# Vedanta Resources Plc

## Barclays Credit Conference

## December 2017

Awarded “Best High-Yield Bond" by FinanceAsia & The Asset for January 2017 issuance

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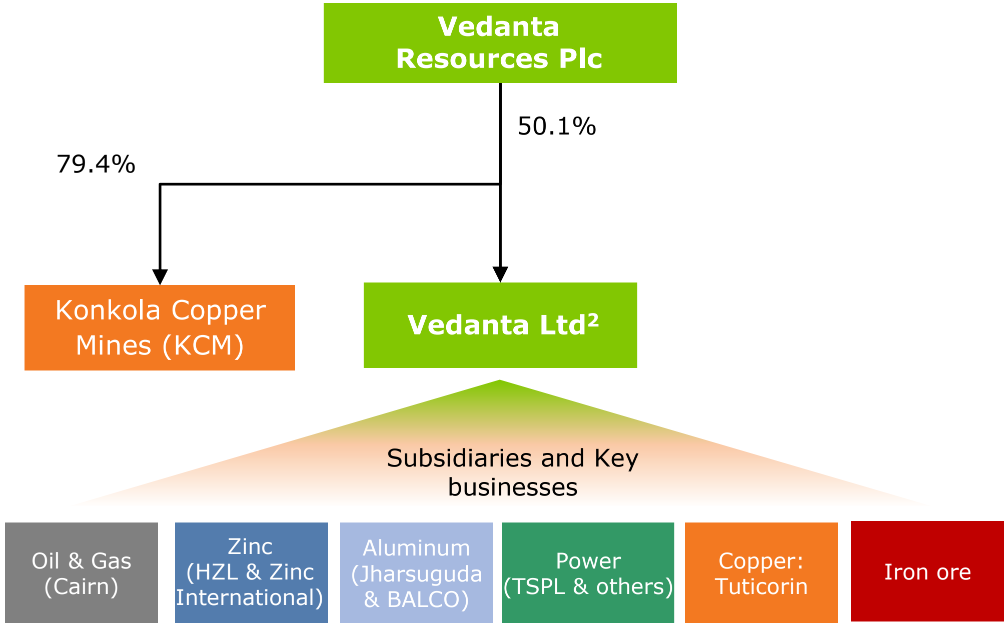
# Vedanta Group - A world-class natural resources powerhouse

## Overview

- Portfolio of large, diversified, structurally low-cost assets geared towards base metals and oil
- Access to diversified sources of funding, raised over $10bn of US$ bonds since listing
- Latest highlights:
  - H1 FY2018 EBITDA of $1.7bn (+37% Y-o-Y) at margin[1] of 34%
  - Significant ramp-up across the business to deliver industry leading growth
- Awards and recognitions:
  - Best High-Yield Bond in Asia by FinanceAsia
  - Best High-Yield Bond / Best Liability Management in South Asia by The Asset

## Group structure




1. *Excludes custom smelting at Copper and Zinc India operations*
2. *Divisions of Vedanta Ltd include: Sesa Iron Ore, Sterlite Copper (Tuticorin), Power (600 MW Jharsuguda), Aluminium (Odisha aluminium and power assets) and MALCO Power (100 MW)*

# Focused on Sustainability

## Drinking water initiative at Barmer, Cairn

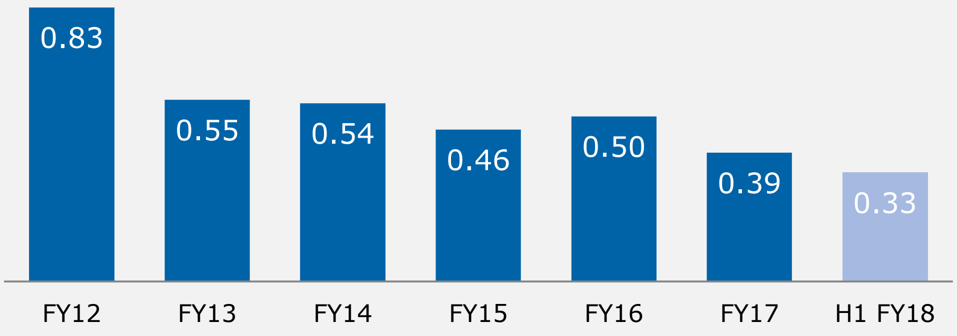
331 RO plants established to benefit 1 million people

## Biodiversity Management Plan at Gamsberg, S. Africa

Focus to minimise environmental footprint

## Lost Time Injury Frequency Rate

*Number of lost time injuries per million man-hours worked*[1]




## Ranking by the Dow Jones Sustainability Index

Dow Jones Sustainability Indexes

*Ranking under Mining & Metal industry*

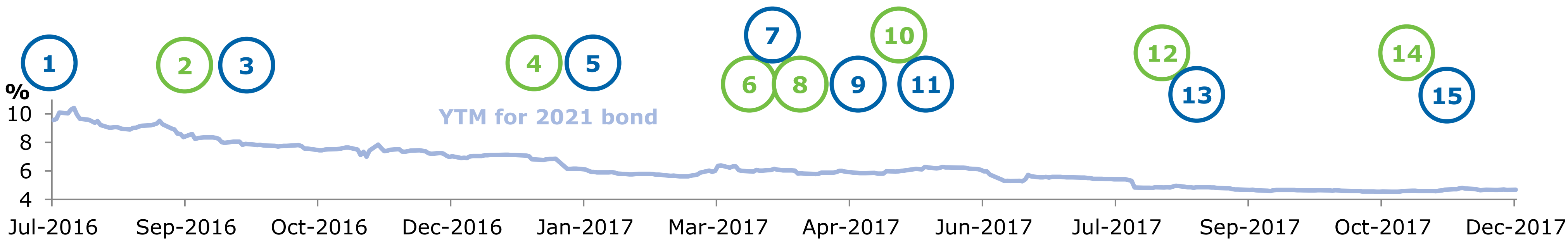
**Hindustan Zinc**
#11 Overall
#3 Environment

**Vedanta Ltd**
#15 Overall

*1. ICMM 2014 methodology adopted from FY2016 onwards*

# Consistently enhancing credit

1. Revised Cairn merger terms
2. Cairn merger approval
3. Moody's upgrade to B1 Stable outlook
4. S&P upgrade to B+ Stable outlook
5. Successful $1bn LM exercise
6. HZL $2.1bn special dividend
7. Cairn merger completion
8. Vedanta Ltd $1bn special dividend
9. Early redemption of stub 2018 bonds
10. Vedanta Ltd dividend policy to complement HZL policy
11. Strong 2017 results, 37% EBITDA growth to $3.2bn and high FCF generation of $1.5bn
12. $840mn new bank debt from globally diverse group
13. LM exercise to extend maturities / reduce interest cost
14. H1 2018 results, $3.1bn gross debt reduction over the last six months[1]
15. Moody's upgrade to Ba3 Stable outlook




*Source: Bloomberg (5 December 2017)*
*1. Including repayment of US$1.1 billion of temporary borrowing at Zinc India*

# Vedanta Investment Case

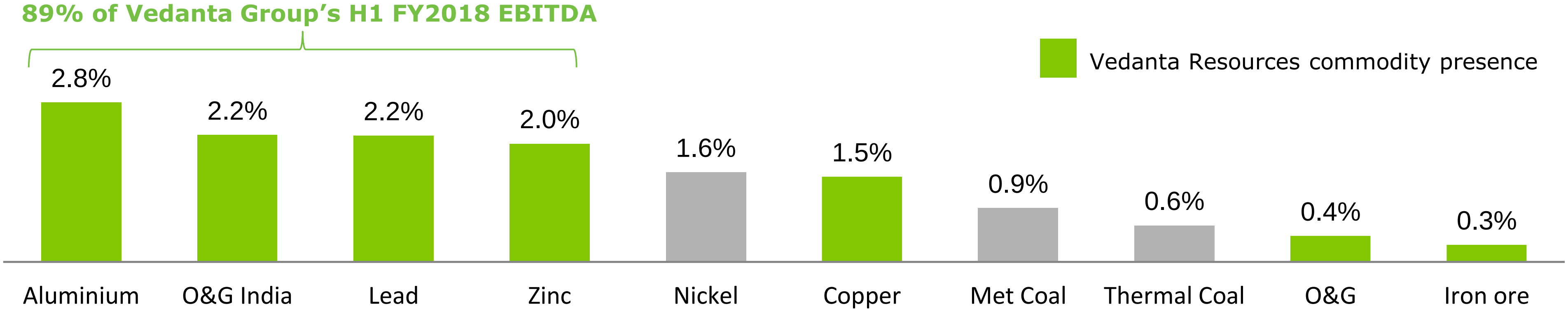
1. Large, low cost and diversified asset base
2. Attractive commodity mix
3. Ideally positioned to capitalise on India's growth potential
4. Well-invested assets driving industry leading cash flow growth
5. Strong financial profile
6. Proven track record

# 1 Large, low cost and diversified asset base

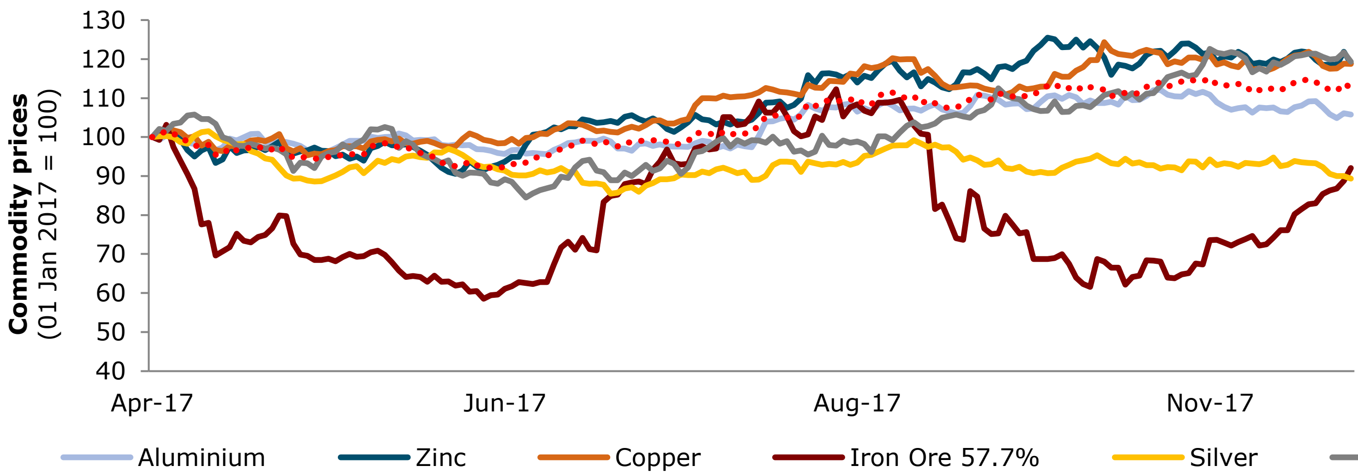
| | |
|---|---|
| **Zinc Lead Silver** | ✓ Second largest integrated zinc-lead producer globally; major silver producer<br>✓ Assets in India, Namibia and South Africa<br>✓ Rampura Agucha – second largest zinc mine globally and Gamsberg – one of the largest undeveloped zinc deposits |
| **Oil & Gas** | ✓ India's largest private-sector crude oil producer<br>✓ Produces about 30% of India's domestic crude<br>✓ One of the lowest cost producers in the world with cost at sub $6/boe |
| **Aluminum** | ✓ Largest aluminum capacity in India at 2.3mtpa<br>✓ Strategically located large-scale assets<br>✓ Integrated capacity with captive power and Alumina refinery |
| **Copper** | ✓ Integrated copper producer in Zambia and custom smelter in India<br>✓ Konkola in Zambia is one of the largest high-grade copper mines with c. 2.5% grade, 25+ years mine life<br>✓ One of the world's most efficient custom smelters and India's largest copper producer |
| **Iron Ore** | ✓ Largest Indian private-sector iron ore producer<br>✓ Can ramp up to pre-ban levels of over 20mtpa without any significant investments |
| **Power** | ✓ 9,000 MW fully operational, of which 40% is sold commercially<br>✓ Poised to benefit from structural power shortage in India |

# Attractive Commodity Mix

## Global demand CAGR 2017-30E




## Vedanta commodity basket




| Commodity | Change |
|---|---|
| Zinc | 19% |
| Copper | 19% |
| Brent Oil | 19% |
| **VED commodity basket[1]** | **12%** |
| Aluminium | 6% |
| Iron ore 57.7% | (8%) |
| Silver | (11%) |

**Diversified commodity mix and presence in commodities of leading global demand growth**

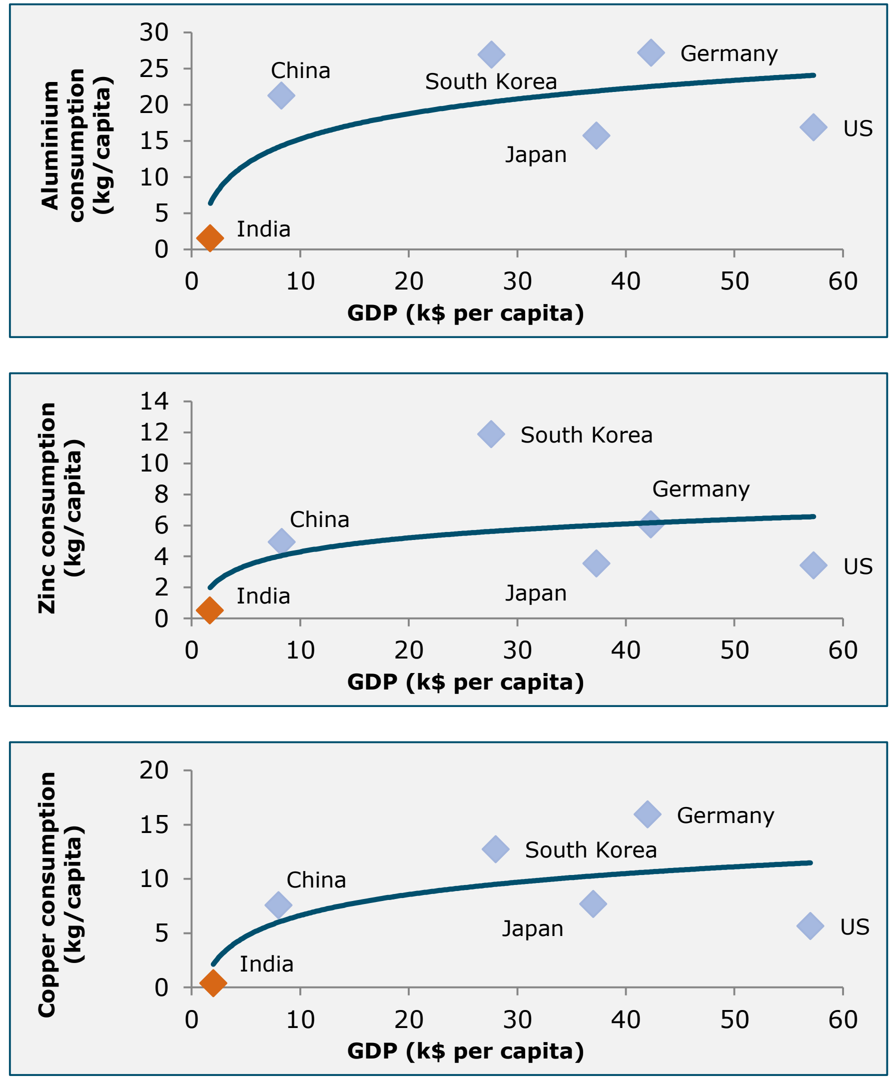
*Sources: Wood Mackenzie, US EIA, Bloomberg, Company filings*

*1. Vedanta commodity basket is a weighted average of commodity prices, weights are based on actual H1FY18 revenue mix, adjusted to exclude Copper India and Copper Zambia custom volumes based on realized Tc/Rc's. Excludes commercial power*

# 3 Ideally Positioned to Capitalize on India's Growth

| | 2017 | 2030 | |
|---|---|---|---|
| GDP (real terms) | 2.6 trillion | 6.0 trillion | 130% |
| Per capita income (real terms) | $1,959 | $3,979 | 103% |
| Population | 1.3bn | 1.5bn | 13% |
| Urbanisation | 34% | 40% | 6% pts |

## Current per capita metals consumption




*Source: Wood Mackenzie, Global Insight, EIA, BMI Research*

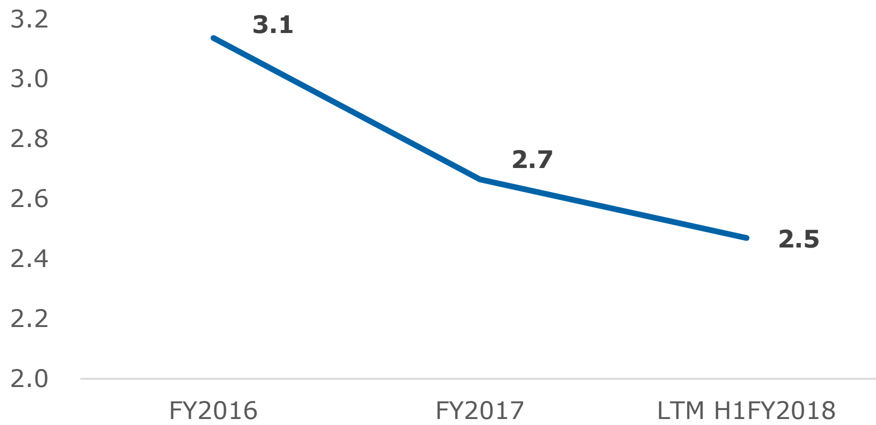
# 4 Well-invested assets driving industry leading cash flow growth

| | | Near-term expansions | Remaining capex, $mn[1] | Total expanded capacity | Change vs FY17 production, % |
|---|---|---|---|---|---|
|  | **Zinc India** | • Expansion to 1.2mt mined Zn-Pb metal<br>• Silver to 24mn oz | 603 | 1.2mt Zn-Pb<br>24mn oz Ag | 30% Zn-Pb<br>65% Ag |
|  | **Zinc International** | • Gamsberg project (250kt) and Skorpion pit extension | 270 | 400kt | 160% |
|  | **Oil & Gas** | • Various projects at Rajasthan - EOR, tight oil, Gas | 764[2] | 275-300 kboepd | 50% |
|  | **Aluminium** | • Ramp-up of Jharsuguda II smelter | 102 | 2.3mt aluminium | 90% |
|  | **Copper India** | • Smelter expansion from 400 to 800kt | 576 | 800kt | 100% |
|  | **Copper Zambia** | • Optimise volumes through process improvements<br>• Cobalt value chain enhancement | - | 200kt integrated and 100kt custom | 110% integrated |
|  | **Iron ore** | • Ramp-up to earlier permitted (pre-ban) capacity | - | 20.5mt | 90% |

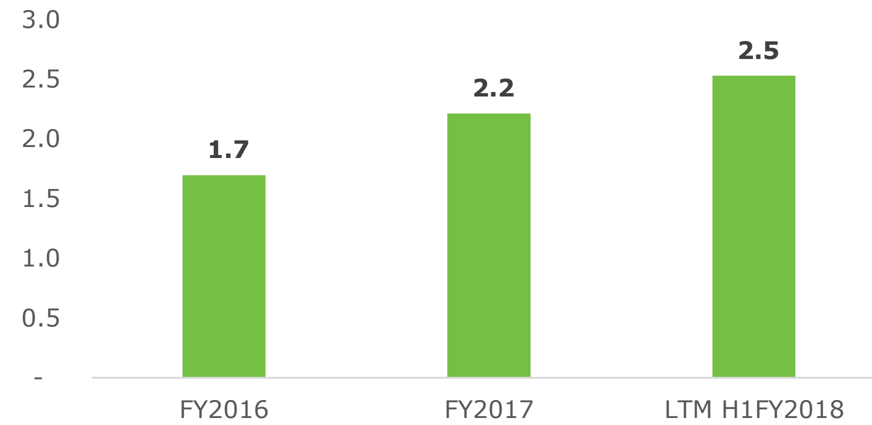
1. *Unspent growth capex as of 30 Sep 2017*
2. *Capex up to FY2020*

# 5a Strong Financial Profile

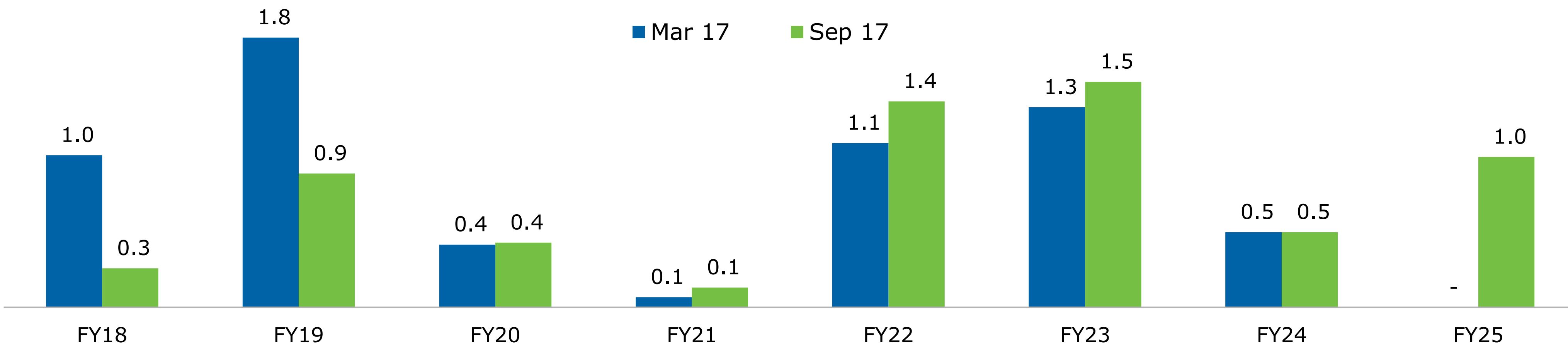
## Net Debt/EBITDA[1]




## EBITDA/Gross Interest[1]




## Maturity Profile of Vedanta Plc Debt ($6.1bn) – No single large maturity over next 12-15 months

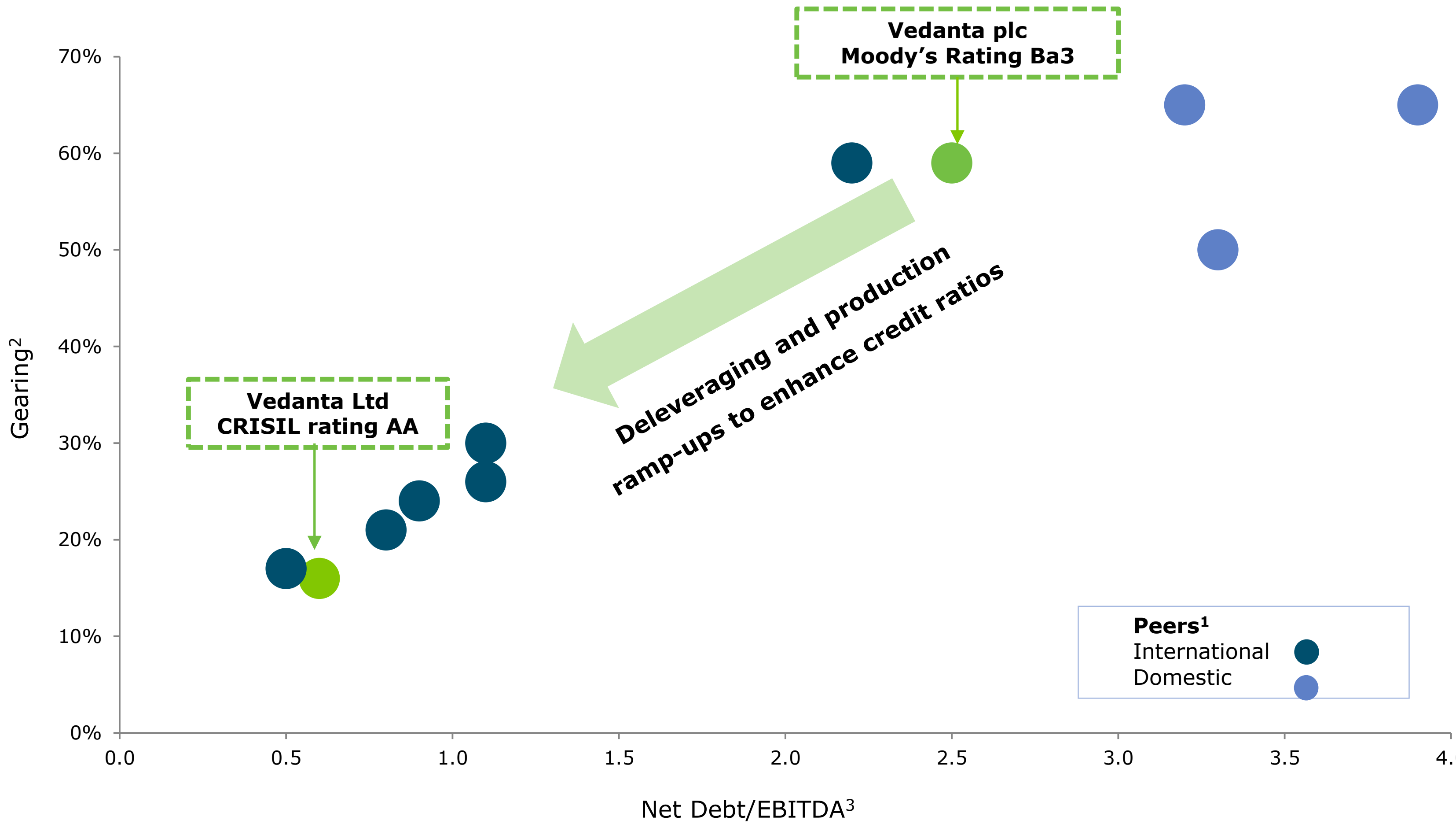



*1. Ratios for the Group on a consolidated basis*

**Strengthening Credit Metrics & Proactive Liability Management**

# Strong Financial Profile

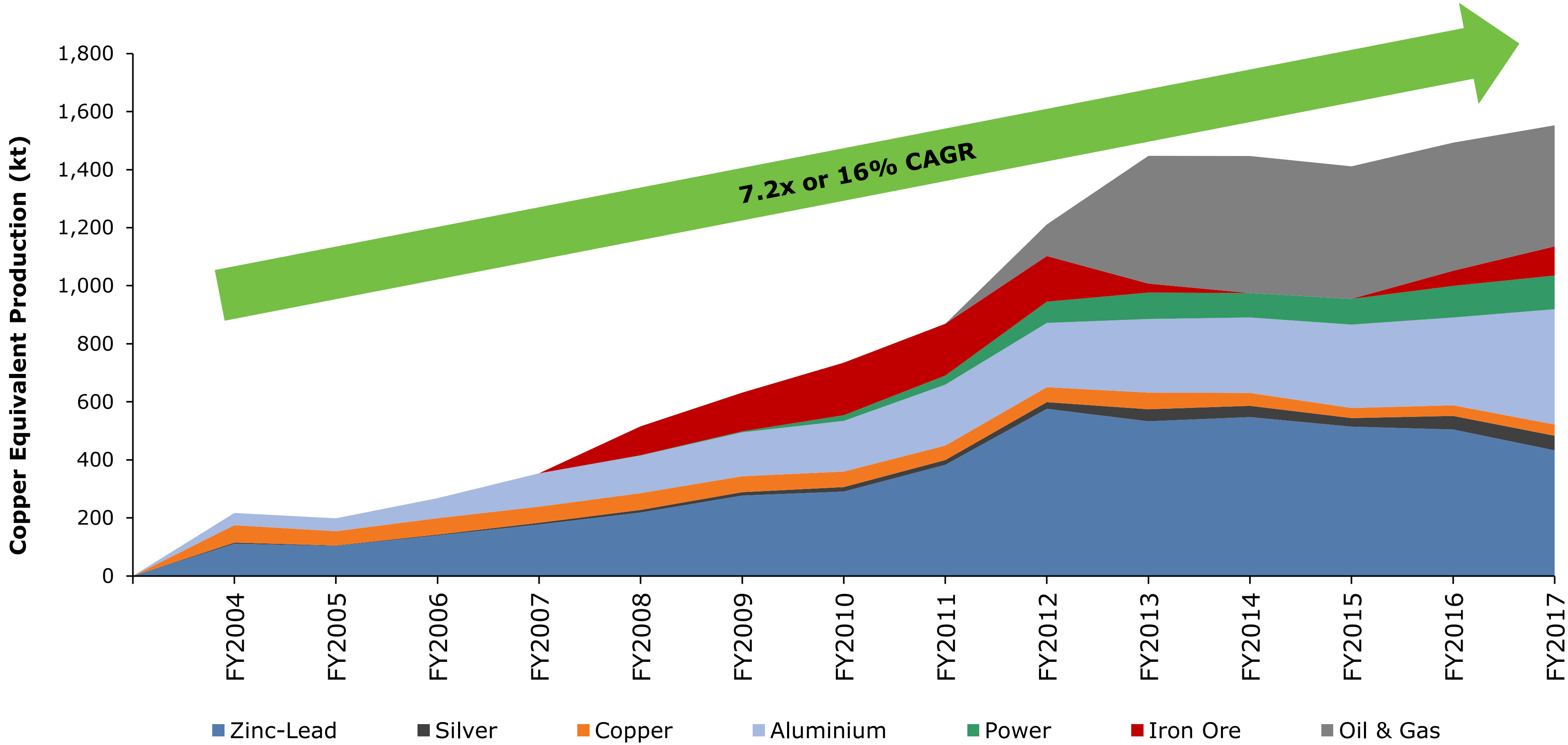
5b




1. Peers include BHP Billiton, Rio Tinto, Anglo American, Glencore, Teck Resources, Freeport, Hindalco, Tata Steel and JSW Steel
2. Gearing is calculated as Net debt divided by the sum of Net debt and Equity (based on reported numbers)
3. Net Debt as per last reported, EBITDA as per CY 2017 consensus estimates

## 16% CAGR production growth since listing

**Total Production (copper equivalent kt)**




*All commodity and power capacities rebased to copper equivalent capacity (defined as production x commodity price / copper price) using average commodity prices for FY2017. Power rebased using FY2017 realisations, copper custom smelting production rebased at TC/RC for FY2017, iron ore volumes refers to sales with prices rebased at realised prices for FY2017*

*1. Iron ore assumed at FY2017 sales of 10.2 million tonnes*

# Capital Allocation Framework

**World class assets and operational excellence to deliver strong and sustainable cash flows**

**Production growth and asset optimization**

### Strong Shareholder Returns

- Dividend policies at:
  - ✓ Vedanta Ltd: Pass through of HZL's regular dividend + min. 30% pay out of Attributable PAT (ex HZL PAT)
  - ✓ HZL: Minimum 30% pay out

### Maintain Strong Balance Sheet

- Continued reduction of gross debt
- Terming out maturities and reducing interest cost
- Achieve improved credit ratings over time

### Grow Existing Businesses

- Focus on full capacity utilisation and production growth in existing businesses
- Any investment opportunities to clear hurdle rate of return

# Strategic Priorities

- **Production Growth and Asset optimisation**
- **Optimise Capital Allocation and Maintain Strong Balance Sheet**
- **Protect and preserve our License to Operate**
- **Identify next generation of Resources**

## Appendix


# Strategic Framework

| Near Term Priority (FY18-20) | Medium Term Priority (FY20+) |
|---|---|
| **Ramp up to Design Capacity** | **Selectively pursue growth options** |
| • Well-invested assets ramping up by FY2020 to deliver industry leading growth | • High quality portfolio with attractive brownfield growth options |
| • Continued focus on asset optimisation and cost efficiency | • Focused exploration strategy |
| | • Participation in resource auctions in India with focus on returns |

**Deliver superior shareholders returns with continued focus on maintaining a strong balance sheet**

***Underpinned by***
***- Disciplined capital allocation***
***- Opex and capex efficiency***
***- Sustainability***

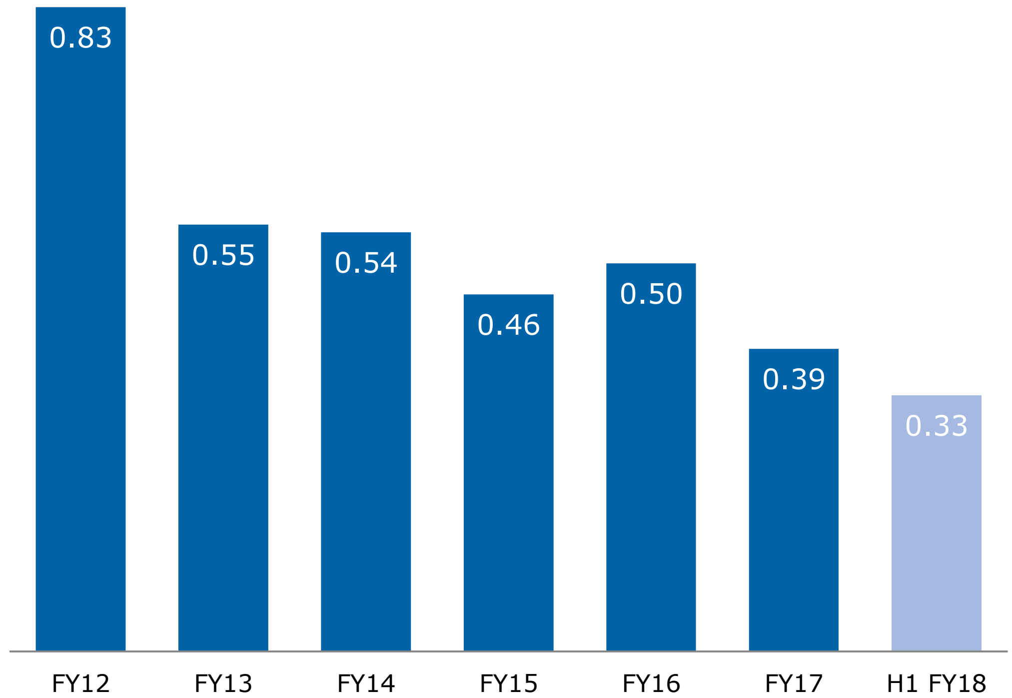
# Strategic Framework: Selectively Pursue Growth Options

| | | Future growth options |
|---|---|---|
|  | **Zinc India** | • Expansion to Zn-Pb to 1.5mtpa<br>• Silver production of 32mn oz.+ |
|  | **Zinc Intl.** | • Gamsberg Phase 2 & 3 (350kt incremental)<br>• Swartberg (75kt) |
|  | **Oil & Gas** | • 300-500 kboepd<br>• Accompanied by continued exploration |
|  | **Aluminium** | • Lanjigarh alumina refinery expansion (6mt) |
|  | **Copper Zambia** | • Expansion of integrated production to 300kt |
|  | **Iron ore** | • Jharkhand iron ore deposit (10mt) |

# Safety : Focussed on Building a Zero Harm Culture

- Regrettably, 4 fatalities during H1 FY18; detailed investigations completed and interventions are in progress under direction of Executive Committee
- Continued focus on safety and fatality prevention
- Reinvigorated Leadership Action Program initiated towards vision of Zero Harm, Zero Waste and Zero Discharge
- Raageswari Gas Terminal at Oil & Gas Business crossed the safety milestone of 12mn LTI-free man-hours – aim to replicate success across segments
- Vedanta ranked 15th by the Dow Jones Sustainability Index globally; Hindustan Zinc ranked 3rd in the Environment category and 11th overall in the Mining and Metal industry

**LTIFR - Lost Time Injury Frequency Rate**
*(Number of lost time injuries per million man-hours worked)[1]*

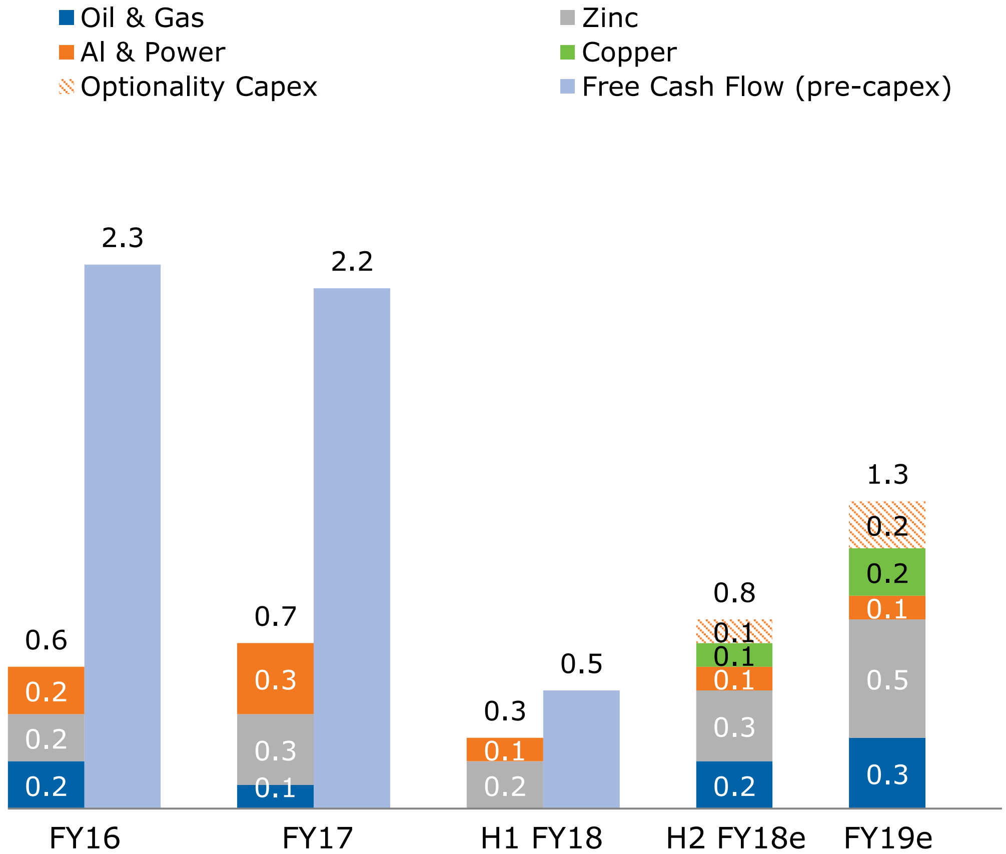



*1. ICMM 2014 methodology adopted from FY2016 onwards*

# Optimising Capex to Drive Cash Flow Generation

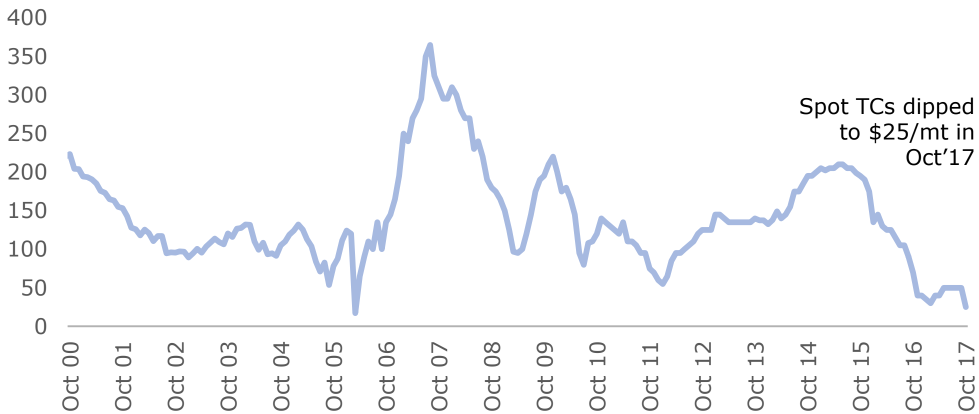
- Prioritised capital to high-return, low-risk projects to maximise cash flows
- H1 Capex spent $0.3bn, H2 FY2018 expected at $0.8bn
- Revised capex guidance to $1.1bn for FY2018 ($1.0bn+$0.1bn optional capex) compared to original guidance of $1.2bn (1bn+$0.2bn optional capex)
  - $0.3bn for Zinc India and $0.2bn for Gamsberg
  - $0.1bn for Aluminium and Power
  - $0.3bn for O&G – capex cycle to restart from H2
  - $0.1bn for Copper – 400ktpa smelter expansion
  - Optionality capex includes Lanjigarh refinery expansion

## Growth Capex Profile and Free Cash Flow pre capex $bn



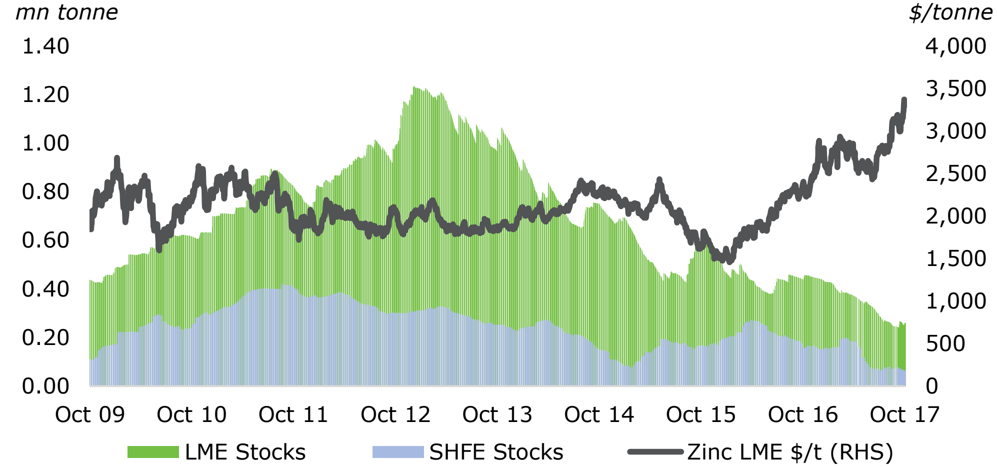
# Zinc Market Overview

## Supply Shortage Leading to Multi-year low spot TCs

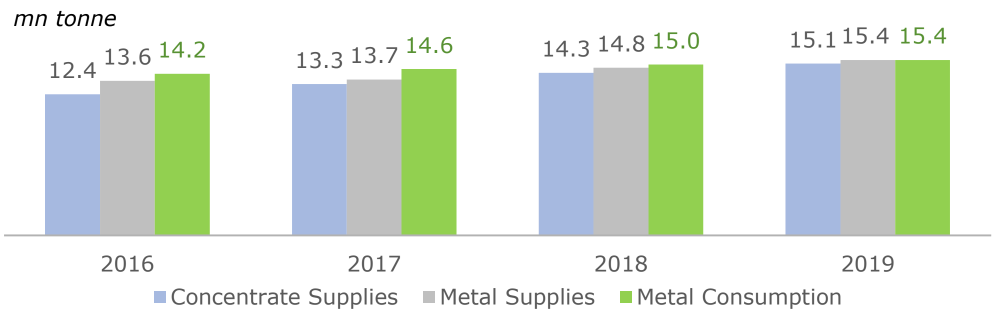



*Source: Wood Mackenzie*

## Declining stocks at LME & SHFE warehouses




*Source: Fast markets*




**Metal Inventory**
*(mn tonne)*

| | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|
| Metal Inventory (mn tonne) | **2.2** | **1.3** | **1.1** | **1.1 (< 1 month)** |

*Source: Wood Mackenzie*

- **Mine to End Use**: Mine supply to metal consumption ratio continues to be under pressure
- **Market balance**: Imbalanced market; Inventories at risk, with levels at below one month
- **Demand**: Steady global demand growth of 2-3%
- **Mine Production**: Market sensitive to timing of new supplies, stable operations & reversal of production cuts
- **Smelter Production**: Falling TCs not incentivising early smelter start ups and halting new projects

**Significant increase in mine & smelter supplies required in next 5 years for stable inventory levels**

# Zinc India Update

### H1 FY2018 Results

- MIC at 452kt; refined zinc-lead production at 459kt
- Refined silver production at 8.2mn ounces
- CoP at $979/t; impacted by higher input commodity prices

### Projects – key highlights

- Capacity expansion to 1.2mtpa MIC by FY2020 on track
- RAM U/G mine main shaft service winder commissioned, production winder installation completed; production from shaft to start in Q3 FY2019
- SK mine main shaft equipping commenced; production from shaft to start in Q3 FY2019
  - New mill of 1.5mtpa will take total milling capacity to 5.8mtpa, targeted commissioning in Q2 FY2019
- Zawar mill de-bottlenecking completed to upgrade capacity to 2.7mtpa; order for second mill of 2mtpa capacity awarded, targeted commissioning by Q3 FY2019
- Fumer project progressing as per schedule for completion by mid FY2019

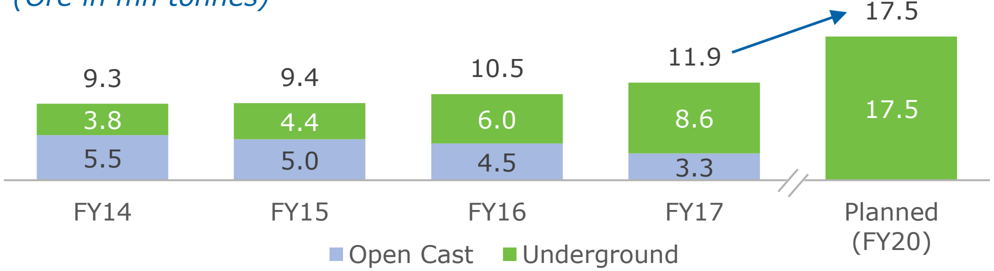
### FY2018 Outlook

- FY2018 integrated Zn-Pb production c.950kt; silver 500t+
- FY2018 CoP to be between $900-$950/t due to significant increase in commodity prices as compared to last year

*Long-haul drilling machine at work*

**Underground Mines Ore Capacity Expansion to facilitate MIC expansion to 1.2mtpa by FY2020**

**Transition from OC to UG**
*(Ore in mn tonnes)*



# Zinc India Expansion

**1.5mtpa capacity under planning**

- Shaft and decline integration
- Multi-level mining
- Digital transformation to boost productivity
- New prospects & tenements

**1.2mtpa capacity by FY2020**

- 25+ years of mining R&R with potential of 1.2mtpa
- Transition to underground mining progressing smoothly
- Shaft commissioning in Q3 FY2019 to give step jump
- Mill & smelter capacity to keep pace

**Outlook FY2018**

- Mined metal: Higher than 907kt of FY2017
- Refined zinc-lead: 950kt; silver: 500+ tonne
- Project Capex of $300-325mn
- Dollar COP (excluding royalty) likely to be $900-$950/t

# Zinc International Update

## H1 FY2018 Results

- Total production at 74kt
  - Skorpion at 36kt, lower y-o-y mainly due to planned acid plant shutdown in Q1
  - BMM at 38kt with the highest quarterly production in Q2 during the last 4 years, driven by higher grades and improved recoveries
- CoP at $1,564/t, higher y-o-y, due to lower volume & ZAR appreciation partially offset by improved copper credit and lower Tc/Rc's

## Projects

- Skorpion pit 112 extension
  - Waste mining fully ramped up in Q2; Ore Production from Q4 FY2018 as per plan
  - Project will extend mine life by 3 years and increase Ore reserves by c.3mt @ 9.7% grade
- Continued focus on exploration program across all the locations (>$10mn)

## Outlook

- FY2018 Production of c.160kt; CoP at c. $1,500/t

## Significant progress at 250kt Gamsberg project

- On target for first production by mid CY2018, with Production ramp-up to its full capacity in the next 9-12 months
- On track for a capex target of $400mn
- Expected mine life of 13 years with upside to extend
- Excavation of >50% of total waste pre-stripping till date
- Construction works for infrastructure progressing well with all contractors fully mobilised to site
- ~1,800 construction manpower on site
- Water and Power lines installation on schedule
- Manufacturing and supply of all Plant equipment is on schedule with mills expected to be at site in November 2017

*Ball mill foundation*

*Civil footprint for the concentrator works*

# Gamsberg – Anchor for Zinc International Growth

## Total Potential for Gamsberg 250 KTPA to 450 KTPA to 600 KTPA

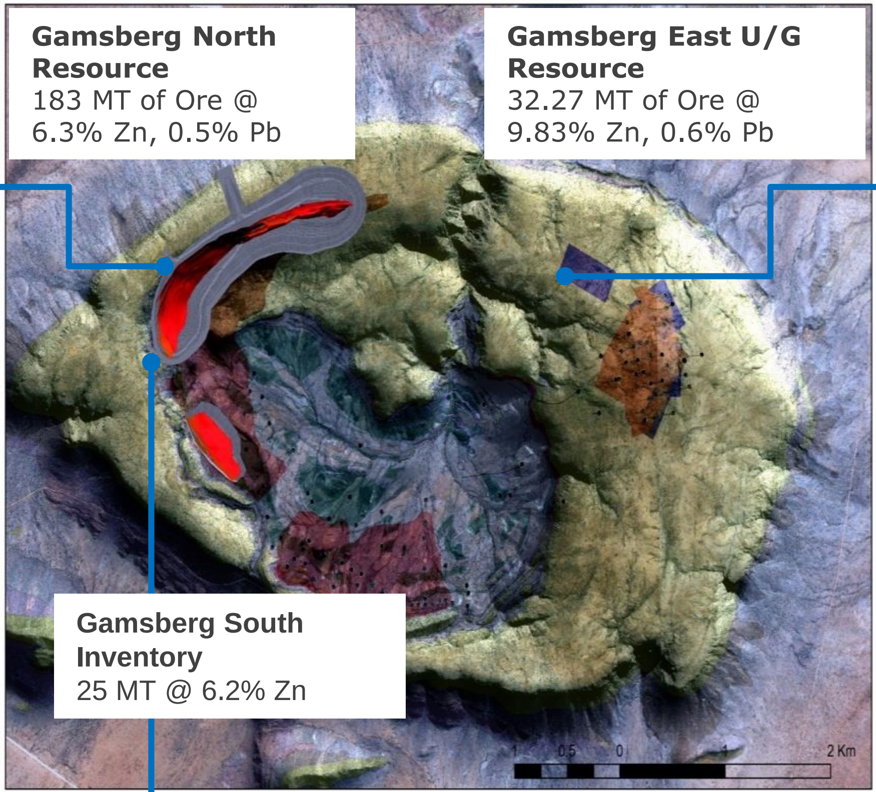
### Phase 1 Project In Execution

***Gamsberg Project (Phase 1)***

- Current project (open-pit mine, concentrator and related infrastructure) 4 MTPA ROM : **250 KTPA MIC**
  - **US$ 400 mn** investment,
  - 4 MTPA ore, 250 KTPA MIC
  - **First production by Mid CY 2018**, 6-9 months of ramp up to full capacity.
  - COP at US$ 1,000-1,150/ton, First quartile of cost curve.
  - ~ 1,500 jobs during construction, 850-900 jobs once operational

***Gamsberg Mega Pit (Phase 2)***

- Expanded open pit by 4 MTPA ROM
- 2nd concentrator stream of 4 MTPA
- Additional metal production - **200 KTPA MIC**




**Gamsberg North Resource**
183 MT of Ore @
6.3% Zn, 0.5% Pb

**Gamsberg East U/G Resource**
32.27 MT of Ore @
9.83% Zn, 0.6% Pb

**Gamsberg South Inventory**
25 MT @ 6.2% Zn

***Gamsberg U/G (Phase 3)***

- New underground option for Gamsberg East 2.5 MTPA
- Potential Expansion of Gamsberg North open pit to U/G
- +150 KTPA MIC

***Gamsberg Extension areas (Beyond Phase 3)***

- Good Potential
- Extensive drilling required to firm up potential

# ZI Outlook

| Indicative Consolidated Outlook | | FY18 | FY19 | FY20 |
|---|---|---|---|---|
| | Prod (kt) | 150-160 | 240-260 | 410-430 |
| | COP ($/t) | <1,500 | <1,200 | <1,100 |

***Gamsberg***

***250kt Production@ ~$1000/t***

**Project on track and progressing as per plan**

- First production by mid CY2018 and on budget for capex target of $400mn
- FY19 production expected to be 100kt+, with ramp-up to 250kt by FY2020
- Targeted COP of $1,000-1,150/t, placing ZI in 1st quartile of global cost curve

***Skorpion & Black Mountain***

***>200kt Production***

**FY2018: Production of c.160kt @ < CoP of $1,500/t**

- Skorpion c.90kt & Black Mountain c.70kt
- Focus on further reducing COP through operational and cost initiatives

**FY2019 & FY2020: Plan to increase production to c.200ktpa by ramping up Pit 112**

- Skorpion c.130kt & Black Mountain c.70kt

***Next phase of projects***

**Currently progressing next phase of projects within pipeline**

- Gamsberg Phase 2: 4 mtpa RoM (200 kt)
- Swartberg Phase 2: 1.7 mtpa RoM (65-70 kt)

# Cairn: Oil & Gas Update

### H1 FY2018 Results

- H1 FY2018 gross average production at 184,062 boepd
  - Rajasthan production at 156,278 boepd
- Commenced 15 wells infill drilling campaign at Mangala with first well brought online in Sept 2017; 4 wells online currently
- Aishwariya Barmer Hill Phase I was approved and the production from appraisal wells commenced in Q2 FY2018
- Operating cost
  - RJ waterflood operating cost at $ 4.3/boe, in line with H1 FY2017; sustainable impact of the cost optimization initiatives over the last few quarters
  - RJ blended cost including EOR at $6.2/boe, in line with H1 FY2017; Polymer cost at sub $ 10/bbl compared to projected cost of over $ 12/bbl

### FY 2018 Outlook

- Rajasthan production expected at 165 kboepd; upside from growth projects to contribute from H2
- Net capex estimated at $250mn
  - 90% for development including EOR, Tight oil and Tight gas projects
  - 10% for Exploration and Appraisal

*Rajasthan: Mangala Processing Terminal*

*Rajasthan: Raageshwari Gas Terminal*

# Cairn Oil & Gas: $1bn Capex Initiated to Deliver 300 kboepd at $5 per boe

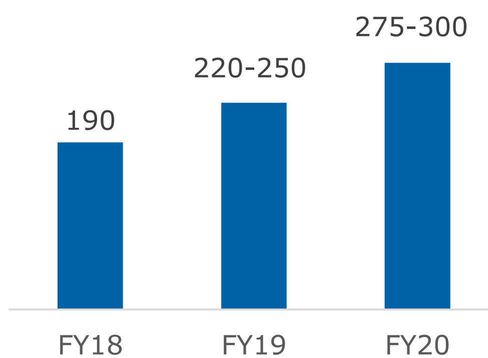
### Enhanced Execution Strategy

- Fundamental shift to 'Integrated Project Development' with in-built risk and reward mechanism to drive incremental value from project schedule and recoveries
- Engaging global partners to access cutting edge technologies to deliver economic value

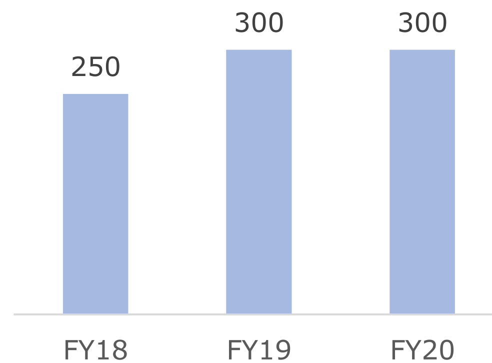
### Project Portfolio

- **Enhanced Oil Recovery**: Replicating the success of Mangala Polymer EOR in Bhagyam and Aishwariya.
  ASP in Mangala to further add over 100 mmbbls at $5/bbl in due course
- **Tight Oil & Gas**: Deploying latest fracking technologies to recover Oil & Gas from tighter reservoir formations through execution of Raageshwari Deep Gas (RDG) and Aishwariya Barmer Hill (ABH)
- **Other Projects**: Infill wells around existing producers in Mangala and Cambay to accelerate near term production;
  Increasing liquid handling capacity at Mangala Processing Terminal by over 30% to handle incremental volumes

**Gross production** *(kboepd)*




**Net capex** *($mn)*




| Project | Gross EUR[1] (mmboe) | Gross Capex ($m) | Peak Production (kboepd) |
|---|---|---|---|
| **Enhanced Oil Recovery** | **40** | **155** | **19** |
| **Tight Oil & Gas Projects** | **137** | **640** | **45** |
| **Other Projects:** | **41** | **290** | **53** |
| - Mangala Infill (60 wells) | 22 | 140 | 32 |
| - Liquid Handling Upgrade | 12 | 120 | 15 |
| - CB/OS-2 Infill (3 wells) | 7 | 30 | 6 |
| **Total** | **218** | **1,085** | **117** |

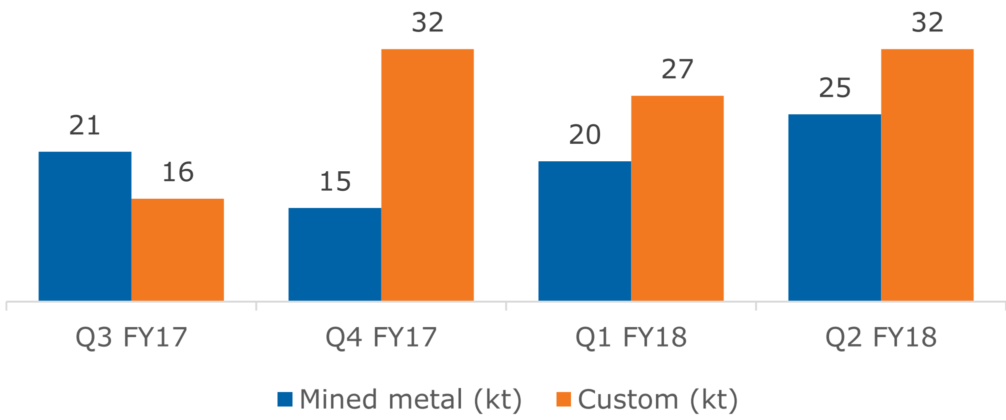
**Project IRR of over 20% even at $40/bbl per barrel Brent → Positive Free Cash Flow post capex every year**

1. *Estimated Ultimate Recovery*

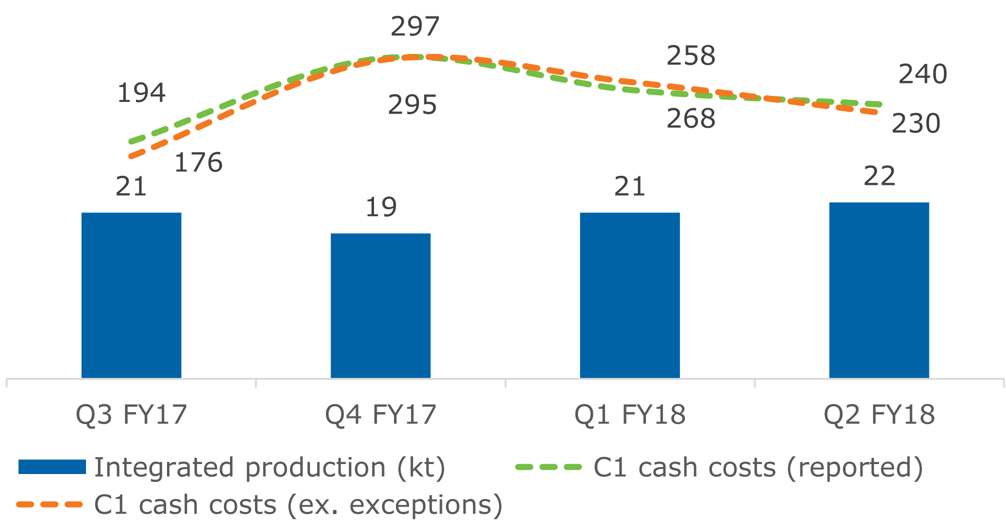
## H1 FY2018 Results

- Higher integrated mined metal in H1 FY2018 vs H2 FY2017 due to:
  - Improved fleet availability at Konkola UG & Nchanga open pit
  - Positive impact of OEM's supervision
  - Improved dewatering efficiency and development rates
  - Improved plant reliability and availability at TLP
- Sustained smelter utilization & higher throughput supported by higher sourcing of third party concentrate
- C1 cost at USc 249/lb in H1 FY2018 impacted by lower volumes, FX and costs associated with process improvement programmes
- Partnering with experienced O&M companies underway and is expected to improve volumes in H2 FY2018
- $21mn EBITDA generated in Q2 FY2018 as a result of focused interventions and higher copper LME

## Production (kt)




## Integrated production (kt) and C1 cash costs (USc/lb)



# Copper – Zambia Update (contd.)

## Regulatory Update

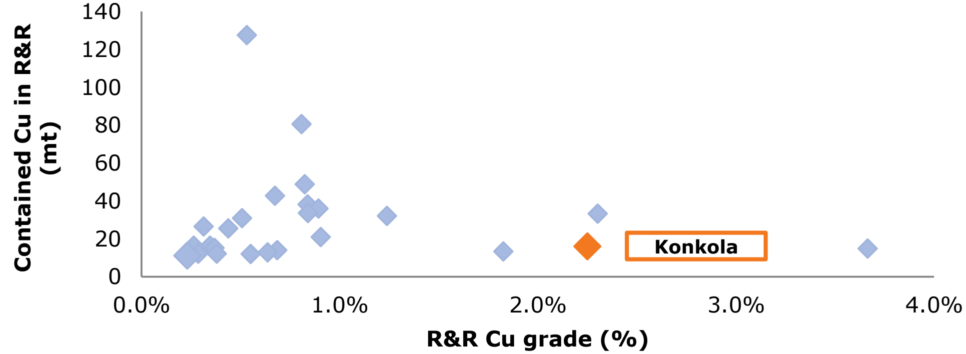
- Power supply situation has stabilised
- Backlog VAT receivable: continued engagement with Zambia Revenue Authority
- Court of Appeal in UK has confirmed that UK has jurisdiction on claim by Zambian: Pursuing right to appeal to Supreme court

## Outlook

- FY2018 expected volume
  - Integrated production: 100-110kt
  - Custom production: 100-110kt
- H2 FY2018 integrated C1 cost: 200-220 USc/lb
- Improvement Projects
  - Cobalt value chain: appointment of technological partner in Q3 FY18
  - Heap Leach: Pilot test pad commissioning in Q3 FY18
  - Elevated Temperature Leach Phase II: Partner appointment in Q3 FY18

**KCM: One of world's highest grade copper mines**

Top 25 producing copper mines by contained copper (mt)




*Source: Wood Mackenzie (Q2 2017) – base case*

*Konkola deep mine shaft*

*Shovel Equipment at NOP*

*Nchanga concentrator*

*Water discharge from Konkola UG*

# Aluminium Update

## H1 FY2018 Results

- Record Aluminium production of 753kt and Alumina 572kt
  - Aluminum CoP at $1,798/t, higher due to high power cost on account of coal shortages and ash dyke incident. High inflation on key inputs like caustic and carbon offset by lower imported Alumina cost
  - Alumina CoP at $324/t vs. $396/t for imported alumina

## Operations

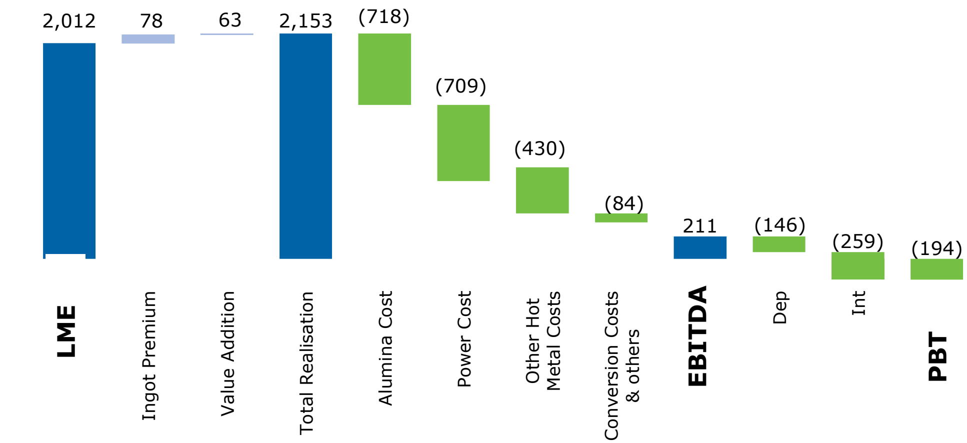
- 500kt Jharsuguda-I smelter: outage in April 2017 impacted 228 of the 608 pots; 121 pots re-started, full ramp-up by Q3 FY2018
- Ramp-up at 1.25mt Jharsuguda-II smelter:
  - 1st line: 301 pots operational, full ramp up by Q3 FY2018
  - 2nd line was fully capitalized in Q4 FY2017
  - 3rd line: 156 pots operational, full ramp up by Q4 FY2018
  - 4th line: Under evaluation
- Inspection by Pollution board of 2 closed power units in early November

## FY2018 Outlook

- Aluminium production 1.5 to 1.6mt (excl. trial run); Alumina production 1.3 to 1.4mt
- CoP estimated at $1850-1900/t for Q3 FY2018 given higher input costs of coal and Alumina. Q4 CoP expected to be substantially lower with improvement in domestic coal situation and production ramp-up
- Working with Odisha State Government on bauxite allocation

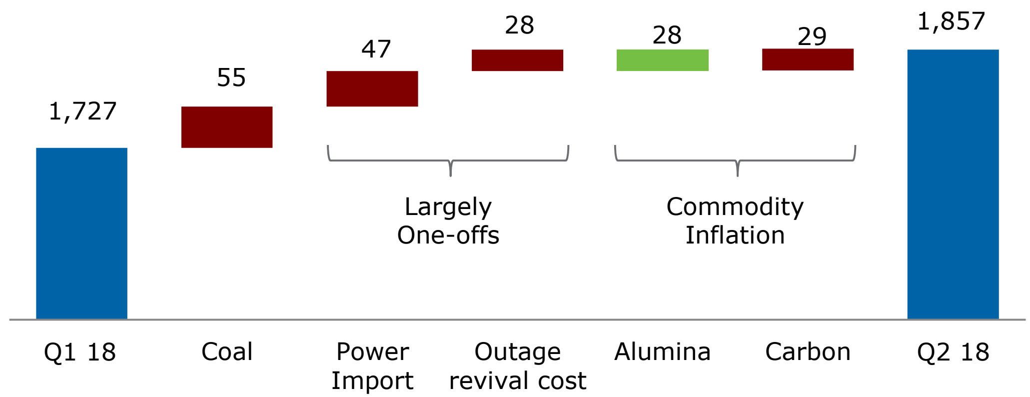
## Aluminium Costs and Margins *($/t, for Q2 FY2018)*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Q4 17* | *1,851* | *45* | *86* | *1,982* | *(645)* | *(548)* | *(298)* | *(44)* | ***$447/t*** | *(150)* | *(299)* | *(2)* |
| *Q1 18* | *1,909* | *98* | *62* | *2,070* | *(745)* | *(607)* | *(373)* | *(72)* | ***$271/t*** | *(172)* | *(339)* | *(240)* |




*Q1 CoP numbers have been regrouped to make them comparable*

## Movements in Aluminium COP *($/t)*



# Power Update

## Talwandi Sabo Power Limited (TSPL)

- 1,980 MW Thermal Power Plant (3 units of 660 MW each)
- Plant availability of 20% in Q1 and 87% in Q2; targeting availability of 75% for FY2018
  - Plant was out of production for c. 2 months, due to fire at coal conveyor in April 2017; restarted in end June 2017
- 'Take or Pay' arrangement based on availability with EBITDA margin of c. Re.1/unit
  - Input coal cost is a pass through

## Other IPPs

- BALCO 600MW: H1 PLF of 47% on account of temporary coal shortage
- Jharsuguda 600MW: Low PLF of 26% due to shut down of the plant, and temporary coal shortage

## Coal Outlook – Aluminium CPPs

- Coal linkage of 8 mtpa secured in Tranche I & II
  - Curtailment of linkage due to coal unavailability
- We intend to deal with the current challenges in domestic coal supply by
  - Working towards better materialisation of linkages
  - Importing coal from international miners
- Secured coal linkage of 2mt for captive power plant at Jharsuguda during Tranche III coal auction
- We expect the challenges in domestic coal to be resolved by Q4 FY2018

# Iron Ore and Copper India Update

## Iron Ore

Volumes:

- Sales of 3mt and production of 4.5mt (Goa and Karnataka)
  - Volumes at Goa impacted by low pricing environment
  - Karnataka to achieve full allocation production in Q3
- FY2018 production allocation: 5.5mtpa at Goa & 2.3mtpa at Karnataka
  - Engaged with respective state governments for additional allocation

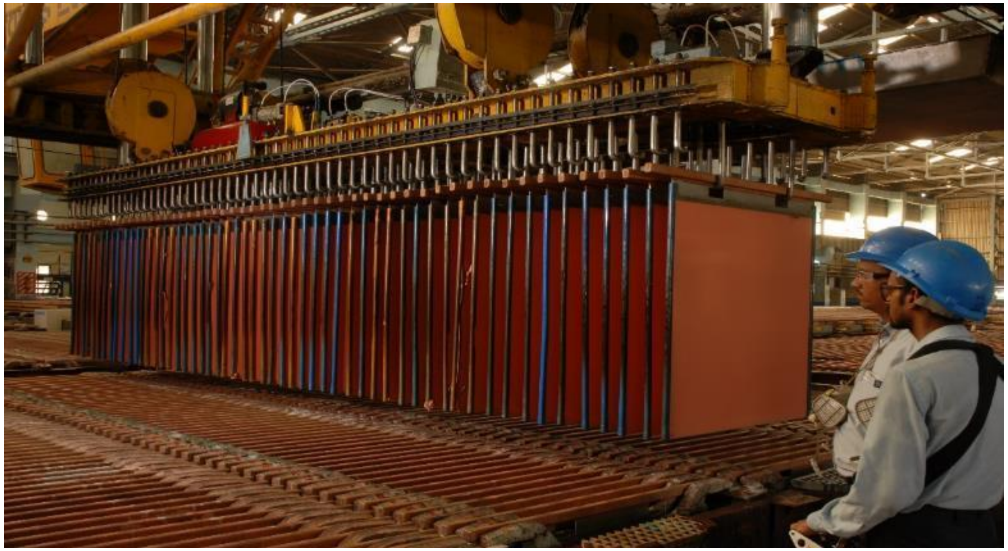
Realizations:

- Beneficiation and blending to increase grades and realisations at Goa
  - Saleable ore at Goa in H2 to be c. 3mt post beneficiation
- Karnataka had steady realizations of $24/t in H1
  - Working towards better realizations in the domestic market

## Copper India

- Record production at 106kt in Q2 on improved operational efficiencies
- Q2 EBITDA at $58m
- Net cost of conversion higher due to coal and fuel prices
- Positioned in the lowest cost quartile
- FY2018 production estimated at 400kt

*Iron Ore Mine in Goa*



*Tuticorin Copper Smelter*

# Copper India: 400kt Expansion

## Business Case

- Robust future for copper in India:
  - Per capita copper consumption of 0.5kg in India vs 1.9kg globally
  - Growth drivers: Urbanisation, transportation and renewables
- Operational capabilities:
  - Proven operational, technical 20 year track record
  - Operations positioned at lowest cost quartile
  - Best in class product quality
  - Capable of treating wide variety of concentrates
  - Leverage our strong relationship for further concentrate sourcing
  - Environment friendly operations

## Approach

- Replicate best in class ISA SMELT technology
- Single EPC contractor
- Safe and sustainable operations

## Project Details

- Incremental project cost of c.$576mn, excluding cost of c.$141mn already invested
  - Project on hold since 2010 pending statutory clearances
  - Required statutory approvals in place
- Execution timeline of 24 months

*Tuticorin Copper Smelter*

**World's largest single location copper smelting complex post expansion**

# FY2018 Guidance

| Segment | FY18e | Comments |
|---|---|---|
| **Zinc India** | Zinc-Lead Integrated: 950kt; Silver volume: +500 tonnes<br>CoP ($/t): $900-950/t | Earlier guidance on CoP for FY2018 was marginally higher than FY17 CoP. Revised guidance due to input commodity inflation |
| **Zinc International** | Zinc-Lead volume: c.160kt<br>CoP: c.$1,500/t | Gamsberg expected CoP: $1,000-1,150/t |
| **Oil & Gas** | RJ Gross Volume: 165kboepd<br>Ravva Gross volume: 16kboepd<br>Cambay Gross volume: 10kboepd | |
| **Aluminium** | Alumina: 1.3-1.4mt<br>Aluminium: 1.5-1.6mt (excl. trial-run)<br>Aluminium CoP: $1,850-1,900/t for Q3 FY2018<br>We expect Q4 CoP will be substantially lower with improvement in domestic coal situation and production ramp-up | Earlier guidance on aluminium CoP for H2 FY2018 was $1,575-1,600/t. Revised guidance due to higher input costs of coal and Alumina |
| **Power** | TSPL plant availability: c.75% | Earlier guidance for FY2018 plant availability was 70%+ |
| **Iron Ore** | 5.5mtpa at Goa and 2.3mtpa at Karnataka | Engaged with respective State Governments for additional allocation |
| **Copper - India** | Production: 400kt | |
| **Copper Zambia** | Integrated production: 100-110kt<br>Custom production: 100-110 kt<br>Integrated H2FY18 C1 cost: 200-220 USc/lb | |

# Entity Wise Cash and Debt

## Net Debt Summary ($mn)

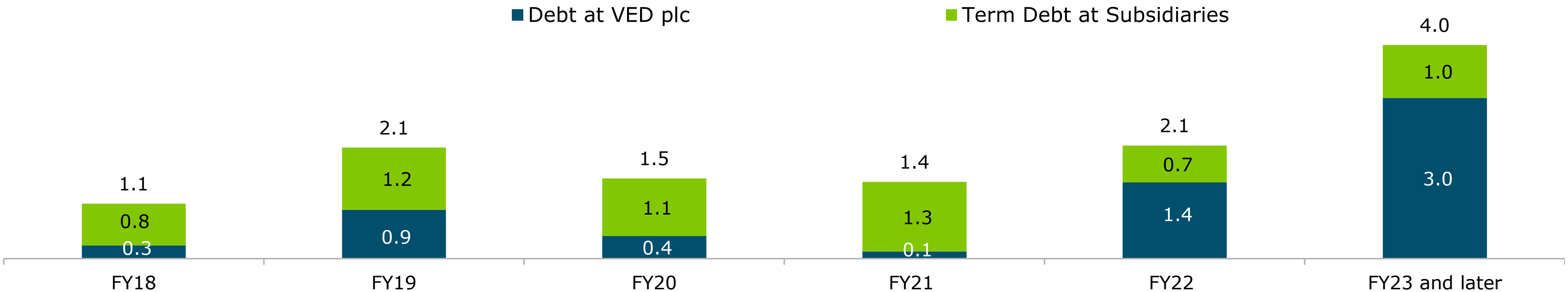
| Company | 30 Sep 2017 Debt | 30 Sep 2017 Cash & LI | 30 Sep 2017 Net Debt | 31 Mar 2017 Debt | 31 Mar 2017 Cash & LI | 31 Mar 2017 Net Debt | 30 Sep 2016 Debt | 30 Sep 2016 Cash & LI | 30 Sep 2016 Net Debt |
|---|---|---|---|---|---|---|---|---|---|
| **Vedanta plc[1]** | **6,116** | **15** | **6,101** | **6,173** | **17** | **6,156** | **6,145** | **19** | **6,126** |
| **KCM** | **467** | **9** | **458** | **554** | **1** | **553** | **642** | **1** | **641** |
| Vedanta Ltd. Standalone | 5,850 | 1,891 | 3,959 | 7,177 | 356 | 6,821 | 6,147 | 315 | 5,832 |
| Cairn India Holdings Limited[2] | 544 | 934 | (391) | NA | NA | NA | NA | NA | NA |
| Cairn India[3] | - | - | - | - | 4,185 | (4,185) | - | 3,576 | (3,576) |
| Zinc India | 91 | 3,058 | (2,967) | 1,220 | 4,960 | (3,740) | 289 | 4,078 | (3,789) |
| Zinc International | - | 108 | (108) | - | 140 | (140) | - | 136 | (136) |
| BALCO | 711 | 12 | 699 | 760 | 9 | 751 | 828 | 3 | 825 |
| Talwandi Sabo | 1,232 | 45 | 1,188 | 1,236 | 29 | 1,206 | 1,147 | 8 | 1,139 |
| Twin Star Mauritius Holdings Limited and Others[4] | 110 | 31 | 79 | 1,110 | 28 | 1,082 | 1,135 | 31 | 1,104 |
| **Vedanta Ltd. Consolidated** | **8,538** | **6,079** | **2,459** | **11,503** | **9,707** | **1,795** | **9,546** | **8,147** | **1,399** |
| **Total ($mn)** | **15,121** | **6,103** | **9,018** | **18,229** | **9,725** | **8,504** | **16,333** | **8,166** | **8,166** |

*Debt numbers at Book Values. Since the table above shows only external debt, it excludes any inter-company loans*
*As on 30 Sep 2017, there was no outstanding on the receivable at Vedanta plc from TSMHL.*

1. *Includes Investment Companies*
2. *Cairn India Holdings limited is a 100% subsidiary of Vedanta Limited which holds 50% of the share in the RJ block*
3. *Merged with Vedanta Limited w.e.f April 2017*
4. *Others include: CMT, Fujairah Gold, MEL, VGCB, Sesa Resources Ltd, other Iron Ore companies, and Vedanta Ltd. Investment companies*

# Group Maturity Profile

## Maturity Profile of Term Debt ($12.2bn)
(as of 30th Sep 2017)




*Debt numbers at face value; As of date, term debt of $12.2bn ($6.1bn at Vedanta plc and $6.1bn at Subsidiaries); Numbers may not foot due to rounding*
*Excludes working capital of $0.2bn, short term debt of $2.1bn, Zinc India borrowing of $0.1bn and preference share of $0.5bn*

**Vedanta Plc Maturities**

- **Mega refinancing successfully completed**
  - Raised 1.84bn in August 2017 through a combination of $1bn bond and $840m bank loans to address near term debt maturities;
  - Average maturity of PLC debt increased to over 4 years and avg cost of borrowings reduced by 25bps.
- **Residual FY2018 maturities**: shall be settled on due date in Q4 FY2018.
- **Refinancing for 2019 maturities** in process.

**Vedanta Ltd Maturities**

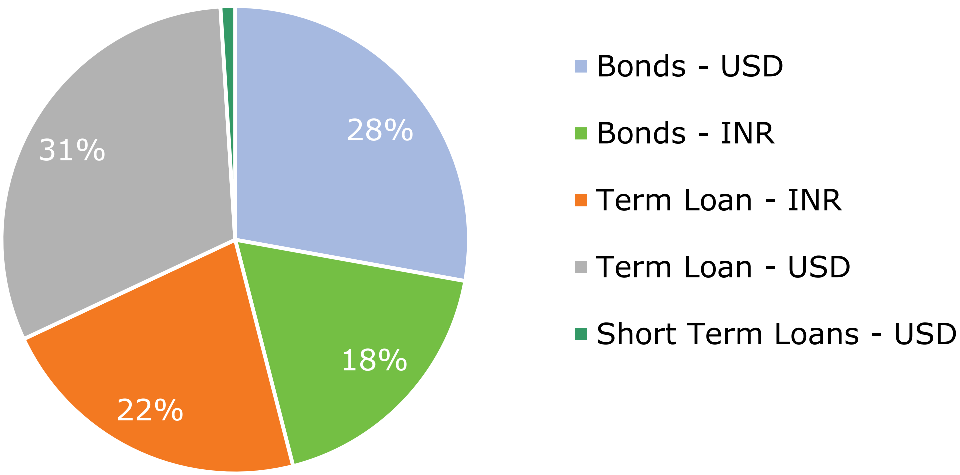
- **Gross debt reduction and maturity extension**
  - Reduced gross debt by $2.0bn[1] since April 2017
  - Raised $300mn through competitively priced capital market instruments to refinance high cost bank debt
  - Lowered the avg cost of borrowing by ~70-80bps on bank debt portfolio with improving credit profile
- **Strong credit profile**: CRISIL (A S & P subsidiary) AA with stable outlook; India Ratings (A Fitch Subsidiary) revised Outlook from AA Stable to AA Positive

**Cash and liquid investments of $6.1bn and undrawn committed lines of $0.8bn**

1. *Excluding temporary borrowing at Zinc India*

# Debt Profile

**Diversified Funding Sources for Term Debt ($12.2bn)**
(as of 30 Sep 2017)




**Debt Breakdown**
(as of 30 Sep 2017)

| Debt breakdown as of 30 Sep 2017 | ($bn) |
|---|---|
| Term debt | 12.2 |
| Working capital | 0.2 |
| Short term borrowing | 2.1 |
| Temporary short term borrowing at Zinc India | 0.1 |
| Preference Shares to Cairn Shareholders | 0.5 |
| **Total consolidated debt** | **15.1** |
| | |
| **Cash and Liquid Investments** | **6.1** |
| **Net Debt** | **9.0** |

- 56% of the gross debt is fixed interest rate, 44% floating rate
- 49% of the gross debt is USD-denominated, 51% is INR-denominated

# Segment-wise Summary

| Oil & Gas | H1 FY18 | H1 FY17 |
|---|---|---|
| *Average Daily Gross Operated* | | |
| Production (boepd) | 184,062 | 196,629 |
| Rajasthan | 156,278 | 167,323 |
| Ravva | 17,810 | 19,228 |
| Cambay | 9,974 | 10,078 |
| *Average Daily Working Interest* | | |
| Production (boepd) | 117,391 | 125,484 |
| Rajasthan | 109,935 | 117,126 |
| Ravva | 4,007 | 4,326 |
| Cambay | 3,990 | 4,031 |
| Average Brent ($/bbl) | 51 | 46 |
| Average realizations Oil & gas ($/boe) | 45 | 40 |
| **EBITDA ($mn)** | **401** | **274** |

| Zinc-India | H1 FY18 | H1 FY17 |
|---|---|---|
| **Mined Metal (kt)** | 452 | 318 |
| Refined Zinc – Integrated (kt) | 386 | 250 |
| Refined Lead – Integrated (kt)[1] | 73 | 55 |
| Saleable Silver – Integrated (moz)[3] | 8.2 | 6.3 |
| Average Zinc LME ($/t) | 2,784 | 2,089 |
| Zinc CoP[2] ($/t) | 979 | 852 |
| **EBITDA ($mn)** | **834** | **456** |

1. *Excludes captive consumption of 3,590 tonnes in H1 FY2018 vs 1,921 tonnes in H1 FY2017*
2. *Excluding royalty. Revenues from silver not credited to CoP. With IFRIC adjustment. Without IFRIC adjustment, the COP was $982 /t in H1 FY2018 and $1,013/t in H1 FY2017*
3. *Excluding captive consumption of 0.6moz in H1 FY2018 and 0.32moz om H1 FY2017*

| Zinc-International | H1 FY18 | H1 FY17 |
|---|---|---|
| Mined Metal –BMM (kt) | 38 | 35 |
| Refined Zinc – Skorpion (kt) | 36 | 47 |
| Total Zinc-Lead Metal (kt) | 74 | 82 |
| Average Zinc LME ($/t) | 2,784 | 2,089 |
| CoP ($/t) | 1,564 | 1,331 |
| **EBITDA ($mn)** | **110** | **88** |

# Segment-wise Summary (contd.)

| Copper-Zambia | H1 FY18 | H1 FY17 |
|---|---|---|
| Mined Metal (kt) | 45 | 58 |
| Finished Metal – Total (kt) | 101 | 92 |
| Integrated (kt) | 43 | 55 |
| Custom Smelting (kt) | 58 | 36 |
| Copper LME ($/t) | 6,013 | 4,751 |
| C1 Cash Cost – Integrated[1] (USc/lb) | 249 | 184 |
| Total Cash Cost– Integrated[2] (USc/lb) | 318 | 240 |
| **EBITDA ($mn)** | **18** | **17** |

1. *C1 cash cost, excludes royalty, logistics, depreciation, interest, sustaining capex*
2. *Total Cash Cost includes C1 cash cost, royalty, interest and sustaining capex*

| Copper-India | H1 FY18 | H1 FY17 |
|---|---|---|
| Copper Cathodes– India (kt) | 197 | 198 |
| Tuticorin Power Plant (mu) | 34 | 90 |
| Average Copper LME ($/t) | 6,013 | 4,751 |
| Copper Tc/Rc (US¢/lb) | 21.2 | 21.7 |
| Conversion cost – India (c/lb) | 6.3 | 5.6 |
| **EBITDA ($mn)** | **93** | **126** |

| Aluminium | H1 FY18 | H1 FY17 |
|---|---|---|
| Aluminium Production (kt) | 753 | 541 |
| Jharsuguda I - 500kt | 191 | 261 |
| Jharsuguda II - 1,250kt[1] | 277 | 77 |
| Korba-I 245kt | 128 | 126 |
| Korba-II 325kt[2] | 156 | 77 |
| Aluminium LME ($/t) | 1,962 | 1,596 |
| Aluminium COP ($/t) | 1,798 | 1,473 |
| BALCO | 1,825 | 1,541 |
| Jharsuguda-I | 1,781 | 1,435 |
| Alumina Production (kt) | 572 | 567 |
| Alumina COP ($/t) | 324 | 276 |
| **EBITDA ($mn)** | **153** | **102** |

1. *Includes trial run production of 34kt in H1 FY2018 vs 29kt in H1 FY2017*
2. *Includes trial run production of 16kt in H1 FY2018 vs 28kt in H1 FY2017*

# Segment-wise Summary (contd.)

## Power

| | H1 FY2018 | H1 FY2017 |
|---|---|---|
| Power Sales (million units) | **4,787** | **6,039** |
| Jharsuguda 600MW | 657 | 1,497 |
| BALCO 600MW | 682 | 1,156 |
| MALCO 100MW[3] | 4 | 115 |
| Talwandi Sabo 1980MW | 3,145 | 2,951 |
| HZL Wind Power | 299 | 320 |
| Power - Realisation (Rs./unit)[1] | 2.77 | 2.92 |
| Power - Cost of generation (Rs./unit)[1] | 1.93 | 2.03 |
| Talwandi Sabo – Realisation (Rs./unit)[2] | 3.62 | 3.54 |
| Talwandi Sabo – Cost of generation (Rs./unit)[2] | 2.83 | 2.51 |
| **EBITDA ($mn)** | **74** | **108** |

## Iron Ore and Pig Iron

| | H1 FY2018 | H1 FY2017 |
|---|---|---|
| Sales (mt) | 3.0 | 3.4 |
| Goa | 2.0 | 2.4 |
| Karnataka | 1.0 | 1.0 |
| Production (mt) | 4.5 | 4.7 |
| Goa | 2.6 | 2.9 |
| Karnataka | 1.9 | 1.7 |
| Average Net Sales Realizations ($/t) | 19.9 | 29.3 |
| Pig iron - Production (kt) | 300 | 372 |
| **EBITDA ($mn)** | **(3)** | **72** |

1. *Excludes Talwandi Sabo*
2. *Based on availability, generation would have been 4361mu for H1 FY2018 and 4363mu for H1 FY2017*
3. *MALCO 100MW is under care & maintenance since 26th May 2017*

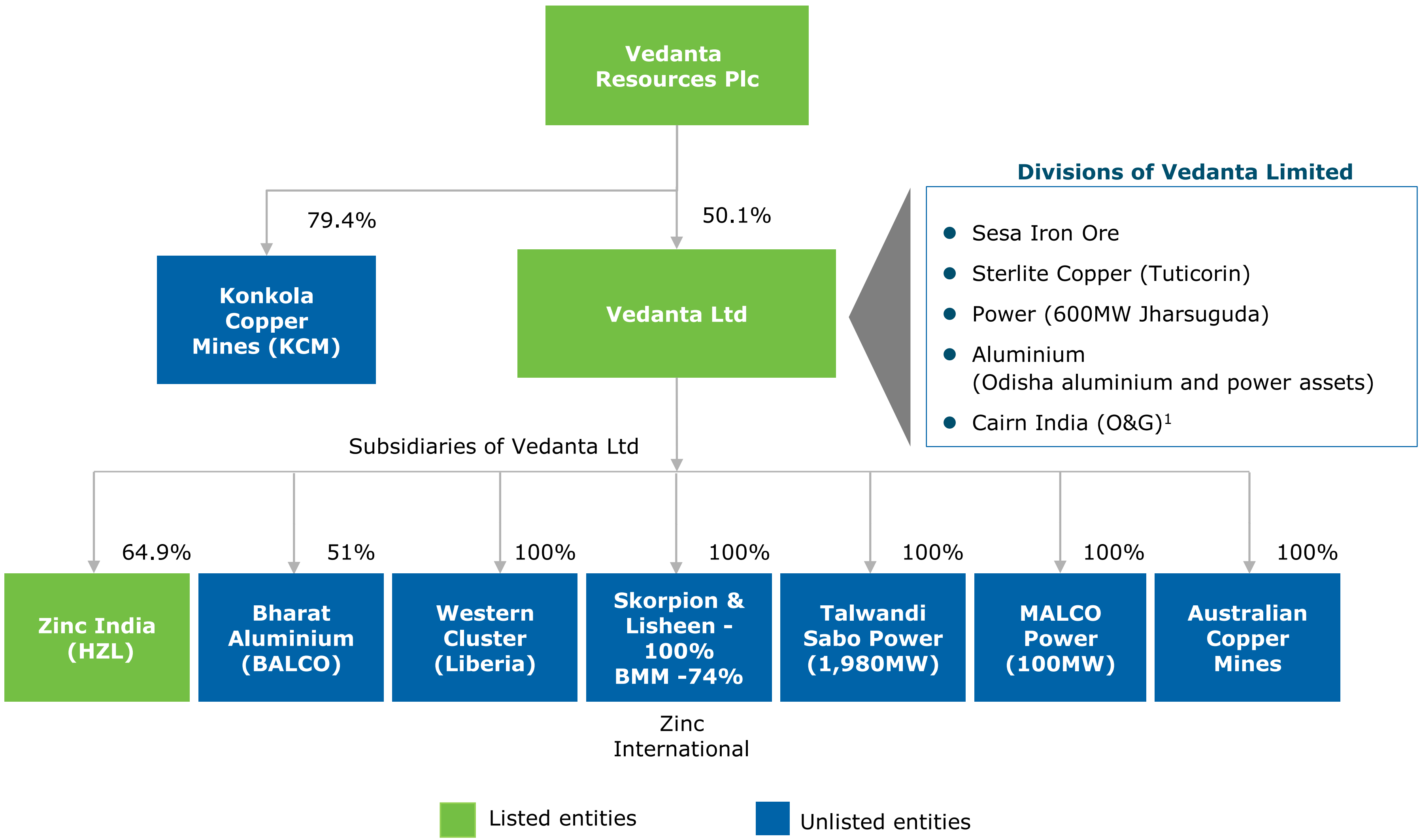
# Credit Metrics

| | FY2017 | H1 FY18 | Covenant (Up to Sep 2017) |
|---|---|---|---|
| Net Debt/EBITDA | 2.7x | 2.5x | <3.75x |
| EBITDA/Net Interest Expense[1] | 4.0x | 3.6x | >3.00x |
| Net Assets/Debt | 1.42x | 1.48x | >1.40x |

Several of our facilities initially had the covenants of Net Debt/EBITDA of <2.75x and EBITDA/Net Interest of >4.0x, as disclosed in previous periods. These have been waived /relaxed by lenders for the period ended September 30, 2017 and progressively revert to original levels by March 2019. The above table shows the strictest of the covenants.

1. *Interest includes Capitalized Interest.*

# Group Structure




*Shareholding post Cairn merger*

1. *50% of the share in the RJ block is held by a 100% subsidiary of Vedanta Limited*