



Channelling  
growth

Vedanta Resources

opportunities



OIL & GAS | ZINC & SILVER | ALUMINIUM | POWER | IRON ORE | STEEL | COPPER

INVESTOR PRESENTATION - H1 FY2019

15 November 2018



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## **H1 FY2019 Review**

Venkat, CEO

## **Growth Projects and Business Deep Dive**

Venkat, CEO

## **Financial Update**

Arun Kumar, CFO

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# H1 FY2019 Review

**Venkat**

**Chief Executive Officer**

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## Safety

- 10 fatalities in H1 FY19 - principal focus area for CEO and ExCo to drive ownership by leaders in all businesses

## Environment and Sustainability

- HZL - 1<sup>st</sup> in Environment category, DJSI global rankings for metals & mining; Overall ranking improves to #5 from #11
- Fly-ash recycling rate at 107% in H1FY19 (90% in FY18)

## Community

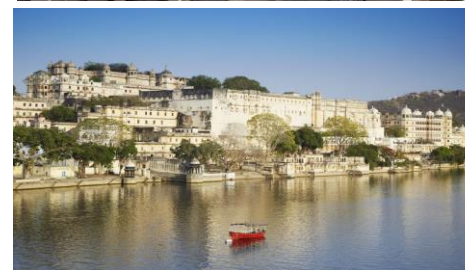
- 32,000+ women part of 2,600+ Vedanta promoted self-help-groups and related programs such as Sakhi at HZL
- 3,400+ youths trained in different trades through 11 projects like Tamira Muthukkal at Tuticorin







## Water Management




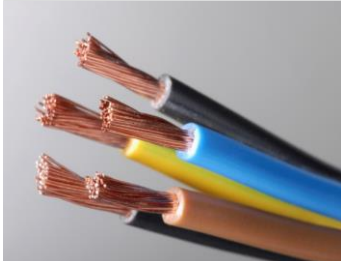

Water risk mitigation measures for water self-sufficiency

- Dariba, HZL - uses treated water from Sewage Treatment plant
- TSPL - Onsite storage increase
- Commitment to conserve 4 million m<sup>3</sup> of water in FY19  
- Greater than 1 million m<sup>3</sup> saved as of H1.



	Zinc India	Zinc International	O&G	Aluminium
<b>Production</b>	Refined Zn-Pb: 425kt Silver: 10 moz	BMM: 29kt Skorpion: 25kt	Gross average: 190 kboepd	Aluminium: 976 kt Alumina: 673 kt
<b>Costs</b>	CoP ex. royalty: \$1,039/t	CoP: \$2,393/t	RJ blended: \$7.2/bbl	CoP: \$1,978/t
<b>EBITDA (Margin %)</b>	\$ 727 mn (50%)	\$ 15 mn (9%)	\$ 572 mn (58%)	\$ 242 mn (11%)
<b>Key developments</b>	<ul style="list-style-type: none"> <li>Record silver production and MIC production from U/G mines</li> <li>CoP higher y-o-y impacted by high input commodity prices</li> </ul>	<ul style="list-style-type: none"> <li>Trial production at Gamsberg commenced in end September</li> <li>Skorpion Pit 112 extension progressing well</li> <li>CoP impacted by lower volumes and grades</li> </ul>	<ul style="list-style-type: none"> <li>Secured 41 exploration blocks through OALP-1</li> <li>First exploration well in KG notified as discovery</li> <li>7 development drilling rigs in Rajasthan; 32 wells drilled till date</li> </ul>	<ul style="list-style-type: none"> <li>Strong alumina production, continued bauxite delivery from OMC</li> <li>Costs impacted by volatility in import alumina prices and coal availability</li> <li>Focus on structural cost reduction</li> </ul>
				

# H1 FY2019 Business Highlights (cont'd)

	Power	Iron Ore and Steel		Copper India	Copper Zambia
		Iron Ore	Electrosteel		
<b>Production</b>	Power sales: 6,830 MU TSPL availability: 93%	Karnataka: 2.6mt	ESL: 527kt	Cathodes: 40kt	Integrated: 48 kt Custom: 47 kt
<b>Costs</b>	TSPL margin: Re1.0/unit	IOK CoS: \$7.0/t	EBITDA/t \$112/t	CoP: -	CoP (ex royalty): 276c/lb
<b>EBITDA (Margin %)</b>	\$ 117 mn (24%)	\$ 45 mn (22%)	\$ 30 mn <sup>1</sup> (14%)	\$ (12) mn (-2%)	\$ (41) mn (-7%)
<b>Key developments</b>	<ul style="list-style-type: none"> <li>TSPL delivered 93% PAF in H1 FY19</li> <li>PLFs of BALCO and Jharsuguda impacted by coal shortages</li> </ul>	<ul style="list-style-type: none"> <li>Mining operations of all companies in Goa remain suspended on state-wide directive, engaging with Govt. for resumption</li> <li>Karnataka sales impacted by muted e-auction sales</li> </ul>	<ul style="list-style-type: none"> <li>Continued ramp-up towards 1.5mtpa capacity</li> <li>Q2 exit run-rate of 1.3mtpa</li> </ul>	<ul style="list-style-type: none"> <li>NGT review in progress</li> <li>Ongoing community and stakeholder engagement</li> <li>CSR projects continuing notwithstanding the plant shutdown</li> </ul>	<ul style="list-style-type: none"> <li>Costs impacted by kwacha depreciation</li> <li>Equipment mobilisation, dewatering and development by business partners at Konkola expected to improve in H2</li> </ul>
					

Note:  
1. Vedanta acquired Electrosteel Steels on 4<sup>th</sup> June 2018, financial numbers are for the period of four months starting from June 2018



# Growth Projects and Business Deep Dive

**Venkat**

Chief Executive Officer

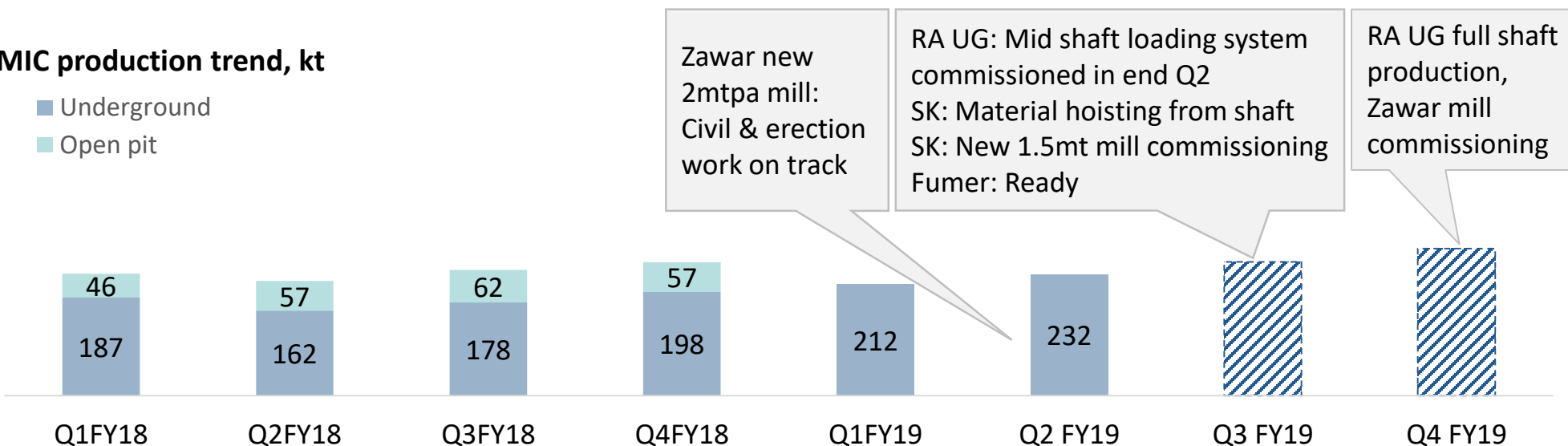
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## MIC production trend, kt

- Underground
- Open pit



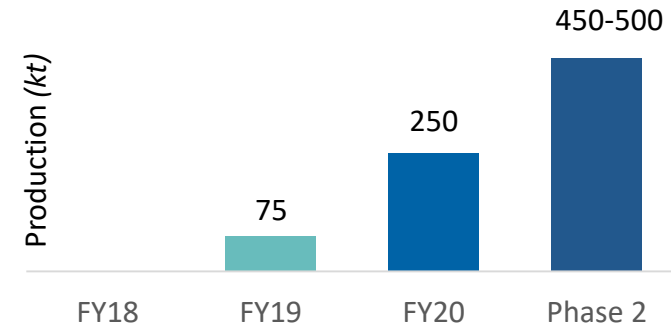
M2C Automatic Face drill Machine

## Roadmap to Phase – I of 1.35mtpa

	FY18	FY20	FY21
Rampura Agucha UG (RA)	2.1	4.5	5.0
Sindesar Khurd (SK)	4.5	6.0	6.5
Zawar	2.2	4.5	5.7
Rajpura Dariba	0.9	1.5	2.0
Kayad	1.2	1.2	1.2
<b>Total ore capacity mtpa</b>	<b>10.9</b>	<b>17.7</b>	<b>20.4</b>
<b>MIC capacity mtpa</b>	<b>0.73</b>	<b>1.20</b>	<b>1.35</b>

## 250kt Gamsberg project

- 100% of pre-stripping completed in July
- Trial production of concentrate commenced in end September
- Crusher commissioned; 750kt of ore stockpile built ahead of plant feed



Crushed ore stock pile



Concentrator Plant



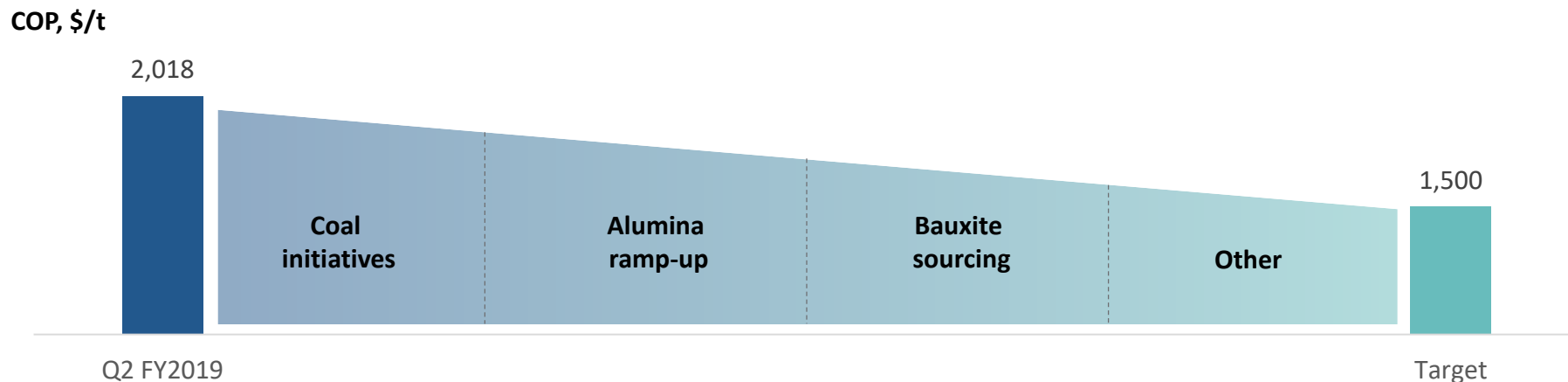
Floatation area

## Skorpion Pit 112 extension

- Over 65% of waste stripping completed, full completion by Q4 FY19
- In H2 higher grades expected, with mine fully ramped up

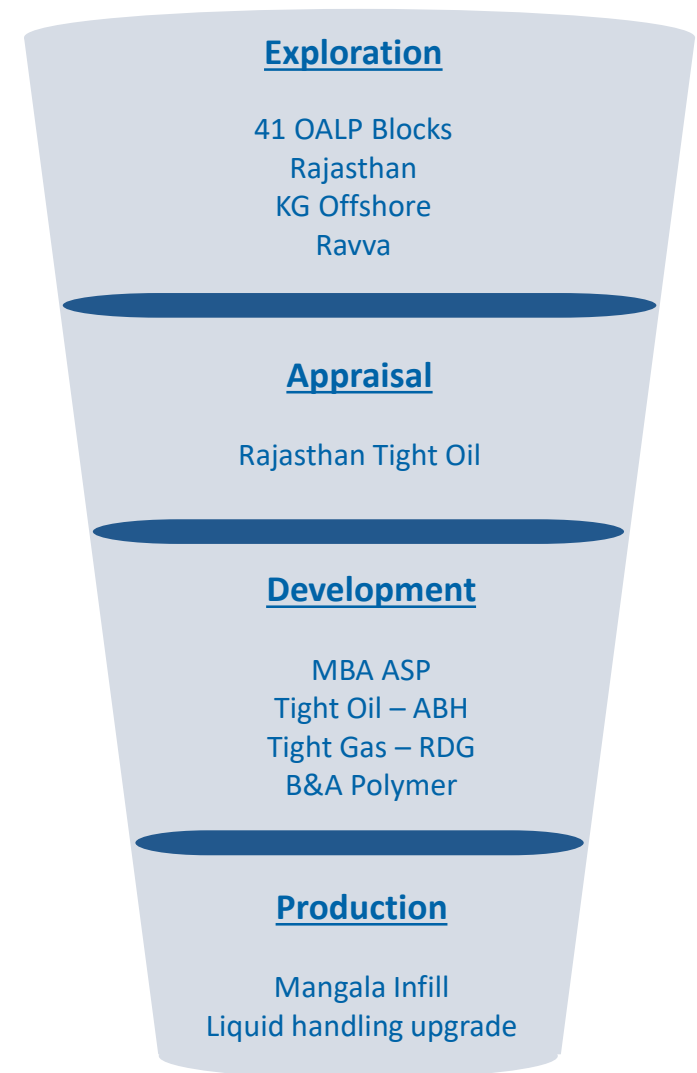


# Aluminium: Progress on structural reduction in costs



Steps	H1 FY19 Progress	Mid term plan	
<b>Coal initiatives</b>	✓✓	<b>Coal security</b> 49% (Q2 FY19) -> 90%	<ul style="list-style-type: none"> <li>3.2mt additional linkage from Tranche IV auction; Tranche V, VI expected in mid term</li> <li>Coal mining at Chotia (first coal delivered end-October)</li> <li>GCV increase with Gol appointed 3<sup>rd</sup> party sampling</li> </ul>
<b>Alumina ramp-up</b>	✓	<b>Captive production</b> 1.5-1.6mt (FY19e) -> 4mt	<ul style="list-style-type: none"> <li>Captive alumina run rate from Lanjigarh expected at c.2mt by year end</li> <li>Lanjigarh 4mt (Phase-1) ramp-up - advanced stage of planning</li> </ul>
<b>Bauxite sourcing</b>	✓✓✓	<b>Captive alumina CoP</b> \$358/t (Q2 FY19) -> c. \$240/t	<ul style="list-style-type: none"> <li>OMC bauxite - targeting 250kt per month exit run rate in Q3 FY2019</li> </ul>
<b>Other</b>	✓		<ul style="list-style-type: none"> <li>Logistics: Shifting from road to rail</li> <li>Ongoing improvement in power plant operating parameters</li> <li>Carbon: Strategic partnership with key suppliers for long term contracts</li> </ul>

- For the first time, a sustainable and large portfolio mix comprising opportunities across O&G lifecycle
- Acquisition of 41 blocks in OALP establishes Cairn as one of the largest acreage holder in the country
- Capex investment of over \$2.5bn being driven through integrated partnership model with global oil field service companies
- Locked in capex contracts at lower oil prices (project IRR > 20% at \$40/bbl Brent); poised to benefit from recent surge in oil prices
- Focus on cutting edge technology enabling world class recovery rates



## Presence

- 41 blocks, mostly in established basins
- Onshore 33 blocks, Offshore 8 blocks

## Prospective resource base

- Potential of ~1.4 - 4.2 bn boe of resources
- Blocks closer to existing infrastructure facilitating ease of cost effective monetization
- ~USD 550m work program commitment
- 150+ exploratory wells to be drilled in the next 2-4 years

## Unlocking potential

- Revenue sharing model enables flexible techno-commercial construct to execute expeditiously
- Vendor outreach commenced
- Key vendors meet (India and Houston) in Q3FY19

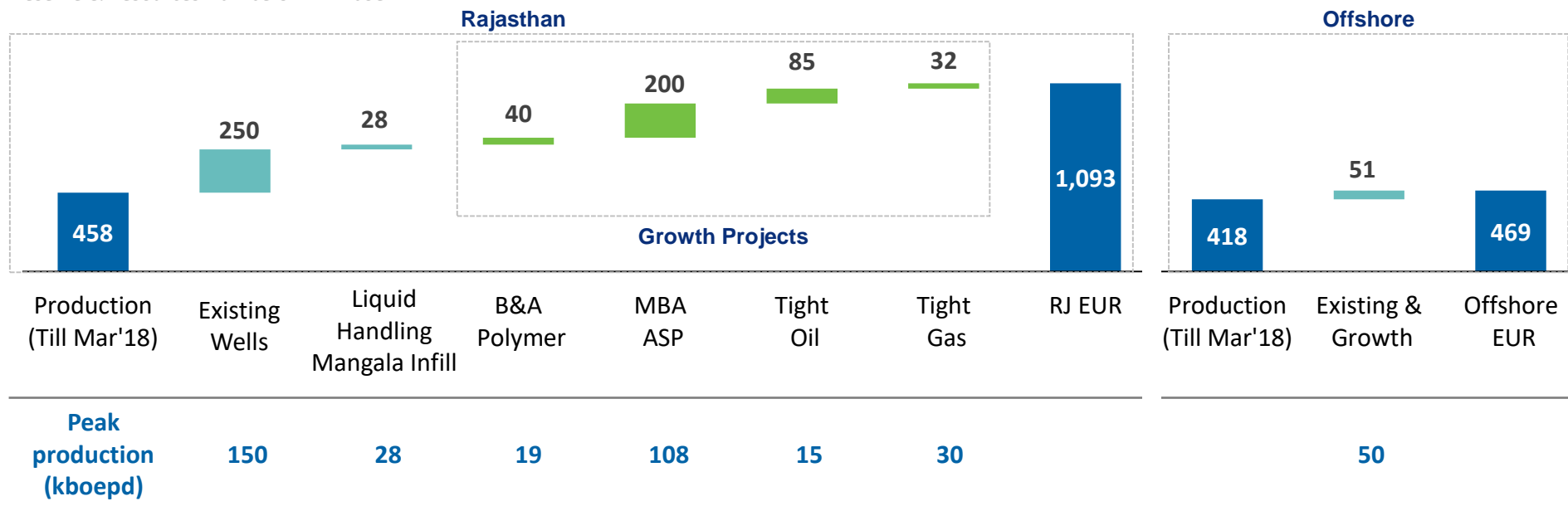


Substantial acreage positions across basins with vast untapped potential

	Onshore		Offshore	
	Rajasthan Exploration	Rajasthan Tight Oil Appraisal	KG Offshore	Ravva
Work Program	Wells: 7-18	4 Fields (V&V, MBH, DP & Shakti)	Wells: 2	Wells: 9-16
Resources Target, mmbœ	300-600	190	300	Reserves – 17 mmbœ Resources – 50 mmbœ
Capex, \$m	60	70	50	185
Partner	Schlumberger	Schlumberger	Schlumberger	Under award
Execution	Rig 1 : Q3 FY19 Rig 2 : Q4 FY19	Rig 1 & 2 : Q3FY19 Rig 3 : Q4FY19	Gas discovery in first well; Second well drilling from January 2019	1 Rig program, likely to commence from Q4 FY19

# Monetizing resources with best in class technology

All Reserve & Resources Numbers in mmboe



- MBA recovery factor ~ 50%, amongst the best globally
- Growth capex adds over 350 mmboe at \$ 5/boe
- RDG gas production pushed ahead of schedule; increase by ~ 90 mmscfd in Q4FY19 through early production facility
- Implementing world's largest ASP project; Wells contract in place, Facilities to be awarded in Q3FY19

**World class recovery factors at best in class capex**

# Growth Projects: Wells hook up to add volumes

Project	Partner	Capex (\$ Million)	Wells	EUR	Rigs	Timeline			
						Jun 18	Sep 18	Dec 18	Mar 19
Mangala Infill	Halliburton	100	45	18	1	3	10  2	22  11	45  21
Bhagyam & Aishwariya Polymer	Halliburton	140	42	40	2	10  2	19  6	33  13	42  23
MBA ASP	BH-GE Facilities: Under Award	905	143 – 286	200	3			5	25  6
Tight Oil	Schlumberger	170	39	32	3		2	9  2	15  6
Tight Gas	Schlumberger, Petrofac, Megha Engg	550	42	85	2		1	3	5
Liquid Handling	L&T, Kalpatru	210	-	10	-				

**Increasing wells in Rajasthan from 500+ to 900+**

Rigs  
 Cumulative count of wells drilled  
 Cumulative count of wells hooked up  
 Facilities execution commenced





# Financial Update

**Arun Kumar**

Chief Financial Officer

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## EBITDA

\$ 1,710 mn

Up 1% y-o-y

## ROCE<sup>1</sup>

13.8%

Robust return

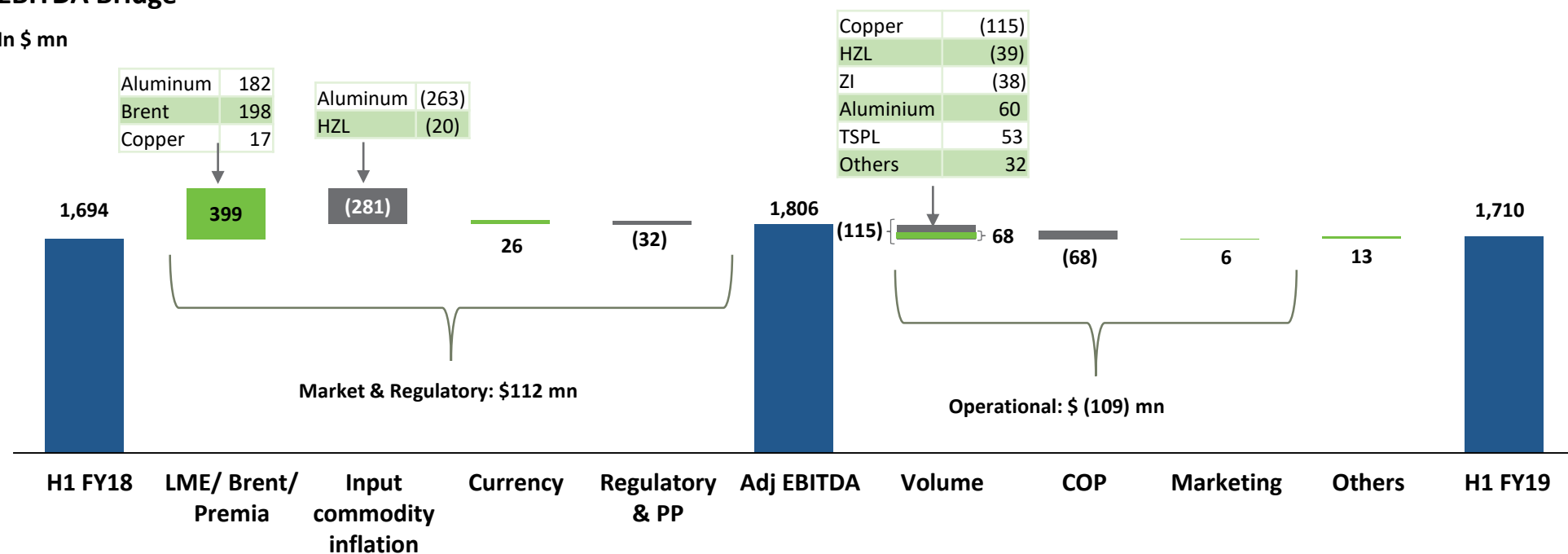
## Net Debt

\$ 10,195 mn

Up 13% y-o-y

## EBITDA Bridge

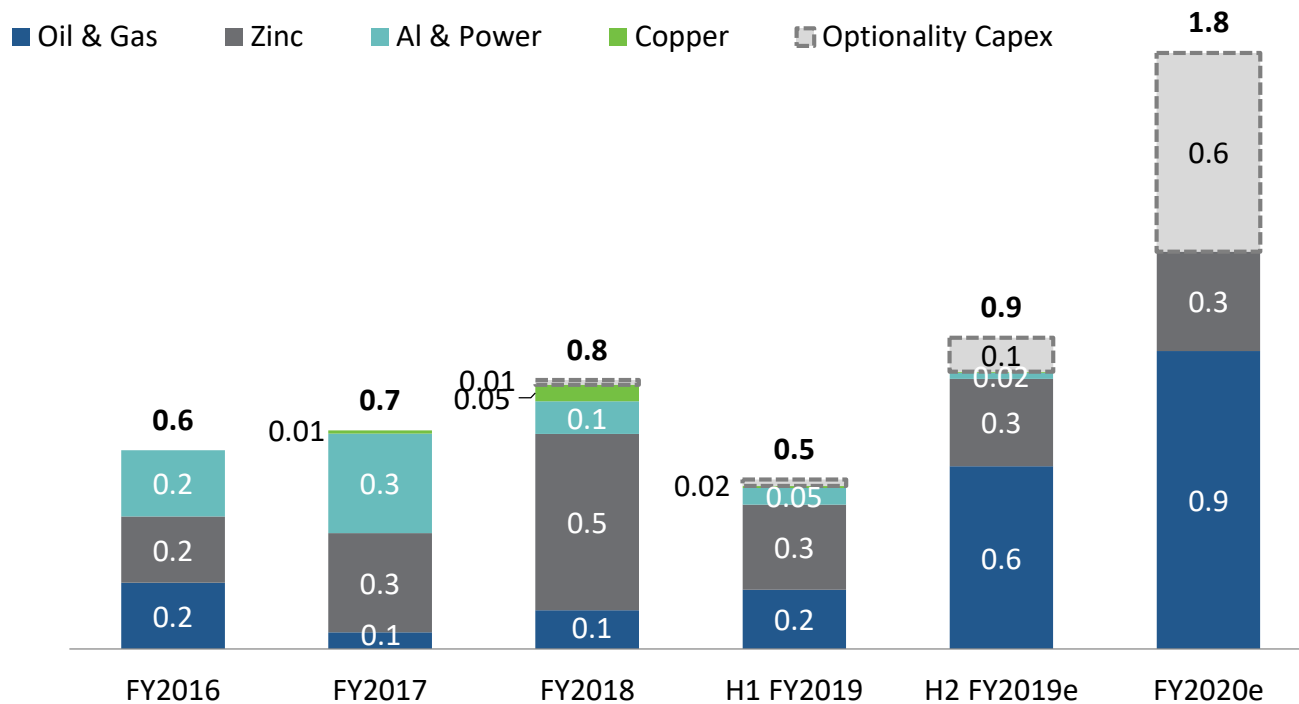
In \$ mn



Note:

1. ROCE is calculated as EBIT net of tax outflow divided by average capital employed

## Growth Capex Profile, \$bn



Lanjigarh 4mt refinery expansion (Phase 1)  
ESL 2.5mt expansion

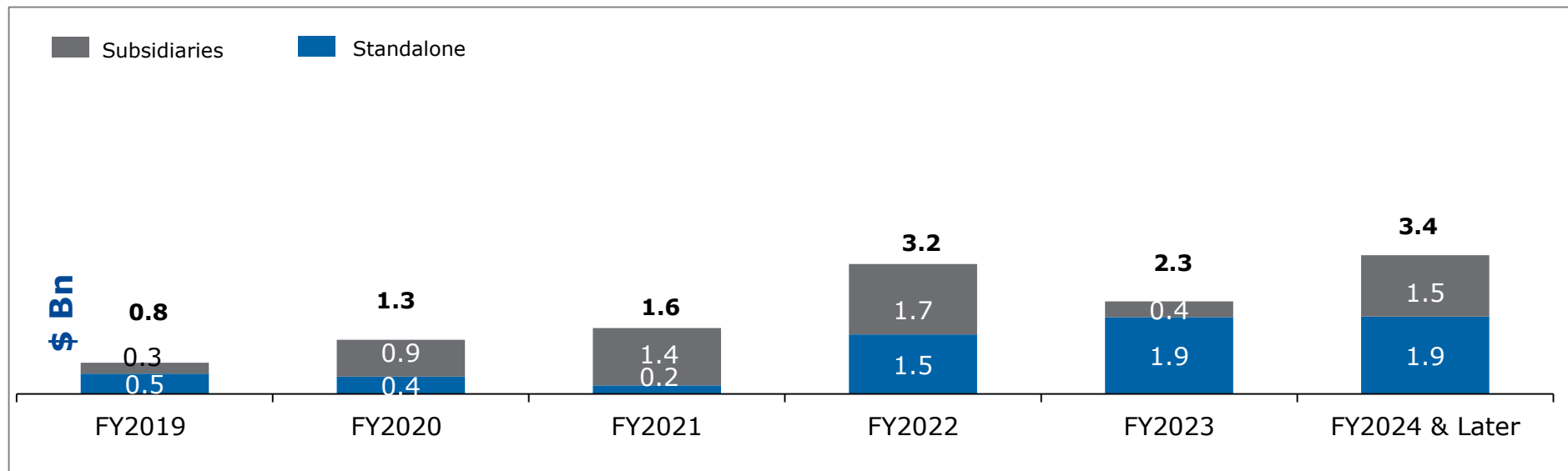
Towards Zinc India expansion to 1.2mt MIC  
Outstanding capex at Gamsberg to be spent in H2 FY19

Towards \$2.5bn capex for ongoing growth projects in Rajasthan + Exploration capex

FCF pre capex, \$bn	2.3	2.2	1.7	0.3
ROCE	3.4%	12.8%	14.9%	13.8%

Note: ROCE is calculated as EBIT net of tax outflow divided by average capital employed

## Maturity Profile of Term Debt: \$12.6 bn (as of 30<sup>th</sup> September 2018)



Term debt of \$12.6 Bn (\$6.4 Bn at Standalone and \$6.2 Bn at Subsidiaries)

Maturity profile excludes working capital and short term borrowing to \$2.7 Bn; and preference share of \$0.4 Bn

- **Continued focus on balance sheet management**

- Refinanced large part of FY19 maturity in H1 FY19, minimal residual maturities in H2
- Maturity extension of standalone debt increased to 3.6 years on rolling basis at Sep 2018 from 2.8 years at Dec 2016
- Marginal increase in interest costs despite rising benchmarks

- **Strong liquidity:** Cash and liquid investments of \$ 5.5 Bn and undrawn fund based line of credit of \$1.1 Bn



## Operational Excellence

- Volume growth and asset optimisation
- Optimise costs
- Adopt digitalisation and technology solutions
- Improved realisations
- Reduce working capital



## Preserve our License to Operate

- Operate as a responsible business
- Continue to focus on Zero Harm, Zero Discharge and Zero Wastage
- Ensure social inclusion of the community to promote inclusive growth



## Optimise Capital Allocation & Maintain Strong Balance Sheet

- Improving cash flows
- Strict Capital discipline
  - Invest in high IRR projects
  - Deleveraging the balance sheet



## Delivering on Growth Opportunities

- Develop brownfield growth opportunities
- Acquisition of attractive, complementary assets, but only for value



## Augment our Reserves & Resources base

- Well developed exploration programs
- Zinc India R&R of 411mt with 25+ years of mine life
- Karnataka iron-ore R&R of 100mt with 20 years of mine life
- Focus on greenfield and brownfield exploration



# Appendix

**VEDANTA RESOURCES**  
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Segment	FY19 Production and CoP
<b>Zinc India</b>	Zinc-Lead Integrated > FY18 production ; Silver: 650 - 700 tonnes (21 – 23 moz) H2 COP: \$950-975/t excluding royalty
<b>Zinc International</b>	Skorpion and BMM: 150kt Gamsberg: 75kt COP: ZI (excl Gamsberg) : \$1,850 – 1,950, Gamsberg: \$800 - \$1,000/t
<b>Oil &amp; Gas</b>	H2 Gross Volume: c. 200-220 kboepd Opex: sub c. \$7/boe
<b>Aluminium</b>	Alumina: 1.5-1.6mt ; Aluminium: c2.0mt FY19 COP: \$1,950 – 2,000/t
<b>Power</b>	TSPL plant availability: 80%
<b>Iron Ore</b>	Goa: Nil and Karnataka: 4.5mtpa
<b>Copper - India</b>	Cathode Production – 100kt per quarter, once the plant restarts
<b>Copper - Zambia</b>	Integrated production: 100 - 110 kt, Custom production: 100-110 kt H2 Integrated C1 cost: 220 – 240 c/lb

## Net Debt Summary (\$ mn)

Company	30 Sep 2018			31 Mar 2018			30 Sep 2017		
	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt
<b>Vedanta Plc<sup>1</sup></b>	6,270	52	6,218	5,877	122	5,755	6,116	15	6,101
<b>KCM</b>	268	4	264	376	1	375	467	9	458
Vedanta Limited Standalone	6,169	1,110	5,059	6,259	1,096	5,163	5,850	1,891	3,959
Cairn India Holdings Limited <sup>2</sup>	401	901	(500)	426	791	(365)	544	934	(391)
Zinc India	-	3,214	(3,214)	-	3,411	(3,411)	91	3,058	(2,967)
Zinc International	-	63	(63)	-	96	(96)	-	108	(108)
BALCO	734	3	731	756	8	748	711	12	699
Talwandi Sabo	1,170	1	1,169	1,330	4	1,326	1,232	45	1,188
Others <sup>3</sup>	675	144	531	171	77	93	110	31	79
<b>Vedanta Limited Consolidated</b>	<b>9,149</b>	<b>5,436</b>	<b>3,713</b>	<b>8,941</b>	<b>5,483</b>	<b>3,458</b>	<b>8,538</b>	<b>6,079</b>	<b>2,459</b>
<b>Total (\$ mn)</b>	<b>15,687</b>	<b>5,492</b>	<b>10,195</b>	<b>15,194</b>	<b>5,606</b>	<b>9,588</b>	<b>15,121</b>	<b>6,103</b>	<b>9,018</b>

Debt numbers at Book Values. Since the table above shows only external debt, it excludes any inter-company loans

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. Others include: CMT, Fujairah Gold, MEL, VGCB, Sesa Resources Ltd, other Iron Ore companies, Vedanta Ltd. Investment companies, TSMHL, ASI and ESL



Capex in Progress	Status	Capex <sup>3</sup> (\$mn)	Spent up to Mar 2018 <sup>5</sup>	Spent in H1 FY2019 <sup>5</sup>	Unspent as at 30 Sept 18 <sup>6</sup>
<b>Cairn India</b> <sup>1</sup> – Mangala Infill, Liquid handling, Bhagyam & Aishwariya EOR, ASP, Tight Oil & Gas etc		1,991	183	179	1,629
<b>Aluminium Sector</b>					
Jharsuguda 1.25mtpa smelter	Line 3: Fully capitalised Line 4: Fully Capitalised Line 5: Six sections capitalised, two pending	2,920	2,846	50	25
<b>Zinc India</b>					
1.2mtpa mine expansion	Phase-wise by FY2020	1,893 <sup>4</sup>	1,265	147	481
Others		139	63	25	51
<b>Zinc International</b>					
Gamsberg Mining Project <sup>2</sup>	First ore was fed through the concentrator plant in September 2018	400	241	85	73
<b>Copper India</b>					
Tuticorin Smelter 400ktpa	Project is under Force Majeure	717	189	6	522
ASI	Furnaces to be operational by March 2019 Cold Repair to be completed by next month	50	3	18	30
<b>Capex Flexibility</b>					
<b>Metals and Mining</b>					
Lanjigarh Refinery (Phase II) – 5.0 mtpa	Under evaluation, subject to bauxite availability	1,570	836	2	732
Skorpion Refinery	Currently deferred until Pit 112 extension	156	14	-	142
Zinc India (1.2-1.35mtpa mine expansion)	In principle board approval	698	-	-	698

**Note:**

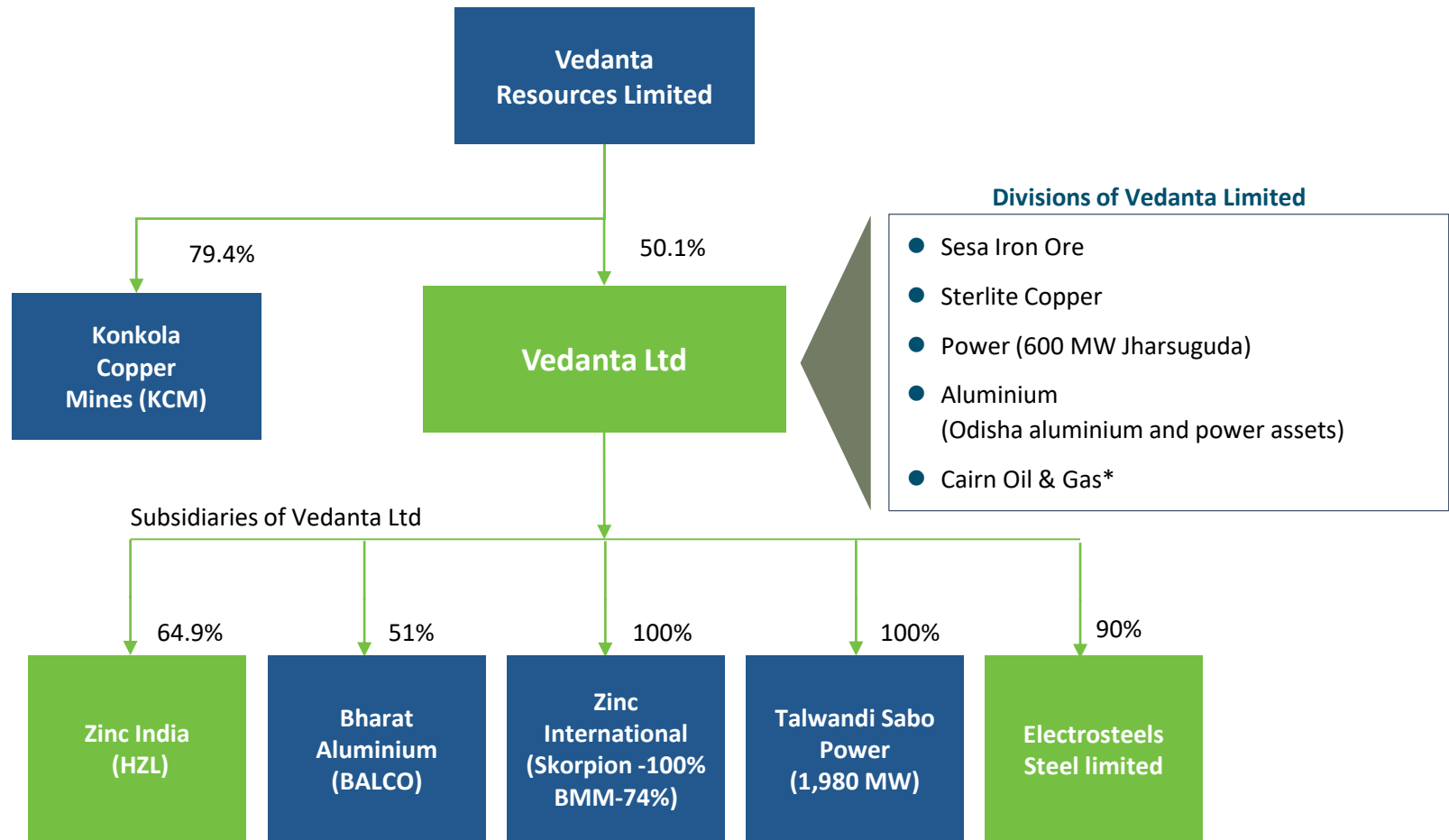
1. Capex approved for Cairn represents Net capex, however Gross Capex is \$2.5 bn
2. Capex Approved US\$400 Mn excludes Interest during construction
3. Is based on exchange rate at the time of approval
4. Capex approved restated on the basis of historical exchange rate
5. Is based on exchange rate at the time of incurrence
6. Unspent capex represents the difference between total Projected capex and cumulative spend as on 30th September 2018

## Foreign Currency - Impact of a 1 Rs depreciation in FX Rate

Currency	Increase in EBITDA
INR/USD	~ \$35 mn / year

## Commodity prices – Impact of a 10% increase in Commodity Prices

Commodity	H1 FY19 Average price	H1 FY19 EBITDA (\$mn)
Oil (\$/bbl)	75	62
Zinc (\$/t)	2,820	94
Aluminium (\$/t)	2,156	143
Copper (\$/t)	6,483	31
Lead (\$/t)	2,244	21
Silver (\$/oz)	16	16



Note: Shareholding as on September 30, 2018

\*50% of the share in the RJ Block is held by a subsidiary of Vedanta Ltd

■ Listed entities

■ Unlisted entities