



# **Vedanta Resources FY 2016 Preliminary Results**

12 May 2016

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# **Overview**

Anil Agarwal
Executive Chairman





# **Strategic Update**

**Tom Albanese**Chief Executive Officer

# **Safety and Sustainability**



#### Safety

- 5 fatalities in H2 FY2016; 12 fatalities in FY2016
- Focus on bringing in a culture of Zero-Harm
  - Making Better Risk Decisions (MBRD) training program for line managers
  - "Chingilila" ("to protect") program launched at KCM
  - Implementation of Safety Performance standards
  - Report and learn lessons from high potential incidents
  - Safety Leadership Drives

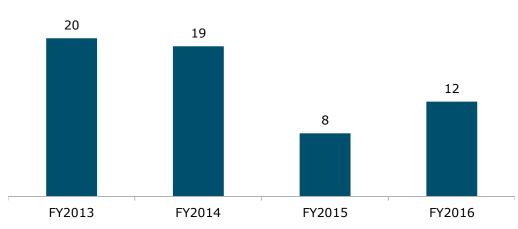
#### **Environmental Management**

- Zero "higher category" (Cat# 4&5) environmental incidents
- Safe and successful closure of the Lisheen mine in FY2016
- Focus on resources efficiency, process innovation and technological interventions on Waste, Water and Energy
- Climate Change
  - Signed the Paris Pledge for Action
  - Evaluating and updating our Carbon Strategy
  - TSPL sets Guinness Record for planting 200,000 saplings in 1 hour
- Vedanta Ltd. awarded with CII- Sustainable Plus Platinum level rating

#### **Community Relations**

- Working towards implementation of the Sustainable Development Goals
- Social Impact Assessment completed for HZL and Cairn India sites
- Executed group wide project 50 Model Angandwadi's (childcare centers)
- Extending WBCSD WASH pledge: Safe access to Water, Sanitation and Hygiene for communities

### **Fatal Incidents**





**Lisheen Windfarm Project** 

# **FY2016 Results Highlights**



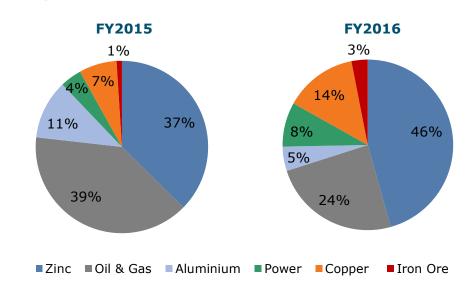
#### **Operations: Record production, capacities ramping-up**

- Record production of zinc, lead and silver at Zinc-India,
   Aluminium, power and copper cathodes at Copper-India
- Ramp-up of capacities at Aluminium, Power and Iron Ore
- 0&G: Successful EOR ramp-up at Mangala
- Copper Zambia: Continued ramp up of production at Konkola; lower cost of production
- Strong cost performance, with lower costs across the businesses

### Financial: Strong free cash flow generated

- EBITDA of \$2.3bn, EBITDA margin<sup>1</sup> of 28%
- Underlying Attributable profit<sup>2</sup> of \$(364)mn, underlying EPS<sup>2</sup> of USc (131.9)
- Cost and marketing savings of c.\$325mn achieved, enabling strong margins
- Significantly higher free cash flow of \$1.7bn driven by opex and capex optimization and working capital initiatives
- Net debt reduced<sup>3</sup> by \$1.1bn to \$7.3bn
- HZL announced special dividend of c.\$1.8bn<sup>4</sup>
- Non-cash charge of \$3.3bn (net of tax) due to impairment, primarily at Oil & Gas
- Final dividend of 30 US cents per share

### **Group EBITDA Mix**



### **Corporate**

 Group simplification remains a strategic priority; committed to Vedanta Limited-Cairn India merger and continue to work towards completion

<sup>1.</sup> Excludes custom smelting at Copper and Zinc India operations.

<sup>2.</sup> Based on profit for the period after adding back special items and other gains and losses, and their resultant tax and non-controlling interest effects.

<sup>3.</sup> Before c.\$1.8bn dividend announced by Hindustan Zinc on 30th March, paid out in April.

<sup>4.</sup> Includes dividend distribution tax.

# **Scorecard for the year**



Focus Area	Stated priorities	Status	Delivered during the year
Aluminium	Ramp-up pots Secure domestic supply of bauxite and coal Environmental approval for the Lanjigarh Alumina refinery expansion		Received approval for captive use of power CoP reduced by 10% at \$1572/t Received environmental approval for Lanjigarh Alumina refinery expansion
Power	Operationalize the entire portfolio		Entire 9,000MW portfolio operational Additional 2,500MW operationalised in FY2016
Iron ore	Re-commence operations at Goa		March production run-rate 0.8mtpa
Copper- Zambia	Deliver operational turnaround at KCM		Reduced C1 cash cost by 27% to USc187/lb <sup>2</sup>
Zinc - India	Ramp-up at Rampura Agucha U/G and SK mine		RAM U/G contributed significantly in Q4 FY2016
Oil & Gas	Mangala EOR ramp-up; increase Gas production		Mangala EOR Q4 average production at 32 kboepd Gas production higher than guidance
Cost & Marketing Savings	Realise \$1.3bn of procurement and marketing synergies over 4 years		Achieved \$325mn in FY2016
<b>Balance sheet</b>	Reduce Net gearing in the medium term; refinance upcoming maturities		Net debt reduced by Rs. \$1.1bn <sup>1</sup> Refinancing debt efficiently
Corporate	Further group simplification		Announced merger of Vedanta Limited - Cairn India in June 15

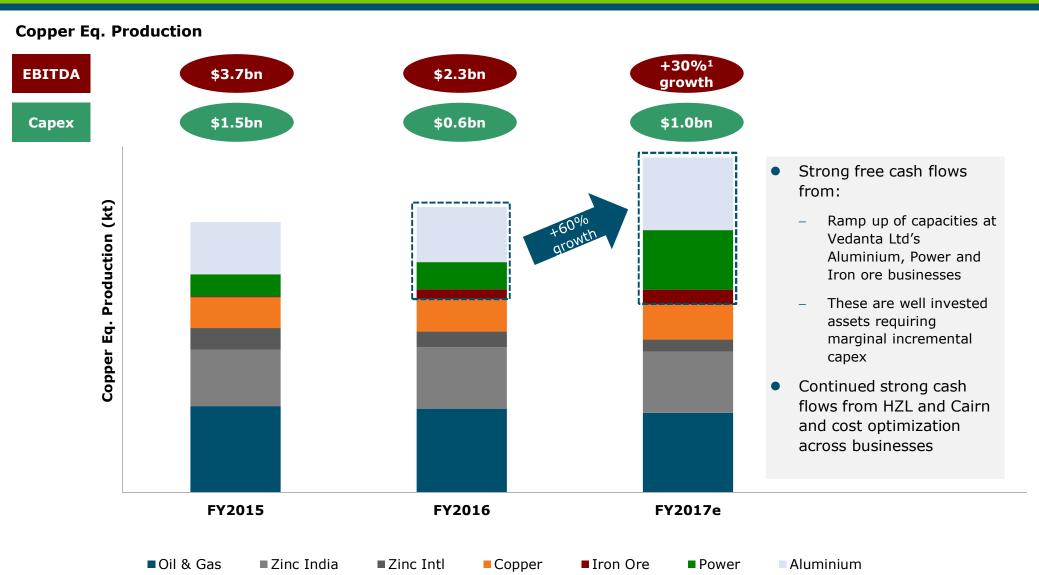
# Focus on ramp-up and cost optimization driving strong free cash flow

<sup>1.</sup> Before \$1.8bn dividend announced by Hindustan Zinc on 30 March, paid out in April.

<sup>2. 2</sup> Before exceptional items primarily include Kwacha impact on VAT receivables and provisioning for higher power cost in H2

# Ramp-up at Aluminium, Power & Iron Ore Underway





All commodity and power capacities rebased to copper equivalent capacity (defined as production x commodity price / copper price) using average commodity prices for FY2016. Power rebased using FY2016 realisations, copper custom smelting capacities rebased at TC/RC for FY2016, iron ore volumes refers to sales with prices rebased at average 56/58% FOB prices for FY2016.

1. EBITDA potential based on estimated FY2017 production, commodity prices as of 20 April 2016 and Q4 FY2016 costs.

# **India: Steady progress on regulatory changes**



#### **Positive Developments for Natural Resources**

- MMDRA Act passed: Auction of natural resources commenced
  - First round of coal and other mineral auctions completed in FY2016; government is keen on further auctions
  - MMDRA amendment eases transfer of mining leases, enabling M&A activity in the sector

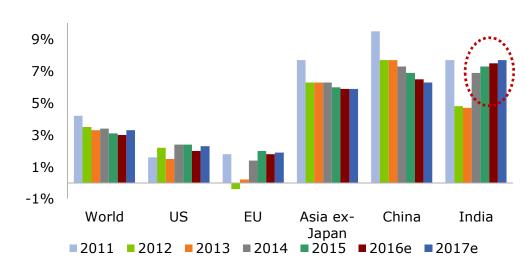
#### • 0&G:

- New Revenue-sharing regime replacing productionsharing model for the auctioning of 69 marginal O&G fields: Hydrocarbon Exploration Licensing Policy (HELP)
- Lifting of iron ore mining ban in Goa after gap of 3 years
- Government considering safeguard duty; Directorate General of Safeguard recommended 5% duty of Aluminium

# Positive developments in the Government's Budget for FY 2017

- Oil cess has been reduced from Rs. 4,500 per tonne to 20% ad valorem
- Aluminium import duty has been increased from 5% to 7.5%
  - Partly offset by increased Clean Energy cess on coal from Rs. 200 to Rs. 400 per tonne
- Export duty on <58% Fe iron ore removed</li>

### India on accelerating growth trajectory



Source: Consensus estimates from Bloomberg

### Approvals for Vedanta during the year

- Received approval to use the power generated from three units of the Jharsuguda power plant for captive use
- Received environmental clearance for expansion of Lanjigarh alumina refinery capacity to 4mtpa

# **Strategic Priorities Remain Unchanged**



### **Strategic Priorities**



Production Growth and Asset optimisation



**De-lever the Balance Sheet** 



- Disciplined ramp-up of new capacities in Aluminium, Power and Iron Ore
- Zinc: Ramp-up volumes from Rampura Agucha U/G and develop Gamsberg
- O&G: Enhance Gas production, EOR at other fields
- KCM: Ramp-up production, optimize cost
- Reduce Net Debt
- Continued optimisation of opex and capex
- Continued discipline around working capital



Simplification of the Group structure

• Vedanta Limited –Cairn India merger



**Protect and preserve our License to Operate** 

- Achieve zero-harm
- Bring all stakeholders on board prior to accessing resources



**Identify next generation of Resources** 

- Disciplined approach to exploration
- Continue to enhance our exploration capabilities: Dedicated exploration cell formed





# **Financial Update**

D.D. Jalan
Chief Financial Officer

# **Financial Highlights**



- Strong EBITDA margins from our diversified portfolio in a volatile commodity environment
- Significantly higher free cash flow of \$1.7bn driven by opex and capex optimization and working capital initiatives
- Net debt reduced by \$1.1bn to \$7.3bn
- Non-cash Impairment charge of \$3.3bn (net of tax), primarily at Oil & Gas

\$mn or as stated	FY2016	FY2015	Change
EBITDA	2,336	3,741	(38)%
Adjusted EBITDA margin <sup>1</sup>	28%	38%	
Free Cash Flow before Growth Capex	2,271	2,578	(12)%
Growth Capex	566	1,531	
Free Cash Flow after Growth Capex	1,705	1,047	<i>63</i> %
Gross Debt	16,263	16,668	(2)%
Net Debt <sup>2</sup>	7,329	8,460	(13)%
Gearing (%)	51.7%	40.8%	
Gearing – pre-impairment	33.3%	33.5%	
Net Debt/EBITDA	3.1	2.3	
Underlying Attributable PAT <sup>3</sup>	(364.1)	(39)	
Underlying EPS (USc/share) <sup>3</sup>	(131.9)	(14.2)	
Total Dividend (USc/share)	30	63	

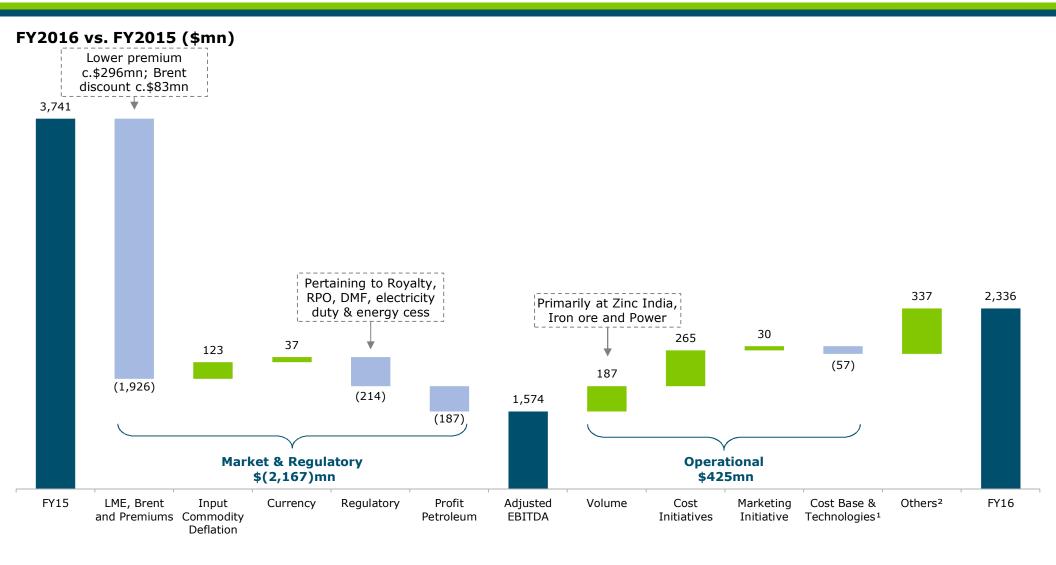
<sup>1.</sup> Excludes custom smelting at Copper India and Zinc-India operations.

<sup>2.</sup> Before \$1.8bn dividend announced by Hindustan Zinc on 30 March 2016, paid out in April.

<sup>3.</sup> Based on profit for the period after adding back special items and other gains and losses, and their resultant tax and non-controlling interest effects.

# **EBITDA Bridge**





<sup>1.</sup> Primarily Enhanced oil recovery (EOR).

<sup>2.</sup> Others for FY2015 included unsuccessful exploration \$122mn, provision for power receivables \$46mn, onetime expense at Copper Australia \$21mn; Others for FY2016 includes one-time TPS benefits mainly at Copper India \$33mn & provision write back at KCM of \$29mn.

# **Cost Savings and Marketing Initiatives**



FY2016

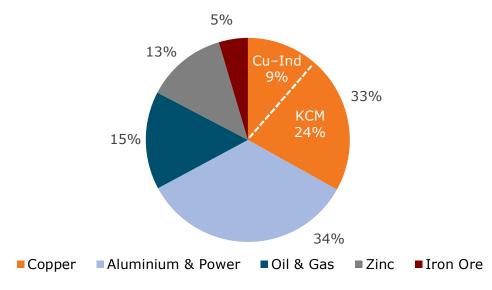
- Achieved \$325mn savings
  - \$265mn in cost, \$30mn in marketing and \$30mn in eliminated capex
  - 34% at Aluminium & Power
  - 24% at Copper-Zambia
- 900+ procurement initiatives across businesses being implemented to achieve sustainable savings:
  - Consolidation of spend & reduction of vendors by 10%
  - Zero cost / clean sheet based renegotiations Operations & Maintenance Contracts, Mining Contracts, Capex, etc.
  - Optimizing sourcing mix (coal, bauxite, alumina, etc.)
  - Enhanced use of e-auctions for procurement
  - Logistics: Multi axle trucks, turnaround time, route optimisation, etc.
  - Power usage at KCM reduced by 6%
  - Fuel, chemicals and repair & maintenance costs reduced by 23% at KCM
- Target to deliver savings of \$350-400mn in FY2017, on track to deliver \$1.3bn by FY2019



### Majority of savings at Aluminium & Power and KCM

H2 FY2016

H1 FY2016



Note: Cost and marketing savings program excludes input commodity deflation/inflation, impact of regulatory changes, technology-related cost changes and capex deferrals.

### **Income Statement**



### **Depreciation**

 Lower on account of revision of useful life of metals and mining assets w.e.f 1st Oct 2014

#### **Amortisation**

 Lower on account of lower base, post impairment in March 2015

### **Interest Expense**

 Lower due to refinancing at lower rates, partly offset by capitalization of Aluminium and Power assets

#### **Investment Revenue**

 Lower compared to FY2015 primarily due to lower interest rates and mark to market gains in FY2015

### **Impairment Charge**

 Non-cash impairment charge, primarily at oil & gas assets; \$3.3bn (\$5.2bn pre-tax)

#### **Tax Rate**

 Higher tax rate on account of higher dividend distribution tax (DDT) owing to special dividend declared by Zinc India in March 2016 (excluding incremental DDT, effective tax rate is 33%)

\$mn or as stated	FY2016	FY2015
EBITDA	2,336	3,741
Depreciation	(1,108)	(1,255)
Amortisation	(347)	(751)
EBIT	881	1,735
Interest Expense	(1,280)	(1,387)
Investment Revenues	698	833
Other Gains and Losses	(72)	(77)
Special Items-Impairment	(5,187)	(6,694)
Other Special Items	(23)	(50)
Profit before tax and special items	226	1,104
Profit Before Tax	(4,984)	(5,640)
Tax - Before special items	(256)	(353)
Effective Tax Rate <sup>1</sup>	113%	32%
Tax Credit – Special Items	1,737	2,205
PAT before special items	(29)	751
Attributable PAT before special items	(393)	(75)
Profit After Tax	(3,502)	(3,788)
Attributable PAT	(1,837)	(1,799)
Underlying PAT	34	821
Underlying Attributable PAT	(364)	(39)
Underlying Minorities %2	-	105%

#### Notes:

<sup>1.</sup> Excluding Special Items.

<sup>2.</sup> Based on profit for the period after adding back special items and other gains and losses, and their resultant tax and non-controlling interest effects. Also refer to Detailed Consolidated Income statement in the financials which shows the income statement with and without special items.

# **Non-Cash Impairment Charge**

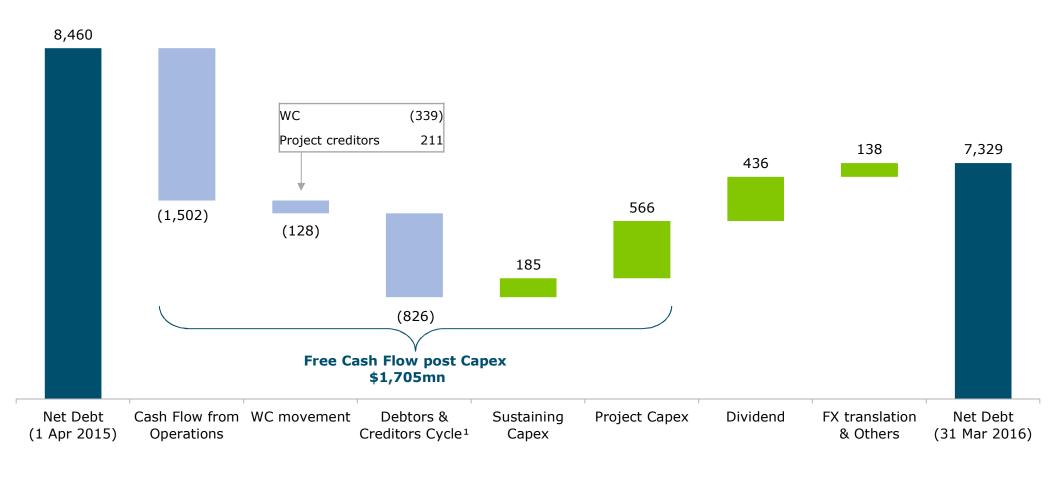


- Total impairment charge of \$3.3bn net of tax (\$5.2bn pre-tax)
- Oil and Gas
  - Non-cash impairment charge taken in light of the steep decline in oil prices, following a carrying value test
  - Present value of long term future cash flows based on oil price of \$41/bbl in FY2017, increasing to \$70/bbl in FY2020, and an annual inflation of 2.5% p.a. thereafter
  - Impairment of Oil & Gas assets of \$3.0bn (\$4.9bn pre-tax)
- Iron Ore assets in Liberia and Bellary, Karnataka
  - \$228mn impairment charge for exploratory iron ore assets in Liberia, given current low price scenario
  - \$25mn pertaining to idle assets in Bellary, Karnataka (Iron ore) and Copper mines Tasmania
- No impact on company's financial covenants or its funding position

# **Net Debt Reduction for FY2016**



(\$mn)



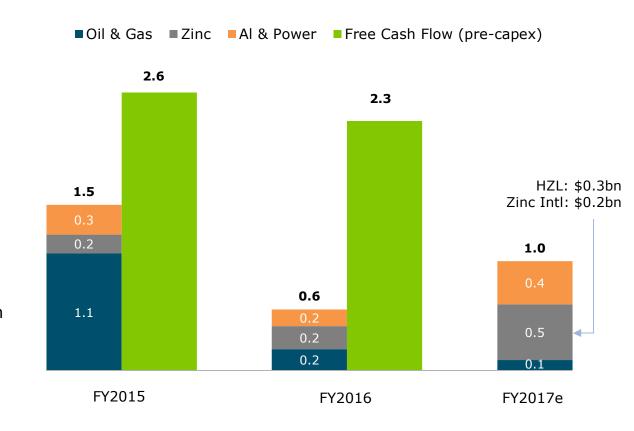
1. c. 50% expected to unwind in FY2017

# **Optimising Capex to drive Cash Flow Generation**



- Free cash flow pre capex of \$2.3bn during FY2016 in a volatile commodity price environment
- Prioritised capital to high-return, low-risk projects to maximise cash flows
  - Total Capex spent in FY16 at \$0.6bn
- Gamsberg mining and milling capex has been reduced from c.\$600mn to c.\$400mn
- FY 2017 Capex guidance at \$1bn
  - \$0.3bn for Zinc India
  - \$0.2bn for Gamsberg project
  - \$0.1bn for O&G with optionality for growth projects
  - \$0.4bn for Aluminium and Power

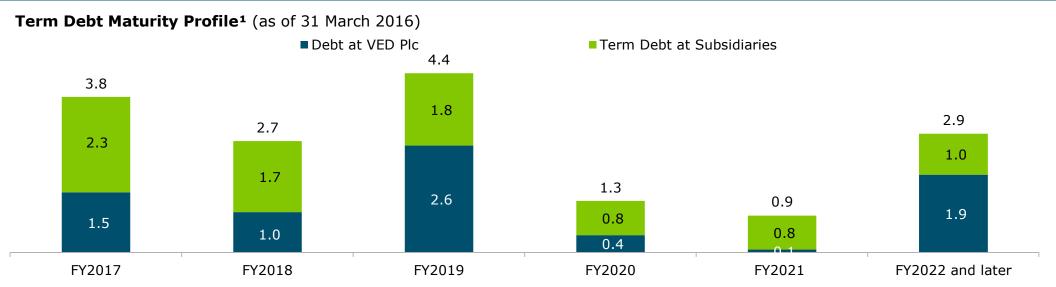
### **Cash Flow pre capex and Growth Capex Profile (\$bn)**



# FY2016 capex reduced by \$1.4bn from initial estimate

# **Strong Financial Profile**





### FY2017 Vedanta plc Maturities (\$1.5bn):

- \$0.9bn intercompany loan paid by Vedanta Limited in April 2016 (inter-company loan outstanding as on date is \$1.0 billion)
  - Available liquidity partly used for closed-period bond buyback program of the FY2017 maturities
- Further \$0.5bn of intercompany loan to be repaid by Vedanta Limited in the current quarter through operational cash flow and working capital initiatives at Vedanta Limited

# FY2017 Vedanta Ltd Maturities (\$2.3bn including \$1.3bn short term debt):

- \$1.3bn of short-term debt is expected to be met through a combination of roll-over and replacement with term debt
- \$1bn of term debt to be met through a combination of refinancing, working capital initiatives and internal accruals
  - \$200mn cash and liquid investments at Vedanta standalone
  - \$200mn refinanced in April
  - \$1bn of undrawn committed facilities at Vedanta Limited

Cash and liquid investments of \$8.9bn and undrawn committed lines of \$1.1bn as of 31 March 2016

1. Debt numbers shown at face value and exclude one-year rolling working capital facilities of \$404mn due in FY 2017.

# **Financial Priorities leading to a stronger Balance Sheet**



Disciplined Capital
Allocation:
Optimising capex,
focus on FCF

- Ramp-ups at Aluminium, Power and Iron ore to generate significant cash flows
- Optimized Capex: FY2016 capex reduced by \$1.4bn
- Positive FCF at each segment remains a priority

Deleveraging; Strong Liquidity Focus

- Continued reduction in net debt
- Strong Liquidity Focus: Cash and Liquid Investments of c.\$8.9bn and undrawn committed facilities of \$1.1bn
- Debt being refinanced at longer maturities and lower interest cost

**Cost Savings** 

- Delivering on savings program
- Cost in  $1^{st}/2^{nd}$  quartile of cost curve across all businesses

**Group Structure Simplification** 

Announced Vedanta Ltd – Cairn India merger to further simplify group structure





# **Business Review**

**Tom Albanese Chief Executive Officer** 

### Oil & Gas



#### Results

- Mangala EOR, world's largest polymer program successfully executed
  - Polymer injection ramped up to 400kblpd, EOR contributing at an average of 32kboepd in Q4
- FY2016 gross average production at 203,703 boepd
  - Rajasthan production strong at 169,609 boepd in FY16
  - Average gas production ramped-up in RDG to 27 mmscfd, exceeded guidance of 25 mmscfd
  - With an aim to improve Rajasthan crude realization, dispatch began from Bhogat terminal to MRPL
- Rajasthan water flood opex at \$5.2/boe in FY2016 reduced by 11% YoY
  - Blended operating cost including polymer at \$6.5/boe; remains well below our estimated cost

#### RDG Gas; Encouraging upside from Hydro-Fraccing

- 26% increase in field EUR as compared to FDP estimate till 2030
- Improved operation efficiency days per frac reduced from 4.5 to 2.2
- c. 50% reduction in per frac cost

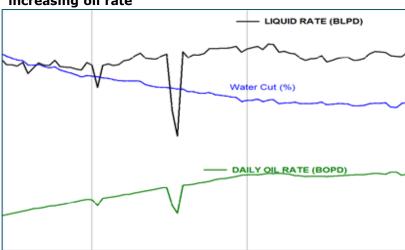
#### **Projects**

- Aishwariya Infill Successful execution of 20 well infill program aided in arresting natural decline
- Significant progress made on key optionality projects:
  - Bhagyam EOR- FEED underway, exploring option for leveraging the Mangala EOR facilities to reduce development time and cost
  - Aishwariya Barmer Hill- Discussion and alignment with JV partner on surface facility ongoing

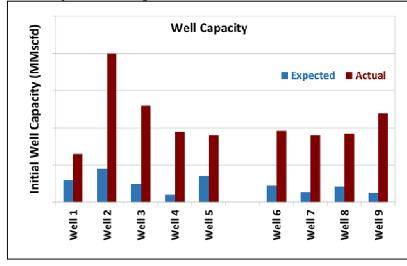
#### Outlook

- Rajasthan FY2017 production expected broadly at FY2016 level
- Routine maintenance shutdown planned in Q2FY2017
- FY2017 net capex guidance of \$100m;
  - 80% in development including RDG and Mangala EOR projects
  - 20% in Exploration

# Mangala EOR program shows stabilizing water cut and increasing oil rate



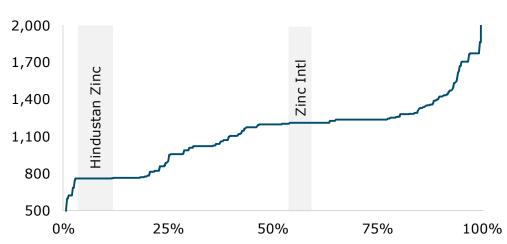
# RDG Gas: Strong increase in initial productivity from Hydro fraccing



# Zinc: Strongest fundamentals across LME metals

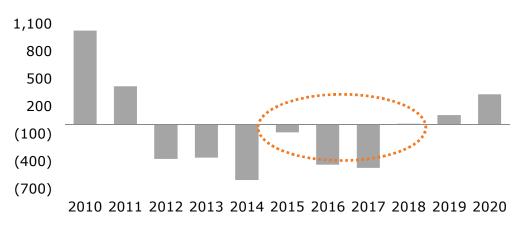






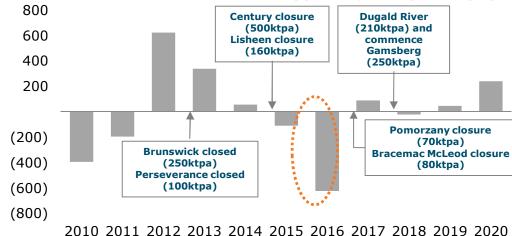
Source: Wood Mackenzie

### Global Refined Zinc Demand supply balance in deficit (kt)



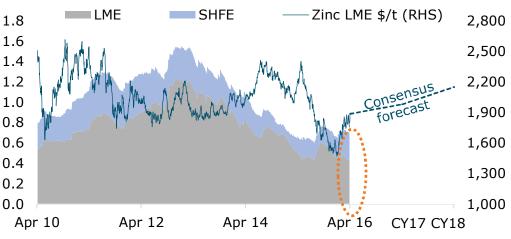
Source: Wood Mackenzie LTO Q1 2016

### Global Zinc concentrate deficit supporting zinc prices (kt)



Source: Wood Mackenzie LTO Q1 2016

### Refined Zinc inventory (mt) at 6 year low



Source: Bloomberg

### **Zinc India**



#### Results

- Mined metal production in line with guidance
- Record integrated zinc, lead and silver production
- Maintained lowest quartile cost position; FY2016 Zinc CoP lower by 7% at \$804/t
  - Cost improvement due to higher integrated production, better smelter efficiencies, lower coal & commodity costs
  - CoP would be c. \$500/t post credit for silver
- 25+ yr mine life maintained: Net addition of 14.8mt to R&R
- Special dividend of \$1.8 billion, highest single dividend by any Indian private sector company

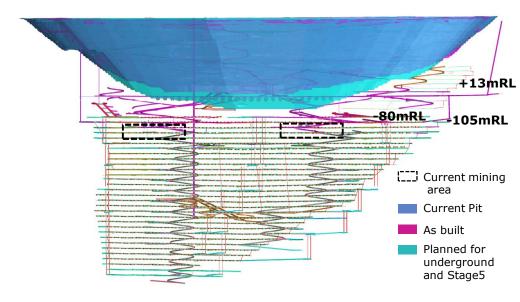
#### **Projects**

- RAM U/G main shaft sunk to 860 of the 950 metres; decline development reaching record rate of 1,425 metres in March
- SK mine ramp-up ahead of schedule, exit run-rate of 3.75mtpa
- Extension of RAM open pit: Deepening of pit by additional 50 metres (Stage V) progressing well
- Kayad surpassed 1mtpa of ore production capacity

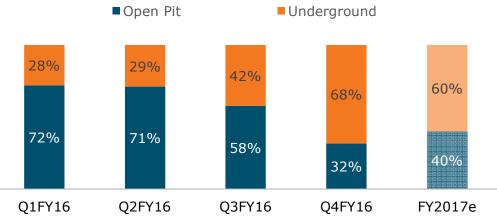
#### Outlook

- FY2017 mined metal expected to be marginally higher
  - H2 to be higher than H1, with Q1 significantly lower
- FY2017 refined integrated lead production expected to be higher than FY2016, zinc production to be stable
- FY2017 Silver production expected to be 15-16 million ounces
  - We would be one of the top 15<sup>1</sup> silver producers globally at 16 million ounces
- Zinc C1 CoP to remain stable at \$800 850 per tonne, H1 CoP to be higher in line with volumes

#### Rampura Agucha Mine - Longitude Vertical Section



### Proportion of Underground Production increasing (% of MIC)



<sup>1.</sup> GFMS; at FY2016 production we would be ranked 18th amongst global silver producers.

### **Zinc International**



#### Results

- FY 2016 Production of 226kt
  - Black Mountain production higher by 7% at 63kt; increase in mine volume supported by an increase in long-hole stopping
  - Lower production at Skorpion due to planned shutdown in Q3 and decline in mine grades
- Lisheen had a safe, detailed and fully-costed closure after 17 years of operation in November 2015, with final shipment of zinc concentrate in January 2016
- FY 2016 COP higher at \$1431/t, due to reduced volume at Skorpion and Lisheen, increased waste stripping and once-off maintenance costs at Skorpion Refinery
  - Q4 COP lower at \$1242/t, driven by higher volumes and cost initiatives

#### **Projects**

- 250kt Gamsberg Mining Project: Capex reduced by \$200mn to ~\$400mn mainly on engineering improvements and renegotiations
  - Significant boost to project returns
  - Pre-stripping progressing in line with plan with 6.5mt of waste excavated
  - First ore production targeted by 2018 with 9 to 12 month ramp-up to full production
- Skorpion Refinery conversion: Basic engineering in final stages of completion. Currently reviewing capex and opex to finalise DFS
- Skorpion pit expansion: Pre-stripping deferred, work underway to explore various options for mine life extension. Current reserves of 5.2mt (9% grade)

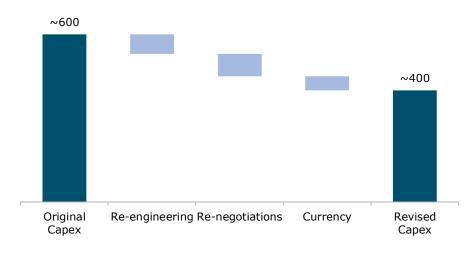
#### Outlook

- FY2017 volume expected at c.170-190kt
- COP expected at c.\$1200-\$1,300/t: continued focus on cost reduction initiatives, including labour and equipment productivity improvements



Gamsberg: Mining progress to date

#### Gamsberg capex reduction (\$mn)



# Copper - Zambia



#### Results

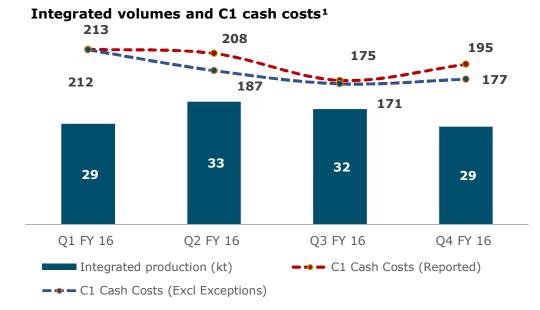
- Integrated production in line with guidance
- 23% increase in production at Konkola
  - Shaft 1 & 4 rehabilitation completed in Q1 & Q4 FY2016 respectively
  - Seeing early stage productivity improvement as mobile fleet utilisation increased from 56% to 70%
- Loss-making Nchanga underground operations (NUG) were put under managed care & maintenance during Q3 FY2016
- TLP production increased by 7%
  - Improved electrical reliability and plant availability
  - Higher throughput from mills and reclaimed tailings

#### **Cost Reduction Initiatives driving turnaround**

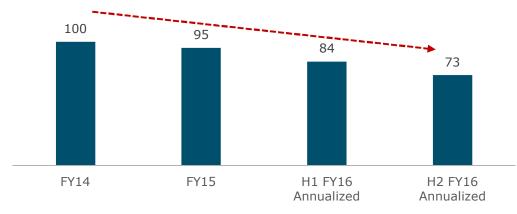
- C1 cost at USc 187/lb before exceptional items in FY2016 (reported C1 cost of USc 198/lb)
  - Continuous effort on cost saving initiatives yielding results
    - Fuel, chemicals and repair & maintenance costs reduced by 23%
    - Power usage reduced by 6%, targeting 10%
- Realized c.\$80mn savings in FY2016 compared to FY2015
- Dedicated team working on identified initiatives

### **Harnessing Technology and Innovation**

- Elevated temperature leaching for recovery improvement
- Heap Leaching Trials underway
- Refinery boiler project to reduce energy consumption



#### Operational spend base<sup>2</sup>



 $<sup>1.\</sup> Exceptional\ items\ primarily\ include\ Kwacha\ impact\ on\ VAT\ receivables\ and\ provisioning\ for\ higher\ power\ cost\ in\ H2.$ 

<sup>2.</sup> Rebased, FY2014=100...

# **Copper - Zambia (contd.)**



#### **Regulatory Update**

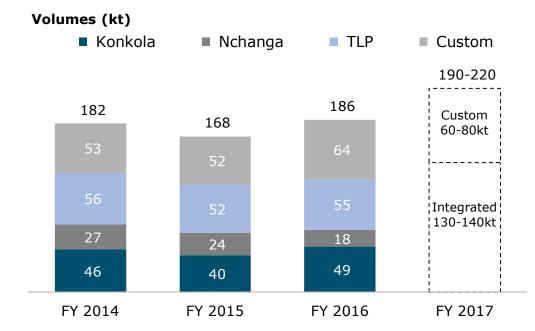
- Mineral Royalty Tax linked to copper LME prices has been passed in the parliament and awaits honourable President's assent (w.e.f. 1 April 2016)
- Power crisis continues in Zambia
  - Government revised the tariff upwards by 29% for 70% power consumption in Jan 2016
  - Copperbelt Energy Corporation continues to import and provide remaining 30% power at 87% higher tariff
  - Water levels at Kariba dam improving, currently at 23%
  - Engagement with CEC and government continues
  - New technical intervention to put oil-fired boilers as an alternate to power for electrolyte heating and ramping up refinery capacity
- VAT refunds: KCM has complied with the ZRA requirements; engaging with government on past receivables

#### Outlook

- Vision of 50 years of mining at world-class asset
  - Turnaround well underway, work still to be done
- FY 2017 expected volume and cost

Integrated production: 130-140kt
 Custom Production: 60-80kt
 Integrated C1 cost: 150-170c/lb

- Focus areas
  - Konkola turnaround
  - Stock piled refractory ores
  - Exploring means for mining Nchanga underground profitably
  - Maximise custom smelting production









Nchanga smelter

### **Aluminium**



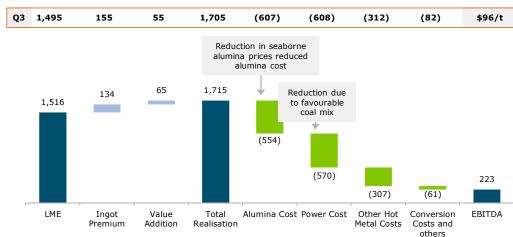
#### Results

- Record production of 923kt
- Alumina production at 971kt, marginally lower on single-stream operations
- Aluminium COP at \$1,572 for FY 2016 and \$1,431 for Q4
  - Jharsuguda Q4 COP at \$1,397, BALCO at \$1,489
  - Lower Q4 COP driven by lower alumina and power costs, and cost efficiencies
- Ingot premium remained low; focus on value added products: 56% in Q4
- Received approvals for expansion of Lanjigarh refinery to 4mtpa
- BALCO CPP: 2nd unit of 300MW of 1200MW power plant commissioned in March 2016; capitalized on 31 March 2016

#### **Outlook**

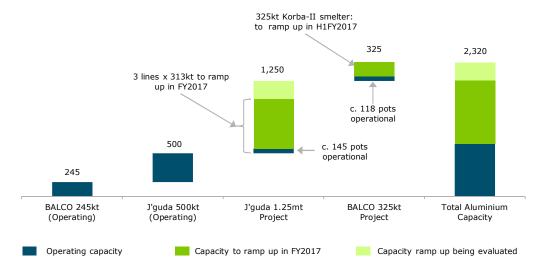
- FY 2017 production expected to be c. 1.2mn tonnes
  - 1.25mt Jharsuguda smelter (4 x 313kt): 1st pot line started-up on 1st April 2016, to ramp-up in 3-6 months
  - 2nd line to commence ramp up from end-Q2; will subsequently ramp up 3rd line from Q4; ramp up of 4th line to be evaluated
  - 325ktpa Korba-II smelter commenced ramp-up in April 2016
- Lower hot metal COP estimated at below \$1,400 for FY 2017:
  - Lanjigarh: Alumina COP estimated at \$250/t; ramp up from current 0.8mt to 1.4mt
  - Laterite mining: to commence from Q3 FY2017
  - Power cost: Favourable coal mix along with optimizing on coal sourcing and logistics

#### Aluminium Costs and Margins (\$/t, for Q4 FY2016)



Excludes one-time reversal of liabilities. Considering the reversal the EBITDA margin would be \$263/t

#### Roadmap to 2.3mtpa Aluminium Capacity



### **Power**



#### Results

- Entire portfolio of 9000MW operational in March 2016
- TSPL: Unit-I and Unit-II operated with availability of 86% in Q4
  - Unit-III synchronized in March 2016, expected to be capitalized in Q1 FY2017
- Jharsuguda 2400 MW: 39% PLF due to lower demand
- BALCO 600MW IPP: 1st unit of 300MW commenced operations in Q2, operated at PLF of 83% in Q4
  - 2nd unit of 300MW commissioned and to be capitalized in Q1FY2017

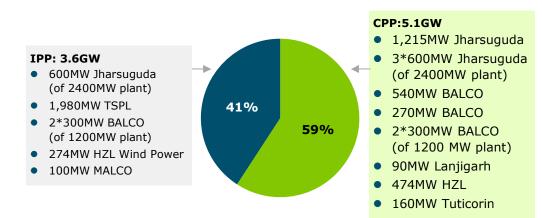
#### **Outlook**

- TSPL: Targeting availability of 80% for FY2017 for all 3 units
- Jharsuguda 2400MW:
  - Supply from 1 unit to Gridco
  - Other 3 units to continue sale of surplus power in FY 2017, until fully utilized by Jharsuguda-II smelter

#### **Coal Outlook**

- FY2017 est. coal requirement of 36mt for 9000MW portfolio
  - Coal sourcing for FY 2017 through linkages, e-auctions, imports
  - Coal India expected to auction linkages
- Chotia coal block commenced mining in FY2016
- Coal supply scenario improving gradually:
  - Coal India offered forward auctions, special auctions for CPPs &
     IPPs and spot auctions for all consumers
  - Increase in clean energy cess by Rs. 200/t has increased coal cost by 5-6%
  - Auction prices remained softer by 5% due to increased availability
  - Import index has increased by 5% but our procurement cost has remained flat

#### Power Generation Capacity Mix - c. 9GW





Talwandi Sabo

### **Iron Ore**



#### Goa

- Goa operations ramped up in Q4; achieved exit run rate of 0.8 million tonne per month
  - Engaging with the state government for higher allocation
- Costs restructured, with operational efficiencies, contract re-negotiations, resolution of transportation issues:
  - From c. \$15-20 per tonne prior to mining ban in 2012
  - 1st quartile position on cost curve

#### Karnataka:

- FY2016 sales at 3.1 million tonnes
- Sales above mining cap of 2.3mt supported through opening inventory
- Reserves & Resources improved by 12.73 million tonnes

#### Regulatory update:

- Export duty on <58% Fe has been removed from 1 March
  - Working closely with Government to resolve:
    - Duplication of taxes: Goa Permanent Fund and DMF

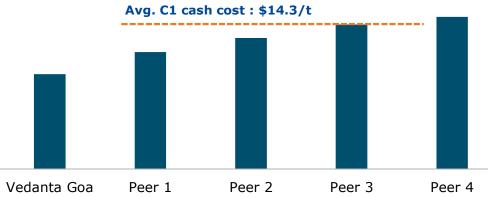
#### Pig iron

- Full year production of 654kt; FY2017 production expected around 750kt
- Significant potential contribution to EBITDA at current prices

#### Outlook

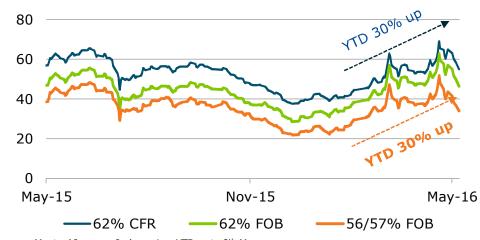
 Goa and Karnataka production expected at 5.5mt and 2.3mt respectively, further mining allocation being pursued

#### Vedanta's cost lower than top four iron ore miners<sup>1</sup>



 Costs reported by respective companies for their six months ending in December 2015, March cost for Vedanta

#### Iron ore prices have recovered from the lows of Q1



Source: Mysteel Iron ore Index price, YTD upto 9th May

# **Copper - India**



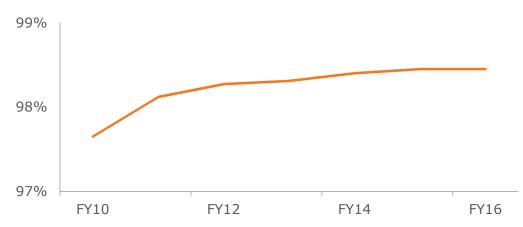
### **Copper Cathodes:**

- Positioned in the lowest cost quartile, with strong Tc/Rc and acid realization
- Smelter recovery rates have improved over time
- Net cost of conversion USc3.2/lb, reflecting plant efficiency and better acid realization
- Maintenance shutdown of c. 10 days expected in FY2017

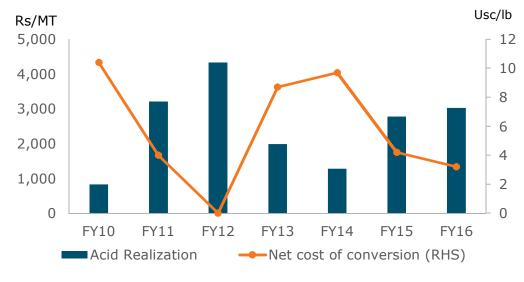
### **Tuticorin Power:**

- PLF was 71% in FY2016 due to reduced offtake from TNEB
  - Compensated at the rate of 20% of realisation for off-take below 85% of contracted quantity
- Power demand is expected to remain at current levels in FY2017

### **Smelter recovery rates**



### Acid realization improves net cost of conversion



# **Summary**



### Disciplined ramp-up of capacities

- Focus on ramp-up at Aluminium, Power and Iron ore
- Volume ramp-up at Copper Zambia
- Newly ramped up capacities to generate strong free cash flow

### Commodity prices improved significantly from lows of early 2016, but markets remain volatile

- We remain committed to further optimize opex and capex across businesses while retaining growth options
- Well positioned to benefit from improvement in the sector

# Strong Financial Profile with focus on shareholder returns

- Delivered positive free cash flow, reduced net debt during the year
- Upcoming maturities been efficiently managed
- Continue to strengthen the balance sheet

# Diversified portfolio of Tier-1 assets delivering strong free cash flows





# **Appendix**

# **Segment-wise summary**



Oil & Gas	FY2015	FY2016
Average Daily Gross Operated		
Production (boepd)	211,671	203,703
Rajasthan	175,144	169,609
Ravva	25,989	23,845
Cambay	10,538	10,249
Average Daily Working Interest		
Production (boepd)	132,663	128,191
Rajasthan	122,601	118,726
Ravva	5,847	5,365
Cambay	4,215	4,100
Average Brent (US\$/bbl)	85.4	47.5
Average realizations Oil & gas (US\$/boe)	76.0	40.9
EBITDA (\$mn)	1,477	570

Zinc-India	FY2015	FY2016
Mined Metal (kt)	887	889
Refined Zinc – Integrated (kt)	721	759
Refined Lead – Integrated (kt) <sup>1</sup>	105	140
Saleable Silver – Integrated (moz)	8.56	13.56
Average Zinc LME (\$/t)	2,177	1,829
Zinc CoP <sup>2</sup> (\$/t)	868	804
EBITDA (\$mn)	1,193	995

<sup>1.</sup> Excludes captive consumption

<sup>2.</sup> Excluding royalty. Revenues from silver not credited to CoP. With IFRIC adjustment. Without IFRIC adjustment, the COP was \$870/t in FY2015 and \$804/t in FY2016

Zinc-International	FY2015	FY2016
Mined Metal – Lisheen & BMM (kt)	209	144
Refined Zinc – Skorpion (kt)	102	82
Total Zinc-Lead Metal (kt)	312	226
CoP (\$/t)	1,393	1,431
EBITDA (\$mn)	181	68

# **Segment-wise summary (contd.)**



Copper-Zambia	FY 2015	FY 2016
Mined Metal (kt)	116	123
Finished Metal – Total (kt)	169	182
Integrated (kt)	117	117
Custom Smelting (kt)	52	64
Copper LME (\$/t)	6,558	5,211
C1 Cash Cost - Integrated¹ (USc/lb)	258	198
Total Cash Cost- Integrated <sup>2</sup> (USc/lb)	329	261
EBITDA (\$mn)	(4)	(18)
PAT (\$mn) <sup>3</sup>	(191)	(373)

<sup>1.</sup> C1 cash cost, excludes royalty, logistics, depreciation, interest, sustaining capex

<sup>3.</sup> Includes special items of \$(174)mn in FY2016 & \$61mn in FY2015

Copper-India/Australia	FY2015	FY2016
Mined Metal – Australia (kt)	-	-
Copper Cathodes- India (kt)	362	384
Tuticorin Power Plant (mu)	641	402
Average Copper LME (\$/t)	6,558	5,211
Copper Tc/Rc	21.4	24.1
Conversion cost – India (c/lb)	4.2	3.2
EBITDA (\$mn)	281	337

Aluminium	FY2015	FY2016
Aluminium Production (kt)	877	923
Jharsuguda I - 500kt	534	516
Jharsuguda II - 1,250kt¹	19	76
Korba-I 245kt	253	257
Korba-II 325kt²	71	75
Aluminium LME (\$/t)	1,890	1,590
Aluminium COP (\$/t)	1,755	1572
BALCO	1,961	1,659
Jharsuguda-I	1,630	1519
Alumina Production (kt)	977	971
Alumina COP (\$/t)	356	315
EBITDA (\$mn)	415	107

<sup>1.</sup> Includes trial run production of 51kt in FY2016 vs 19kt in FY 2015

<sup>2.</sup> Total Cash Cost includes C1 cash cost, royalty, interest and sustaining capex

<sup>2.</sup> Includes trial run production of 24kt in FY2015

# **Segment-wise summary (contd.)**



FY2016

5.3 2.2

3.1

5.2

2.2

3.0

20.6

654

485

**73** 

Power	FY2015	FY2016	Iron Ore and Pig Iron	FY2015
Power Sales (million units)	9,859	12,121	Sales (mt)	1.2
Jharsuguda 2,400MW	7,206	7,319	Goa <sup>1</sup>	-
BALCO 270MW	89	169	Karnataka	1.2
BALCO 600MW	10	1,025	Production	0.6
MALCO	897	402	Goa	-
Talwandi Sabo	1,213	2,792	Karnataka	0.6
HZL Wind Power	444	414	Average Net Sales Realizations (\$/t)	28.0
Power - Realisation (Rs./unit)¹	3.25	2.91	Pig iron - Production (kt)	611
Power - Cost of generation (Rs./unit) <sup>1</sup>	2.14	2.15	Met coke – Production (kt)	500
Talwandi Sabo – Realisation (Rs./unit)²	4.37	4.34	EBITDA (\$mn)	31
Talwandi Sabo – Cost of generation (Rs./unit)²	3.91	3.50	1. Includes ore purchased from auction: - 0.6mt in Q3FY2016	
EBITDA (\$mn)	154	196	- 0.8mt in Q4FY2016, and - 1.4mt in FY2016	

<sup>1.</sup> Excludes Talwandi Sabo.

<sup>2.</sup> Based on availability, generation would have been 1,897mu for FY2015 and 5,751mu for FY2016.

<sup>- 1.4</sup>mt in FY2016

# **Entity-wise financials**



### FY2016

(\$mn or as stated)	VED Plc Consol	КСМ	Plc Cos	Elim	VED Ltd Consol	VED Ltd stand- alone	Cairn India	HZL	ZI	BALCO	TSMHL	TS	Others¹	Elim
Group Revenue	10,738	972	_	(5)	9,770	4,534	1,322	2,132	392	739		248	925	(522)
EBITDA	2,336	(18)	(7)	(0)	2,361	615	570	1,018	68	(1)	(0)	86	1	5
Depreciation	(1,108)	(179)	(0)	1	(930)	(150)	(545)	(103)	(54)	(36)	(0)	(28)	(15)	-
Amortisation	(347)	(175)	-	_	(347)	(34)	(282)	(21)	(2)	(5)	_	(20)	(3)	_
Special Items	(5,210)	(1)	_	_	(5,210)	(21)	(4,934)	(5)	(0)	(11)	_	_	(239)	0
Operating Profit	(4,329)	(198)	(7)	1	(4,125)	411	(5,190)	889	11	(53)	(0)	58	(256)	5
Investment Revenue	698	0	363		668	1,376	224	415	6	3	41	(0)	78	(1,474)
Finance Cost	(1,280)	(77)	(503)	203	(903)	(561)	(11)	(3)	(4)	(38)	(297)	(50)	(63)	123
Other Net Gains / (Losses)	(72)	(22)	(2)	_	(70)	(13)	(37)	-	3	(12)	(237)	(10)	(1)	-
Profit Before Taxation	(4,984)	(275)	(149)	(129)	(4,430)	1,213	(5,014)	1,301	16	(100)	(256)	(2)	(242)	(1,346)
Current Tax	(537)	(0)	(2)	(123)	(535)	(1)	11	(276)	(1)	(100)	(230)	(2)	(242)	(272)
Deferred Tax	2,019	(98)	(2)	(26)	2,142	70	1,823	169	(1)	59	_	_	(1)	24
Profit after tax		(373)				1,281	(3,180)		(1) <b>14</b>	(41)	(256)	(2)		(1,595)
Attributable to equity holders	(3,502)			(155)				1,194			(256)	(2)		
Underlying PAT (before non-	(1,838)	(296)	(151)	(155)	(1,236)	805	(1,197)	487	7	(13)	(161)	(1)	(150)	(1,013)
controlling interests) Underlying Attributable PAT	34	(199)	(151)		537	1,310	(111)	1,197	12	(26)	(256)	8	(0)	(1,595)
	(364)	(158)	(151)	(155)	97	823	(42)	488	6	(8)	(161)	5.18	(0)	(1,014)
Property Plant and Equipment <sup>2</sup>	13,862	1,320	0.19	-	12,542	6,044	1,224	1,782	114	1,746	_	1,593	38	
Mining Reserve	1,315	428	-	-	887	354	-	149	129	23	-	-	232	-
Exploratory Assets	1,471	_	-	_	1,471	_	1,331	_	140	-	_	_	_	-

<sup>1.</sup> Includes Fujairah Gold, Sesa Resources Ltd, SMCL, Vizag General Cargo Berth, Western Cluster Limited, Copper Mines of Tasmania, Malco Energy Limited and Vedanta Ltd Investment companies.
2. Includes Capital Work in Progress.

# **Entity Wise Cash and Debt**



### **Net Debt Summary (\$mn)**

		31 Mar 2015			30 Sept 2015	5		31 Mar 2016	
Company	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt
Vedanta plc¹	7,707	34	7,673	8,053	17	8,036	7,364	30	7,334
КСМ	802	65	738	728	38	690	659	33	626
Vedanta Ltd. Standalone	4,574	135	4,439	4,422	334	4,088	4,982	203	4,779
Zinc International	-	137	(137)	-	158	(158)	-	97	(97)
Zinc India	-	4,937	(4,937)	-	5,306	(5,306)	-	5,318	(5,318)
Cairn India	-	2,857	(2,857)	-	2,976	(2,976)	-	3,240	(3,240)
BALCO	767	0	766	769	12	757	770	2	768
Talwandi Sabo	1,037	24	1,013	1,032	30	1,002	1,094	6	1,088
Twin Star Mauritius Holdings Limited and Others <sup>2</sup>	1,781	21	1,760	1,447	46	1,401	1,394	7	1,387
Vedanta Ltd. Consolidated	8,159	8,111	48	7,670	8,862	(1,192)	8,240	8,873	(633)
Total (in \$mn)	16,668	8,210	8,460	16,451	8,917	7,536	16,263	8,937	7,329³

#### Notes:

Debt numbers at Book Values. Since the table above shows only external debt, it excludes the inter-company loans. As on 31 March 2016 there was \$1.9bn receivable at Vedanta plc from TSMHL.

<sup>1.</sup> Includes Investment Companies.

<sup>2.</sup> Others include: CMT, Fujairah Gold, MEL, VGCB, Sesa Resources Ltd, other Iron Ore companies, and Vedanta Ltd. Investment companies.

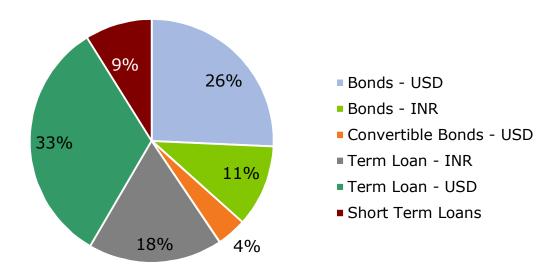
<sup>3.</sup> Includes \$2mn debt related derivative liability.

### **Debt Profile**



### **Diversified Funding Sources for Term Debt**

(as of 31 March 2016)



- 48% of the debt is fixed interest rate, 52% floating rate
- 63% of the debt is USD-denominated, 37% is INR-denominated

Note: Numbers based on face value of debt

# **Inter-company Debt**



# **Debt Service Liability**

(in \$mn)

Vedanta Resources plc	30 Sept 2015	31 Mar 2016	FY2016 Interest Cost
Gross External Debt	8,216	7,507	505
Intercompany Receivable at Plc from Vedanta Ltd	(2,611)	(1,867)	(177)
Debt Service Liability	5,605	5,640	328

Vedanta Ltd.	30 Sept 2015	31 Mar 2016	FY2016 Interest Cost
Gross External Debt	7,711	7,972	555
Intercompany Payable to Vedanta plc	2,611	1,867	177
Intercompany Payable to Cairn India	1,250	1,250	43
Debt Service Liability	11,572	11,089	775

Cairn India Ltd.	30 Sept 2015	31 Mar 2016	FY2016 Interest Cost
Intercompany Receivable at Cairn India from Vedanta Ltd	(1,250)	(1,250)	(43)

Note: Debt numbers at Face Values.

# **Credit Metrics**



	FY2015	FY2016	Covenant (Up to March 2017)
Net Debt/EBITDA	2.27x	3.14x	< 4.0x
EBITDA/Net Interest Expense <sup>1</sup>	6.78x	3.86x	> 2.5x
Net Assets/Debt	1.91x	1.55x	> 1.4x
Gearing <sup>2</sup>	40.8%	51.7%	
Gearing – pre-impairment <sup>2</sup>	33.5%	33.3%	

Several of our facilities have 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 by lenders until Sept 2016, and progressively revert to original levels by March 2019. The above table shows the strictest of the covenants.

<sup>1.</sup> Interest includes Capitalized Interest.

<sup>2.</sup> Gearing is calculated as Net Debt divided by the sum of Net Debt and Equity.

# **Currency and Commodity Sensitivities**



### Foreign Currency - Impact of a 10% depreciation in FX Rate

Currency	FY2016 Average FX rate	FY2016 EBITDA (\$mn)
INR/USD	65.4611	207.6

### **Commodity prices - Impact of a 10% increase in Commodity Prices**

Commodity	FY2016 Average price	FY2016 EBITDA (\$mn)
Oil (\$/bbl)	47	96.2
Zinc (\$/t)	1,829	158.0
Aluminium (\$/t)	1,590	119.2
Copper (\$/t)	5,211	96.7
Lead (\$/t)	1,768	28.3
Iron ore (\$/dmt)	20.6	8.2
Silver (\$/oz)	15.22	21.8

# **Project Capex**



Capex in Progress	Status	Capex (US\$mn)	Spent up to March 2015	Spent in FY2016	Unspent as at 31 Mar 2016
Cairn India	Flexibility in capex based on oil prices	1,378	1,080	198	100
<b>Total Capex in Progress - Oil &amp; Gas</b>		1,378	1,080	198	100
Aluminium Sector					
BALCO – Korba-II 325ktpa Smelter and 1200MW power plant(4x300MW)	Smelter: 84 pots capitalised in Sep 14, further ramp-up commenced from Apr 16 Power – All 4 units operational	1,872	1,818	71	$(17)^1$
Jharsuguda 1.25mtpa smelter	Ramp-up commenced : 82pots capitalized in Dec 15; further ramp-up in $1^{\rm st}$ April	2,920	2,535	34	351
Power Sector					
Talwandi 1980MW IPP	All 3 units commissioned	2,150	2,011	43	96
Zinc Sector					
Zinc India (Mines Expansion)	Phase-wise by FY2019	1,500	602	188	710
Zinc International					
Gamsberg Mining Project	By 2018-19	400	5	16	379
<b>Total Capex in Progress</b>		10,220	8,051	550	1,619
Capex Flexibility					
Metals and Mining					
Lanjigarh Refinery (Phase II) – 4mtpa		1,570	809	3	758
Iron ore, Liberia <sup>2</sup>		228	225	3	-
Tuticorin Smelter 400ktpa	EC awaited	367	129	3	235
Skorpion Refinery	Under feasibility study	156	4	7	145
Total Capex Flexibility		2,321	1,167	16	1,138
Total Capex		12,541	9,218	566	2,757

Cost overrun on account of changes in exchange rates.
 No capex currently planned at Liberia due to decline in Iron Ore prices.

# **Sales Summary**



Sales volume	FY2015	FY2016
Zinc-India Sales		
Refined Zinc (kt)	736	760
Refined Lead (kt)	129	145
Zinc Concentrate (DMT)	-	-
Lead Concentrate (DMT)	-	-
Total Zinc (Refined+Conc) kt	736	760
Total Lead (Refined+Conc) kt	129	145
Total Zinc-Lead (kt)	865	906
Silver (moz)	10.5	13.7
Zinc-International Sales		
Zinc Refined (kt)	98	87
Zinc Concentrate (MIC)	158	106
Total Zinc (Refined+Conc)	256	193
Lead Concentrate (MIC)	48	44
Total Zinc-Lead (kt)	304	237
Aluminium Sales		
Sales - Wire rods (kt)	310	357
Sales - Rolled products (kt)	46	21
Sales - Busbar and Billets (kt)	116	111
Total Value added products (kt)	472	489
Sales - Ingots (kt)	406	438
Total Aluminium sales (kt)	878	927

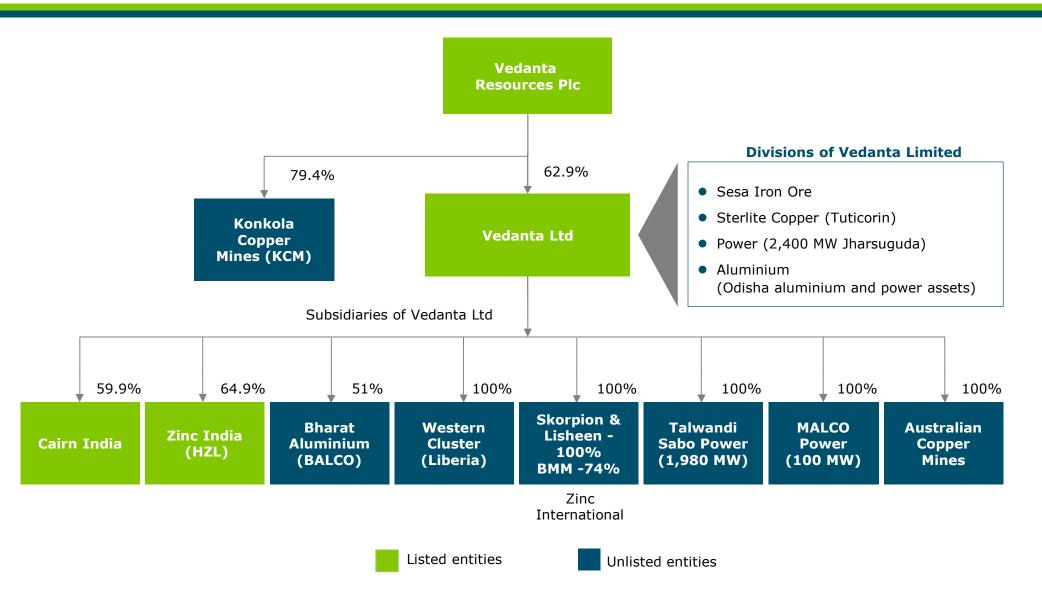
Sales volume	FY2015	FY2016
Iron-Ore Sales		
Goa (mn DMT)	=	2.2
Karnataka (mn DMT)	1.2	3.1
Total (mn DMT)	1.2	5.3
MetCoke (kt)	505	498
Pig Iron (kt)	605	663
Copper-India Sales		
Copper Cathodes (kt)	191	167
Copper Rods (kt)	171	210
Sulphuric Acid (kt)	504	505
Phosphoric Acid (kt)	193	197
Copper-Zambia Sales		
Copper Cathodes (kt)	163	184
Power Sales (mu)		
Jharsuguda 2,400MW	7,206	7,319
TSPL	1,213	2,792
BALCO 270MW	89	169
BALCO 600 MW	10	1,025
MALCO	897	402
HZL Wind power	444	414
Total sales	9,859	12,121
Power Realisations (INR/kWh)	2.0	2.6
Jharsuguda 2,400MW TSPL <sup>2</sup>	3.0 4.4	2.6 4.3
BALCO 270MW	4.4 2.9	3.3
BALCO 600MW	2.9	3.2
MALCO	5.5	6.2
HZL Wind power	3.5	4.0
Average Realisations <sup>1</sup>	3.3	2.9
Power Costs (INR/kWh)		
Jharsuguda 2,400MW	2.0	2.1
TSPL <sup>2</sup>	3.9	3.5
BALCO 270MW	4.0	3.9
BALCO 600MW	2.0	2.4
MALCO	3.8	4.2
HZL Wind power Average costs	0.6	0.1
Average costs	2.1	2.1

<sup>1.</sup> Excludes TSPL.

<sup>2.</sup> Based on plant availability.

# **Group Structure**





Note: Shareholding based on basic shares outstanding as on 31 March 2016