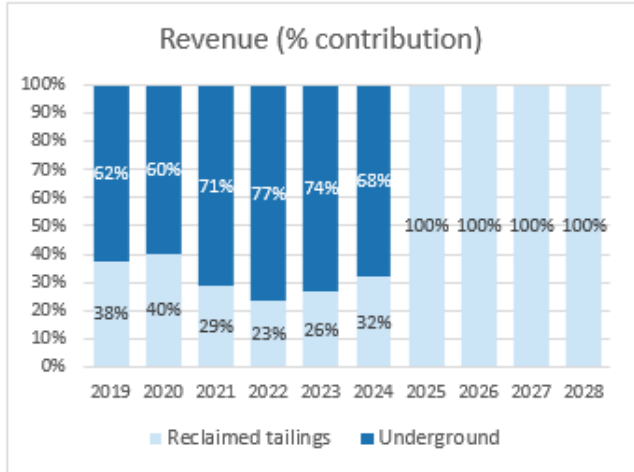
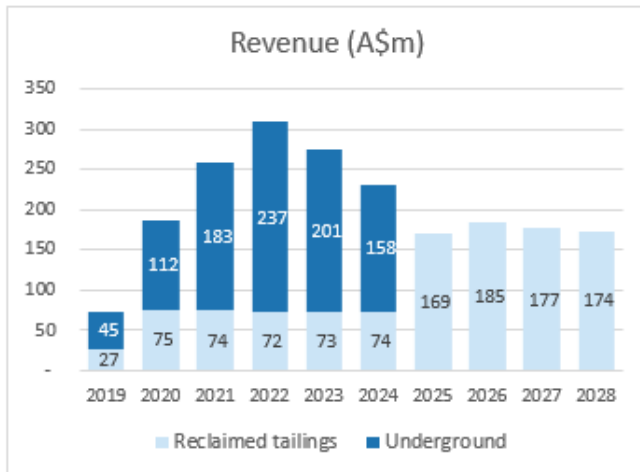
With average underground annual revenues (pre-TC/RC) of A\$180m, we imagine that a priority for HRR will be keen to extend the underground operations via Reserve expansion (Resource to Reserve conversion / new Reserve discovery).

**Figure 19: Revenue by operation**

Revenue (A\$m)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Reclaimed tailings	27	75	74	72	73	74	169	185	177	174
Underground	45	112	183	237	201	158	-	-	-	-
Total	72	187	258	309	274	231	169	185	177	174

Revenue (% contribution))	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Reclaimed tailings	38%	40%	29%	23%	26%	32%	100%	100%	100%	100%
Underground	62%	60%	71%	77%	74%	68%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Source: Company, State One Stockbroking forecasts

## Costs and Margin

Key cost assumptions include:

- Reclaimed tailings mining costs (pumping slurry to plant) of A\$1.75/t.
- Underground mining costs of between A\$65/t.
- Reclaimed tailings processing costs of A\$18/t.
- Underground mining processing costs of A\$22/t.
- TC/RC costs: 13% of gross (metal) revenue
- Logistics (road/rail haulage/port handling costs): 7% of gross revenue
- Corporate costs: A\$5m per annum
- Royalties: the equivalent of 3% of net revenue
- Costs escalated at 2% pa
- Zero corporate tax to FY22E on back of ~A\$100m in direct tax losses

Note: Mining and processing costs based on the July 2016 FS.

Predicated on the above cost assumptions, we calculate an average reclaimed tailings/underground blended operating cost of A\$70/t ore. This compares to the FS indicative operating cost of A\$68/t ore.

Our forecast cost profile indicates unit operating costs of US\$0.54/lb Zn and unit AISCs of US\$0.76/lb Zn. With revenue from co-products (for Cu, Pb, Au, Ag) exceeding total costs, we calculate that operating costs including co-product credits are negative.

**Figure 20: Forecast revenue and costs**

Financial Year (end-June)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Revenue (A\$m)	72.4	187	258	309	274	231	169	185	177	174
TC+RC Costs (as % revenue)	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
<b>Net revenue (A\$m)</b>	<b>63.0</b>	<b>163</b>	<b>224</b>	<b>269</b>	<b>238</b>	<b>201</b>	<b>147</b>	<b>161</b>	<b>154</b>	<b>151</b>
Costs - Mining (A\$m)	(10.2)	(21)	(38)	(43)	(43)	(44)	(3)	(3)	(3)	(3)
Costs - Ore Processing (A\$m)	(7.8)	(20)	(26)	(26)	(27)	(27)	(30)	(31)	(32)	(30)
Costs - Logistics (A\$m)	(5.1)	(13)	(18)	(22)	(19)	(16)	(12)	(13)	(12)	(12)
Costs - Admin/Corporate (A\$m)	(5.0)	(5)	(5)	(5)	(5)	(6)	(6)	(6)	(6)	(6)
Costs - Royalty (A\$m)	(1.9)	(5)	(7)	(8)	(7)	(6)	(4)	(5)	(5)	(5)
<b>Total cash costs (A\$m)</b>	<b>(29.9)</b>	<b>(64)</b>	<b>(94)</b>	<b>(104)</b>	<b>(102)</b>	<b>(100)</b>	<b>(55)</b>	<b>(58)</b>	<b>(58)</b>	<b>(56)</b>
<b>EBITDA (A\$m)</b>	<b>33.0</b>	<b>99</b>	<b>130</b>	<b>165</b>	<b>136</b>	<b>102</b>	<b>92</b>	<b>103</b>	<b>96</b>	<b>95</b>
Tax (A\$m)	-	-	-	(49)	(41)	(31)	(28)	(31)	(29)	(29)
<b>EAT (A\$m)</b>	<b>33</b>	<b>99</b>	<b>130</b>	<b>115</b>	<b>95</b>	<b>71</b>	<b>64</b>	<b>72</b>	<b>67</b>	<b>67</b>

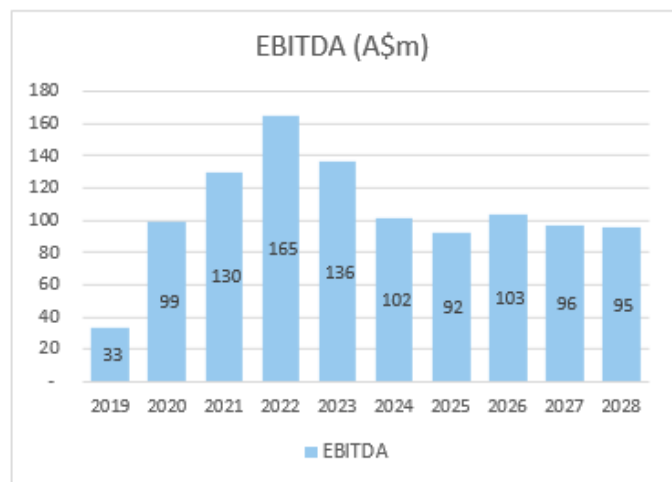
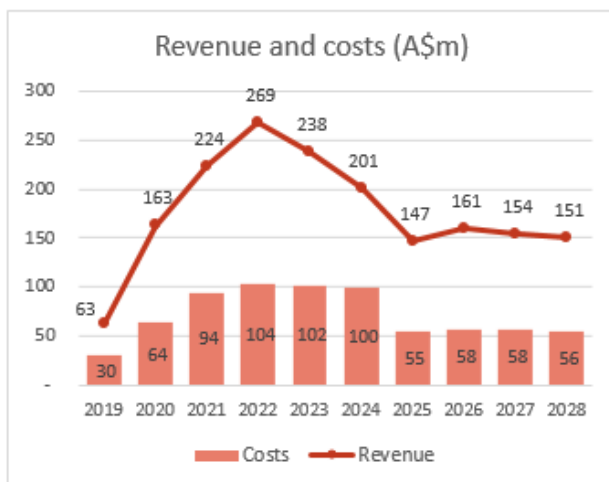
  

Assumptions	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
% ore from reclaimed tailings	63%	70%	56%	52%	52%	52%	100%	100%	100%	100%
% ore from u/g	38%	30%	44%	48%	48%	48%	0%	0%	0%	0%
Mining cost - reclaimed tailings (A\$/t)	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1
Mining cost - underground (A\$/t)	65	66	68	69	70	72	73.2	74.7	76.2	77.7
Processing cost - reclaimed tailings (A\$/t)	18.0	18.4	18.7	19.1	19.5	19.9	20.3	20.7	21.1	21.5
Processing cost - underground (A\$/t)	22.0	22.4	22.9	23.3	23.8	24.3	24.8	25.3	25.8	26.3
Logistics costs (as % net revenue)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Royalties (as % net revenue)	3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3%	3%	3%
Tax rate (%)	0%	0%	0%	30%	30%	30%	30%	30%	30%	30%

Source: Company, State One Stockbroking

**Figure 21: Forecast revenue, costs, and EBITDA**

Revenue and costs (A\$m)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Revenue	63	163	224	269	238	201	147	161	154	151
Costs	30	64	94	104	102	100	55	58	58	56
EBITDA	33	99	130	165	136	102	92	103	96	95



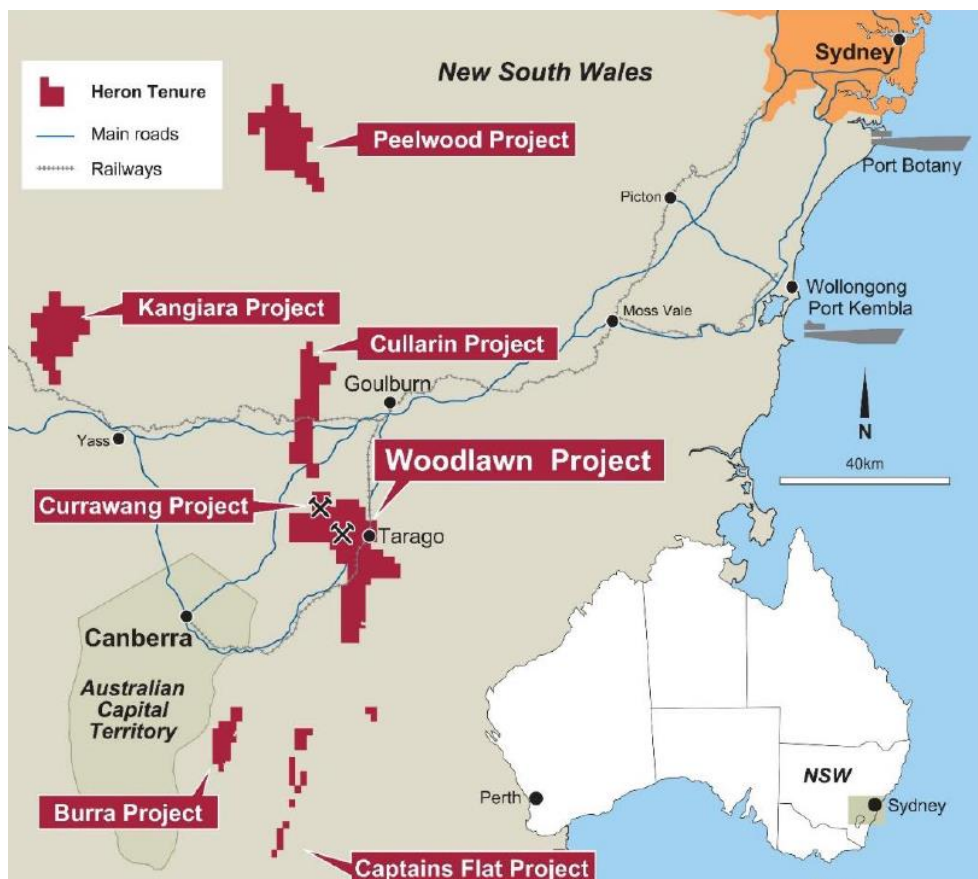
Source: Company, State One Stockbroking

**Our revenue and costs assumptions point to the Woodlawn Project generating attractive average annual EBITDA of A\$113m (post ramp-up in FY19E).**

## Woodlawn Zn-Cu Project: Background

HRR's flagship asset - The Woodlawn Project - is a high-grade, Volcanogenic Massive Sulphide (VMS) deposit located in NSW, Australia, approximately 50km northeast of Canberra. As at end August 2018, the 1Mtpa (underground ore) to 1.5Mtpa (recovered tailings) processing plant was 73% complete and on track for year-end commissioning and first concentrate production in early 1Q 2019. HRR also owns several other tenements surrounding Woodlawn which are prospective for base metal and gold exploration.

**Figure 22: Project locations**



Source: Company

The Woodlawn deposit was discovered in 1970 with open-pit operations commencing in 1978 and underground operations in 1987. The operation was closed in March 1998 primarily due to corporate issues within then owners, Denehurst Ltd. Between 1978 and 1998 the operation reported production of 13.8Mt @ 9.1% Zn, 1.6% Cu, 3.6% Pb, 0.5g/t Au and 74g/t Ag.

In 1999, Tri Origin Exploration Ltd (subsequently becoming TriAusMin Ltd) acquired the mineral rights to the site from the Denehurst Administrator. HRR acquired its interest in the Woodlawn Project through the merger with TriAusMin Ltd in August 2014.

Over the past four years, HRR advanced the project through the completion of a Preliminary Economic Assessment (PEA) in April 2015 and a FS in July 2016, arranging equity and debt financing in 2017/2018, securing an offtake agreement, securing permitting and third-party contractor agreements, and plant & mine development and construction.



## Chairman and MD/CEO Profiles Source: Company website



### **Stephen Bruce Dennis**

BCom, LLB, GDipAppFin(Finsia), CFTP  
Appointed 6 December 2006  
Position: Chairman (Non-Executive)

Stephen Dennis has been actively involved in the mining industry for over 30 years. He has held senior management positions at MIM Holdings Limited, Minara Resources Limited, and Brambles Australia Limited. Until recently, Mr Dennis was the chief executive officer and managing director of CBH Resources Limited, the Australian subsidiary of Toho Zinc Co., Ltd of Japan.



### **Wayne Taylor**

BEng (Mining), MBA  
Appointed 11 August 2014  
Position: Managing Director and CEO

Wayne Taylor is a mining engineer with over 30 years experience. He holds a Bachelor of Engineering (Mining) degree from the University of New South Wales and a Masters of Business Administration from the University of New England. Mr Taylor has held senior operational management roles with Western Mining Corporation and Glencore International's Australian operations. For the six years prior to joining TriAusMin he managed Glencore's base metal business development based out of Australia which involved assessing mining projects throughout the world. Mr. Taylor was the managing director/CEO of TriAusMin for 3 years prior to the merger with Heron.

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