

VEDANTA RESOURCES LTD.

**INVESTOR  
PRESENTATION  
H1 FY2020**

December 2019

*We Are...*  
GROWING  
RESPONSIBLY

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

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# H1 FY20 Review

**Venkat**

Chief Executive Officer



<p><b>Operational</b></p> 		<ul style="list-style-type: none"> <li>▪ <b>Zinc India</b> ore production up by 6% y-o-y at 7.0 Mt with strong growth at Rampura Agucha and Zawar</li> <li>▪ <b>Zinc International</b> overall production at 123kt, up 130% with COP \$1,652/t down 31%</li> <li>▪ <b>O&amp;G</b> 166 wells drilled, 63 wells hooked up</li> <li>▪ Early gas production facility currently ramped up to over 50 mmscfd</li> <li>▪ <b>Aluminum</b> continuous structural reduction in cost, down 9%</li> <li>▪ EGA Bauxite supplies started from Guinea</li> <li>▪ Lanjigarh production 856kt, up 27% with COP \$289/t down 17%</li> <li>▪ <b>Copper Zambia</b> treated as discontinued operations with effect from 1<sup>st</sup> June 2019</li> <li>▪ <b>Iron ore</b> achieved highest ever sales 2.6 million tonnes at Karnataka</li> <li>▪ <b>Electrosteel</b> sales 557 kt, up 11%</li> </ul>
<p><b>Financial</b></p> 		<ul style="list-style-type: none"> <li>▪ Robust EBITDA generation of \$ 1,395 mn with Industry leading margin in subdued commodity market</li> <li>▪ Gross debt reduced by \$ 1,330 mn pursuant to repayment at TSPL and Vedanta Standalone</li> <li>▪ Net debt at \$ 9,507 mn, down by 7% with strong cash and liquid position of \$5,144 mn</li> </ul>
<p><b>Awards &amp; Recognition</b></p> 		<ul style="list-style-type: none"> <li>▪ Vedanta bestowed with the coveted <b>“Golden Peacock Global Award for Excellence in Corporate Governance 2019”</b></li> <li>▪ The world’s largest PR awards program, <b>“The Sabre Awards”</b>, presented Oil &amp; Gas and Vedanta Ltd., a <b>Gold SABRE APAC 2019 award</b> in the B2B category</li> <li>▪ Zinc India won best Environmental Sustainability Award in the category of National Awards for <b>‘Excellence in CSR and Sustainability’</b> by World CSR Day &amp; Zee Business</li> </ul>

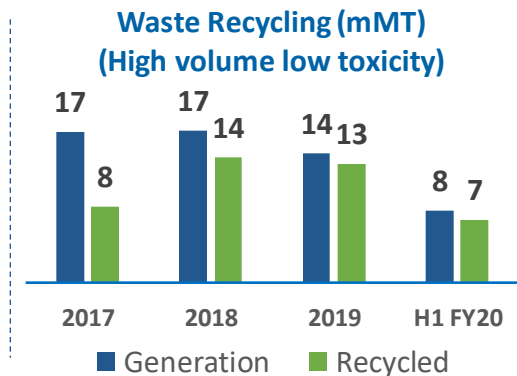
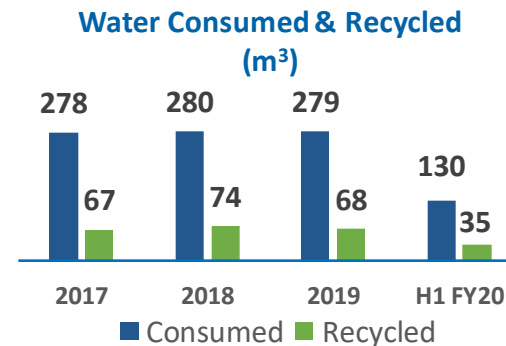
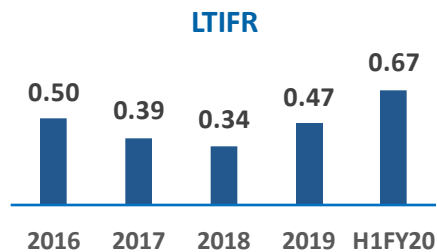
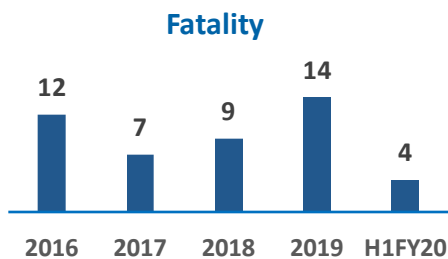
## Dow Jones Sustainability Index Ranking Improves to 20<sup>th</sup> (24<sup>th</sup> in 2018) Ranked 7<sup>th</sup> in Asia Pacific Region (metals and mining sector)

### Safety Program Update

Four fatalities in H1	<ul style="list-style-type: none"> <li>Safety committees to prevent repeats</li> </ul>
Visible felt leadership	<ul style="list-style-type: none"> <li>Group Safety Head conducting in-situ reviews to facilitate implementation</li> </ul>
Controls-in-place for safety critical tasks	<ul style="list-style-type: none"> <li>Enhanced bow-tie risk assessments</li> <li>Update of the Permit to Work System</li> </ul>
Business partner engagement	<ul style="list-style-type: none"> <li>Review of BP pre-qualification and on-boarding process</li> <li>Committee established to aid BP enhance their safety deliverables</li> </ul>

### Environment Update

Tailings Management	<ul style="list-style-type: none"> <li>Tailings dam information published per Church of England request</li> </ul>
Measuring water use efficiency	<ul style="list-style-type: none"> <li>BALCO estimate based on ICMM showed 99.8% efficiency against ~11% average</li> </ul>



Benefitting the lives of 3.0 million people across 1,042 villages

## Healthcare

1.6 Million people benefited  
> 35 Initiatives

## Drinking Water and Sanitation

350,000 people benefited  
> 25 Initiatives

## Community Infrastructure

200,000 people and 3000+ families benefited  
> 25 Initiatives

## Children's Well-being and Education

135,000 Children Benefited  
>50 Initiatives

## Sports & Culture

> 65,000 Million sports person benefited  
> 20 Initiatives

## Women's Empowerment

>35,000 Women benefited  
> 10 Initiatives  
>2,400 Self Help Groups  
120+ Micro - Enterprises

## Environmental Protection & Restoration

> 100,000 saplings planted

## Agriculture and Animal Husbandry

>30,000 people benefited  
> 30 Initiatives

## Flagship Programs

1000<sup>th</sup> Nand Ghar established in 4 states



## Football Academy



## Vedanta Medical Research Foundation

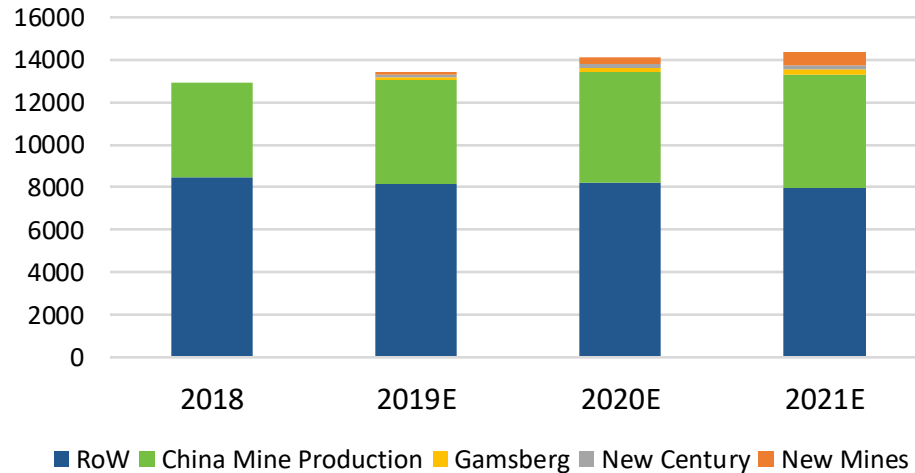


# Zinc India: Zinc supply shortfall and low stocks expected to support price

## Slower than expected production growth continues

- Reduction in production forecast in China
- Slow start at new projects
- Lower production in Russia and Peru

Global Zinc Mine Production ('000 MT)

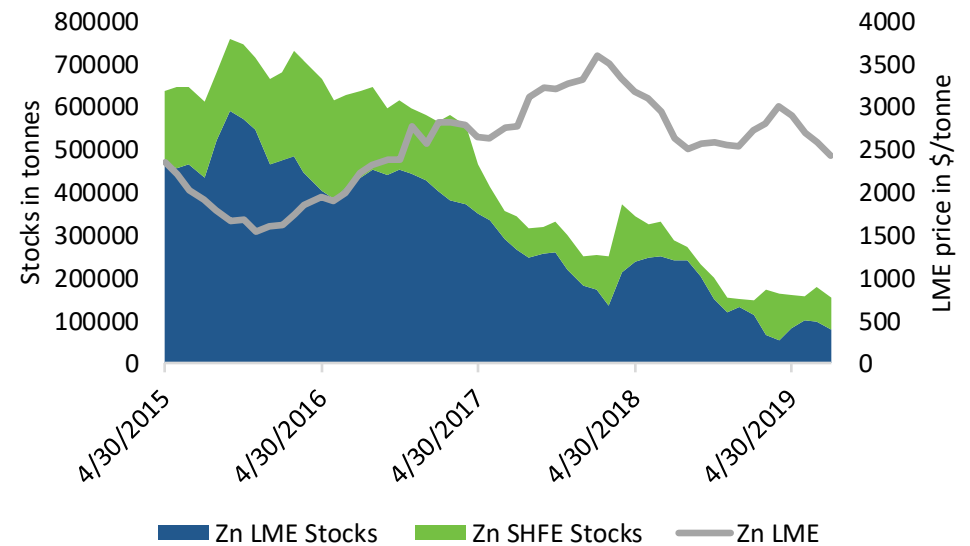


Forecast includes ~280kt increase each year in China which is at risk due to ongoing environmental issues  
mine production declining from 2023 onwards

## Refined market remains in deficit despite weak demand as production growth remains modest

- Plant closures in China continue despite high TCs due to environmental regulations
- Exchange Metal stocks are at 4 days of consumption
- Metal stocks are forecast to remain at historically low levels over the balance of 2019 and into 2020

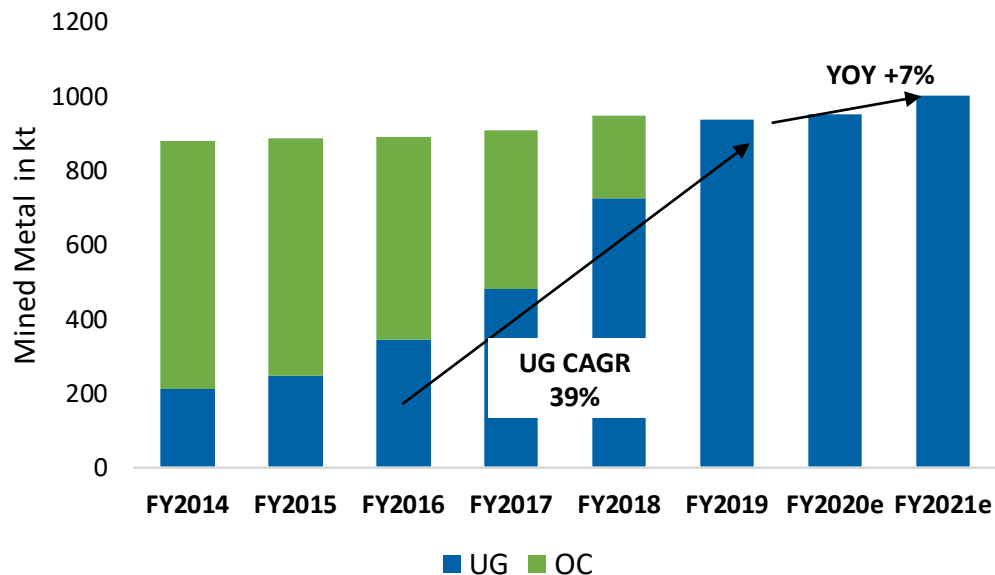
Zinc exchange stocks and LME price trend



Source: Wood Mackenzie Q2 2019 Long Term Outlook

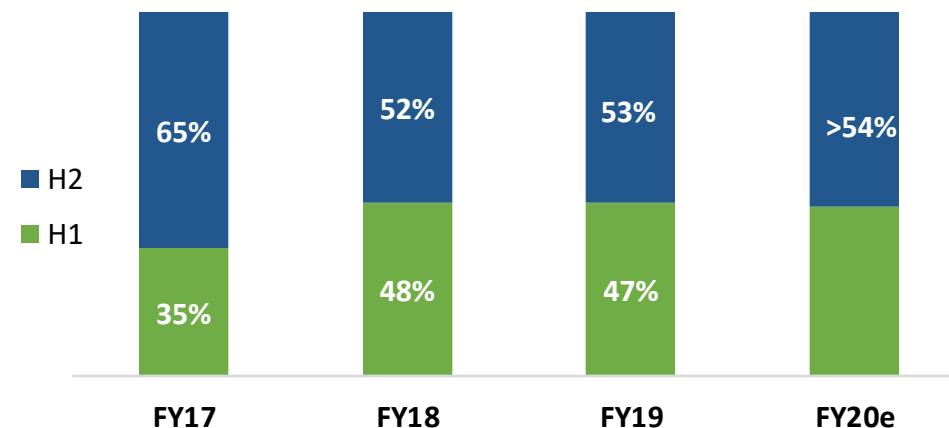


## Production ramp up to 1.0 million tons mined metal



## H2 – Completing 1.2 Mtpa project activities

- Traditional post-summer ramp-up in production
- Completion of key projects in H2



### Rampura Agucha

- ✓ Rapid Development crew to open new levels from Q2
- Shaft Commissioning in Q3

### Sindesar Khurd

- ✓ Shaft full ramp-up
- Resolution of Geotech issues in lower blocks
- Faster Paste filling in H2

### Zawar

- ✓ Commissioning of dry tail stacking plant
- Commissioning of two paste fill in Q3
- Ballaria ramp-up in Q4
- Pillar mining

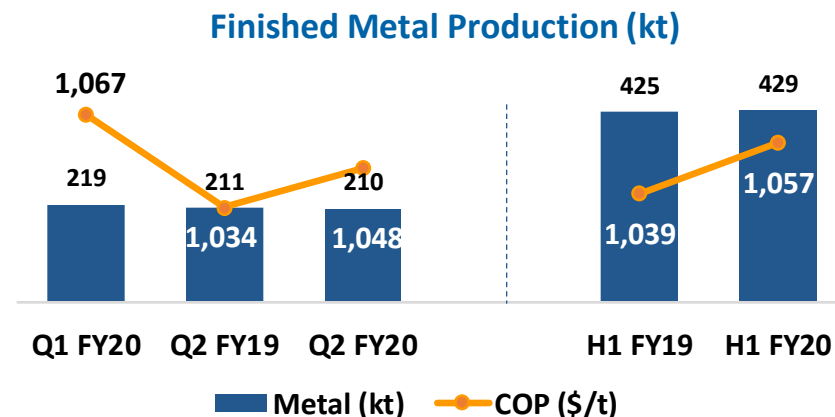
## Performance Update

### Quarter Performance:

- Metal Production 210kt, almost flat y-o-y
- MIC Production 219kt, down 6% y-o-y
- Silver Production 134 tons, down 22% y-o-y
- COP at \$1,048/t, marginally up 2% y-o-y

### Half Year Performance:

- Metal Production 429kt, up 1%
- MIC Production 432kt, marginally down 3%
- Silver Production 293 tons, down 5%
- COP at \$1,057, marginally up 2%



## Dow Jones Sustainability Index Ranking

**5<sup>th</sup> Globally**

In metals and mining sector for the 2<sup>nd</sup> consecutive year

**1<sup>st</sup> Asia Pacific Region**

Overall Ranking in metals and mining sector

**1<sup>st</sup> Globally**

In Materiality, Environment Reporting and Human Capital Development aspects

**FTSE4Good Index series for the 3<sup>rd</sup> consecutive year**

## Performance Update

### Quarter Performance:

- Overall production at 63kt, up 126% y-o-y
- COP of \$1,584/t, down 35% y-oy

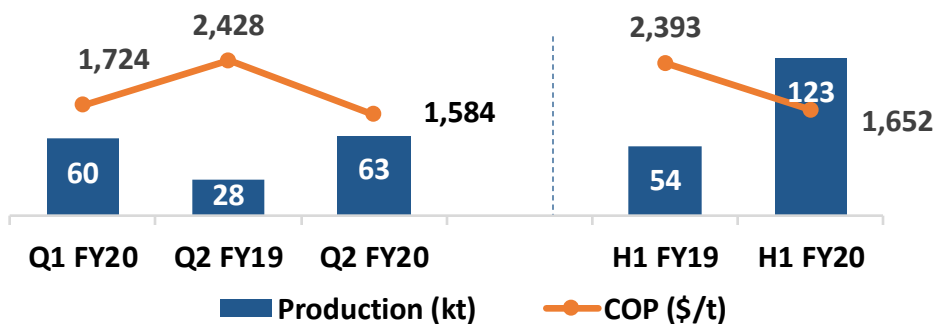
### Half Year Performance:

- Overall production at 123kt, up 130%
- COP of \$1,652/t, down 31%

### Skorpion

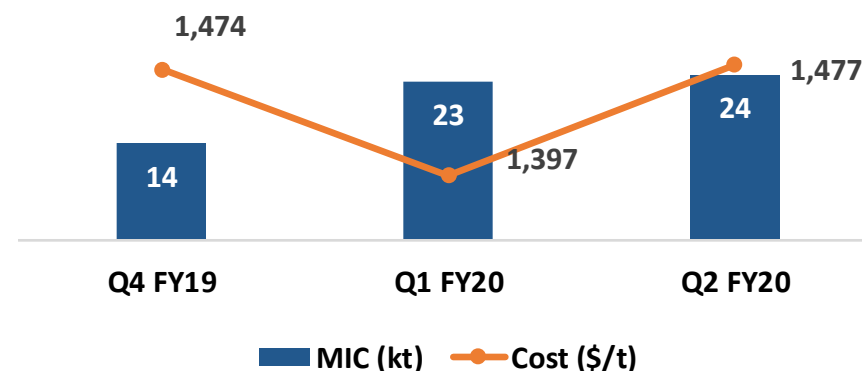
- Skorpion had a slope failure in May 2019 in Pit 112, remedial activities has been substantially completed. This has resulted in 4 month ore gap hence refinery shutdown and shifting of 60kt production to FY21

### Consolidated Production and COP



## Gamsberg

- Production at 24kt, up 7% q-o-q
- COP at \$1,477, up 6% q-o-q due to increase in mining cost
- Ore production achieved >0.5 Mt in Sep
- >1.6 Mt of healthy ore stockpile ahead of plant
- Crusher current throughput is ~700 tph better than design throughput of 685 tph
- Achieved Exit Mill production run rate of 408 tph, will reach design run rate in Q3
- Won **“Visionary Client of the Year Award for Excellence in Tailing Facility Engineering”** from CESA



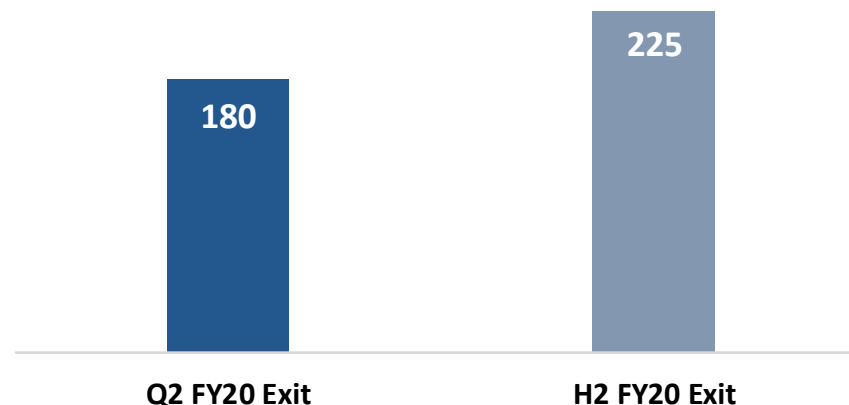
## Capex Investment

- **Gross Capex of \$ 3.2 billion in PSC blocks**
  - Monetization of 400 mmeob of resources
  - Development cost of \$ 7/boe
  
- **Capex of \$ 0.8 million in OALP blocks across 51 blocks**
  - Integrated Project Management by Lloyd’s Register
  - Full Tensor Gravity – Gradiometry survey commenced across 8 OALP Blocks in Assam

## Project Progress

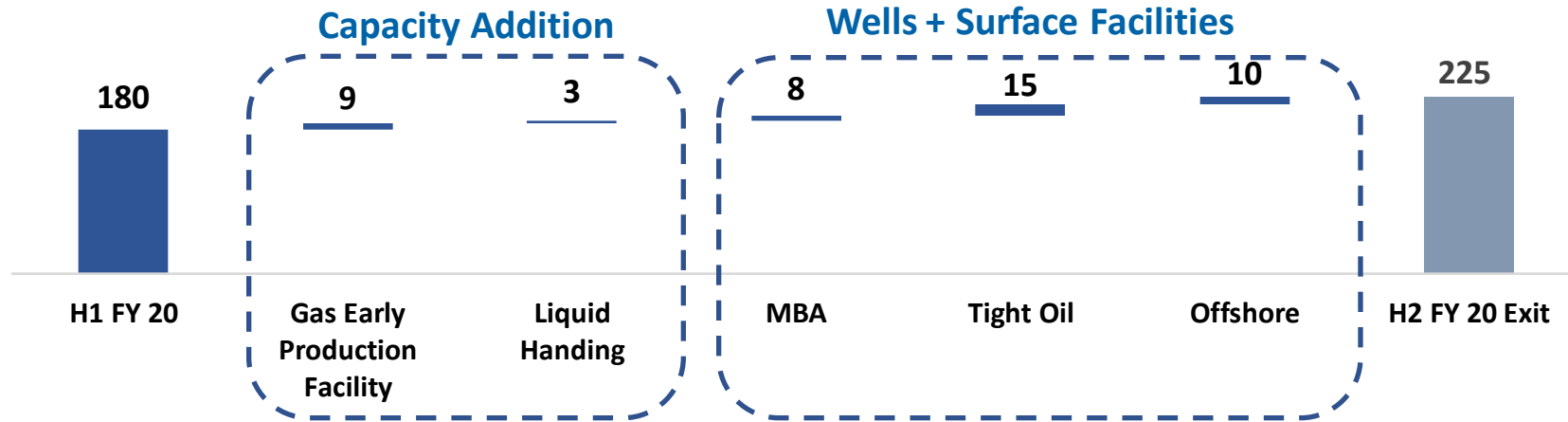
- 166 wells drilled, 63 wells hooked up
  
- Early gas production facility being progressively ramped up to design capacity of 90 mmscfd; currently at over 50 mmscfd
  
- Liquid handling capacity upgradation in progress

### Production Ramp Up (kboepd)



### Key Drivers for Production Ramp Up

	H1 FY20 Exit	H2 FY20 Exit
<b>Wells Drilled</b>	166	250
<b>Wells Hooked Up</b>	63	150
<b>Liquid Handling Capacity</b>	1.10 mmbldpd	1.25 mmbldpd
<b>Gas Processing Capacity</b>	80 mmscfd	150 mmscfd



### Mangala, Bhagyam & Aishwariya

- Commence full field polymer injection in Bhagyam and Aishwariya fields
- Additional Horizontal wells in Mangala Field
- Hook up balance 33 wells

### Tight Gas (RDG)

- Early production facility ramp up to design capacity of 90 mmscfd

### Liquid Handling

- Complete facility upgradation to enhance capacity by ~15% through Water Injection debottlenecking

### Tight Oil (ABH)

- Ramp up production through hook up of balance 34 wells
- Surface Facility online by January 2019

### Ravva

- Drilling to commence in Q3 FY20; 4 producer wells online by Q4 FY20

## OALP Blocks

51

**Well Diversified**  
40 Onshore  
11 Offshore

~60,000  
sq km

Acreage

500

**Peak Production (kboepd)**  
Upside Scenario

5.5

**Resources (bnboe)**  
Upside Scenario

\$800  
mn

**Capex commitment**  
For exploration phase

192

**Exploratory Wells**  
To be drilled

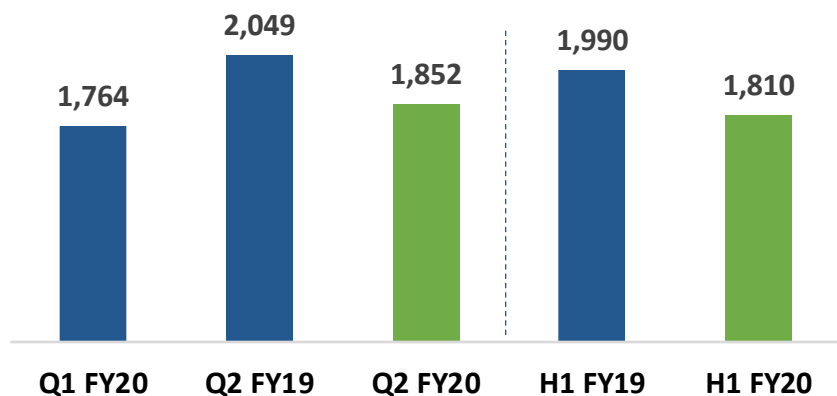
- **Integrated Project Management** by Lloyd's Register
- **Full Tensor Gravity** – Gradiometry survey, a state-of-the-art Airborne Technology for early screening of opportunities commenced across 8 OALP Blocks in Assam

## PSC Blocks

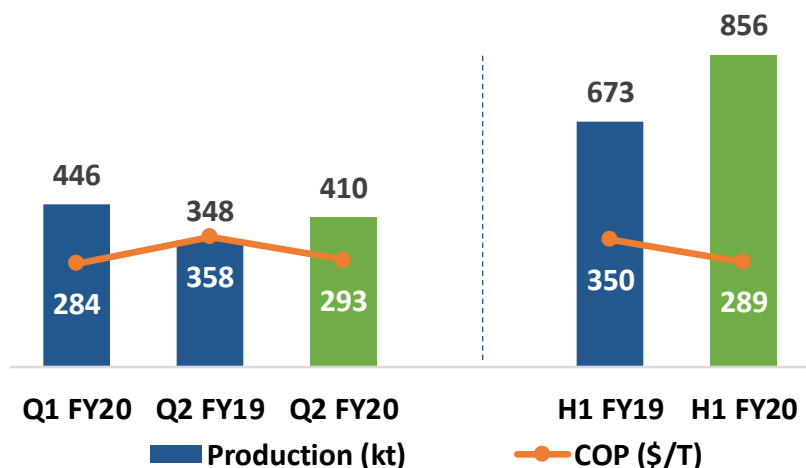
	Investment (\$mn)	Resources (mmboe)	Work Program (Wells)	Drilling Status
<b>Rajasthan Exploration</b>	60	300-600	7-18	Drilling from Q4 FY 20
<b>Rajasthan Tight Oil Appraisal</b>	75	200	14	Commenced in Q2 FY 20
<b>KG - Offshore</b>	60	300	2	Evaluation Ongoing
<b>Ravva</b>	85	50	4-9	Drilling from Q3 FY 20

**Strong exploration fundamentals supports reserves & resources growth**

## Structural Reduction in Cost



## Alumina Production & COP



## Performance Update

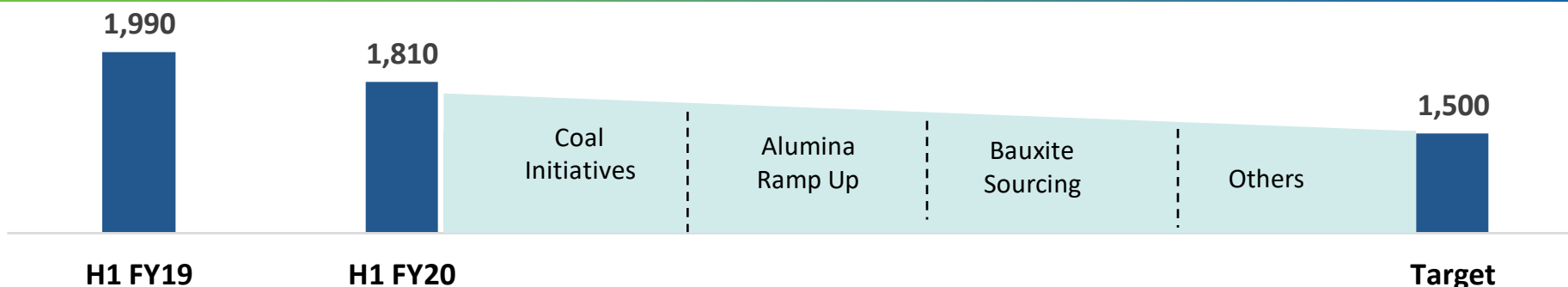
### Quarter Performance:

- Aluminium COP at \$1,852/t, down 10% y-o-y
- Lanjigarh production 410 kt, up 18% y-o-y
- Lanjigarh COP at \$293/t, down 18% y-o-y
- EGA Bauxite supplies started from Guinea

### Half Year Performance:

- Aluminium COP at \$1,810/t, down 9% y-o-y
- Lanjigarh production 856 kt, up 27% y-o-y
- Lanjigarh COP at \$289/t, down 17% y-o-y
- Local bauxite meeting half of the total requirement
- Chotia coal Mine on track to achieve full capacity of c. 1 Mtpa

# Aluminium: Significant progress on Strategic levers Continues



Initiatives	Action Plan
Coal Initiatives	<ul style="list-style-type: none"> <li>▪ Increase Linkages through participation in Tranche V &amp; VI, Coal Block Auctions</li> <li>▪ Target coal security 90% of requirement, up from current 72%</li> <li>▪ Balance Requirements: E-Auctions, Actively evaluate options available for best deals</li> </ul>
Alumina Ramp Up	<ul style="list-style-type: none"> <li>▪ Phase-I expansion to 2.7 Mtpa</li> <li>▪ Medium term expansion to 4 Mtpa</li> <li>▪ Easing of Alumina prices to sub \$300/t levels</li> </ul>
Bauxite Sourcing	<ul style="list-style-type: none"> <li>▪ Efforts to significantly increase mine output</li> <li>▪ Exploration of new resources under the New Mineral Policy</li> </ul>
Carbon & Others	<ul style="list-style-type: none"> <li>▪ Logistics: Shifting from road to rail</li> <li>▪ Procurement efficiencies: Strategic partnerships with key suppliers, long-term contracts</li> <li>▪ Ongoing improvement in power plant operating parameters, Fixed cost reduction</li> </ul>



## Iron Ore

### Performance Update

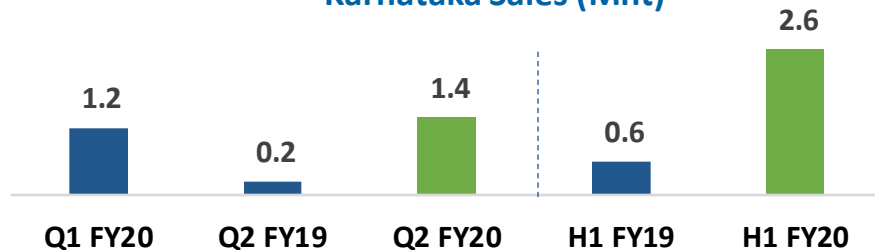
#### Quarter Performance:

- Karnataka sales 1.4 Mnt, significantly up y-o-y
- Pig Iron production 176kt, up 2% y-o-y

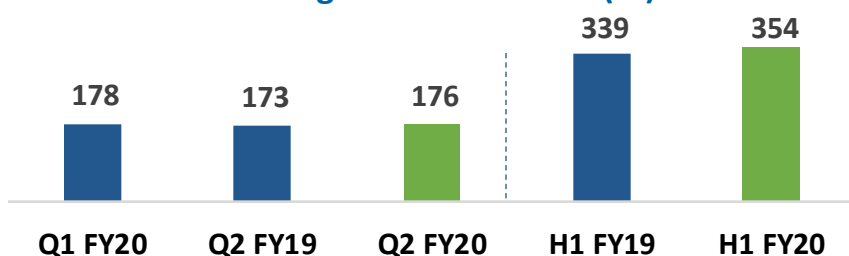
#### Half Year Performance:

- Karnataka sales 2.6 Mnt, significantly up
- Pig Iron production 354kt, up 4%

Karnataka Sales (Mnt)



Pig Iron Production (kt)



## Electrosteel Steels

### Performance Update

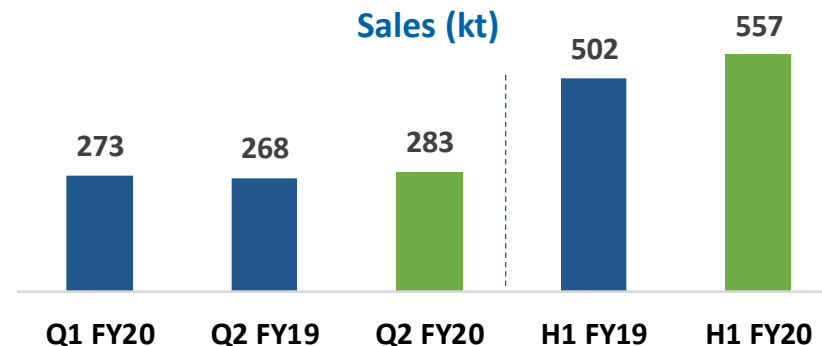
#### Quarter Performance:

- Production 270kt, down 5% y-o-y
- Sales 283kt, up 6% y-o-y
- Margin at \$23/t, down 75% y-o-y on account of soften steel pricing scenario in domestic market

#### Half Year Performance:

- Production 645kt, up 15%
- Sales 557kt, up 11%
- Margin at \$64/t, down 32% on account of soften steel pricing scenario in domestic market

Sales (kt)



## Background

- ZCCM, a minority shareholder in KCM and the investment arm majorly controlled by the Government of Republic of Zambia filed a petition in the High Court of Zambia to wind up KCM on a just and equitable basis and further chosen a route to exclude Vedanta, by having a Provisional Liquidator appointed ex-parte
- ZCCM, later amended the Petition to include an additional ground for winding up KCM alleging KCM's ability to pay its debts

## Current situation

- Following notification of the filing of the Petition, Vedanta has commenced the arbitration proceedings against ZCCM in July 2019 which is the agreed dispute resolution mechanism as specified in the KCM Shareholders' Agreement
- In Jul 2019, Vedanta obtained injunctive relief from the High Court of South Africa requiring ZCCM to withdraw the Petition such that the provisional liquidator is discharged from office, and declaring ZCCM to be in breach of the arbitration clause in the KCM Shareholders' Agreement
- In Aug 2019, the Court denied ZCCM leave to appeal against the injunctive relief. Subsequently ZCCM had sought leave to appeal to the Supreme Court of South Africa in Sep 2019, which was granted by the Court. Hearing is expected in Jan 2021. To date, ZCCM has failed to comply with the order of High Court of South Africa
- Vedanta has also made several applications before the Zambian High Court in connection with the Petition including an application for a stay of the Petition and the order appointing the provisional liquidator, pending the determination of the arbitration which was the contractually agreed means of resolving disputes under the KCM shareholders agreement. Although this application was dismissed, leave to appeal to the Zambian Court of Appeal has been granted and the Petition is currently stayed pending the outcome of the appeal. Hearing is expected in Jan 2020

# Financial Update

**Arun Kumar**

Chief Financial Officer

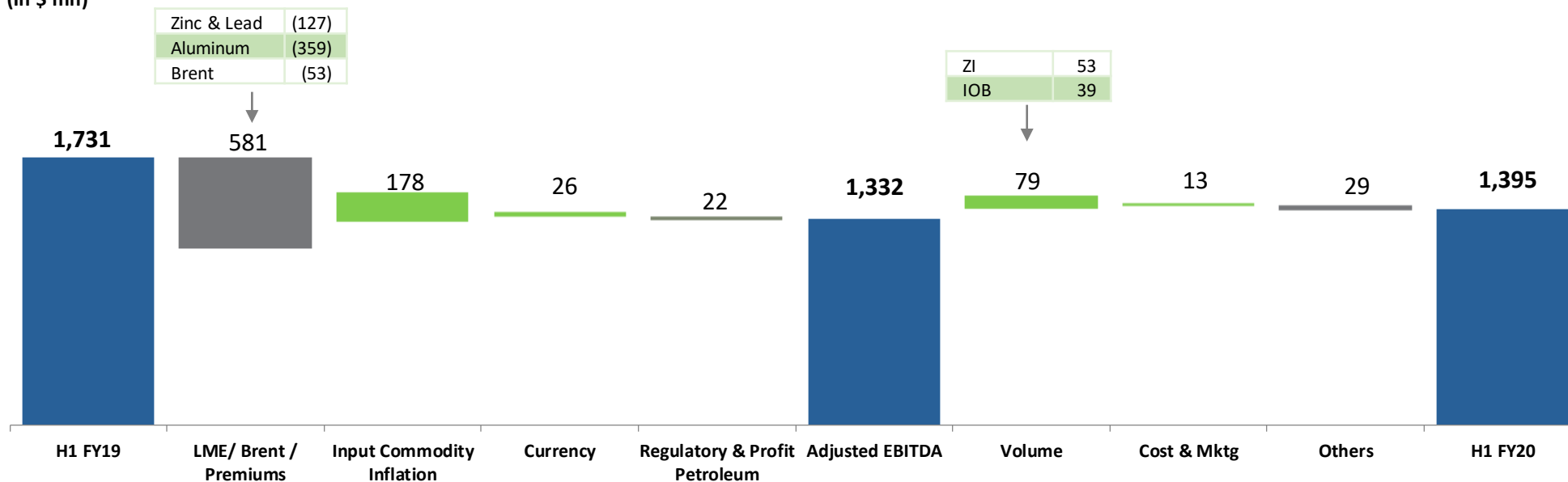


EBITDA	FCF post capex	EBTIDA Margin*	Net Debt
\$ 1,395 mn	\$ 814 mn	26%	\$ 9,507 mn
Down 19% y-o-y	Consistent Cash generation	Industry leading margin	Down 7% y-o-y

\* Excludes custom smelting at Copper India, Copper Zambia and Zinc-India operations

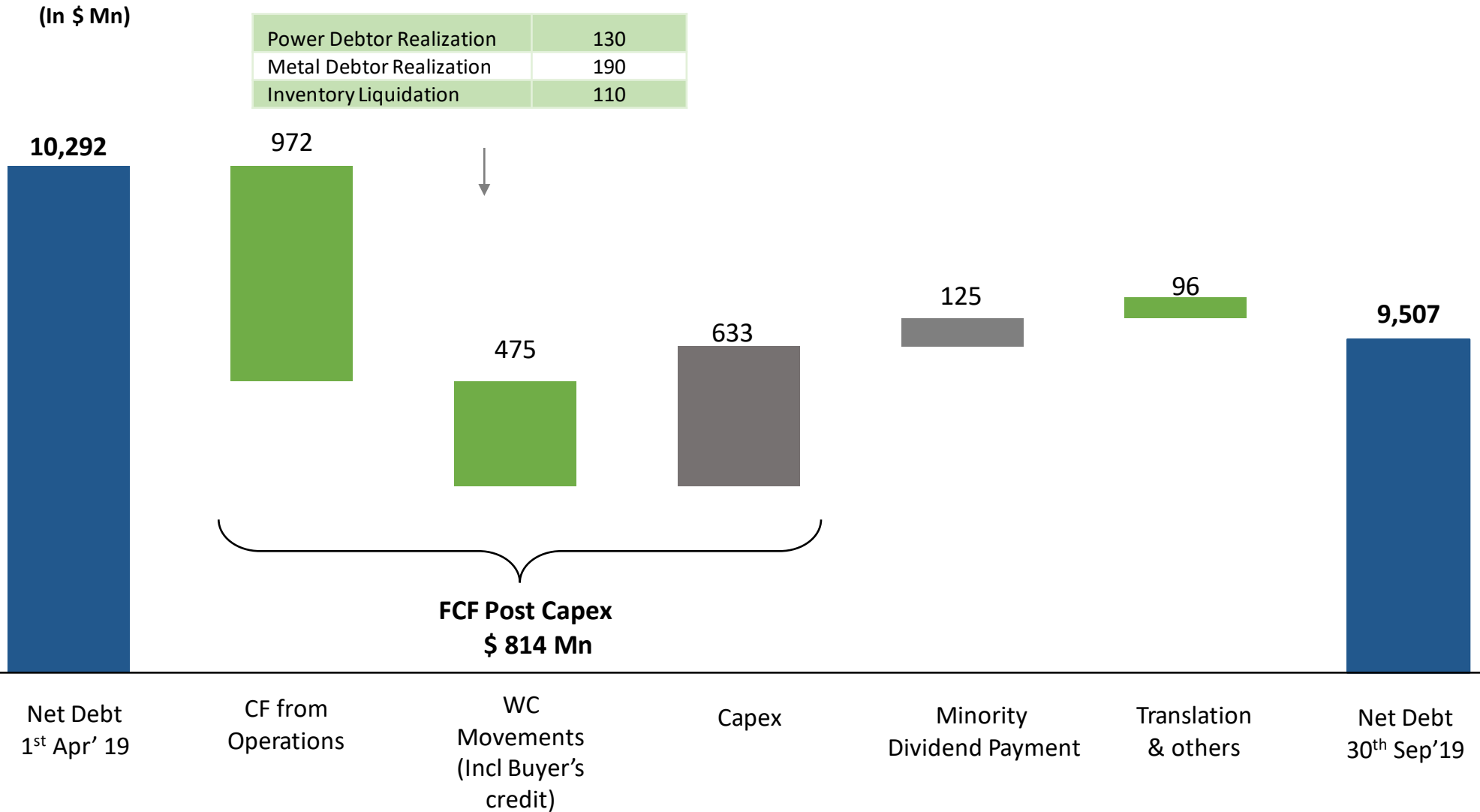
## EBITDA Bridge

(In \$ mn)

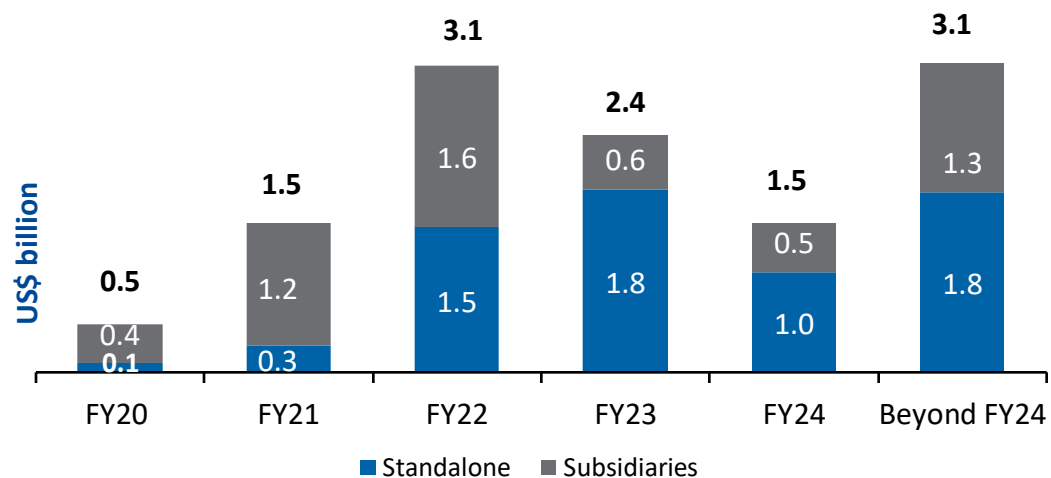


Note : Others mainly include impact of shutdown of Tuticorin Smelter.

# Net Debt for H1 FY 2020



## Term Debt Maturities - \$12.1 bn (as of 30<sup>th</sup> Sep 2019)



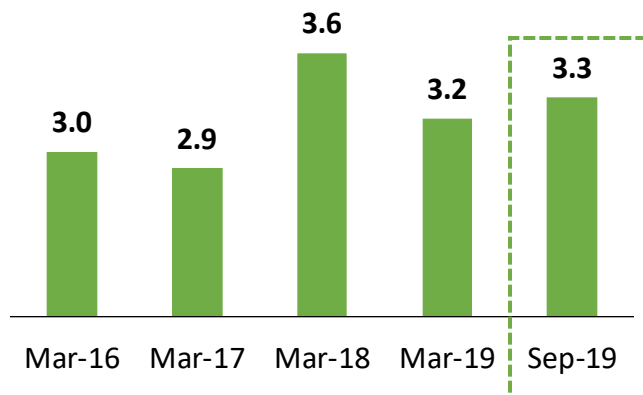
### Liquidity

- Cash and investments @ \$ 5.1 billion rated Tier I by CRISIL;
- Undrawn line of credit c. \$ 1.0 billion

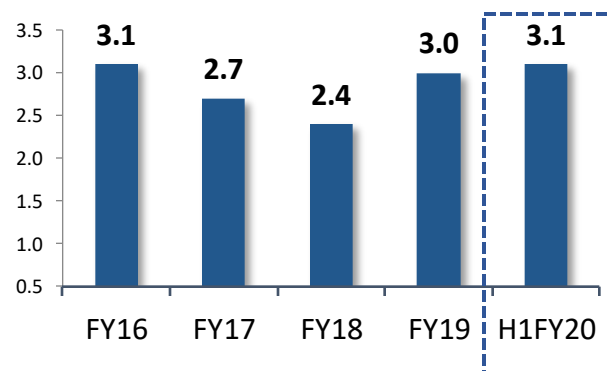
### Net Interest

- **Interest Income** – Returns ~7.5%.
- **Interest Expense** – Maintained ~7.6%
- Raised \$1 bn at VRL in Apr 2019, with avg maturity of c.5.4 years

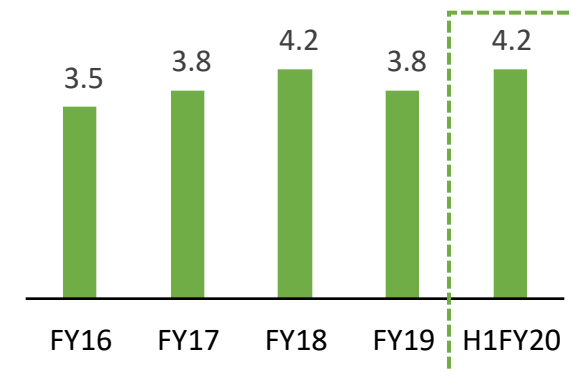
## Average Term Debt Maturity (years)



## Net Debt / EBITDA



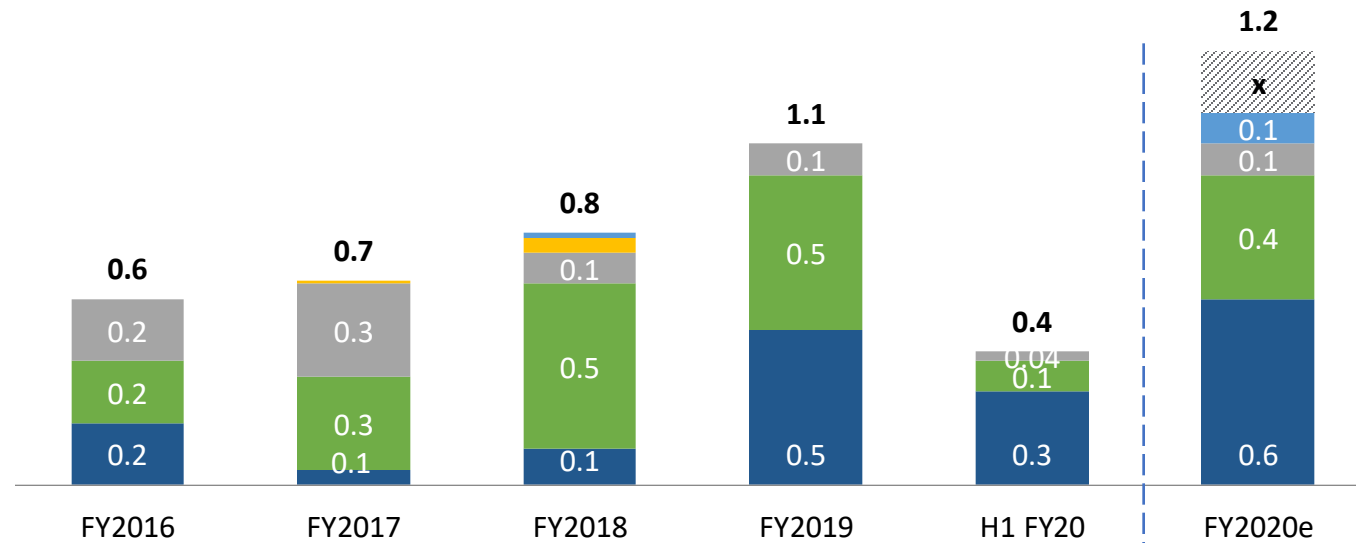
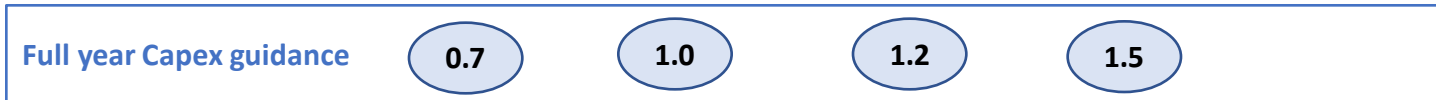
## Interest coverage ratio



# Self funded Capex Delivering Superior Returns

## Growth CAPEX Profile, \$bn

■ Oil & Gas   ■ Zinc   ■ Al & Power   ■ Copper   ■ Other   ▨ Optionality



FCF pre capex, \$bn

2.3	2.2	1.7	2.3	0.9
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ROCE<sup>1</sup>

3.4%	12.8%	14.3%	9.6%	9.4%
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1. ROCE is calculated as EBIT net of tax outflow divided by average capital employed on LTM basis.

# Appendix





Segment	FY20 Production and COP	Revised FY20 Guidance
<b>Zinc India</b>	Mined Metal and Finished Metal: c 1.0 Mtpa Silver: 750 - 800 tonnes < \$1,000/t excluding royalty	Mined Metal and Finished Metal: c 950kt Silver: c. 650 tonnes H2 COP < \$1,030/t excluding royalty
<b>Zinc International</b>	Skorpion and BMM: >170kt Gamsberg: 180 - 200kt ZI COP (excl Gamsberg) : \$1,400/t Gamsberg: c \$1,000/t	Skorpion and BMM: ~130kt Gamsberg: 140 - 150kt ZI COP (excl Gamsberg) : \$1,850/t Gamsberg: \$1,200 - \$1,250/t
<b>Oil &amp; Gas</b>	Gross Volume: 200-220 kboepd Opex: ~ \$7.5/boe	Gross Volume: 190-200 kboepd H2 Exit: c 225 kboepd
<b>Aluminium</b>	Alumina: 1.7-1.8 Mtpa Aluminium: 1.9 - 1.95 Mtpa COP*: \$ 1,725 – 1,775/t	
<b>Power</b>	TSPL plant availability: >80%	
<b>Iron Ore</b>	Karnataka (WMT): 4.5 Mtpa Goa: To be updated on re-start of operations	
<b>ESL</b>	Hot Metal – c 1.5 Mtpa	
<b>Copper - India</b>	To be updated on re-start of operations	

\*Hot Metal COP

## Depreciation & Amortization

- Higher depreciation due to higher ore production across Zinc business, commencement of Gamsberg operations and higher charge in O&G business due to higher capitalisation.

## Finance Cost

- Lower primarily due to reduction in gross borrowings.

## Investment revenue

- Higher primarily on account of mark to market gain on investments due to softening of yields partially offset by one time re-classification from other comprehensive income in Zinc India in previous year.

## Taxes

- Tax charge includes, one time deferred tax credit of \$331 Mn on account of re-measurement of deferred tax balances due to introduction of section 115BAA of the Income Tax Act, 1961. Effective tax rate excluding the above item after special items for H1FY 20 was 112% as compared to 89% in H1 FY 19.

In \$ mn	H1 FY'20	H1 FY'19
Revenue from operations	6,132	6,477
EBITDA	1,395	1,730
Depreciation & amortization	(711)	(679)
EBIT	684	1,051
Finance Costs	(615)	(631)
Investment Revenue	207	142
Other gains and (losses) [net]	(41)	(74)
Special items - credit/(expense)	(60)	47
Profit before tax and special items	235	488
Profit before tax	175	535
Tax - before special items – (credit)/expense	(127)	461
<b>Effective tax rate before special items</b>	<b>(54%)</b>	<b>94%</b>
Tax charge – special items – (credit)/expense	(8)	16
Profit After Tax (PAT) from continuing operations	310	58
Profit After Tax (PAT) from discontinuing operations	521	(229)
<b>PAT for the period</b>	<b>831</b>	<b>(171)</b>
Attributable profit / (loss)	503	(327)
Attributable profit/(loss) before special items from continuing operations	(23)	(161)

Capex in Progress	Status	Capex <sup>3</sup> (\$mn)	Spent up to 31 Mar'19 <sup>4</sup>	Spent in H1 FY2020 <sup>4</sup>	Unspent as at 30 Sep'2019 <sup>5</sup>
<b>Oil &amp; Gas<sup>1</sup></b> – Mangala Infill, Liquid handling, Bhagyam & Aishwariya EOR, Tight Oil & Gas etc		2,452	651	282	1,519
<b>Aluminium Sector</b>					
Jharsuguda 1.25mtpa smelter	Line 3: Fully capitalised Line 4: Fully Capitalised Line 5: Six Section capitalised	2,920	2,915	10	-
<b>Zinc India</b>					
1.2mtpa mine expansion	Phase-wise by FY2020	2,076	1,569	99	408
Others		261	124	16	121
<b>Zinc International</b>					
Gamsberg Mining Project <sup>2</sup>	Completed Capitalisation	400	364	10	26
<b>Copper India</b>					
Tuticorin Smelter 400ktpa	Project is under Force Majeure	717	198	-	519
<b>Avanstrate</b>					
Furnace Expansion and Cold Repair	Completed	48	41	5	3
<b>Capex Flexibility</b>					
<b>Metals and Mining</b>					
Lanjigarh Refinery (Phase II) – 5mtpa	Under evaluation	1,570	857	27	686
Zinc India (1.2 Mtpa to 1.35mtpa mine expansion)	Subject to Board approval	698	1	-	697
Skorpion Refinery Conversion	Currently deferred till Pit 112 extension	156	14	-	142

1. Capex approved for Oil & Gas represents Net capex, however Gross capex is \$3.2 bn.

2. Capex approved for Gamsberg \$400 mn excludes interest during construction.

3. Is based on exchange rate at the time of approval.

4. Is based on exchange rate at the time of incurrence

5. Unspent capex represents the difference between total capex approved and cumulative spend as on 30<sup>th</sup> September 2019.

Company	30 Sep 2019 (\$mn)			31 Mar 2019 (\$mn)		
	Debt	Cash & LI	Net Debt	Debt	Cash & LI	Net Debt
Vedanta Limited Standalone	5,384	1,004	4,380	6,101	1,195	4,906
Cairn India Holdings Limited <sup>1</sup>	172	703	(531)	379	1,172	(793)
Zinc India	0	2,787	(2,787)	367	2,821	(2,454)
Zinc International	60	118	(58)	60	134	(74)
BALCO	626	24	602	638	63	575
Talwandi Sabo	919	174	745	1,253	38	1,215
Vedanta Star Limited <sup>2</sup>	479	4	475	488	4	484
Others <sup>3</sup>	288	214	74	288	216	72
<b>Vedanta Limited Consolidated</b>	<b>7,928</b>	<b>5,028</b>	<b>2900</b>	<b>9,574</b>	<b>5,643</b>	<b>3,931</b>
KCM	0	0	0	150	2	148
<b>Vedanta PLC<sup>4</sup></b>	<b>6,722</b>	<b>115</b>	<b>6,607</b>	<b>6,256</b>	<b>43</b>	<b>6,213</b>
<b>Total (\$ mn)</b>	<b>14,650</b>	<b>5,144</b>	<b>9,507</b>	<b>15,980</b>	<b>5,688</b>	<b>10,292</b>

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

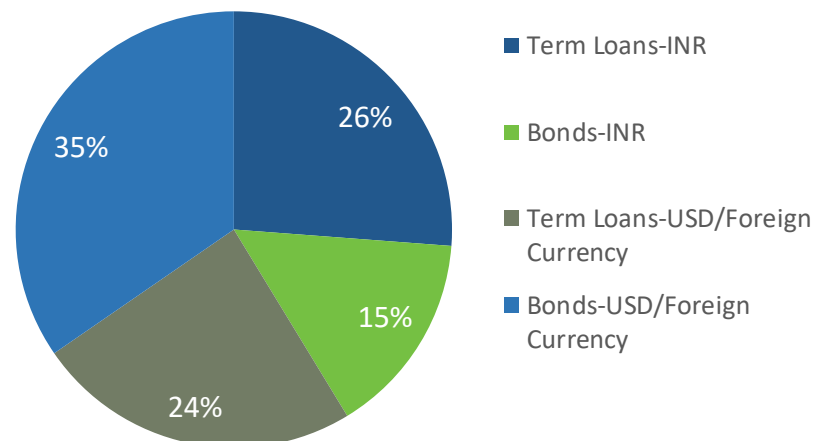
1. Cairn India Holdings Limited is a wholly owned subsidiary of Vedanta Limited which holds 50% of the share in the RJ Block

2. Vedanta Star limited, 100% subsidiary of VEDL which owns 90% stake in ESL

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

4. Includes investment companies

## Diversified Funding Sources for Term Debt of \$12.1 bn (as of 30<sup>th</sup> Sep 2019)



- Term debt of \$6.6bn at Standalone and \$5.5bn at Subsidiaries, total consolidated \$12.1bn

Note: USD-INR: ₹ 69.1713 at 30 Sep 2019

## Debt Breakdown (as of 30 Sep 2019)

Debt breakdown as of 30 Sep 2019	(in \$bn)
Term debt	12.1
Working capital	0.9
Short term borrowing	1.7
<b>Total consolidated debt</b>	<b>14.7</b>
<b>Cash and Liquid Investments</b>	<b>5.2</b>
Net Debt	9.5
<b>Debt breakup (\$14.7bn)</b>	
- INR Debt	50%
- USD / Foreign Currency Debt	50%

Oil & Gas	H1 FY20	H1 FY19
<b>Average Daily Gross Operated</b>		
<b>Production (boepd)</b>	<b>179,398</b>	<b>190,431</b>
Rajasthan	149,790	159,593
Ravva	13,015	13,855
Cambay	16,593	16,984
<b>Average Daily Working Interest</b>		
<b>Production (boepd)</b>	<b>114,783</b>	<b>121,761</b>
Rajasthan	104,853	111,715
Ravva	2,928	3,117
Cambay	6,637	6,794
KG-ONN 2003/1	365	135
Average Brent (\$/bbl)	65.4	74.8
Average realizations Oil & gas (\$/boe)	61.7	68.3
<b>EBITDA (\$mn)</b>	<b>525</b>	<b>572</b>

1. Excludes captive consumption of 3,396 tonnes in H1 FY20 vs 3,577 tonnes in H1 FY19

2. Excluding royalty. Revenues from silver not credited to CoP. With IFRIC adjustment

Zinc-India	H1 FY20	H1 FY19
<b>Mined Metal Content (kt)</b>	<b>432</b>	<b>444</b>
Refined Zinc – Integrated (kt)	338	334
Refined Lead – Integrated (kt) <sup>1</sup>	91	91
Saleable Silver – Integrated (in tonnes)	293	310
Average Zinc LME (\$/t)	2,549	2,820
Zinc CoP <sup>2</sup> (\$/t)	1,057	1,039
<b>EBITDA (\$mn)</b>	<b>642</b>	<b>727</b>

Zinc-International	H1 FY20	H1 FY19
Mined Metal – BMM (kt)	35	29
Mined Metal – Gamsberg (kt)	47	-
Refined Zinc – Skorpion (kt)	41	25
<b>Total Zinc-Lead Metal (kt)</b>	<b>123</b>	<b>54</b>
CoP (\$/t)	1,652	2,393
<b>EBITDA (\$mn)</b>	<b>48</b>	<b>15</b>

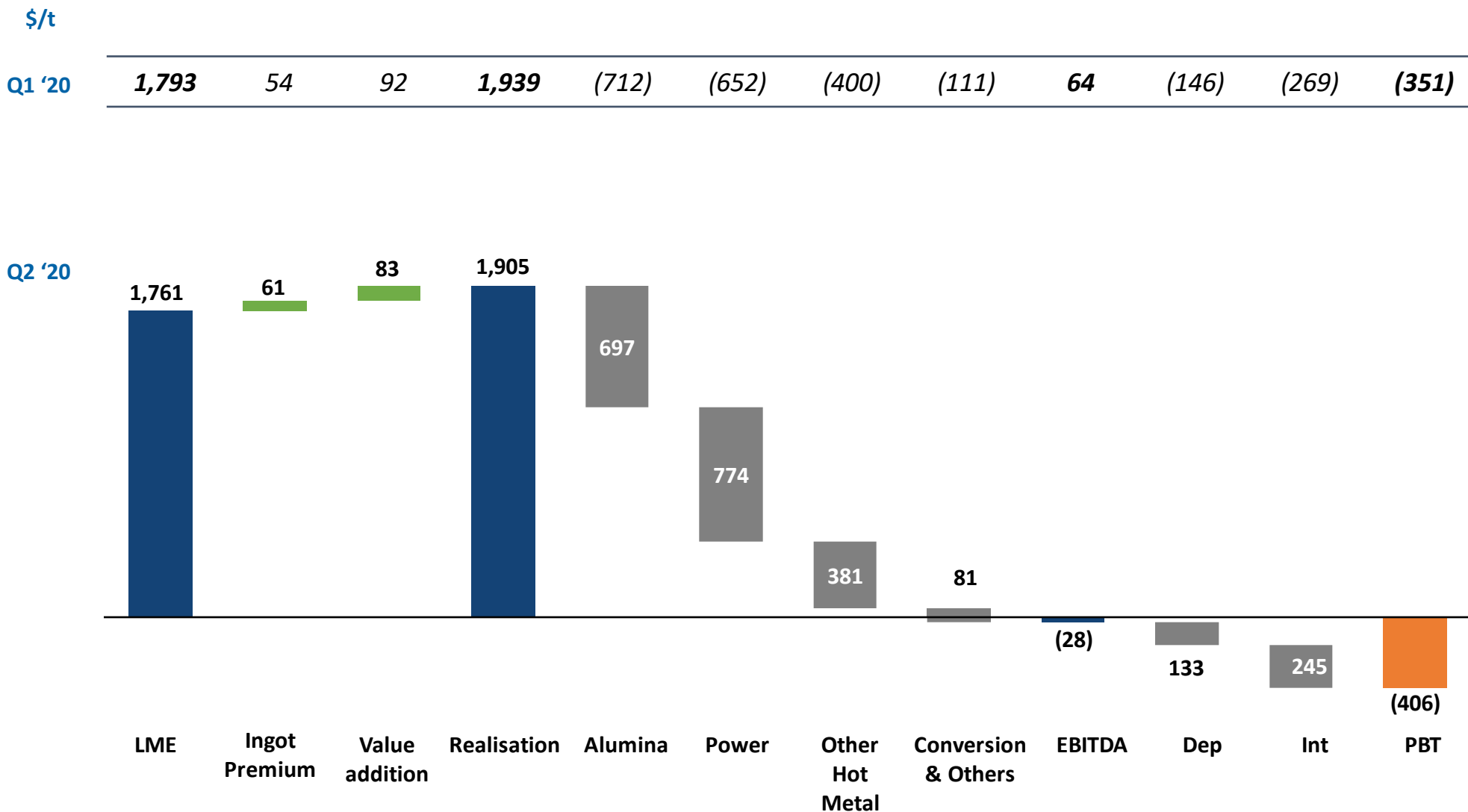
## Segment-wise Summary (cont'd)

Aluminium	H1 FY20	H1 FY19
<b>Aluminium Production (kt)</b>	<b>947</b>	<b>976</b>
Jharsuguda I - 500kt	271	273
Jharsuguda II - 1,250kt <sup>1</sup>	401	420
Korba-I 245kt	126	128
Korba-II 325kt	150	155
Average Aluminium LME (\$/t)	1,777	2,156
Aluminium COP (\$/t)	1,810	1,978
BALCO	1,781	1,973
Jharsuguda	1,822	1,981
Alumina Production (kt)	856	673
Alumina COP (\$/t)	289	349
<b>EBITDA (\$mn)</b>	<b>9</b>	<b>225</b>

Copper-India	H1 FY20	H1 FY19
<b>Copper Cathodes– India (kt)</b>	<b>31</b>	<b>40</b>
Tuticorin Power Plant (mu)	-	-
Average Copper LME (\$/t)	5,952	6,483
<b>EBITDA (\$mn)</b>	<b>(23)</b>	<b>(13)</b>

1. Includes trial run production of Nil in H1FY20 vs 30kt in H1FY19

# Aluminium profitability





## Segment-wise Summary (cont'd)

Power	H1 FY20	H1 FY19
Power Sales (million units)	6,773	6,830
Jharsuguda 600MW	287	289
BALCO <sup>1</sup>	878	1,137
Talwandi Sabo 1980MW	5,309	5,081
HZL Wind Power	298	324
Power - Realisation (Rs./unit) <sup>2</sup>	3.63	3.51
Power - Cost of generation (Rs./unit) <sup>2</sup>	2.44	2.75
Talwandi Sabo – Realisation (Rs./unit)	4.38	4.11
Talwandi Sabo – Cost of generation (Rs./unit)	3.35	2.89
<b>EBITDA (\$mn)</b>	<b>116</b>	<b>117</b>

1. BALCO 300 MW: received an order dated January 1, 2019 from CSERC for Conversion of 300 MW IPP to CPP.

2. Average excludes TSPL

\* Vedanta acquired Electrosteel on 4th June 2018, previous period numbers are memorandum information for the purpose of performance evaluation of the company

Iron Ore	H1 FY20	H1 FY19
Sales (dmt)	2.6	1.8
Goa	-	1.2
Karnataka	2.6	0.6
Production (mt)	2.4	2.8
Goa	-	0.2
Karnataka	2.4	2.6
Average Net Sales Realizations (\$/t)	27.4	29.6
Pig iron - Production (kt)	354	339
<b>EBITDA (\$mn)</b>	<b>45</b>	<b>42</b>
Steel*	H1 FY20	H1 FY19
<b>Total Production</b>	<b>593</b>	<b>527</b>
Pig Iron	73	59
Billet	41	7
TMT Bar	217	196
Wire Rod	187	208
Ductile Iron Pipes	76	57
<b>EBITDA (\$/t)</b>	<b>63</b>	<b>106</b>
<b>EBITDA (\$mn)</b>	<b>31</b>	<b>30</b>

Sales volume	H1 FY20	H1 FY19
<b>Zinc-India Sales</b>		
Refined Zinc (kt)	335	331
Refined Lead (kt)	91	91
<b>Total Zinc-Lead (kt)</b>	<b>427</b>	<b>422</b>
Silver (moz)	9.3	9.7
<b>Zinc-International Sales</b>		
Zinc Refined (kt)	40	25
Zinc Concentrate (MIC)	63	12
<b>Total Zinc (Refined+Conc)</b>	<b>103</b>	<b>37</b>
Lead Concentrate (MIC)	21	16
<b>Total Zinc-Lead (kt)</b>	<b>124</b>	<b>53</b>
<b>Aluminium Sales</b>		
Sales - Wire rods (kt)	162	171
Sales - Rolled products (kt)	13	12
Sales - Busbar and Billets (kt)	217	201
<b>Total Value added products (kt)</b>	<b>391</b>	<b>384</b>
Sales - Ingots (kt)	570	570
<b>Total Aluminium sales (kt)</b>	<b>962</b>	<b>954</b>

Sales volume	H1 FY20	H1 FY19
<b>Iron-Ore Sales</b>		
Goa (mn DMT)	-	1.2
Karnataka (mn DMT)	2.6	0.6
<b>Total (mn DMT)</b>	<b>2.6</b>	<b>1.8</b>
Pig Iron (kt)	330	338
<b>Copper-India Sales</b>		
Copper Cathodes (kt)	0.7	2
Copper Rods (kt)	43	53
Sulphuric Acid (kt)	-	2
<b>Total Steel Sales (kt)</b>	<b>557</b>	<b>502</b>
Pig Iron	71	55
Billet	17	13
TMT Bar	209	188
Wire Rod	193	197
Ductile Iron Pipes	65	48

Sales volume Power Sales (mu)	H1 FY20	H1 FY19
Jharsuguda 600 MW	287	289
TSPL	5,309	5,081
BALCO	878	1,137
HZL Wind power	298	324
<b>Total sales</b>	<b>6,773</b>	<b>6,860</b>
<b>Power Realisations (INR/kWh)</b>		
Jharsuguda 600 MW	2.23	2.16
TSPL <sup>2</sup>	4.38	4.11
Balco 600 MW	3.83	3.64
HZL Wind power	4.10	4.27
<b>Average Realisations<sup>1</sup></b>	<b>3.63</b>	<b>3.51</b>
<b>Power Costs (INR/kWh)</b>		
Jharsuguda 600 MW	4.91	5.48
TSPL <sup>2</sup>	3.35	2.89
Balco 600 MW	2.24	2.67
HZL Wind power	0.66	0.59
<b>Average costs<sup>1</sup></b>	<b>2.44</b>	<b>2.75</b>

1. Average excludes TSPL

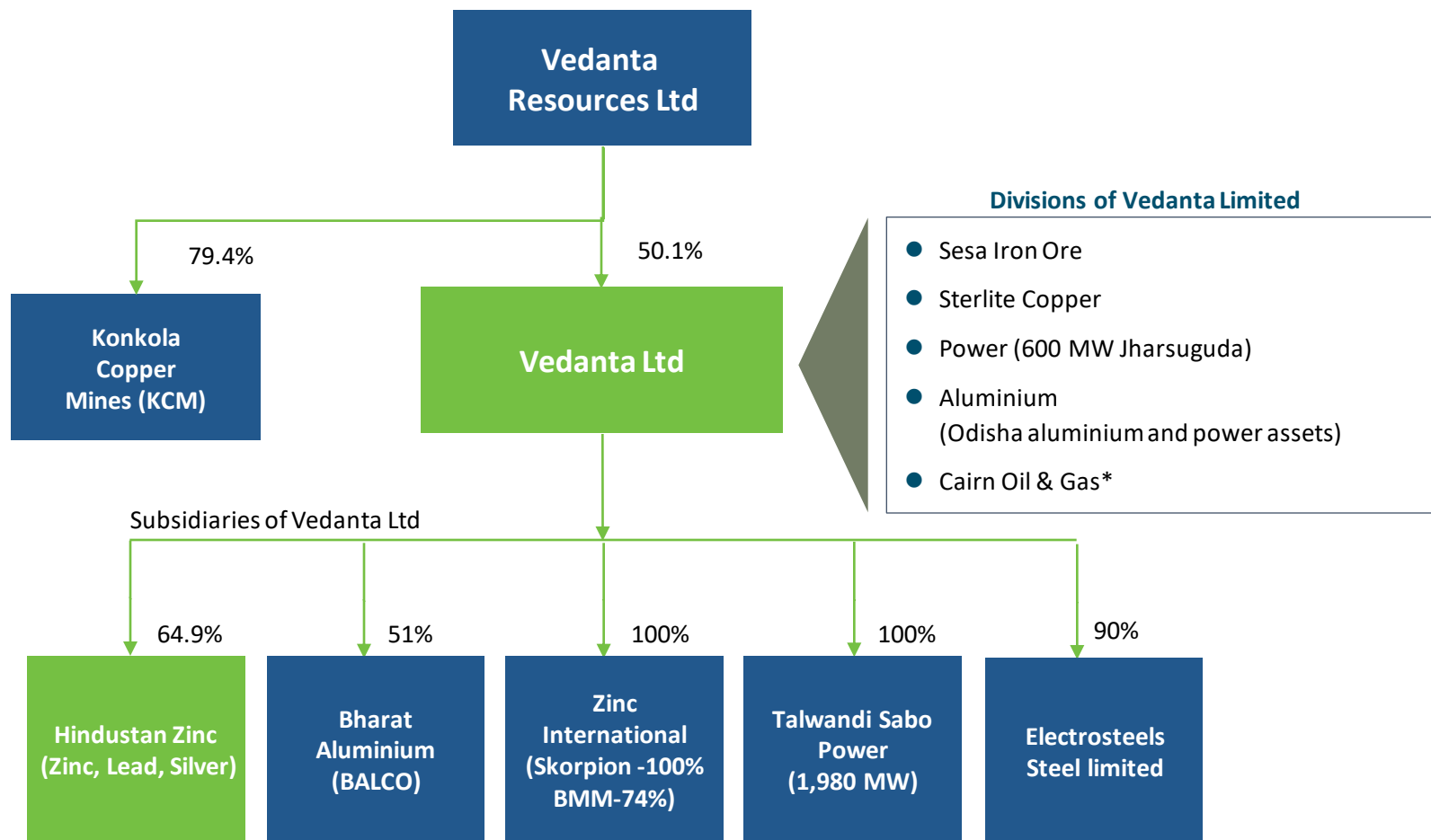
2. Based on Availability

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

Currency	Increase in EBITDA
INR/USD	~ US\$ 30 - 35 million / year

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

Commodity	H1 FY20 Average price	Full year impact on EBITDA (\$mn)
Oil (\$/bbl)	66	108
Zinc (\$/t)	2,575	205
Aluminium (\$/t)	1,782	272
Lead (\$/t)	1,936	37
Silver (\$/oz)	15.5	31



Note: Shareholding as on March 31, 2019

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

■ Listed entities

■ Unlisted entities