

# Vedanta Limited

## Investor Presentation

November 2017



Elements for a Sustainable Future

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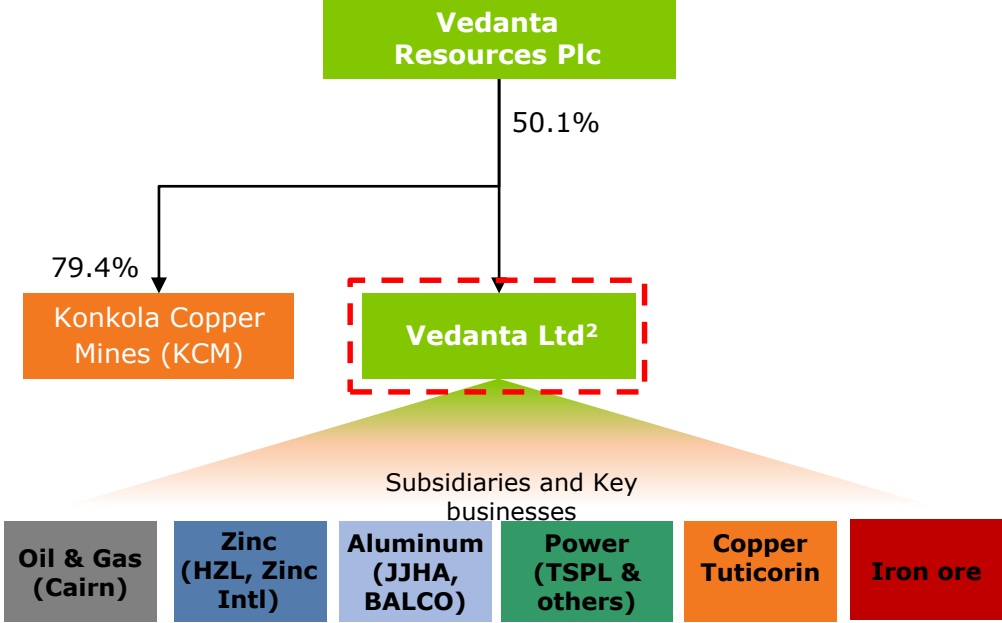
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## Overview

- World’s 6<sup>th</sup> largest diversified resources company and the largest in India
- Only global player with significant operations, expertise and majority sales in the Indian market – the fastest growing G-20 economy<sup>1</sup>
- Part of India’s premier index – the Nifty 50 and also listed in NYSE (ADR)

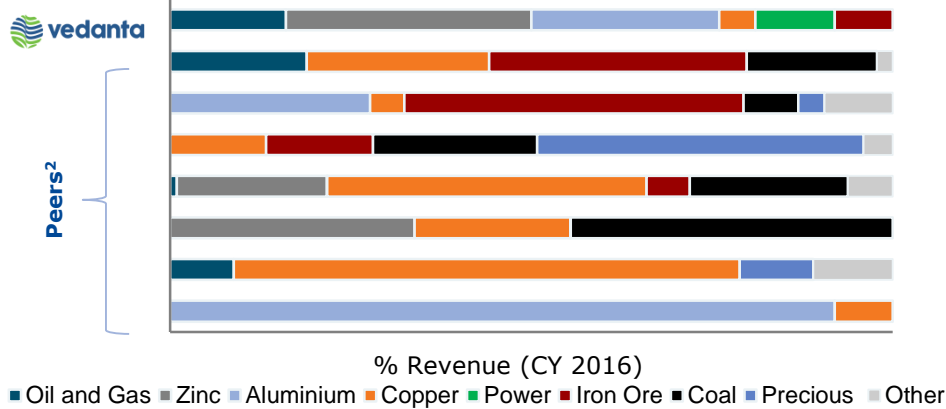
## Group Structure



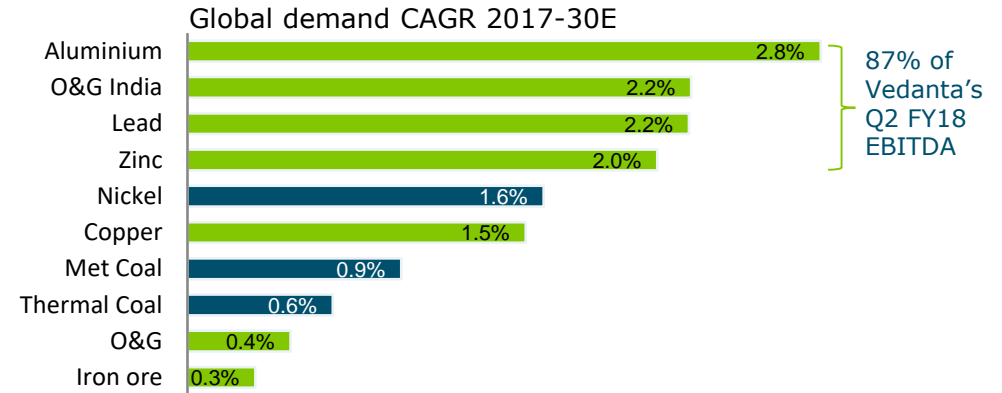
1. As per Moody’s  
 2. Divisions of Vedanta Ltd include: Sesa Iron Ore, Sterlite Copper (Tuticorin), Power (600 MW Jharsuguda), Cairn Oil & Gas, Aluminium (Odisha aluminium and power assets)

# A diversified resources company with an attractive commodity mix, market leading growth and strong balance sheet

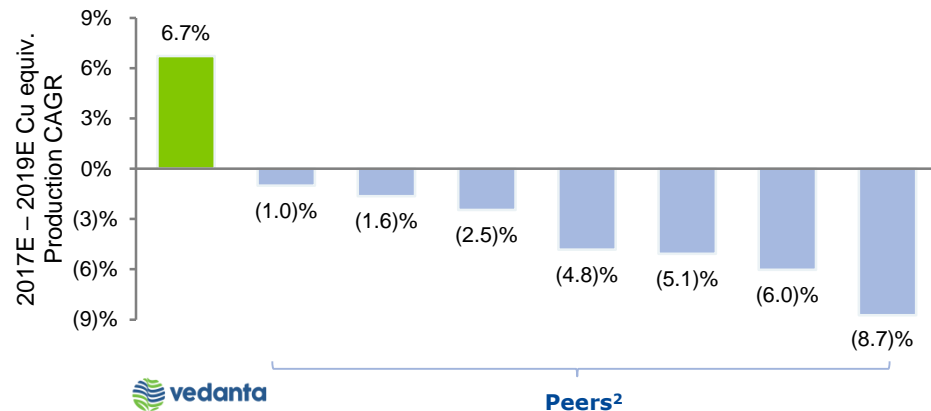
## Commodity diversification<sup>1</sup>



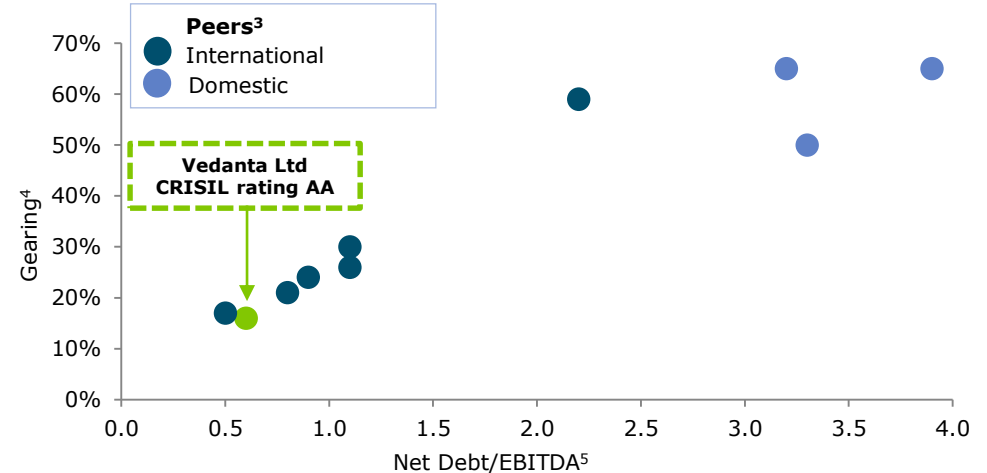
## Attractive commodity mix



## Sector leading growth



## Strong balance sheet



Source: Consensus, Company filings, Bloomberg, Wood Mackenzie, US EIA, CRU, Company data for Vedanta








Notes: 1. All companies have been calendarised to a Dec YE; Glencore revenue split accounts only for their 'Industrial activities'; Revenues from copper smelting for Vedanta Ltd and Hindalco are based on benchmark Tc/Rc

2. Peers include BHP Billiton, Rio Tinto, Anglo American, Glencore, Teck Resources, Freeport and Hindalco

3. Peers include BHP Billiton, Rio Tinto, Anglo American, Glencore, Teck Resources, Freeport, Hindalco, Tata Steel and JSW Steel

4. Gearing is calculated as Net debt divided by the sum of Net debt and Equity (based on reported numbers)

5. Net Debt as per last reported, EBITDA as per CY 2017 consensus estimates




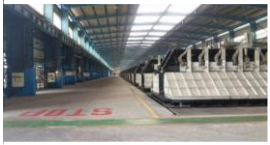

 <b>Zinc – India</b>	<ul style="list-style-type: none"> <li>• India’s only miner of Zinc-Lead, and the world’s second largest integrated Zinc-Lead producer</li> </ul>
 <b>Zinc Intl.</b>	<ul style="list-style-type: none"> <li>• Assets in South Africa and Namibia</li> <li>• Gamsberg in South Africa is one of the world’s largest undeveloped zinc deposits</li> </ul>
 <b>Oil &amp; Gas</b>	<ul style="list-style-type: none"> <li>• India’s largest private sector oil producer</li> <li>• Operates c. 30% of India’s total oil production</li> <li>• One of the lowest cost producer in the world with cost at sub \$6/boe</li> </ul>
 <b>Aluminium</b>	<ul style="list-style-type: none"> <li>• Largest capacity in India at 2.3mn tonnes per annum</li> <li>• Integrated capacity with captive power, with Alumina refinery</li> </ul>
 <b>Copper – India</b>	<ul style="list-style-type: none"> <li>• India’s largest Copper producer at 0.4mn tonnes per annum</li> <li>• One of the world’s most efficient custom smelters, operating consistently above 90% utilisation rate</li> </ul>
 <b>Iron Ore</b>	<ul style="list-style-type: none"> <li>• India’s largest producer-exporter in the private sector</li> </ul>
 <b>Power</b>	<ul style="list-style-type: none"> <li>• 9,000 MW fully operational, of which 40% is sold commercially</li> <li>• Poised to benefit from structural power shortage in India</li> </ul>

		Near-term expansions	Remaining capex, \$mn <sup>1</sup>	Total expanded capacity
	<b>Zinc India</b>	<ul style="list-style-type: none"> <li>Expansion to 1.2mt mined Zn-Pb metal</li> <li>Silver to 750t</li> </ul>	603	1.2mt Zn-Pb 750t Ag
	<b>Zinc International</b>	<ul style="list-style-type: none"> <li>Gamsberg project (250kt) and Skorpion pit extension</li> </ul>	270	400kt
	<b>Oil &amp; Gas</b>	<ul style="list-style-type: none"> <li>Various projects at Rajasthan - EOR, tight oil, Gas</li> </ul>	764 <sup>2</sup>	275-300 kboepd
	<b>Aluminium</b>	<ul style="list-style-type: none"> <li>Ramp-up of Jharsuguda II smelter</li> </ul>	102	2.3mt aluminium
	<b>Copper India</b>	<ul style="list-style-type: none"> <li>Smelter expansion from 400 to 800kt</li> </ul>	576	800kt
	<b>Iron ore</b>	<ul style="list-style-type: none"> <li>Ramp-up to earlier permitted (pre-ban) capacity</li> </ul>	-	20.5mt

1. Unspent growth capex as of 30 Sep 2017

2. Capex up to FY2020

## Future growth options

	<p><b>Zinc India</b></p>	<ul style="list-style-type: none"> <li>● Expansion to Zn-Pb to 1.5mtpa</li> <li>● Silver production of 1,000t +</li> </ul>
	<p><b>Zinc Intl.</b></p>	<ul style="list-style-type: none"> <li>● Gamsberg Phase 2 &amp; 3 (350kt incremental)</li> <li>● Swartberg (75kt)</li> </ul>
	<p><b>Oil &amp; Gas</b></p>	<ul style="list-style-type: none"> <li>● 300-500 kboepd</li> <li>● Accompanied by continued exploration</li> </ul>
	<p><b>Aluminium</b></p>	<ul style="list-style-type: none"> <li>● Lanjigarh alumina refinery expansion (6mt)</li> </ul>
	<p><b>Iron ore</b></p>	<ul style="list-style-type: none"> <li>● Jharkhand iron ore deposit (10mt)</li> </ul>

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

**Production growth and asset optimization**

## **Strong Shareholder Returns**

- Announced dividend policy at Vedanta Ltd
  - pass through of HZL's regular dividend, plus
  - minimum 30% pay out of Attributable PAT (ex HZL PAT)
- HZL dividend policy - minimum 30% pay out

## **Maintain Strong Balance Sheet**

- Continued reduction of gross debt
- Target for AA+ rating from current AA rating (CRISIL)

## **Grow Existing Businesses**

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





**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**

## Business Review



Operational Excellence

## Operations: Record volumes with ramp-up on track

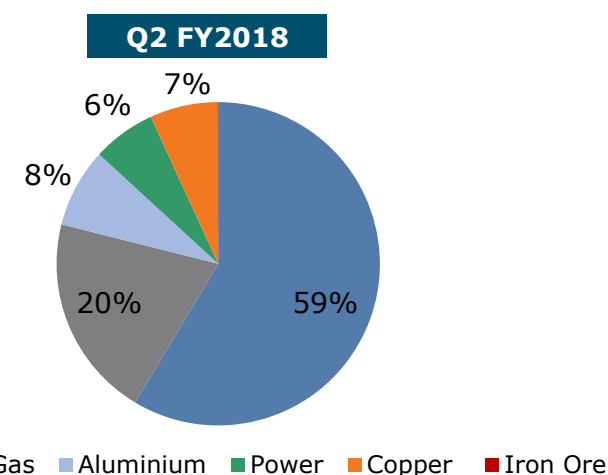
- High zinc-lead and record silver volume at Zinc India
- Highest quarterly production at BMM in last 4 years; Gamsberg on track for mid CY18 production
- Aluminium smelters continue ramp up, with record quarterly production and current run-rate of 1.6mtpa
- High PAF at TSPL of 87%, following the shutdown in Q1
- Record quarterly copper cathode production at Copper India

## Financial: Strong free cash flow

- EBITDA at Rs. 5,776 crore, up 24% y-o-y at 35% margin
- Attributable PAT<sup>2</sup> at Rs 2,036 crore, 41% higher y-o-y
- Gross debt reduced by Rs. 11,466 crore in H1 FY2018<sup>1</sup>
- Strong FCF of Rs. 3,280 Cr in Q2
- Contribution to exchequer of c. Rs. 13,000 cr in H1 FY2018

Notes: 1. Excluding repayment of temporary borrowing by Zinc India & preference shares issued pursuant to the Cairn India merger in April  
 2. Before exceptional items and DDT  
 3. Excludes custom smelting at Copper and Zinc India operations

## EBITDA mix



## Key Financials

In Rs. Crore	Q2 FY18	Q2 FY17	Q1 FY18
EBITDA	5,776	4,647	4,965
Attributable PAT <sup>2</sup>	2,036	1,442	1,525
EBITDA Margin <sup>3</sup>	35%	39%	36%

## Divisional EBITDA

	Q2 FY18	Q2 FY17	Q1 FY18
Zinc - India	3,001	1,977	2,369
Zinc - Intl.	389	339	321
Oil & Gas	1,176	1,047	1,385
Iron Ore	(4)	105	40
Copper - India	392	371	213
Aluminium	457	397	528
Power	366	403	110
Others	(1)	8	(1)

## Q2 FY2018 Results

- MIC at 219kt; refined zinc-lead production at 230kt
- Refined silver production at a record high of 140 tonnes
- CoP at \$984/t; impacted by high 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 FY 2019
- Zawar mill de-bottlenecking completed to upgrade capacity to 2.7mtpa; order for second mill of 2mtpa capacity awarded, targeted commissioning by Q3 FY 2019
- Fumer project progressing as per schedule for completion by mid FY 2019

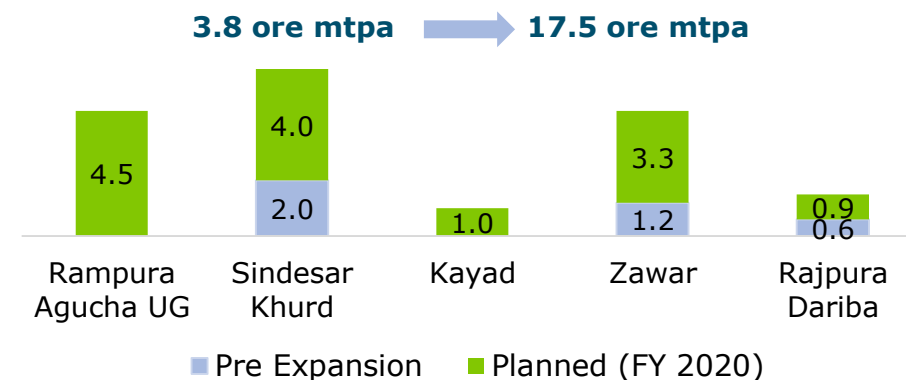
## FY2018 Outlook

- FY2018 integrated Zn-Pb production c.950kt; silver 500t+
- FY 2018 CoP likely to be in the range of \$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 FY 2020





## Q2 FY2018 Results

- Total production at 42kt:
  - Skorpion at 23kt: highest in last 3 quarters following full mobilization of mine outsourcing
  - BMM at 20kt: highest quarterly production in the last 4 years, driven by better grades and higher recoveries
- CoP at \$1,470/t, lower q-o-q, driven by higher production and efficiency improvements

## Projects

- Skorpion pit 112 extension
  - Waste mining fully ramped up in Q2; ore extraction from Q4 FY2018
  - Project to extend mine life by further 3 years and increase reserves by c.3mt (9.7% grade)
- Continued focus on exploration program across all the locations (>\$10mn)

## Outlook

- FY18 Production of c.160kt; CoP at c. \$1500/t

## Significant progress at 250kt Gamsberg project

- On target for first production by mid CY2018, with ramp-up to its full mining capacity in the next 9-12 months
- On budget for a capex target of \$400mn
- First phase expected to have a mine life of 13 years
- CoP expected at \$1000-1150/t
- Excavation of 50% of waste rock of total pre-stripping requirement completed till date
- Construction works for infrastructure progressing well with all contractors (>1600 construction manpower) fully mobilised to site
- Site activities including water and power lines installation on schedule
- Manufacturing and supply of all equipment is on schedule with mills expected to be at site in November 2017



North access ramp including mining workshops    Civil footprint for the concentrator works

Video Link : <https://www.youtube.com/watch?v=-tcsqJpTIHk&feature=youtu.be>

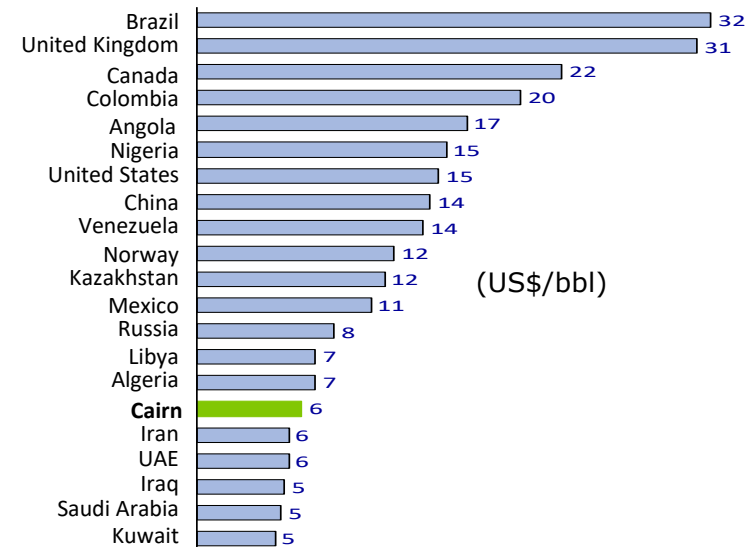
## Q2 FY 2018 Results

- Gross average production at 180,955 boepd
  - Rajasthan production at 153,238 boepd
  - Offshore production at 27,718 boepd
- Commenced 15 wells infill drilling campaign at Mangala with first well brought in Sept 2017; 4 wells online currently
- Operating cost
  - RJ waterflood operating cost at \$ 4.4/boe, in line with previous quarter
  - RJ blended cost including EOR at \$6.3/boe, in line with previous quarter



Rajasthan: Mangala Processing Terminal

### Cairn has one of the lowest operating costs globally



Source: For peer company Opex - Rystad Energy, Nov 2015

## 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

## Key Projects

### Exploration

- **Rajasthan:** Studies contract awarded for Shallow Oil and Deep Gas prospects. Tendering underway for integrated exploration and appraisal drilling campaign
- **KG Offshore:** 2 wells exploration program to commence from Q4FY18; Contract award in place

### RDG Gas project

- Phase-1: 40-45 mmscfd from November 2017
- Phase-2: Gas production of 100mmscfd and condensate production of 5kboed by H1 CY2019

### Key Oil projects

- Aishwariya Barmer Hill: Production from appraisal wells commenced, Phase -2 FDP submitted to JV Partner
- Mangala Infill (15 well): Drilling progressing as per plan
- Mangala Infill (45 wells): Firmed up drilling program; Proposal under discussion with JV Partner
- Bhagyam EOR: FDP submitted to JV Partner
- Aishwariya EOR: FDP approved by Operating Committee
- Liquid handling: Upgrading infrastructure to support incremental oil volumes in phased manner
- Cambay Infill: 3 wells drilling program to commence from Q4FY18



Rajasthan: Central Polymer Facility

## Summary of key projects

Key Projects	EUR <sup>1</sup> (mmboe)	Estimated Gross Capex (US\$m)
RDG	105	460
Aishwariya Barmer Hill	32	180
Mangala Infill (15 wells)	4	40
Mangala Infill (45 wells)	18	100
Bhagyam Polymer EOR	25	95
Aishwariya Polymer EOR	15	60
Liquid Handling Upgrade	12	120
Cambay Infill (3 wells)	7	30

Note 1. Estimated Ultimate Recovery

## Q2 FY2018 Results

- Record Aluminium production of 401kt and Alumina 269kt
  - Aluminum CoP at \$1,857/t, higher q-o-q 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 \$331/t vs. \$ 383/t for imported alumina

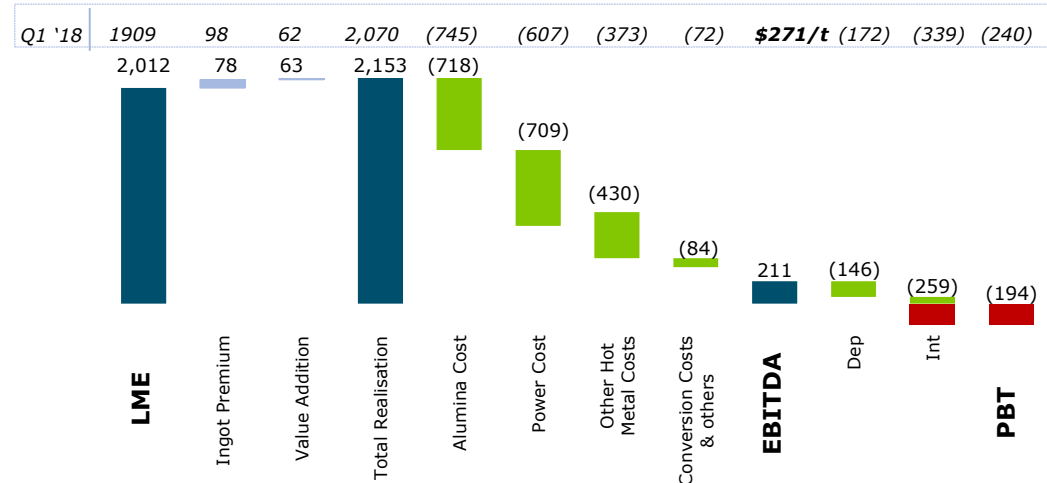
## Operations

- 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:
  - 1<sup>st</sup> line: 301 pots operational, full ramp up by Q3 FY2018
  - 2<sup>nd</sup> line was fully capitalized in Q4 FY2017
  - 3<sup>rd</sup> line: 156 pots operational, full ramp up by Q4 FY2018
  - 4<sup>th</sup> line: Under evaluation
- Inspection by Pollution board of 2 closed power units in early November

## FY2018 Outlook

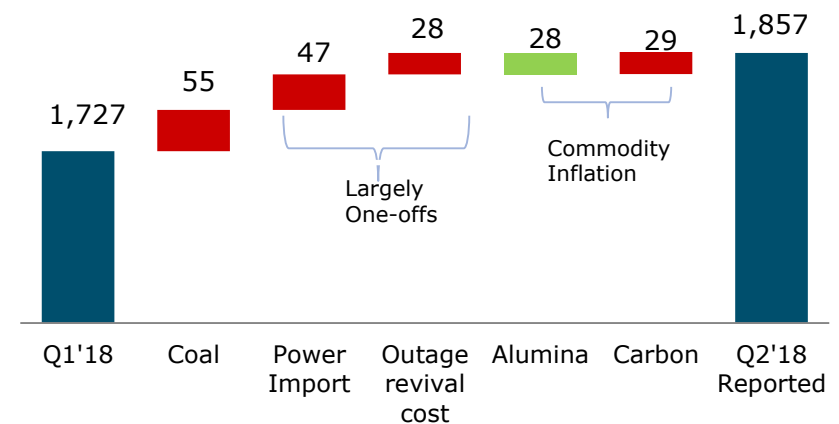
- Aluminium production 1.5 to 1.6mt (excl. trial run); Alumina production 1.3 to 1.4mt
- CoP estimated at \$1850-1900/t for Q3 FY2018 given higher input costs of coal and Alumina. Q4 CoP expected to be substantially lower with improvement in domestic coal situation and production ramp-up
- Working with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

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



Note: Q1 CoP numbers have been regrouped to make them comparable

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





## Talwandi Sabo Power Limited (TSPL)

- 1,980 MW Thermal Power Plant (3 units of 660 MW each)
- Plant availability of 87% in the quarter; Targeting availability of c. 75% for FY 2018
- '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: Q2 PLF of 27% on account of temporary coal shortage
- Jharsuguda 600MW: Low PLF of 7%. Impacted due to the shut down of the plant and temporary coal shortage.

## Coal Outlook – Aluminium CPPs

- Coal linkage of 8 mtpa secured in Tranche 1 & 2
  - 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
  - Coal linkage Tranche III auction in progress
- We expect the challenges in domestic coal to be resolved by Q4

## Q2 FY2018 Results

### Iron Ore

#### Volumes:

- Sales of 0.7mt and production of 1.2mt (Goa and Karnataka)
- Lower production and sales on a q-o-q basis due to monsoons
- 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 Q2
  - Working towards better realizations in the domestic market

### Copper India

- Record production at 106kt on improved operational efficiencies
- Net cost of conversion lower q-o-q due to higher volumes
- FY2018 production estimated at 400kt
- 400ktpa smelter expansion under final evaluation



Iron Ore Mine in Goa



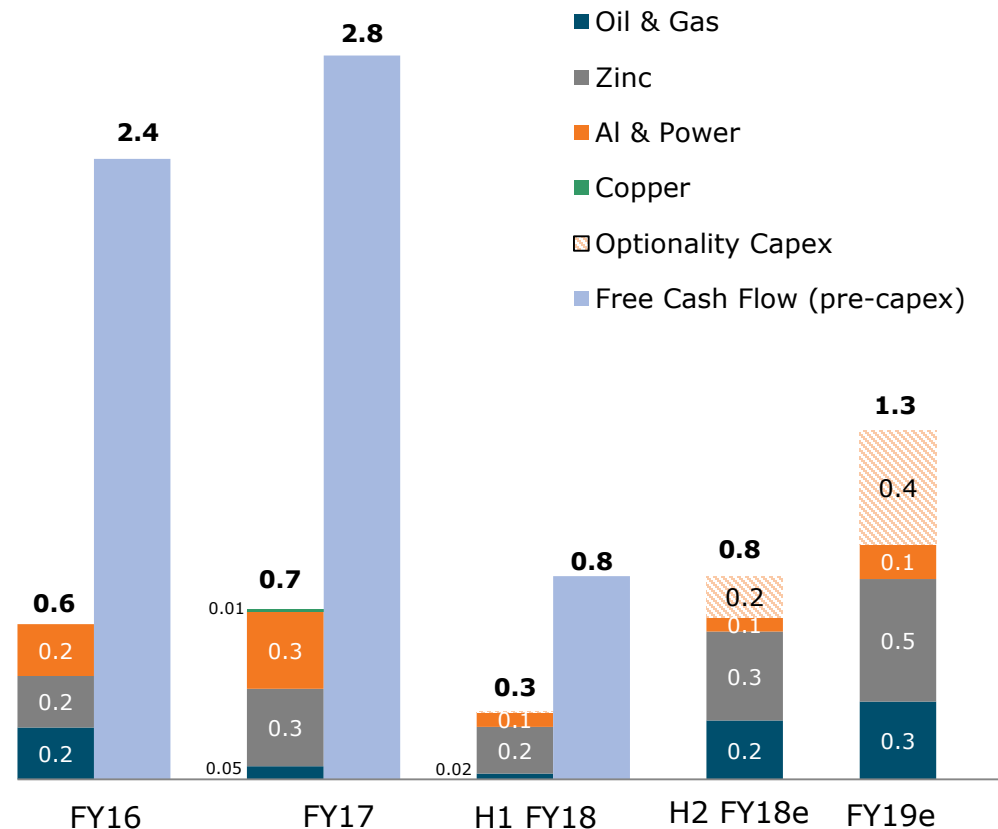
Tuticorin Copper Smelter

# Appendix

Segment	FY18e	Comments
<b>Zinc India</b>	Zinc-Lead Integrated: 950kt Silver volume: +500 tonnes CoP (\$/t): \$900-950/t	Earlier guidance on CoP for FY2018 was marginally higher than FY17 CoP. Revised guidance due to input commodity inflation
<b>Zinc International</b>	Zinc-Lead volume: c.160kt CoP: c.\$1,500/t	Gamsberg expected CoP: \$1000-1,150/t
<b>Oil &amp; Gas</b>	RJ Gross Volume: 165kboepd Ravva Gross volume: 16kboepd Cambay Gross volume: 10kboepd	
<b>Aluminium</b>	Alumina: 1.3-1.4mt Aluminium: 1.5-1.6mt (excl. trial-run) Aluminium CoP: \$1,850-1,900/t for Q3 FY2018 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
<b>Power</b>	TSPL plant availability: c. 75%	Earlier guidance for FY2018 plant availability was 70%+
<b>Iron Ore</b>	5.5mtpa at Goa and 2.3mtpa at Karnataka	Engaged with respective State Governments for additional allocation
<b>Copper - India</b>	Production: 400kt	

- Prioritised capital to high-return, low-risk projects to maximize cash flows
- H1 Capex spent \$0.3bn, H2 FY 2017 expected at \$0.8bn
- Revised capex guidance to \$1.1bn for FY 2018 (\$0.9bn+\$0.2bn 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 with full swing in H2
  - Optionality capex includes capex flexibility for Lanjigarh refinery expansion and 400ktpa Copper smelter expansion

**Growth Capex Profile and Free Cash Flow pre capex - \$bn**



# Entity Wise Cash and Debt

(in Rs. crore)

Company	30 Sept 2017			30 June 2017			30 Sept 2016		
	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt
Vedanta Limited Standalone	38,232	12,375	25,857	42,711	16,698	26,013	41,285	2,114	39,171
Cairn India <sup>1</sup>	NA	NA	NA	NA	NA	NA	0	24,339	(24,339)
Cairn India Holdings Limited <sup>2</sup>	3,554	6,562	(3,008)	4,155	6,759	(2,604)	NA	NA	NA
Zinc India	593	19,986	(19,393)	6,959	23,967	(17,009)	1,928	27,186	(25,258)
Zinc International	-	705	(705)	-	614	(614)	0	909	(909)
BALCO	4,647	82	4,565	4,765	102	4,663	5,521	22	5,499
Talwandi Sabo	8,055	294	7,761	8,029	70	7,960	7,643	56	7,587
Twin Star Mauritius Holdings Limited and Others <sup>3</sup>	717	202	515	723	108	615	10,417	207	10,210
<b>Vedanta Limited Consolidated</b>	<b>55,798</b>	<b>40,206</b>	<b>15,592</b>	<b>67,342</b>	<b>48,318</b>	<b>19,024</b>	<b>66,794</b>	<b>54,833</b>	<b>11,961</b>

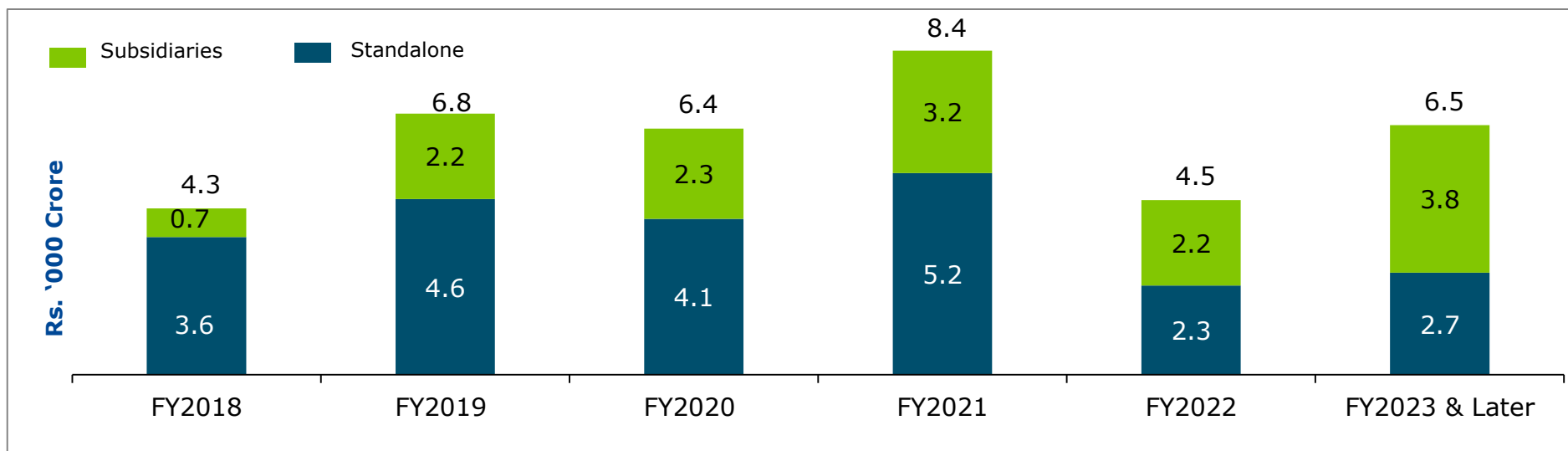
Notes: Debt numbers are at Book Value and excludes inter-company eliminations.

1. Merged with Vedanta Limited with effect from April 2017.

2. Cairn India Holdings Limited is a subsidiary of Vedanta Limited which holds 50% of the share in the RJ Block

3. Others includes MALCO Energy, CMT, VGCB, Sesa Resources, Fujairah Gold, and Vedanta Limited's investment companies.

## Maturity Profile of Term Debt (Rs.36,927 Crore) (as of 30<sup>th</sup> Sept 2017)



Term debt of Rs. 36,927 crore ( Rs.22,463 cr at Standalone and Rs. 14,464 crore at Subsidiaries)

Maturity profile excludes working capital / short term of Rs.15,269 crore, HZL borrowing of Rs.593 crore and preference share of Rs. 3010 crore

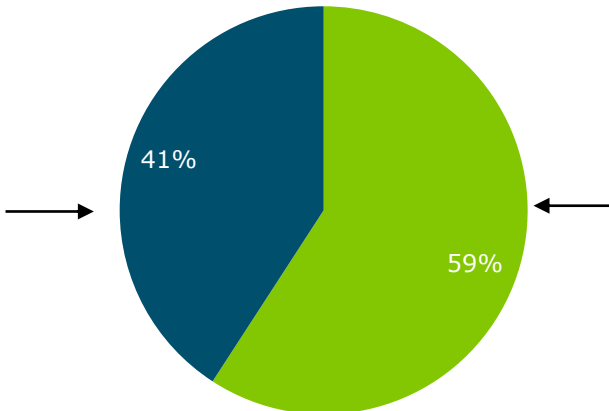
- **Continued focus on gross debt reduction and cost optimization**

- Long Term debt reduced by c. Rs.9200 crore during YTD FY2018
- Tapped Rs.1900 crore through competitively priced capital market instruments to refinance high cost bank debt
- Lowered the average cost of borrowing by c. 70-80 bps on bank debt portfolio due to improving credit profile

- **Strong liquidity:** Cash and liquid investments of Rs.40,206 crore and undrawn fund based line of credit of c. Rs.5,300 crore

## Power Generation Capacity – c. 9GW

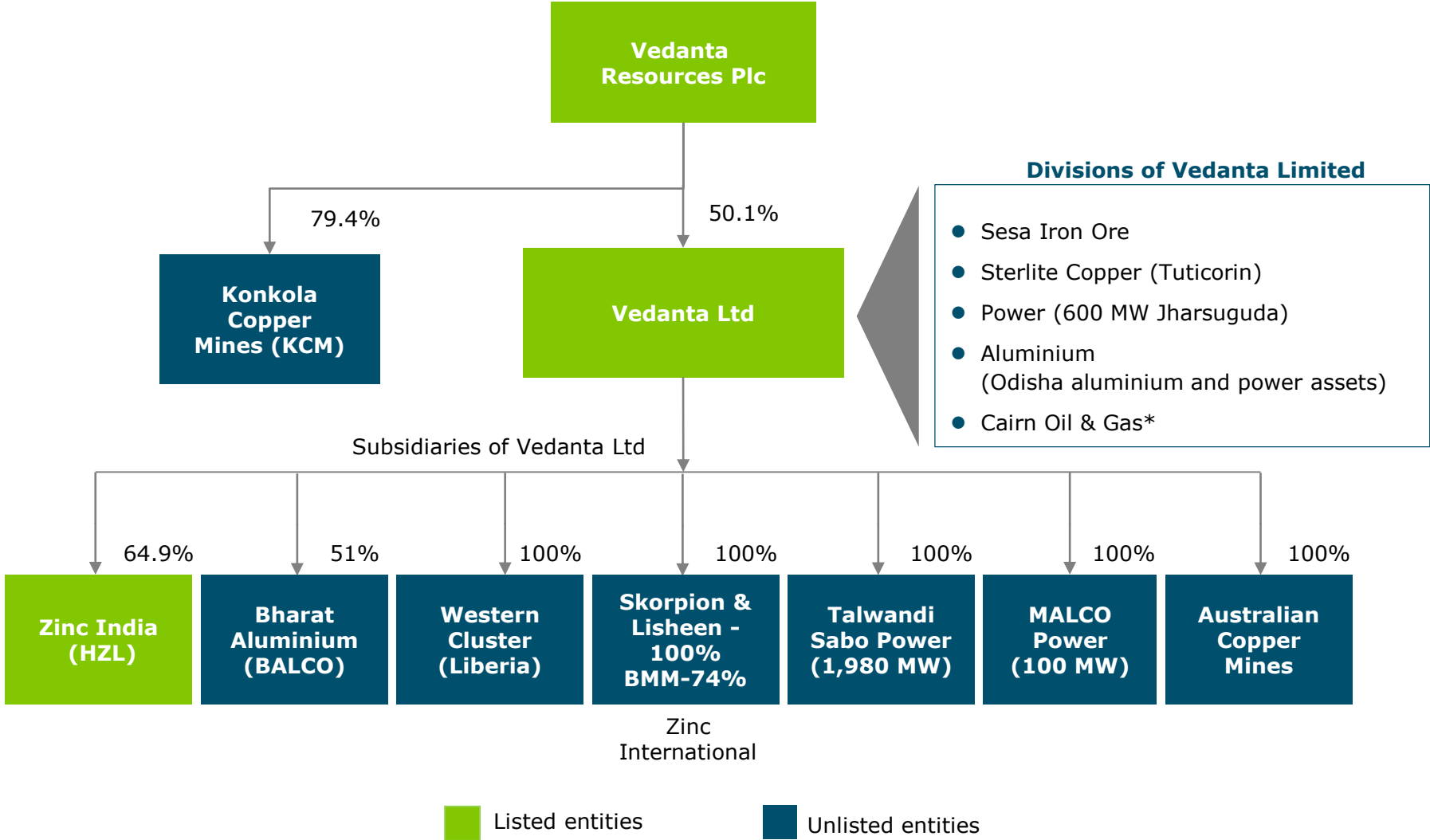
- IPP: 3.6GW**
- 600MW Jharsuguda (of 2400MW plant)
  - 1,980MW TSPL
  - 2\*300MW BALCO (of 1200MW plant)
  - 274MW HZL Wind Power
  - 100MW MALCO



- CPP: 5.1GW**
- 1,215MW Jharsuguda
  - 3\*600MW Jharsuguda (of 2400MW plant)
  - 540MW BALCO
  - 270MW BALCO
  - 2\*300MW BALCO (of 1200 MW plant)
  - 90MW Lanjigarh
  - 474MW HZL
  - 160MW Tuticorin

*Note: MALCO 100MW (IPP) is under care and maintenance since 26<sup>th</sup> May 2017*





Note: Shareholding as on Sept 30, 2017  
 \*50% of the share in the RJ Block is held by a subsidiary of Vedanta Ltd