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20 May 2019

Vedanta Resources Limited

Preliminary Results for the year ended 31 March 2019

Financial highlights

- Revenue at US$ 14.0 billion, 8% lower y-o-y (FY2018: US$ 15.3 billion) driven mainly by shutdown of Tuticorin smelter partially offset by Aluminium business ramp up and ESL acquisition
- EBITDA◊ at US$ 3.4 billion, 14% lower y-o-y (FY2018: US$ 4.0 billion)
- Robust adjusted EBITDA◊ margin of 29% (FY2018: 35%)
- ROCE◊ at 9.6% in FY2019 (FY2018: 14.3%)
- Free cash flow (FCF) ◊ post-capex of US$ 1.2 billion (FY2018: US$ 0.9 billion)
- Gross debt at US$ 16.0 billion (FY2018: US$ 15.2 billion), due to ESL acquisition and temporary borrowing at Zinc India
- Net debt◊ at US$ 10.3 billion (FY2018: US$ 9.6 billion) , primarily due to ESL acquisition
- Strong financial position with cash equivalents, liquid investments and structured investments of US$ 5.7 billion (FY2018: US$ 5.6 billion)
- S&P affirmed the ratings at B+ while revising the Outlook to Negative in March 2019
- Moody's affirmed the Corporate Family ratings at Ba3 while revising the Outlook to Negative in February 2019
- Highest ever contribution to the exchequer of c. US$ 6.2 billion in FY2019
- In December 2018, the Group purchased an economic interest through a structured investment in the equity shares of Anglo-American Plc, from Volcan Investments Limited for a total consideration of US$ 541 million. As of March 31, 2019 , the transaction was positively marked to market by US$ 137 million.

Business highlights FY2019

Zinc India

- Record underground mined metal production at 936kt, up 29% y-o-y. Total mined metal production marginally down 1% y-o-y, post closure of open-cast operations
- Record lead metal production at 198kt, up 18% y-o-y
- Record refined silver production at 21.8 million ounces, up 22% y-o-y

Zinc International

- Commercial production commenced at Gamsberg in March 2019

Oil & Gas

- Average gross production of 189kboepd for FY2019, up 2% y-o-y
- 11 development drilling rigs as at March 2019, 99 wells drilled and 33 wells hooked up during FY2019 in Rajasthan
- Production sharing contracts (PSC) of Rajasthan and Ravva block extended for 10 years, subject to conditions
- Revenue sharing contract signed for 41 OALP blocks

Aluminium

- Record aluminium production at 1,959kt, up 17% y-o-y
- Record alumina production from Lanjigarh refinery at 1,501kt, up 24% y-o-y
- Q4 FY 2019 hot metal cost of production significantly lower at US$ 1,776 per tonne, lower by 12% q-o-q

Power

- Record PAF of 88% at the 1,980MW TSPL plant in FY2019

Iron Ore

- Goa operations remain suspended due to state-wide directive from the Hon'ble Supreme Court; engagement continues with the Government for a resumption of mining operations
- Production of saleable ore at Karnataka at 4.1 million tonnes, up 89% y-o-y

Steel

- Record annual steel production at 1.2 million tonnes for FY2019, up 17% y-o-y
- Achieved hot metal production run-rate of c.1.5mtpa in FY2019

Copper Zambia

- Integrated metal production at 90kt, up 7% y-o-y
- Custom Production at 87kt, down 22% y-o-y

Copper India

- Due legal process being followed to achieve a sustainable restart of the operations

Consolidated Group Results

(US$ million, unless stated)

Particulars	FY 2019	FY 2018	% Change
Net Sales/Income from Operations	14,031	15,294	(8)%
EBITDA	3,393	3,963	(14)%
EBITDA Margin (%)◊	24%	26%	
Adjusted EBITDA margin(1) (%)◊	29%	35%	
Operating Profit before special items	1,911	2,692	(29)%
Profit/(loss) attributable to equity holders of the parent	(237)	239	-
Underlying attributable profit/(loss) ◊	(226)	166	-
ROCE (%)◊	9.6%	14.3%	

1) *Excludes custom smelting at Copper India, Copper Zambia and Zinc India Operations.*

Vedanta Resources Limited will host its full year results call on Tuesday, 21st May 2019 at 2:30 PM IST (10:00 AM UK). In order to participate in the call, please pre-register by clicking on the link below.

https://services.choruscall.in/DiamondPassRegistration/register?confirmationNumber=875110&linkSecurityString=140aef998

Kindly note that pre-registration is mandatory to participate in the call.

The results will be available in the Investor Relations section of our website

www.vedantaresources.com

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About Vedanta Resources

Vedanta Resources Limited ("Vedanta") is a diversified global natural resources Company. The group produces aluminium, copper, zinc, lead, silver, iron ore, oil & gas and commercial energy. Vedanta has operations in India, Zambia, Namibia, South Africa, Ireland and Australia. With an empowered talent pool globally, Vedanta places strong emphasis on partnering with all its stakeholders based on the core values of trust, sustainability, growth, entrepreneurship, integrity, respect and care. To access the Vedanta Sustainable Development Report 2018, please visit http://www.vedantaresources.com/media/237848/vedanta-sd-report-2017-18.pdf. For more information on Vedanta Resources, please visit www.vedantaresources.com

Disclaimer

This press release contains "forward-looking statements" – that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, and often contain words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "should" or "will." Forward–looking statements by their nature address matters that are, to different degrees, uncertain. For us, uncertainties arise from the behaviour of financial and metals markets including the London Metal Exchange, fluctuations in interest and/or exchange rates and metal prices; from future integration of acquired businesses; and from numerous other matters of national, regional and global scale, including those of a political, economic, business, competitive or regulatory nature. These uncertainties may cause our actual future results to be materially different that those expressed in our forward-looking statements. We do not undertake to update our forward-looking statements.

CEO's statement

Steady sustainable performance sets a solid base for FY 2020

Introduction

I am pleased to table my first report to all our shareholders and other stakeholders for the year ending 31 March 2019. It was a year that saw the setting of new production records across some of our businesses, commissioning of a new zinc mine, efficiencies to mitigate cost pressures, growth projects being on track, an increase in our oil reserves and mineral resources and reserves and a healthy dividend to shareholders.

What I've found since joining, is a Company with a strong purpose of giving back for the greater good, a track record of achievement, coupled with an equally strong sense of selflessness. Vedanta has always recognised that business and people are interdependent. We regard supporting our local communities, respecting our environments and sharing the collective fruits of our work as imperatives for our social licence to operate. This is an area where we recognise we need to improve and communicate better and these will receive added attention during the forthcoming year.

As we look forward to the year ahead our three key businesses are well positioned. In the case of our Zinc, Lead and Silver business, we will see the benefit of increased volumes and therefore lower costs, augmented by our newly commissioned mine in South Africa. In oil & gas, we are India's largest private producer of crude, and rank with the world's lowest-cost producers with a production, development and exploration pipeline. In aluminium we offer India's largest production capacity, supported by our own captive power generation and we are increasingly integrating backwards for our own alumina.

We continue to consolidate our position as one of the largest diversified natural resource businesses in the world, positioned in commodities that have a growing demand in the largest, most stable and fastest growing democracies in the world. We operate long-life, high-growth, low-cost assets, and deliver consistent returns through the cycle. This set of strengths, together with our focused growth strategy, excellent talent, hunger for technology and modernisation, and an anchor shareholder who is committed to the long-term, all combine to create a truly inspirational company.

Safety & Sustainability

A life lost at work is a life too many and we are deeply saddened to report that we recorded fourteen fatal accidents in the Group.

'Zero harm' is our non-negotiable safety tenet across all our operations at Vedanta, and we are determined to bring about a clear and measurable improvement in our safety record, and are ramping up a range of actions to achieve this. These include strengthening compliance and accountability; instilling a new culture of care in the field; and ensuring transparent reporting of incidents, near-misses and high impact potential incidents and consequence management.

For FY2020, we have also enhanced safety scorecards with the three focus areas of 'Visible Felt Leadership', managing safety critical tasks and better management of business partners. We have seen some improvement in the fourth quarter ended 31 March 2019, with no fatal accidents across the businesses, however, we also recognise that 'Zero-Harm' is a journey and we continue to monitor this as a high priority.

Our initiatives on water, energy and carbon management progressed well during the year. We recycled 92% of the high-volume-low-effect-wastes such as fly ash, slag, red-mud and jarosite. We had set ourselves a target of reducing our greenhouse gas intensity by 16% by FY2020, against the baseline year of 2012. By the end of this year, we were on track to achieving our target and had reduced our GHG emission intensity by 14.5%.

We have strengthened our efforts on tailings dam management. We apply stringent steps to comply with all local environmental standards, ensuring that the water contained in this waste is treated and made safe before it can be discharged into local drainage systems. We have worked with independent industry experts to provide long-term monitoring and advice on the safe design, construction and operation of all our tailings facilities. I am happy to share that these efforts are resulting in further advances towards making our operations sustainable. For example, at Zinc India, instead of disposing of tailings in land-hungry surface pits, we have found a way to turn them into paste and use them for backfilling of empty underground voids. We have also rehabilitated one retired tailing dam into a haven of over 1.5 million trees, and another into a vibrant football academy for India's most promising young talent.

India's growth: we stand ready

I believe there is no more exciting economy in the world than our own here in India. It is a nation teeming with opportunity and potential, as the country looks to modernise, expand and accommodate the rising aspirations of a growing population. Indeed, in just a decade from now, India is expected to be home to 1.5 billion people and have an economy worth US$ 6 trillion.

This presents Vedanta, as India's only diversified natural resources group, with a unique opportunity to provide the vital commodities the country needs for infrastructure development, asset-creation, mobility, housing, consumer goods and general consumption.

The demand potential for our metals such as aluminium, zinc and steel, therefore, is immense.

Companies such as Vedanta will also be instrumental in addressing a major national mineral deficit: India currently imports around 80% of its oil and mineral needs. We stand ready to supply the 'home-grown' products that the nation requires.

Policy and regulation

Against this backdrop, we were naturally pleased to see a renewed focus by the Government of India on the mining sector as an engine of economic growth.

Its National Mineral Policy (NMP), launched during the year, aims to increase mineral production in India by 200% and to reduce India's trade deficit in minerals by 50% in the next seven years. NMP introduces a more effective and meaningful policy, with more transparency and better regulation enforcement. A pro-growth ambition requires a pro-business environment, and the NMP will encourage private sector participation in exploration.

We have offered our suggestions to NITI Aayog in its deliberations on a new pathway for the regulatory framework for mining.

In a similar vein, we welcomed landmark policy reforms in the oil & gas sector, aimed at raising domestic output and cutting imports, while also providing a smooth transition to cleaner fuels.

In South Africa, the revised Mining Charter III, announced by the Minister for Mineral Resources, addressed the needs of the country and provided very welcome certainty to the sector, and we support the efforts of the Government in this regard. As evidenced during the formal inauguration of our Gamsberg mine by His Excellency, Cyril Ramaphosa, the President of the Republic, our project is in keeping with the spirit of the Charter.

Business performance & growth opportunities

The year saw our three large businesses Zinc, Aluminium and Oil & Gas – which together represent 90% of the Group's EBITDA, achieve significant milestones which give us a strong base for the near-term targets we have set for these businesses.

Zinc

We are pleased with the transition Zinc India has made from open cast to fully underground mining, with the latter increasing by 29% y-o-y. The increased silver production at our Sindesur

Kurd mine has resulted in the business now being ranked 9th in the Elite Club of top 10 silver producers with a record production of 21.8 million ounces during the year, up 22% y-o-y.

We now look to build on that success in FY2020 to achieve the mined metal design capacity of 1.2 million tonnes and further ramp up the silver production. We are expecting these volume increases to also translate to unit cost reductions in the business.

The Company achieved a significant milestone in December 2018, when our flagship Gamsberg project in South Africa shipped out its first parcel of concentrate. It is now ramping up to its target MIC capacity of 250,000 tonnes. This new age fully automated and digital mine will be a catalyst for the region's development and a significant contributor to Vedanta's earnings over the next 9-12 months.

Certainly, in FY2019 we took a step towards becoming the largest producer of the zinc in the world.

Oil & Gas

We continue to make progress on the various growth projects in the Oil & Gas business. We now have 11 development drilling rigs deployed, drilled 99 wells and hooked up 33 wells in Rajasthan during the year. We are aiming to grow this production base using better well reservoir management, enhanced recovery technologies that we have already successfully piloted, bringing on line more new wells, augmenting our surface infrastructure to appropriate levels and adding further gas and off-shore production. We are keeping a careful lid on our lifting and discovery costs which are some of the most competitive globally.

We won 41 blocks under the Government's new OALP and are excited by the potential it offers to make Vedanta an even more significant contributor to India's domestic oil & gas production. The discovery of oil & gas in the two fields in the KG basin enhances our position.

During the year, we also received an extension of the Production Sharing Contract for the Rajasthan block till 2030 subject to certain conditions. We have now committed to a gross capex of US$3.2 billion and we are partnering with international oil service providers to achieve our objective.

Aluminium

Despite cost pressures seen in the first half of FY2019, we are very encouraged by the many structural changes we have put in place in the Aluminium business to reduce the overall cost of production – increased Bauxite sourcing reducing our dependence on imported alumina, improved volumes from our alumina refinery, better coal availability, linkage and coal stock on hand and more efficient logistics. The business exited the year with coal linkage at 72% of its consumption and indigenous bauxite sourcing to address more than one-third of our yearly requirement. With this and the proposed ramp up of alumina refinery, I am certain that our target of Aluminium COP of US$1500 per tonne is achievable in the near term.

Steel

We are also pleased with the acquisition of ESL, which we completed in June 2018. The year has been transformational for them with production ramping up to 1.2 million tonnes for the year and with an exit run rate of c.1.5 million tonnes and EBITDA margins of US$115 per tonne.

Copper Zambia

The business continues to focus on process stabilization. The turnaround actions required are understood and under way, and although there is much to be done, it remains a world-class asset with a 50-year mine life. It remains an integral part of our vision for the future. We are equally focused on enhancing the margins by optimising our cost through our cost program "NATSUNGE - Let us Preserve"

At KCM, in line with our commitment to contribute towards the growth of the economy and sustainability, we undertake to constructively engage with all key stakeholders such as government, local communities, suppliers, employees and the shareholders in a respectful manner.

Resources and Reserves

As a natural resource's company, we are clear that the greatest value adding growth can come from our existing land positions. We are therefore sharply focused on the areas of exploration and conversion of resources to reserves, to more than off-set depletion and create a long runway for our assets.

We are pleased to report a healthy resources and reserves base across our businesses as follows:

Business	Reserves and Resources
Zinc India	403 million tonnes
Zinc International	434 million tonnes
Oil & Gas	1,195 mmboe gross proved and probable reserves and resources
Copper Zambia	509 million tonnes

People

Good results are, of course, the product of great people, and the energies and talents of our 88,500+ employees across locations truly came to the fore during the year.

During the year we were also pleased to announce a number of new appointments as we strengthened our leadership in the business units. Ajay Kapur was appointed as the CEO of our Aluminium and Power business, Christopher Sheppard as the CEO of KCM, Pankaj Malan as Deputy CEO of ESL and Pankaj Kumar, CEO of Sterlite Copper; Since the year-end, Ajay Dixit has been appointed as the CEO of our Oil & Gas business.

The new leadership team is excited to take Vedanta forward on its journey to deliver the best from its assets and create value added growth. Importantly, it is well supported by a deep bench-strength of talent that will see the new leaders emerge to fill the succession pipe-line for later years.

I also express my sincere thanks to Mr Kuldip Kaura for his valuable contribution to Vedanta as interim CEO and for a seamless handover.

Outlook

Looking ahead to FY2020, we have in place the building blocks to enhance our performance in the three key businesses. We are excited by the prospects ahead which include a ramp up in zinc, lead and silver production from Hindustan Zinc, the benefit of a full year's production from our Gamsberg Zinc mine, increased production from our Oil & Gas business as the first phase of our projects come on stream and embedding the structural changes to our cost structure in our Aluminium business while improving volumes. For our Iron Ore business in Goa, we will continue to engage with and encourage the Central and State Governments to resume production given the benefits to all stakeholders. We regret the tragic loss of thirteen lives in the demonstrations in Tuticorin and we will continue to engage with the Government, the relevant authorities, the courts and all stakeholders to enable the safe and supported restart of operations at the copper smelter at Tuticorin.

In our markets we expect base metals prices to remain stable and to inch higher to catch up with demand supply inventory dynamics. The refined metal market for Aluminium and Zinc remains in short supply and hence we expect favourable conditions. Also, as the only diversified natural resources Company in India, we expect to benefit from economic development in this region. The various policy moves in India are encouraging. The approval of the National Mineral Policy, 2019 (NMP) is an important milestone in the liberalisation of the mines and minerals sector in India. The new licensing policy for awarding the oil blocks is also a positive move to develop this sector.

Our strategic focus areas for FY2020 will continue to be:

- **Ethics, governance and our social licence to operate** = Here we will continue our journey towards zero harm by ensuring greater levels of safety; an ever-gentler impact on our environments and resources; and even greater inroads into delivering healthcare, education, skills and quality of life where it is needed in our communities.
- **Expanding our reserves and resource base** = Focused exploration to augment our long-life, low-cost assets by improving our land positions, growing our reserves and resource positions in our businesses by more than offsetting depletion and bringing on stream more discoveries.
- **Continued track record of delivering value adding growth** = Continuing to build on the track record of our three key businesses whereby the project pipeline is strong and projects are stress tested to deliver at least 20+% returns off conservative price assumptions.
- **Strict capital allocation and balance sheet focus** = As managers of the business we will follow strict capital allocation whilst keeping the balance sheet in sharp focus. Balance sheet is proactively managed with businesses having to earn their capital before spending.
- **Delivering the best out of our assets with the best teams and means** = Our business CEOs will remain focused on operational delivery and having the right management and teams in place to deliver. Asset planning, execution, operational excellence, cost control and reduction, productivity enhancements, improving realisations, risk mitigation, use of technology, innovation and digitalisation will all help us sweat our assets better to deliver enhanced performance.

Together with our Chairman, the Board, all our colleagues and business partners, I thank all our loyal shareholders for their continuing support and look forward to delivering another year of value adding growth.

Srinivasan Venkatakrishnan

Chief Executive Officer

STRATEGIC OVERVIEW

Over the last few years, our strategic priorities have remained consistent with a focus on delivering growth and long-term value to our stakeholders while upholding operational excellence and sustainable development through our diversified portfolio.

During the year, we invested in the next phase of growth in Zinc and Oil & Gas businesses. These projects in addition to the ramp-ups already underway in other businesses, will provide Vedanta with significant growth in its production capacities. At the same time, we continuously strive to improve our operations to achieve benchmark performance, optimise costs and improve realisations.

Summary of strategic priorities below:

1) Continued focus on world-class ESG performance: We operate as a responsible business, focusing on achieving 'zero harm, zero discharge & zero wastage', and so minimising our environmental impact. We promote social inclusion across our operations to promote inclusive growth. We put management systems and processes in place to ensure our operations create sustainable value for all our stakeholders.

2) Augment our Reserves & Resources (R&R) base : We look at ways to expand our R&R base through targeted and disciplined exploration programmes. Our exploration teams aim to discover mineral and oil deposits in a safe and responsible way, to replenish the resources that support our future growth.

3) Delivering on growth opportunities: We are focused on growing our operations organically by developing brownfield opportunities in our existing portfolio. Our large well -diversified and long-life asset portfolio offers us attractive growth opportunities, which are evaluated based on our return criteria for long term value enhancement of the Company.

4) Optimise capital allocation and maintain strong balance sheet: Our focus is on generating strong business cash flows and maintaining strict capital discipline in investing in profitable high IRR projects. Our aim is to maintain a strong balance sheet through proactive liability management. We also review all investments (organic & acquisitions) based on our strict capital allocation framework, with a view to maximising returns to the shareholders.

5) Operational excellence: We strive for all-round operational excellence to achieve benchmark performance across our business, by debottlenecking our assets to enhance production, supported by improved digital and technology solutions. Our efforts are focused on enhancing profitability by optimising our cost and improving realisation through the right marketing strategies.

FINANCE REVIEW

Executive summary: We had a strong operational and financial performance in FY2019. During the year we completed the acquisition of ESL which will complement our iron ore business through vertical integration. Our ramp-up plans for growth projects are all on track and with that we have a firm base for an even stronger performance next year.

In FY 2019 we recorded an EBITDA of US$ 3,393 million, 14% lower y-o-y but with a robust margin of 29%. (FY2018: US$ 3,963 million, margin 35%).

Production volumes contributed to an increase in EBITDA of US$ 148 million, which was primarily on account of ramp up of volumes at aluminium and volume addition from ESL acquisition. However, this was partially offset by lower volumes at Zinc India and at Zinc International.

Market factors resulted in a net fall in EBITDA of US$ 244 million compared to FY2018. This was mainly driven by input raw material inflation and lower commodity prices. This decrease was partially offset by depreciation of operating currencies.

During FY 2019 Gross debt increased to US$ 16.0 billion (FY2018: US$ 15.2 billion), primarily due to the acquisition debt for Electrosteel Steels and temporary borrowings at Zinc India.

Net debt◊ increased to US$ 10.3 billion as at 31 March 2019 from US$ 9.6 billion as at 31 March 2018, primarily due to the acquisition debt for ESL in FY 2019.

In April 2019, to proactively refinance our near-term maturities, we raised US$ 1 billion through bonds in two tranches at a blended average cost of 8.75% and average maturity of 5.8 years. This will extend the average maturity of the outstanding debt at VRL to c.4 years.

The balance sheet of Vedanta Limited, the Indian listed subsidiary of Vedanta Resources continues to remain strong with cash equivalents, liquid investments and structured investment, net of the deferred consideration payable for such investment of c.US$ 5.6 billion and Net Debt◊ to EBITDA ratio at 1.1x, which is the lowest among Indian peers.

Consolidated operating profit before special items

Operating profit before special items decreased by US$ 781 million in FY 2019 to US$ 1,911 million . This was mainly on account of shutdown of the Tuticorin smelter, input commodity inflation, lower metal prices, higher cost of production and a higher depreciation charge. This was partially offset by ramp up of volumes at aluminium , volume addition from ESL acquisition , improved oil prices and currency depreciation.

Consolidated operating profit summary before special items:

(US$ million , unless stated)

Consolidated operating profit before special items	FY2019	FY2018	% change
Zinc	1,287	1,861	(31)%
-India	1,248	1,669	(25)%
-International	39	192	(80)%
Oil & Gas	489	388	26%
Aluminium	76	157	(52)%
Power	133	183	(28)%
Iron Ore	55	(21)	-
Steel	85	-	-
Copper	(222)	98	-
India/Australia	(57)	137	-
Copper Zambia	(165)	(39)	-
Others	8	26	(68)%
Total Group operating profit before special items	**1,911**	**2,692**	**(29)%**

Consolidated operating profit bridge before special items:

	(US$ million)
Operating profit before special items for FY2018	**2,692**
Market and regulatory: US$ (244) million	
a) Prices, premium / discount	(91)
b) Direct raw material inflation	(344)
c) Foreign exchange movement	164
d) Profit petroleum to GOI at Oil & Gas	13
e) Regulatory changes	14
Operational: US$ (76) million	
f) Volume	148
g) Cost and marketing	(224)
h) Others	(250)
Depreciation and amortization	(211)
Operating profit before special items for FY2019	**1,911**

a) Prices , premium/discount

Commodity price fluctuations have a significant impact on the Group's business. During FY2019, we saw a net negative impact on EBITDA of US$ 91 million due to commodity price fluctuations.

Zinc , lead and silver: Average zinc LME prices during FY2019 dropped to US$2,743 per tonne, down 10% y-o-y; lead LME prices decreased to US$2,121 per tonne, down 11% y-o-y; and silver prices decreased to US$15.4 per ounce, down 9% y-o-y. The collective impact of these price fluctuations lowered EBITDA by US$ 289 million.

Aluminium: Average aluminium LME prices decreased to US$2,035 per tonne in FY2019, down 1% y-o-y, this had a negative impact of US$ 33 million on EBITDA.

Oil & Gas: The average Brent price for the year was US$70.4 per barrel, higher by 22% compared with US$57.5 per barrel during FY2018, this was further supported by a lower discount to Brent during the year (FY2019: 6.1%; FY2018: 12.3%). These positively impacted EBITDA by US$ 241 million.

b) Direct raw material inflation

Prices of key raw materials such as imported alumina, thermal coal, carbon and caustics have increased significantly in FY2019 and this had an adverse impact on EBITDA of US$ 344 million.

c) Foreign exchange fluctuation

Our main operating currencies (the Indian rupee and South African rand) both depreciated against the US dollar during FY2019. Depreciation of these currencies is favourable to the Group's operating profit, given the local cost base and predominantly US dollar-linked revenues. However, the depreciation of the Zambian kwacha is unfavourable to the group; considering the Value Added Tax (VAT) receivables at Copper Zambia in local currency.

These currency movements at an aggregate increased EBITDA by US$ 164 million compared to FY2018.

Information regarding key exchange rates against the US dollar :

	Average year ended 31 March 2019	**Average year ended 31 March 2018**	**% change**	**As at 31 March 2019**	**As at 31 March 2018**
Indian rupee	69.89	64.45	8%	69.17	65.04
South African rand	13.76	13.00	6%	14.48	11.83
Zambian Kwacha	11.04	9.54	16%	12.19	9.50

d) Profit petroleum to GOI at Oil & Gas

The profit petroleum outflow to the Government of India (GOI), as per the production sharing contract (PSC), reduced by US$ 13 million. The reduction was primarily due to the higher recovery of capital expenditure over the previous year.

e) Regulatory

During FY2019, regulatory changes had a cumulative positive impact on the Group EBITDA of US$ 14 million.

f) Volumes

Higher volumes contributed to an increase in EBITDA of US$148 million, generated through these key Group businesses:

Aluminium (positive US$ 70 million)

In FY2019, the Aluminium business achieved record production of 1.96 million tonnes , up 17% y-o-y due to the ramp -up of the Jharsuguda smelters. This volume increase had a positive impact on EBITDA of US$ 70 million.

Electrosteel (positive US$ 113 million)

Vedanta Limited completed the acquisition of 90% of the share capital of ESL on 4 June 2018. This acquisition had a positive impact on EBITDA of US$ 113 million.

Power (positive US$ 29 million)

The power business generated contributed positively to EBITDA by US$29 million . This was mainly due to TSPL , which was impacted by a fire incident in the coal conveyor in Q1 FY 2018.

Zinc India (negative US$ 73 million)

The integrated zinc metal production stood at 696kt, lower by 12% , although this was offset by record lead and silver production of 198kt and 21.8 million ounces respectively. This had a cumulative negative impact on EBITDA of US$73 million.

g) Cost and marketing

Higher costs resulted in a fall in EBITDA by US$ 224 million over FY2018, primarily due to volume led absorption at Zinc India and Zinc International and purchase of power from external sources in aluminium due to coal supply disruption during FY2019.

h) Others

This primarily includes the reduction in EBITDA due to the shutdown of the Tuticorin smelter.

Depreciation and amortisation:

Depreciation and amortisation increased by US$ 211 million against the previous year. This was mainly due to reversal of previously recorded impairment at Oil and Gas business in Q4 FY2018, higher charge due to higher ore production at Zinc businesses and capitalisation of costs at Gamsberg, and acquisition of ESL partially offset by depreciation of the India rupee.

INCOME STATEMENT

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	14,031	15,294	(8)%
EBITDA◊	3,393	3,963	(14)%
EBITDA margin (%)	24%	26%	-
EBITDA margin without custom smelting (%)	29%	35%	-
Special items	38	683	(94)%
Depreciation and amortisation	(1,482)	(1,271)	17%
Operating profit	1,949	3,375	(42)%
Operating profit without special items	1,911	2,692	(29)%
Net interest expense	(787)	(774)	2%
Interest cost-related special items	9	(108)	-
Other gains /(losses) special items	-	11	-
Other gains /(losses)	(75)	(16)	-
Profit before taxation	1,096	2,488	(56)%
Profit before taxation without special items	1,049	1,902	(45)%
Income tax expense	(656)	(675)	(3)%
Income tax (expense) (special items)	(16)	(338)	(95)%
Effective tax rate without special items (%)	62%	35%	-
Profit for the year	424	1,475	(71)%
Profit for the year without special items	393	1,227	(68)%
Non-controlling interest	661	1,236	(46)%
Non-controlling interest without special items	646	1,064	(39)%
Attributable (loss)/ profit	(237)	239	-
Attributable (loss)/profit without special items	(253)	163	-
Underlying attributable (loss)/profit	(226)	166	-

Consolidated revenue

Revenue for FY2019 decreased by 8% to US$ 14,031 million (FY2018: US$ 15,294 million). This was mainly on account of shutdown of Tuticorin smelter, lower zinc volumes, lower custom volumes at Copper Zambia and lower metal prices. This was partially offset by ramp-up of volumes at aluminium, volume addition from ESL acquisition and improved oil prices.

(US$ million, unless stated)

Consolidated revenue	FY2019	FY2018	Net revenue % change
Zinc	3,347	3,889	(14)%
India	2,955	3,354	(12)%
International	392	535	(27)%
Oil & Gas	1,892	1,480	28%
Aluminium	4,183	3,545	18%
Power	934	877	6%
Iron Ore	416	485	(14%)
Steel	600		-
Copper	2,622	5,111	(49)%
India/Australia	1,537	3,828	(60)%
Zambia	1,085	1,283	(15)%
Others [1]	37	(93)	-
Total	**14,031**	**15,294**	**(8)%**

1) *Includes port business, ASI and eliminations of inter-segment sales.*

Consolidated EBITDA

The consolidated EBITDA by segment is set out below:

(US$ million, unless stated)

	FY2019	FY2018	% change	Key drivers	EBITDA margin % FY2019	EBITDA margin % FY2018
Zinc	1,616	2,122	(24)%		48%	55%
-India	1,516	1,902	(20)%	Lower volumes and lower LME	51%	57%
-International	100	220	(55)%	Lower sales, lower LME and higher COP	25%	41%
Oil & Gas	1,100	849	(30)%	Improved Oil Prices	58%	57%
Aluminium	316	414	(24)%	Record volume offset by higher COP	8%	12%
Power	219	258	(15)%	One time gains in FY2018	23%	25%[2]
Iron Ore	90	48	87%	Higher Iron Ore Karnataka volumes	22%	10%
Steel	113	-	-		19%	-
Copper	(99)	235	-		(4)%	5%
-India/Australia	(36)	162	-	shutdown of Tuticorin smelter	(2)%	4%
-Zambia	(63)	73	-	Lower Custom volumes, kwacha depreciation	(6)%	6%
Others [1]	38	37	3%		-	-
Total	**3,393**	**3,963**	**(14)%**	**EBITDA margin◊**	**24%**	**26%**
				Adjusted EBITDA margin◊	**29%**	**35%**

1. *Includes port business, ASI and elimination of inter-segment transactions.*
2. *Excluding one-offs*

EBITDA AND EBITDA MARGIN

EBITDA for the year was US$ 3,393 million, 14% lower y-o-y. This was mainly on account of shutdown of Tuticorin smelter, input commodity inflation, lower metal prices and higher cost of production partially offset by ramp up of volumes at aluminium , volume addition from ESL acquisition , improved oil prices and currency depreciation.

We maintained a robust Adjusted EBITDA margin of 29% for the year (FY 2018: 35%)

Special items (including interest cost related, and others)

In FY2019 special items included:

- A reversal of previously recorded non-cash impairment charge of US$ 38 million relating to the KG ONN block, in the Oil & Gas business.
- Special items related to interest cost is a credit of US$ 9 million in FY2019, this pertains to a reversal of charge relating to arbitration of a historical vendor claim pursuant to Supreme Court Order in Aluminium business.

Further analysis of special items is set out in notes 7 and 9 of the financial statements.

Net Interest

The blended cost of borrowings was 7.45% for FY2019 compared to with 7.15% in FY2018.

Finance cost excluding special items for FY2019 was at US$ 1,267 million, 2% higher y-o-y compared to US$ 1,239 million in FY2018 mainly because of higher gross debt due to ESL acquisition, temporary borrowings at Zinc India and higher average borrowing cost in line with market trends partially offset by higher capitalisation during the year and rupee depreciation.

Investment income for FY2019 stood at US$ 480 million, 3% higher y-o-y compared to US$ 465 million in FY2018. This was mainly due to mark to market gains on a treasury investment made by Vedanta Limited's overseas subsidiary through a purchase of an economic interest in a structured investment in Anglo American Plc from its parent, Volcan Investments Limited. This was partially offset by a lower investment corpus and rupee depreciation.

The higher finance cost was partially offset by higher investment revenue and this led to a net increase of US$ 13 million in net interest expense (excluding special items) during the period.

Other gains/(losses) excluding special items

Other gains / (losses) excluding special items for FY2019 amounted to US$(75) million, compared to US$(16) million in FY2018. This was mainly on account of significant depreciation of the Indian rupee against the US dollar.

Taxation

Effective tax rate (before special items) for FY2019 was 62%, compared to 35% in FY 2018.

The effective tax rate (ETR) was higher in FY2019 due to a change in the profit mix across the businesses, together with depreciation of the rupee impacting tax WDV of Oil & Gas assets, whose functional currency is USD. Further the tax charge for FY2019 includes US$ 121.0 million (FY2018: US$ nil million) representing reversal of deferred tax assets on carry forward losses not expected to be utilised during the statutory permitted period and US$ 158 million (FY2018: US$ 63 million) of dividend distribution tax on dividends paid by subsidiaries.

Attributable profit/(loss)

Attributable loss before special items was US$ (253) million in FY2019 compared to an attributable profit of US$ 163 million in FY2018 . This was mainly on account of lower EBITDA , higher depreciation and a higher effective tax rate.

Free Cash flow post-capex◊

The Group generated free cash flow (FCF)◊ post-capex of US$ 1,190 million (FY2018: US$ 925 million). This was driven mainly by working capital initiatives and disciplined capital expenditure.

Fund flow movement in net debt◊

Fund flow and movement in net debt◊ in FY2019 are set out below.

(US$ million, unless stated)

Details	FY2019	FY2018
EBITDA	3,393	3,963
Operating exceptional items	-	33
Working capital movements	279	(627)
Changes in non-cash items	33	28
Sustaining capital expenditure	(435)	(385)
Movements in Capital Creditors	107	42
Sale of property, plant and equipment	18	10
Net interest (including interest cost-related special items)	(738)	(821)
Tax paid	(386)	(498)
Expansion capital expenditure	(1,081)	(820)
Free cash flow (FCF) post capex◊	**1,190**	**925**
Dividend paid to equity shareholders	(113)	(164)
Dividend paid to non-controlling interests	(1,028)	(1,414)
Tax on dividend from Group companies	(161)	(69)
Acquisition of subsidiary	(707) [1]	(240)[2]
Other movements[3]	115	(122)
Movement in net debt	**(704)**	**(1,084)**

1.Includes cost of acquisition of ESL US$ 788 million net of cash related to the acquired company US$ 81 million.
2.Includes net debt on acquisition of ASI US$ 72million and acquisition expenses of US$7million
3. Includes foreign exchange movements.

Debt, maturity profile and refinancing

The Gross debt increased from US$ 15.2 billion in FY2018 to US$ 16.0 billion mainly on account of acquisition of Electrosteel Steels Limited (ESL) and temporary borrowing at Zinc India.

During FY2019, Net debt◊ increased from US$ 9.6 billion to US$ 10.3 billion y-o-y. This was primarily on account of the acquisition of ESL during FY2019.

Our total gross debt of US$ 16.0 billion comprises:

- US$ 12.6 billion as term debt (March 2018: US$ 11.3 billion);
- US$ 2.9 billion of short-term borrowings (March 2018: US$ 2.7 billion)and;
- US$ 0.5 billion of working capital loans (March 2018: US$ 0.7 billion).

Gross debt as at 31 March 2018 also included preference shares issued pursuant to the Cairn merger of US$ 0.5 billion which were redeemed during FY2019.

The maturity profile of term debt of the Group (totalling US$ 12.6 billion) is summarised below:

Particulars	As at 31 March 2018	As at 31 March 2019	FY2020	FY2021	FY2022	FY2023	FY2024 & beyond
Debt at Vedanta Resources	5.9	6.3	0.8	0.2	1.5	2.0	1.8
Debt at subsidiaries	5.4	6.3	1.2	1.3	1.7	0.4	1.7
Total term debt[1]	**11.3**	**12.6**	**2.0**	**1.5**	**3.2**	**2.4**	**3.5**

1. *Term debt excluding preference shares.*

Term debt at our subsidiaries was US$ 6.3 billion, with the balance at Vedanta Resources Limited. The total undrawn fund-based credit limit was c.US$ 1.0 billion as at 31 March 2019.

In April 2019, to proactively refinance our near-term maturities, we raised US$ 1 billion through bonds in two tranches at a blended average cost of 8.75% and average maturity of 5.8 years. This will extend the average maturity of the outstanding debt at VRL to c.4 years. The Company intends to use the net proceeds primarily to repay near term debt maturities of the Company.

Cash equivalents, liquid investments and structured investments stood at US$5.7 billion at 31 March 2019 (31 March 2018: US$5.6 billion). The portfolio continues to be conservatively invested in debt mutual funds, and in cash and fixed deposits with banks.

Going Concern

The Directors have considered the Group's cash flow forecasts for the next 12-month period, from the date of signing the financial statements for the year ending 31 March 2019. The Board is satisfied that the forecasts and projections show that the Group will be able to operate within the level of its current facilities for the foreseeable future. This takes into account the effect of reasonably possible changes in trading performance on cash flows and forecast covenant compliance; the transferability of cash within the Group; the flexibility that the Group has over the timings of its capital expenditure; and other uncertainties. For these reasons, the Group continues to adopt the 'going concern' basis in preparing its financial statements.

Covenants

The Group is in compliance with its covenants relating to all facilities for the testing period ending 31 March 2019.

Credit rating

Moody's revised the outlook on ratings for Vedanta Resources Limited to Negative from Stable while affirming the corporate family rating at Ba3 in February 2019. This was on account of expectation of weaker earnings on account of downside risk to commodity prices and increased risk of movement of funds outside Vedanta to support Volcan interests following recent structured investment.

S&P affirmed the ratings at B+ while revising the Outlook to Negative in March 2019 on account of weaker operating performance due to commodity slowdown which along with higher debt due to ESL acquisition and debt for privatisation of Vedanta Resources Limited could keep its metrics weaker than required for current rating levels.

Balance sheet

(US$ million, unless stated)

	31 March 2019	31 March 2018
Goodwill	12	12
Intangible assets	108	123
Property, plant and equipment	17,322	15,401
Exploration and Evaluation Assets	404	2,326
Other non-current assets	2,671	2,179
Cash, liquid investments and Financial asset investment net of related liabilities	5,688	5,606
Other current assets	3,576	3,591
Total assets	**29,781**	**29,238**
Gross debt	(15,980)	(15,194)
Other current and non-current liabilities	(8,548)	(7,504)
Net assets	**5,253**	**6,540**
Shareholders' (deficit)	(928)	(330)
Non-controlling interests	6,181	6,870
Total equity	**5,253**	**6,540**

Shareholders' (deficit) was US$(928) million at 31 March 2019 compared with US$(330) million at 31 March 2018. This mainly reflects the attributable loss for FY2019 and dividend pay-out of US$113 million (US cents 41 per share).

Non-controlling interests decreased to US$ 6,181 million at 31 March 2019 (from US$ 6,870 million at 31 March 2018) mainly driven by the profit attributable to Non-controlling interests for the year offset by dividend payments during the year.

Property, plant and equipment (including Exploration and Evaluation Assets)

As at March 31, 2019, PPE was at US$17,726 million (FY2018: US$ 17,727 million). Investment of $ 1,081 million on expansion projects and US$ 435 million on sustaining capital expenditure and the acquisition of Electrosteel Steels Limited was offset by depreciation expense during the period and the restatement of rupee-denominated assets caused by rupee depreciation.

Contribution to the exchequer

The Group contributed c. US$ 6.2 billion to the exchequer in FY2019 compared to US$ 5.4 billion in FY2018 through direct and indirect taxes, levies, royalties and dividend. This was the highest ever contribution made by Vedanta Resources Limited.

Project capex

(US$ million)

Capex in progress	Status	Total capex[3]	Cumulative spend up to March 2018[4]	Spent in FY2019[4]	Unspent as at 31 March 2019[5]
Cairn India[1]					
Mangala infill, Liquid handling, Bhagyam & Aishwariya EOR, Tight oil & gas etc.		2,481	183	469	1,829
Aluminium Sector					
Jharsuguda 1.25mtpa smelter	Line 3: fully capitalised Line 4: fully capitalised Line 5: Six sections capitalised	2,920	2,846	69	5
Zinc India					
1.2mtpa mine expansion	Phase-wise by FY2020	2,076	1,265	304	507
Others		218	64	60	94
Zinc International					
Gamsberg mining Project[2]	Completed Capitalisation	400	241	123	36
Copper India					
Tuticorin smelter 400ktpa	Project is under force majeure	717	189	9	519
Avanstrate					
Furnace Expansion and Cold repair	Completed	48	3	38	7
Capex flexibility					
Metals and Mining					
Lanjigarh Refinery (Phase II) – 5mtpa	Under evaluation	1,570	836	21	713
Zinc India (1.2mtpa 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 Cairn represents Net capex, however Gross capex is $3.2 bn*
2. *Capital approved US$400 million excludes interest during construction (IDC).*
3. *Based on exchange rate prevailing at time of approval.*
4. *Based on exchange rate prevailing at the time of incurrence.*
5. *Unspent capex represents the difference between total projected capex and cumulative spend as at March 31, 2019.*

OPERATIONAL REVIEW

ZINC INDIA

The year in summary

The year witnessed continued ramp-up of our underground mines, which delivered mined metal production at 936kt. This was 29% higher y-o-y; virtually overcoming the closure of open-cast operations in the previous year. Lead and silver metal production reached new records of 198kt and 21.8 million ounces respectively. Hindustan Zinc was ranked 9th in the elite club of top 10 silver producers globally published by Washington based Silver Institute for calendar year 2018.

The ramp-up to 1.2 million tonnes per annum (mtpa) mined metal capacity by FY2020 is on track as capital projects approach completion.

SAFETY

However, we were deeply saddened to report seven fatalities at our Rajapura Dariba, Zawar mines, Chanderia Smelter and Debari smelting complex during the year. The root causes of these tragic incidents have been thoroughly investigated and the resulting learnings, which include, among other making better risk decisions and providing better supervision during all activities have been shared and implemented across Zinc India to prevent such tragedies in the future.

Our business had seen improving safety performance in the last five year, where our LTIFR had decreased by 24%. However, this year has ran counter to that trend and during FY2019, the lost time injury frequency rate increased to 0.63 (FY2018: 0.27).

Specific initiatives have been introduced to instil a culture of safety. These include forming a Safety Innovation Cell and a Fatality and Serious Injury Prevention Programme subcommittee, as well as themed drives on reducing man-machine interactions; mine fire safety; a mining-mate competency assessment; a safety maturity assessment; and a second party safety audit.

We also collaborated with global safety and protection experts Du Pont on our 'Aarohan' journey to excel in our process safety management. Together we have developed a structured programme aimed at mitigating the risks of serious injuries and fatalities in our processes.

ENVIRONMENT

Over the reporting year, the business improved its hazardous waste recycling, which rose to 52% from 42% in FY2018. Our water recycling rate remained consistent at 35% (FY2018: 35%).

With the success of implementing the 20 million litres per day (MLD) sewage treatment plant (STP), Phase 2 of 40MLD STP is under commissioning, of which 25MLD will be commissioned in Q1 FY2020. On completion, it will reduce our fresh water intake at our operational sites.

Solar power projects of 22MW were commissioned during the year, and we intend to further enhance our solar energy footprint in the coming year.

We are also committed to the Science Based Target initiative, to reduce by 2026 our absolute Scope 1 and 2 GHG emissions by 14%, and absolute Scope 3 GHG emissions by 20%, measured against the 2016 base-year.

Our sustainability activities received several endorsements during the year, including the CII-ITC Sustainability Award ('Outstanding Accomplishment'), as well as awards for Sustainable Business of the Year and the Sustainability Disclosure Leadership Award from the World CSR Day. Zinc India's sustainability performance was ranked No.5 in the Dow Jones Sustainability Index (Metal and Mining) globally, and No. 1 globally in the Environment category. We were also selected as an Index Constituent of the Emerging Index 'FTSE4Good' series 2018.

Production performance

Production (kt)	FY2019	FY2018	% change
Total mined metal	936	947	(1%)
Underground mines	936	724	29%
Open cast mines	-	223	-
Refinery metal production	894	960	(7%)
Refined zinc – integrated	696	791	(12%)
Refined lead – integrated[1]	198	168	18%
Production – silver (million ounces)[2]	21.8	17.9	22%

1. Excluding captive consumption of 6,534 tonnes in FY2019 vs. 6,946 tonnes in FY2018.
2.Excluding captive consumption of 1,099 thousand ounces in FY 2019 vs. 1,171 thousand ounces in FY 2018.

Operations

Mined metal production for FY2019 was 936,000 tonnes compared to 947,000 tonnes in the prior year. The FY2019 production was entirely from underground mines, which ramped up strongly by 29%, driven by a 27% increase in ore production and better grades. Therefore, despite the closure of open-cast operations, total mined metal production declined only marginally from the year before.

Integrated metal production was 894,000 tonnes in line with mined metal production, 7% lower than the previous year's record production of 960,000 tonnes. Integrated zinc production was lower by 12%, in line with the availability of zinc mined metal and the higher lead ratio in ore. Integrated lead and silver production stood at a record 198,000 tonnes and 21.8 million ounces, higher by 18% and 22% respectively. This was driven by higher lead mined metal production and retrofitting of a pyro-metallurgical smelter to produce more lead and better silver grades. This smelter was retrofitted during the year to produce more lead metal, in the light of the higher availability of lead mined metal, leading to higher lead production.

Hindustan Zinc was ranked 9th in the elite club of top 10 silver producers globally published by Washington based Silver Institute for calendar year 2018. Further during the year we received environment clearance to increase silver production from 600 tonnes per annum (tpa) to 800 tpa at the Pantnagar plant.

Prices

	FY2019	FY2018	% change
Average zinc LME cash settlement prices US$/tonne	2,743	3,057	(10)%
Average lead LME cash settlement prices US$/tonne	2,121	2,379	(11)%
Average silver prices US$/ounce	15.4	16.9	(9)%

FY2019 was a turbulent year for base metals, caused by uncertainty from international trade disputes, a slowdown in manufacturing activity and the negative impact of a stronger dollar. The average zinc price during the year was US$2,743 per tonne, 10% lower than the previous year's average of US$3,057.

Zinc market fundamentals remain robust with global zinc consumption expected to grow by 1.5% to 14.5 million tonnes in the calendar year 2019, with smelter supply increasing to 14 million tonnes and mine supply likely to be 13.9 million tonnes (source: Wood Mackenzie). According to demand-supply fundamentals, the zinc price should improve since metal stocks are at an all-time low and may continue to remain so.

In a similar story to zinc and other base metals, the lead price was volatile during the year, rising and falling in response to developments in international trade disputes between the US and its trading partners. Lead averaged US$2,121 per tonne in FY2019, down 11% y-o-y.

In a challenging environment, silver prices declined by 9% against the prior year, slipping to US$15.4 per ounce in FY2019. A slowing Chinese economy, coupled with rising US interest rates, an equity market bull run and global trade tensions all took their toll on the price performance.

Unit costs

	FY2019	FY2018	% change
Unit costs (US$ per tonne)			
Zinc (including royalty)	1,381	1,365	1%
Zinc (excluding royalty)	1,008	976	3%

Zinc's cost of production (excluding royalty) for FY2019 was US$1,008 per tonne, higher by 3% y-o-y. Production cost was impacted by higher mine development, input commodity inflation and long-term wage settlement (LTS) related expense but was partly offset by higher acid credits and rupee depreciation. Including royalties, the total cost of zinc production increased to US$1,381 per tonne, 1% higher y-o-y.

Of this figure, government levies amounted to US$ 389 per tonne (FY2018: US$423 per tonne). This comprised mainly of royalty payments, the Clean Energy Cess, electricity duty and other taxes.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	2,955	3,354	(12)%
EBITDA	1,516	1,902	(20)%
EBITDA margin (%)	51%	57%	-
Depreciation and amortisation	268	233	15%
Operating Profit before special items	1,248	1,669	(25%)
Share in Group EBITDA (%)	45%	48%	
Capital Expenditure	520	465	12%
Sustaining	155	106	46%
Growth	365	359	2%

Revenue for the year was US$2,955 million, down 12% y-o-y, primarily on account of lower zinc metal production and lower LME prices, partially offset by record lead and silver volumes. EBITDA in FY2019 decreased to US$1,516 million, down 20 % y-o-y. The decrease was primarily driven by lower volumes and higher cost of production.

Projects

The mining projects we announced are progressing in line with the expectation of reaching 1.2 million tonnes per annum of mined metal capacity in FY2020. Capital mine development increased by 12% to 43km in FY2019.

At the Rampura Agucha underground mine, the ventilation system was commissioned earlier in the year, liberating the mine from ventilation issues for its lifetime. The commissioning of the mid-shaft loading system in October 2018 allowed waste hoisting to be carried out through the shaft ahead of schedule, leading to improved ore production. The second paste fill plant was completed ahead of schedule in Q4 FY2019. The full shaft commissioning is expected to complete by Q2 FY2020, synchronising with the completion of the crusher and conveyor system.

During the year, Sindesar Khurd received environment clearance to produce 6.0 million tonnes of ore and 6.5 million tonnes of ore beneficiation. The new 1.5mtpa mill was commissioned smoothly and began production in Q3 FY2019, taking the total milling capacity to 6.2mtpa. The underground crusher and production shaft were commissioned during Q4 FY2019 and ore hoisting from the shaft is expected to start in Q1 FY2020. The second paste fill plant is under mechanical completion and expected to commission in Q1 FY2020.

With a substantial improvement in infrastructure, Zawar has reached a run-rate of c.3.5mtpa. The new 2.0 mtpa mill was commissioned in Q4 FY2019, taking the total milling capacity at Zawar to 4.7mtpa. Meanwhile, the dry tailing plant is under execution and expected to commission in Q2 FY2020.

The Rajpura Dariba mine has received environmental clearance to increase ore production from 0.9 to 1.08 mtpa and is seeking regulatory approval for further expansion to 2.0mtpa. The ore production run-rate is already at 1.2 mtpa following the major infrastructure enhancement. During the year, orders were placed for a new 1.5 mtpa mill and paste fill plant; these are expected to complete in FY2020.

Other projects

The Fumer project at Chanderiya is expected to commission in Q1 FY2020.

The 22MW solar plant was completed during Q3 FY2019 at Rampura Agucha taking the total solar capacity there to 38MW.

The 25MLD Sewage Treatment Project at Udaipur will be commissioned in Q1 FY2020, taking the total capacity to 45MLD. This will play a key role in improving water availability at Dariba and treat over half of Udaipur's sewage.

Exploration

Successful exploration in FY2019 added to reserves and resources (R&R), providing opportunities for extended mine life and production growth. Across all the sites, surface drilling increased to 181km and underground drilling of 26km was achieved during the year.

In comparison with the previous year's mineral resource and ore reserve statements:

There is an overall net depletion of 13.1 million tonnes of ore reserves to 92.6 million tonnes, and a net 4.7 million tonnes increase of exclusive mineral resources to 310.3 million tonnes.

Total contained metal in ore reserves is 7.2 million tonnes of zinc, 2.1 million tonnes of lead and 280 million ounces of silver.

The exclusive mineral resource contains 18.5 million tonnes of zinc, 6.8 million tonnes of lead and 685 million ounces of silver.

At current mining rates, the R&R underpins a mining life of more than 25 years.

Outlook

Mined metal production, and finished metal production is expected to around 1 million tonnes. The cost of production excluding royalty is expected to be < US$ 1000 per tonne. The project capex for the year will be in the range of US$350 to US$400 million.

Further in line with the structural growth in mined metal production and with improved silver grades, we can expect to deliver significant growth in silver volumes. The silver volumes for FY2020 is in the range of 750 tonnes to 800 tonnes.

Strategic priorities

Our focus and priorities will be to:

- ramp up underground mines to 1.2 mtpa design capacity;
- de-bottleneck and expand smelting capacity to maintain mines/smelter synergies at higher levels of production;
- use advanced technology, automation and digitalisation to structurally reduce cost of production by improving equipment productivity, metal recoveries and operational efficiency; and
- increase R&R through higher exploration activity and new mining tenements.

ZINC INTERNATIONAL

The year in summary

FY2019 was a milestone year for Zinc International. We ramped up production from Pit 112 at Skorpion and completed our flagship Phase I Gamsberg project.

As per the mine plan, we have substantially completed pre-stripping of Pit 112 and will be able to access the ore body and fully ramp up production in FY2020.

Gamsberg operation was commissioned during the middle of FY2019 with trial production starting in November 2018, followed by the first shipment of concentrate in December 2018. Gamsberg was formally inaugurated by the President of South Africa, Mr. Cyril Ramaphosa, and Vedanta Chairman, Mr. Anil Agarwal, on 28 February 2019. Ramp up to full capacity of 4mtpa of ore is expected in 3-6 months.

With further ramp-up of Gamsberg Phase I and the Skorpion Zinc Pit 112 expansion, Zinc International is expected to produce more than 350,000 tonnes next year.

Safety

With deep sorrow, we reported a fatality at Gamsberg project during the year, which occurred in the construction phase at the concentrator plant. The lessons learned, following a thorough investigation, have been shared across the business and our control of critical risks related to equipment selection and business partner on-boarding have been strengthened. Lost time injuries have shown an increase from 16 to 23 for the year, with the frequency rate also showing an increase to 1.89 (FY2018: 1.36). This is largely due to an increase in activity at Gamsberg. Injury severity rates continue to decrease year on year.

The business has taken steps in driving Safety as the Number One Value across the business. The value will strengthen partnerships with our employees and Business Partners in achieving Zero Harm. Dust control remains a main focus area in order to reduce lead and silica dust exposures of employees, which will also further sustain the number of employees withdrawn over the last few years (from 25 in FY2016 to 7, 8 and 8 over the last three years). Participation in the VCT drive for HIV/ Aids programmes for both employees and business partners was well attended, with 2767 tests conducted during FY19.

Environment

During the period, Skorpion Zinc reported one category 3 environmental incident involving tailings overflow from one pond due to a failed pump. The incident had a limited environmental impact and is being consistently and closely monitored. Remedial actions include drilling of 4 – 6 boreholes for the recovery of contaminants and monitoring purposes. The pond is also being rehabilitated.

Gamsberg complied with the Biodiversity Offset Agreement requirement on total hectares of sensitive plant communities impacted by securing four properties measuring 21,900ha. The proclamation of Gamsberg Nature reserve was also gazetted on 26 November 2018.

Production performance

	FY2019	FY2018	% change
Total production (kt)	148	157	(5%)
Production– mined metal (kt)			
BMM	65	72	(10)%
Gamsberg*	17	-	-
Refined metal Skorpion	66	84	(22)%

**Includes trial run production of 10 kt*

Operations

During FY2019, total production stood at 148,000 tonnes, 5% lower y-o-y. This was due to lower production at Skorpion because of a two-week strike in March 2019, as well as lower zinc grades at Skorpion (7.6% vs 8.2%) and lower production at BMM due to lower than planned grades and hence lower recoveries. This was partially offset by the commencement of production from Gamsberg.

Skorpion's production was 66,000 tonnes, down 22% y-o-y, due to the planned shutdown of the acid plant during Q1 FY2019, and lower than planned zinc grades. Furthermore, the mining business partner's employees embarked on an illegal strike from 22 February to 6 March 2019. The employees cited unresolved labour matters with their employer. The strike action lasted 14 days and had a severe negative impact on mining activities and the lead time to re-establish mining operations. This resulted in the depletion of run of mine ore inventory, with the consequent effect of a temporary closure of the refinery while re-establishing mining buffers. Skorpion took this opportunity to bring forward the annual shutdown previously scheduled in Q2 FY2020. The operations restarted in the second half of April 2019.

At BMM, production was 10% lower than the previous year. This decrease was primarily due to lower than planned grades and hence lower recoveries.

Unit costs

	FY2019	FY2018	% change
Zinc (US$ per tonne) unit cost	1,912	1,603	19%

The unit cost of production increased by 19% to US$1,912 per tonne, up from US$1,603 in the previous year. This was mainly driven by lower production at both Skorpion Zinc and BMM, higher amortisation of stripping costs of Pit 112 at Skorpion Zinc, higher TCRCs and annual inflation partially offset by local currency depreciation, sulphur efficiencies, lower oxide consumption at Skorpion Zinc and higher copper credit at BMM.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	392	535	(27)%
EBITDA	100	220	(55)%
EBITDA margin (%)	25%	41%	-
Depreciation and amortisation	61	28	-
Operating Profit before special items	39	192	(80)%
Share in Group EBITDA (%)	3%	6%	-
Capital Expenditure	196	238	(18)%
Sustaining	73	65	12%
Growth	123	173	(29)%

During the year, revenue decreased by 27% to US$392 million, driven by lower sales volumes compared to FY2018 and lower price realisations. The same factors along with higher cost of production resulted in a decrease in EBITDA to US$ 100 million, down 55% from US$220 million in FY2018.

Projects

Gamsberg mining is continuing as per plan. During the year, 41mt waste and ore has been moved including pre-stripping and a healthy stockpile of 1.0mt has been built up for smooth feed to Plant. Post-trial production, the concentrator plant has been progressively ramping up.

The focus for Gamsberg has been to fully commission the plant, including all automation and achieve an 80% plant runtime which has been successfully achieved in March 2019. This was

despite the stoppage of work and retraining of all employees and business partners following the fatality at Gamsberg in May 2018 as well as commissioning issues which have since been resolved.

In the case of Pit 112 at Skorpion Zinc over 75% of waste pre-stripping has been completed and mining will come to end by Q3 FY2020 with a stockpile built up to feed plant for next 12 months.

We are at an advanced stage in concluding feasibility for Gamsberg Phase 2 to increase Gamsberg production capacity from existing 250 thousand tonnes per annum (ktpa) to 450ktpa. Indicative investments in this project is expected to be around US$300 million.

Exploration

During the year, we made gross additions of 130.39 million tonnes of ore and 4 million tonnes of metal to reserves and resources (R&R), after depletion.

As at 31 March 2019, Zinc International's combined mineral resources and ore reserves were estimated at 434 million tonnes, containing 24.4 million tonnes of metal. The reserves and resources support a mine life of more than 30 years.

Zinc International is further pleased to announce the declaration of a maiden resource at its Big Syncline project, located on its Black Mountain mining license in South Africa. Resource estimation was carried out by SRK Consulting (UK) and resulted in an inferred resource of 151.7 million tonnes grading 3.6% (zinc and lead). The majority of the resource is accessible through open cast operations at low stripping ratios.

Outlook

In FY2020, we expect production volumes to be in the range of 180-200kt from Gamsberg, while the volumes from Skorpion and BMM will be greater than 170kt. The cost of production excluding Gamsberg is expected to be around US$1,400 per tonne due to Skorpion's Zinc production ramp up due to access to high grade ore from Pit 112 , while the cost of production Gamsberg is forecasted to be around US$1000 per tonne.

Strategic priorities

Our focus and priorities will be to:

- ramp up of Gamsberg Phase I production in H1 of FY2020;
- complete the approval of Gamsberg Phase 2; and
- complete the feasibility study for an integrated smelter-refinery with 250ktpa metal production.

OIL & GAS

The year in summary:

During FY2019, we delivered a strong operational and financial performance in addition to execution of key contracts across our portfolio of development opportunities which are expected to add significant volumes going forward.

In pursuit of our vision to contribute 50% of India's domestic crude oil production, we continue to invest in growth projects in order to monetise the resource base. The Oil & Gas business has a rich project portfolio comprising enhanced oil recovery, tight oil, tight gas, satellite field development, facility upgradation and exploration and appraisal prospects. Most of the projects are being executed under an Integrated Development strategy involving leading global oilfield service companies and are on track to deliver expected volume additions. 11 development drilling rigs are currently deployed; 99 wells drilled & 33 wells hooked up during FY2019 in Rajasthan. We are ramping up well drilling and hook up to add volumes.

Further, in order to add additional resource base, we entered into Revenue Sharing Contract for 41 exploration blocks through OALP-1 and also secured two discovered small fields in DSF Round-2. The new blocks are expected to add significant resource potential to our portfolio.

SAFETY

There were eleven lost time injuries (LTIs) in FY2019. The frequency rate stood at 0.31 (FY2018: 0.19), amid a significant increase in activity due to development projects.

At the same time, we were proud that our safety philosophy and management systems were recognised with awards conferred by a number of external bodies:

- Cairn Oil & Gas was recognised in the CII-ITC Sustainability Awards 2018.
- Raageshwari Gas Terminal has been awarded 'Sword of Honour' from British Safety Council for excellence in HSE management
- Bhagyam field received the Platinum prize in the seventh FICCI Safety Systems Excellence Awards 2018 (large-scale mining sector category).
- Cairn Oil & Gas won three awards in the International Fire and Security Exhibition and Conference (IFSEC) India.
- Raageshwari Gas Terminal and CB/OS-2 asset were certified for '5S' by the Quality Circle Forum of India (QCFI).
- Ravva asset achieved a Five Star Rating in the CII-Southern Region Award for HSE Excellence.

ENVIRONMENT

Our Oil & Gas business is committed to protecting the environment, minimising resource consumption and driving towards our goal of 'zero discharge'. Our progress was recognised in the fifth CII Environmental Best Practices Award 2018 for Natural Gas Recovery, for zero flaring during frac well milling in gas operations.

At the Rajasthan asset, our operations at the Mangala, Bhagyam and Aishwarya fields were recognised as 'Noteworthy Water Efficient Units', in the 'within fence category' of the National Award for Excellence in Water Management 2018 by CII.

Production performance

	Unit	FY2019	FY2018	% change
Gross Operated production	Boepd	188,784	185,587	2%
Rajasthan	Boepd	155,903	157,983	(1)%
Ravva	Boepd	14,890	17,195	(13)%
Cambay	Boepd	17,991	10,408	73%
Oil	Bopd	178,207	177,678	0%
Gas	Mmscfd	63.5	47.4	34%
Net production – working interest*	Boepd	119,798	118,620	1%
Oil	Bopd	114,214	114,774	0%
Gas	Mmscfd	33.5	23.1	45%
Gross production	Mmboe	68.9	67.7	2%
Working interest production	Mmboe	43.7	43.3	1%

**Includes net production of 119boepd from the KG-ONN block, which is operated by ONGC. Cairn holds a 49% stake.*

Operations

Average gross production across our assets was 2% higher y-o-y at 188,784boepd. Production from the Rajasthan block was 155,903boepd, 1% lower y-o-y. The natural reservoir decline has been managed with gains accruing from the new wells brought online. Production from the offshore assets stood at a combined 32,881boepd, higher by 19% y-o-y, due to the gains from the Cambay infill campaign.

Production details by block are summarised below.

Rajasthan block

Gross production from the Rajasthan block averaged 155,903boepd in FY2019, 1% lower y-o-y. This decrease was primarily due to natural decline from the fields but was partially offset by the gain realised from new wells brought online as part of Mangala infill, Bhagyam & Aishwariya EOR campaign, production optimisation activities and augmentation of liquid handling capacity at the Mangala Processing Terminal (MPT).

At Rajasthan, 99 wells have been drilled as part of the growth projects, of these 33 wells have been brought online during FY2019.

Gas production from Raageshwari Deep Gas (RDG) averaged 51.3 million standard cubic feet per day (mmscfd) in FY2019, with gas sales, post captive consumption, at 35.6mmscfd.

The Government of India, acting through the Directorate General of Hydrocarbons, Ministry of Petroleum and Natural Gas, has granted its approval for a ten-year extension of the PSC for the Rajasthan block, RJ-ON-90/1, subject to certain conditions, with effect from 15 May 2020. The applicability of the Pre-NELP extension policy to the RJ Block PSC is currently sub-judice.

Ravva block

The Ravva block produced at an average rate of 14,890boepd, lower by 13% y-o-y. This was primarily due to natural field decline, although this was partially offset by production optimisation measures. The Government of India, acting through the Directorate General of Hydrocarbons, Ministry of Petroleum and Natural Gas, has granted its approval for a ten-year extension of the PSC for the Ravva block, subject to certain conditions.

Cambay block

The Cambay block produced at an average rate of 17,991boepd in FY2019, up by 73% y-o-y, supported by the gains realised from the infill wells campaign completed in Q1 FY2019.

Prices

	FY2019	FY2018	% change
Average Brent prices – US$/barrel	70.4	57.5	22%

Brent crude oil averaged US$70.4/bbl, compared to US$57.5/bbl in the previous financial year. The oil price rallied in the first half, owing to the high compliance on the production cut by OPEC and other producers, as well as sanctions on Iran imposed by the US and a steep decline in production from Venezuela. This rally saw crude oil hitting a four-year high in early October to touch US$86.29/bbl.

In the latter half of the year oil prices declined due to the US Government's waivers to eight major importers of Iranian crude, leading to an oversupply in the market. However, the oil price started to rebound in last quarter owing to the production cut by OPEC and other producer countries.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	1,892	1,480	28%
EBITDA	1,100	849	30%
EBITDA margin (%)	58%	57%	-
Depreciation and amortisation	611	461	33%
Operating Profit before special items	489	388	26%
Share in Group EBITDA (%)	32%	21%	-
Capital Expenditure	480	137	-
Sustaining	11	10	6%
Growth	469	127	-

Revenue for FY2019 was 28% higher y-o-y at US$1,892 million (after profit and royalty sharing with the Government of India), supported by a recovery in oil price realisation. EBITDA of FY2019 was higher at US$1,100 million, up 30% y-o-y in line with the higher revenue.

The Rajasthan water flood operating cost was US$5.1 per barrel in FY2019 compared to US$4.6 per barrel in the previous year, primarily driven by increased interventions and production enhancement initiatives. Overall, the blended Rajasthan operating costs increased to US$7.6 per barrel compared to US$6.6 per barrel in the previous year, due to the ramp-up in polymer injection volumes and the increase in commodity prices.

A. Growth Projects Development

The Oil & Gas business has a robust portfolio of development opportunities with the potential to deliver incremental volumes. In order to execute these projects on time and within budget, we have devised an integrated project development strategy, with an in-built risk and reward mechanism. This new strategy is being delivered in partnership with leading global oilfield service companies. Major contracts have been awarded and execution has started.

Mangala infill, enhanced oil recovery (EOR) and Alkaline Surfactant Polymer (ASP)

The field is currently under full field polymer injection. In addition, to increase the ultimate oil recovery and support production volumes, we are executing a 45-well infill drilling campaign in the field.

The valuable learnings, gained from the successful implementation of the Mangala polymer EOR project, are being leveraged to enhance production from the Bhagyam and Aishwariya fields. Till March 2019, 73 wells have been drilled under enhanced oil recovery projects across Mangala, Bhagyam and Aishwariya, of these 33 wells are online.

Going forward, the Alkaline surfactant polymer (ASP) project at Mangala will enable incremental recovery from the prolific Mangala field. The project entails drilling wells and developing infrastructure facilities at the Mangala Processing Terminal. The contract for drilling has already been awarded, while the contract for the surface facility will be awarded by Q1 FY2020.

Tight oil and gas projects

Tight oil: Aishwariya Barmer Hill (ABH)

Aishwariya Barmer Hill (ABH) is the first tight oil project to monetise the Barmer Hill potential, and drilling started in Q1 FY2019. Currently three rigs are operational, and 20 wells had been drilled by March 2019. Initial deliverability from the two wells is in line with expectations. We have successfully drilled the longest lateral well of 1,355m using advanced geo-steering technology.

Tight gas: Raageshwari deep gas (RDG) development

The RDG project is being executed through an integrated development approach to ramp up overall Rajasthan gas production to ~150mmscfd, and condensate production of 5kboepd. The project entails developing surface facilities and the drilling and completion of 42 wells. The early production facility is under commissioning and the construction of the terminal is progressing to plan. Up to March 2019, six wells had been drilled.

Other projects

Satellite field development

An integrated contract for the development of satellite fields is under award.

Surface facility upgradation

The Mangala Processing Terminal (MPT) facility upgradation is progressing as per plan to handle incremental liquids. Phase 1 of the intra-field pipeline augmentation project was commissioned in Q4 FY2019 and the balance scope of Phase 1 to be commissioned by Q1 FY2020.

Ravva development

An integrated contract for drilling development wells is under award.

B. Exploration and Appraisal

Rajasthan - (BLOCK RJ-ON-90/1)

Rajasthan exploration

The Group is reactivating its oil & gas exploration efforts in the prolific Barmer Basin, which provides access to multiple play types with oil in high permeability reservoirs, tight oil and tight gas. We have engaged global partners to reveal the full potential of the basin and establish >1 billion boe of prospective resources.

We have awarded an integrated contract for a drilling campaign of 7-18 exploration and appraisal wells to build on the resource portfolio, with well-spud expected by Q1 FY2020.

Tight oil appraisal

The contract for the appraisal of four fields (Vijaya & Vandana, Mangala Barmer Hill, DP and Shakti) has been awarded, and will include the drilling of 10 new wells. This will also involve multi-stage hydraulic fracturing and extended testing. Rigs are under mobilization and drilling is expected to begin in Q1 FY2020.

Krishna-Godavari Basin offshore

Oil discovery was notified in the second exploratory well (H2), and a further appraisal will now be required to establish its size and commerciality of the oil discovery.

The first exploration well drilled in the block (A3-2) was a gas discovery. Evaluations are ongoing.

Ravva

In order to increase the reserve and resource base, an integrated contract for drilling exploratory wells is under award.

Open Acreage Licensing Policy (OALP)

Under the Open Acreage Licensing Policy (OALP), revenue-sharing contracts have been signed for 41 blocks. These comprise 33 onshore and 8 offshore blocks with a potential of ~1.4 - 4.2 billion boe of resource, and are located primarily in established basins, including some optimally close to existing infrastructure. We have issued a global tender, inviting bids for an end-to-end integrated contract.

Discovered small fields (DSF2)

Discovered small fields (DSF2) provide synergy with existing oil & gas blocks in the vicinity. These blocks were assessed based on the resource potential and proximity to infrastructure in prioritised sedimentary basins across India. Two discovered small fields named as Hazarigaon and Kaza gas fields, located in Assam and Krishna Godavari basins respectively, have been awarded under DSF2.

Outlook

Vedanta's Oil & Gas business now has a robust portfolio comprising a number of exploration blocks with promising prospects, a large pool of development projects and prolific producing fields. Our energies are focused across these opportunities, and as we execute our development projects we expect to deliver a progressive increase in production volumes.

The closure of growth projects contracts with global vendors took longer than envisaged impacting near term volumes. We have however locked in contracts at attractive prices and returns. For FY2020, with the increase in drilling activities and wells hook up, we expect the production volumes to be in the range of 200-220 kboepd. Opex during the year is expected to be c.-US$7.5/boe.

Strategic priorities

Our focus and priorities will be to:

- continue to progress towards 'zero harm, zero waste and zero discharge';
- continue to operate at a low cost-base and generate free cash flow post-capex;
- execute growth projects within schedule and cost;
- continue progress on execution of projects to achieve targeted production of 270-300kboepd; and
- evaluate further opportunities to expand the exploration portfolio through OALP and other opportunities.

ALUMINIUM

The year in summary:

In FY2019, the aluminium smelters achieved an all-time-high production of 1.96 million tonnes (including trial run). Despite some headwinds facing cost of production – mainly input commodity inflation, global disruptions in alumina supply and temporary coal disruptions in the domestic market – we were supported by higher alumina production volumes at Lanjigarh and rupee depreciation. We are focusing on optimising our controllable costs and improving our price realisation to improve profitability in a sustainable way.

The cost of production for Q4 FY2019 was US$1,776 per tonne, on account of structural improvements in the cost due to increased local bauxite supply, ramped up alumina volume and improved coal materialisations.

We also achieved record production of 1.5 million tonnes at the alumina refinery through debottlenecking. We continue to explore the feasibility of expanding the refinery's capacity, growing through a phased programme and subject to bauxite availability.

Safety

We experienced 15 lost time injuries during the year (FY 2018: 22), and the frequency rate decreased to 0.23 from 0.39. We have delivered specialist skill and competency training in areas such as crane and lifting operations, vehicles and driving. Root cause analysis training was also given to the heads of department and maintenance heads, in order to investigate the injuries and high-potential incidents in order to avoid these lapses in the future.

Focusing on building a culture of care, a programme of 'Visible Felt Leadership' has been launched, with management at plants spending more time on the shop-floor to pre-empt and address safety issues.

At BALCO, in order to increase safety awareness and to interact with business partners, workers and their families, programmes such as care-drives (seven in number) and 'Suraksha ki goth' have been organised within the plant. Additionally, the Company has kick-started a training programme on practising life-saving behaviours. About 8,000 employees and business partners have received this training.

In a significant achievement, the Lanjigarh refinery achieved zero-LTIs for the third consecutive year, and we seek to replicate its success across the business.

Environment

The review of our tailings dam and ash pond structures was completed by Golder Associates and we are studying recommendations to increase the structures' stability.

Separately, we recycled 14% of the water we used in the year (FY2018: 11%) and our BALCO operations saw a marginal improvement in their specific water consumption of 0.72 m3/MT (FY2018: 0.74 m3/MT). In Lanjigarh, as part of waste management, 101%[1] of fly ash and 97% of lime grit was recycled.

1.The number exceeds 100% as we were able to utilize our legacy fly-ash waste for internal infrastructural development projects

Production performance

	FY2019	FY2018	% change
Production (kt)			
Alumina – Lanjigarh	1,501	1,209	24%
Total aluminium production	**1,959**	**1,675**	**17%**
Jharsuguda I	545	440	24%
Jharsuguda II[1]	843	666	27%
BALCO I	260	259	-
BALCO II[2]	311	310	-

(1) Including trial run production of 60.5kt in FY2019 vs. 61.8kt in FY2018

(2) Including trial run production of nil in FY2019 vs. 16.1kt in FY2018

Alumina refinery: Lanjigarh

At Lanjigarh, production was 24% higher y-o-y at 1,501,000 tonnes, primarily through plant debottlenecking. We continue to evaluate the possible expansion of the refinery, subject to bauxite availability.

Aluminium smelters

We ended the year with record production of 1.96 million tonnes (including trial run).

Production from the Jharsuguda I smelter was 24% higher y-o-y. This was primarily due to lower volumes in 2018 due to pot outage incident in Q1 that affected 228 pots of the Jharsuguda-I smelter. These pots were fully restored by Q3 FY2018.

Production from the Jharsuguda II smelter was 27% higher y-o-y. This was mainly driven by production stabilisation from the ramp-ups in the previous year. We continue to evaluate Line 4 of Jharsuguda II smelter.

The BALCO I & II smelters continued to show consistent performance.

Coal linkages

We continue to focus on ensuring the long-term security of our coal supply, and at competitive prices. We added 3.2mtpa of coal linkages during FY2019 from Tranche IV auctions. The materialisation of Tranche IV began in March 2019. We have also operationalized the captive coal block, Chotia, at our BALCO operations. This takes our coal security to 72% of our requirements.

Prices

	FY2019	FY2018	% change
Average LME cash settlement prices (US$ per tonne)	2,035	2,046	(1)%

Average LME prices for aluminium in FY2019 stood at US$ 2,035 per tonne, which was almost flat y-o-y. Prices were volatile throughout the year driven by global uncertainties, fuelled by sanctions against Rusal and US-China trade war concerns.

Unit costs

(US$ per tonne)

	FY2019	FY2018	% change
Alumina cost (ex-Lanjigarh)	322	326	(2)%
Aluminium hot metal production cost	1,940	1,887	3%
Jharsuguda CoP	1,938	1,867	4%
BALCO CoP	1,945	1,923	1%

During FY2019, the cost of production (CoP) of alumina was flat y-o-y at US$322 per tonne. Benefits from increase in locally-sourced bauxite from Odisha Mining Corporation (OMC), improved plant operating parameters and rupee depreciation were offset by input commodity inflation (mainly caustic soda and imported bauxite).

In FY2019, the total bauxite requirement of about 4.4 million tonnes was met by captive mines (10%), OMC (31%), domestic sources (20%) and imports (39%). In the previous year, the bauxite supply mix was captive mines (29%), domestic sources (41%) and imports (30%).

In FY2019, the CoP of hot metal at Jharsuguda was US$1,938 per tonne, up by 4% from US$1,867 in FY2018. The equivalent CoP figure at BALCO increased to US$1,945 per tonne, up by 1% from US$1,923 in FY2018.

This was primarily driven by volatility in global alumina prices due to supply disruptions and input commodity inflation (mainly carbon). The global alumina price indices generally traded higher than prices in the past years. The power cost was higher due to disruptions in domestic

coal supply from Coal India, resulting in procurement of coal from alternative sources at higher prices and power import from the grid. CoP was partially offset by higher Lanjigarh alumina production and currency depreciation.

The cost of production for Q4 FY 2019 was US$1,776 per tonne, significantly lower compared to previous quarters on account of structural improvements in the cost due to increased local bauxite supply from OMC meeting over 50% of our Q4 FY2019 requirements, increase captive alumina production from the Lanjigarh refinery. The peak run rate at Lanjigarh refinery during the year was 1.8 mtpa.

Coal materialisation improved significantly in Q4 FY2019, resulting in no power imports from the grid in last four months of FY2019. We have further secured 3.2 million tonnes of coal in the Tranche IV auction and materialisation started in March 2019. This will further improve coal availability and therefore help drive costs down.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% Change
Revenue	4,183	3,545	18%
EBITDA	316	414	(24)%
EBITDA margin (%)	8%	12%	-
Depreciation and amortisation	240	257	(7)%
Operating Profit before special items	76	157	(52)%
Share in Group EBITDA (%)	9%	10%	
Capital Expenditure	182	218	(17)%
Sustaining	100	105	(5)%
Growth	82	113	(28)%

During the year, revenue increased by 18% to US$4,183 million, driven by volume ramp up at Jharsuguda. EBITDA was lower at US$ 316 million (FY2018: US$ 414 million), mainly due to increase in cost of production partially offset by a write back of liability pursuant to a settlement agreement with a contractor at BALCO.

Outlook

Volume and cost

In FY2020, we expect production at our Lanjigarh refinery of around 1.7-1.8 million tonnes, with aluminium production at smelters remaining stable.

As input commodity prices continue to be volatile, we are looking at ways to optimise our controllable costs, while also increasing the price realisation in order to improve profitability in a sustainable way.

The global alumina price indices remained volatile during FY2019 and peaked in the middle of the year but have since lowered in recent months. We expect the global alumina supply to improve as new refinery volumes enter production and expect prices to remain stable for the forthcoming year.

At our power plants, we are also working towards reducing GCV losses as well as improving plant operating parameters which should deliver higher plant load factors (PLFs) and a reduction in non-coal costs.

The hot metal cost of production for FY 2020 is expected to be in the range of US$ 1,725 – 1,775 per tonne.

We aim to increase our value-added production to 60% of our total sales for FY2020.

Strategic priorities

Our focus and priorities will be to:

- deliver Lanjigarh refinery production at 1.7-1.8 million tonnes and stable aluminium production;
- enhance our raw material security of bauxite & alumina;
- improve coal linkage security, better materialisation and continued production at our Chotia mines;
- improve our plant operating parameters across locations; and
- improve realisations by improving our value-added product portfolio.

POWER

The year in summary:

FY2019 was a significant year for the Talwandi Saboo (TSPL) power plant, where we achieved plant availability of c. 88%. However, the plant load factors for the Jharsuguda and Balco IPP were impacted by domestic coal shortages.

Safety

We report with deep regret a fatality during the year, as the result of a vehicle accident at our BALCO IPP. After a thorough investigation, the lessons learned were shared for implementation across all our businesses. To enhance safety, a segregated pedestrian pathway has been completed throughout the coal truck movement area, designed to reduce the risk of accidents to passing pedestrians.

Environment

One of the main environmental challenges for power plants is the management and recycling of fly ash. At our BALCO IPP, 100% of the fly ash was utilised at both the power plants, up from 62% and 58% respectively in the previous year. The plant also saw a significant reduction in auxiliary power consumption at 7.82% (FY2018: 8.14%). A similar downward trend was achieved in BALCO IPP's specific water consumption at 2.20 m3/MwH (FY2018: 2.8 m3/MwH).

Production performance

	FY2019	FY2018	% change
Total power sales (MU)	13,515	11,041	22%
Jharsuguda 600MW	1,039	1,172	(11%)
BALCO 600MW*	2,168	1,536	41%
MALCO#	-	4	-
HZL wind power	449	414	9%
TSPL	9,858	7,915	25%
TSPL – availability	88%	74%	

#continues to be under care and maintenance since 26 May 2017 due to low demand in Southern India.

**we have received an order dated 1 January 2019 from CSERC for Conversion of 300MW IPP to CPP. During the Q4 FY2019, 184 units were sold externally from this plant.*

Operations

During FY2019, power sales were 13,515 million units, 22% higher y-o-y. Power sales at TSPL were 9,858 million units with 88% availability. At TSPL, the Power Purchase Agreement with the Punjab State Electricity Board compensates us based on the availability of the plant.

The 600MW Jharsuguda power plant operated at a lower plant load factor (PLF) of 15% in FY2019.

The 600MW BALCO IPP operated at a PLF of 53% in FY2019. We have received an order dated 1 January 2019 from CSERC for the conversion of 300MW capacity from an Independent power plant (IPP) to a Captive power plant (CPP).

The MALCO plant continues to be under care and maintenance, effective from 26 May 2017, due to low demand in Southern India.

Unit sales and costs

	FY2019	FY2018	% change
Sales realisation (US cents/kWh)1	4.8	4.5	8%
Cost of production (US Cents/kWh)[1]	4.1	3.6	15%
TSPL sales realisation (US Cents/kWh)[2]	5.9	5.5	7%
TSPL cost of production (US Cents/kWh)[2]	4.4	3.9	12%

(1) Power generation excluding TSPL

(2) TSPL sales realisation and cost of production is considered above, based on availability declared during the respective period

Average power sale prices, excluding TSPL, increased by 8% to US cents 4.8 per kWh. This was mainly due better prices in the open access market.

During the year, the average generation cost was higher at US cents 4.1 per kWh (FY2018: US cents 3.6 per kWh), driven mainly by an increase in coal prices owing to supply disruptions.

TSPL's average sales price was higher at US cents 5.9 per kWh (FY2018: US cents 5.5 per kWh), and power generation cost was higher at US cents 4.4 per kWh (FY2018: US cents 3.9 per kWh) driven mainly increased coal prices.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	934	877	6%
EBITDA	219	258	(15)%
EBITDA margin (%)	24%	25%*	-
Depreciation and amortisation	86	75	15%
Operating Profit before special items	133	183	(28)%
Share in Group EBITDA (%)	6%	7%	
Capital Expenditure	4	2	
Sustaining	4	2	
Growth	-	-	

**Excluding one-offs*

EBITDA for the year was 15% lower y-o-y at US$219 million mainly due to an increase in the cost of production due to higher coal prices owing to supply disruption in the domestic market. Further, the EBITDA for FY2018 included a one-off revenue recognition of US$35 million and US$22 million at BALCO and at Jharsuguda IPP's respectively.

Outlook

During FY2020, we will remain focused on maintaining the plant availability of TSPL above 80% and achieving higher plant load factors at the BALCO and Jharsuguda IPP's.

Strategic priorities

Our focus and priorities will be to:

- resolve pending legal issues and recover aged power debtors;
- achieve high PLFs for the Jharsuguda and BALCO IPP; and
- improve power plant operating parameters to deliver higher PLFs/availability and reduce the non-coal cost.

IRON ORE

The year in summary

Operations in Goa continued to be suspended in FY2019, and remain so, due to a state-wide directive from the Supreme Court. We continue to engage with the Government to secure a resumption of mining operations.

Production of saleable ore at Karnataka was 4.1 million tonnes, in line with the increase in the mining cap for the state of Karnataka.

Safety

In continuing our journey to 'zero harm', the lost time injury frequency rate (LTIFR) was 0.30 (FY2018: 0.12). During the year we initiated new safety practices in our organisations including 'one man, one lock'; deployment of trained rescue teams for work at height and confined space; training in making better risk decisions (MBRD); crane lifting and rigger training; and continuing a grid ownership concept for improving EHS culture on the ground.

We also launched a dedicated safety app for real-time reporting of safety issues as well as tracking business leaders' time on-field which has proved highly successful. Across all the sites, scores have improved against the Vedanta Sustainability Audit Programme (VSAP) and Vedanta Safety Standards (VSS).

Environment

We recycle and reuse all of the wastewater we generate in the Iron Ore business, with the exception of blow down from the power plant which is treated and discharged according to consent conditions. We have also installed five fog cannon systems for dust suppression and have installed a bag filter at the charging car of the coke oven.

Our Iron Ore Karnataka business has started biodiversity studies which are currently in the Phase 2 stage. We have planted around 32,000 plants and also desilted around 1.17 lac m3 in 29 check dams and village ponds round our business area.

Production performance

	FY2019	FY2018	% change
Production (dmt)			
Saleable ore	4.4	7.1	(38%)
Goa	0.2	4.9	(95%)
Karnataka	4.1	2.2	89%
Pig iron (kt)	686	646	6%
Sales (dmt)			
Iron ore	3.8	7.6	(49)%
Goa	1.3	5.4	(77%)
Karnataka	2.6	2.2	19%
Pig iron (kt)	684	645	6%

Operations

At Goa, production and sales volumes were lower than the prior year due to the mine closure. This was pursuant to the Supreme Court judgement dated 7 February 2018 directing all companies in Goa to stop mining operations with effect from 16 March 2018. We continue to engage with the Government for a resumption of mining operations.

At Karnataka, production was 4.1 million tonnes, 89% higher y-o-y due to an increase in the annual mining allocation. Sales in FY 2019 were 2.6 million tonnes, 19% higher y-o-y due to an increase in production, but partially offset by muted e-auction sales.

Production of pig iron increased by 6% to 686,000 tonnes in FY2019, mainly lower metallurgical coke availability due to weather-related supply disruptions in Australia in Q1 FY2018, and a local contractors' strike in Q2 FY2018.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% Change
Revenue	416	485	(14%)
EBITDA	90	48	87%
EBITDA margin (%)	22%	10%	
Depreciation and amortisation	35	69	(49)%
Operating Profit before special items	55	(21)	
Share in Group EBITDA (%)	3%	1%	
Capital Expenditure	1	11	(92)%
Sustaining	1	11	(92)%
Growth	-	-	-

In FY2019, revenue decreased to US$416 million, 14% lower y-o-y mainly due to lower sales at Iron Ore Goa resulting from the mine closure partially offset by increase in sales volume at Karnataka and pig iron prices during the year. EBITDA increased to US$90 million compared with US$48 million in FY2018. This was mainly due to higher volumes at Karnataka.

Outlook

The production from Iron ore Karnataka is expected to be 4.5 WMT (wet million tonnes).

Strategic priorities

Our focus and priorities will be to:

- bring about a resumption of mining operations in Goa through continuous engagement with the Government and the judiciary; and
- increase our footprint in iron ore by continuing to participate in auctions across the country, including Jharkhand.

STEEL

The year in summary

Vedanta Limited completed the acquisition of 90% of the share capital of ESL on 4 June 2018. ESL is an integrated steel plant (ISP) in Bokaro, Jharkhand, with a design capacity of 2.5mtpa. Its current operating capacity is 1.5mtpa with a diversified product mix of wire rod, rebar, DI pipe and pig iron.

FY2019 was a transformational year for Electrosteel Steels Limited (ESL). The business achieved record production, sales volume, EBITDA, EBITDA margin and free cash flow generation. Indeed, FY 2019 EBITDA margin of 19% was among the sector leaders in India.

Safety

Since the acquisition by Vedanta, we have started to implement the best safety practices of the Vedanta Group to work towards achieving 'zero harm'. These include:

- Training and awareness programmes for making better risk decisions (MBRD);
- Implementation of eight Vedanta safety standards;
- Launch of Vedanta Sustainability Audit Programme (VSAP); and
- Focusing on Visual Felt Leadership (VFL).

We regard any safety incident as unacceptable and preventable and continue to work towards our zero harm goal.

Environment

Alongside zero harm, a main priority for ESL is to achieve 'zero waste and zero discharge'. In line with this, we have started on a journey to achieve no discharges of water.

Production performance

	FY2019	FY2018	% change
Production (kt)	1,199	1,025	17%
Pig iron	142	179	(21%)
Billet	39	50	(21%)
TMT bar	441	300	47%
Wire rod	427	365	17%
Ductile iron pipes	150	130	15%

Operations

ESL's manufacturing facility is a greenfield integrated steel plant located near Bokaro, Jharkhand, India, which has a current capacity of 1.5mtpa and the potential to increase to 2.5mtpa. It primarily consists of one sinter plant, a vertical coke oven plant, two blast furnaces, an oxygen plant, a lime calcination plant, a steel melting shop, a wire rod mill, a bar mill, a captive power plant and a ductile iron pipe plant.

Since June 2018, post Vedanta's acquisition of ESL, the business has seen significant improvements leading to a healthy financial position. There have been significant gains in operational efficiencies, such as a substantial reduction in the coke rate at blast furnaces 2 & 3 by about 3% and 7% respectively y-o-y; optimisation of the coal mix and iron ore blending; and improved yields of the finishing mill to 96.7% (from 95.9% in FY2018).

Prior to the acquisition, the saleable production for the business was about 1mtpa.This was mainly due to a sub-optimal use of assets, weak liquidity and limited working capital that resulted in an inadequate availability of resources. In FY2019, we achieved record saleable production of 1.2mtpa as a result of operational excellence and restarting of 350 m3 Blast Furnace 3 in August 2018. In line with our stated priorities to stabilize production and ramp up to 1.5mtpa, we achieved a hot metal production run-rate of c.1.5mtpa in FY2019.

The priority remains to enhance production of value-added products (VAPs), i.e. TMT bar, wire rod and Di pipe, and to minimize the production of non-value-added products (NVAPs) i.e. Pig iron and billets. During the year, we shifted c.21% production of NVAPs to higher margin VAPs. TMT bar and wire rod production increased by 47% and 17% respectively y-o-y, driven mainly by improving yields at the steel melting shop, higher availability of hot metal and better efficiency at the mills.

Our Consent to Operate (CTO) for the steel plant at Bokaro, which was valid until December 2017, was not renewed by the State Pollution Control Board (PCB). This was followed by the Ministry of Environment, Forests and Climate Change revoking the Environmental Clearance (EC). Both the directions have since been stayed by the Hon'ble High Court of Jharkhand until the next hearing date, which is due on 25 July 2019.

Prices

(US$ per tonne)

	FY2019	FY2018	% change
Pig iron	404	359	13%
Billet	486	447	9%
TMT	564	515	10%
Wire rod	638	558	14%
DI pipe	593	598	(1%)

Average sales realisation increased 12% y-o-y from US$510 to US$572 per tonne in FY2019. Prices of iron and steel are influenced by several macro-economic factors. These include government spend on infrastructure, the emphasis on developmental projects, demand-supply forces, the Purchasing Managers' Index (PMI) in India and production and inventory levels across the globe specially China.

Unit costs

	FY2019	FY2018
Steel (US$ per tonne)	457	456

Coal prices and iron ore prices were higher by 15% and 50% respectively over FY 18 despite of which, the cost of production stood flat at US$457 per tonne in FY2019. T This was managed through improvement in key operational metrics which includes optimisation of lower grade iron ore fines, improvement in coke rate consumption, higher PCI consumption in blast furnaces, lower consumption of pellets, improvements in mill yields, commercial excellence and tight control over costs.

Financial performance

(US$ million, unless stated)

	FY2019*
Revenue	600
EBITDA	113
EBITDA margin (%)	19%
Depreciation and amortisation	28
Operating Profit before special items	85
Share in Group EBITDA (%)	3%
Capital Expenditure	15
Sustaining	15
Growth	-

** Financial numbers are for a period of 10 months post acquisition*

Since its acquisition by Vedanta with effect from June 2018, ESL has generated EBITDA of US$113 million. Prudent cost management and improvisation of key matrices played a pivotal role for this turnaround story.

Outlook

Hot metal production is expected to be c.1.5mtpa in FY2020 and expected EBITDA margin is US$130 -US$140 per tonne.

Strategic priorities

Our focus and priorities will be to:

- obtain clean Consent to Operate and [environmental clearance];
- debottleneck the blast furnace, steel melting shop & roll capacity, improving production volume;
- raw material securitization through long-term contracts;
- re-branding of value-added products and enter the retail market for TMT;
- embark on the expansion journey from 1.5 to 2.5mtpa;
- ensure zero harm and zero discharge, fostering a safety-centric culture; and
- focus on waste-to-wealth through maximizing revenue from secondary products.

COPPER – INDIA / AUSTRALIA

The year in summary

The copper smelter plant at Tuticorin was under shutdown for the whole of FY2019. We continue to engage with the Government and relevant authorities to enable the restart of operations at Copper India.

We continued to operate our refinery and rod plant at Silvassa, catering to the domestic market.

Safety

The lost time injury frequency rate (LTIFR) was 0.15 (FY2018: 0.08). The primary reason for the increase was the significant decline in man-hours due to plant closure.

Environment

Copper Mines of Tasmania continued in care and maintenance awaiting a decision on restart. Meanwhile, a small dedicated team is maintaining the site and there were no significant safety or environmental incidents during the year. The site retained its ISO accreditation in safety, environment and quality management systems and the opportunity of a lull in production was used to review and further improve these systems.

Production performance

	FY2019	FY2018	% change
Production (kt)			
India – cathode	90	403	(78)%

Operations

The Tamil Nadu Pollution Control Board (TNPCB) vide order, dated 9 April 2018, rejected the consent renewal application of Vedanta Limited for its copper smelter plant at Tuticorin. It directed Vedanta not to resume production operations without formal approval/consent (vide order dated 12 April 2018), and directed the closure of the plant and the disconnection of electricity (vide order dated 23 May 2018).

The Government of Tamil Nadu also issued an order dated 28 May 2018 directing the TNPCB to permanently close and seal the existing copper smelter at Tuticorin; this was followed by the TNPCB on 28 May 2018. Vedanta Limited filed a composite appeal before the National Green Tribunal (NGT) against all the above orders passed by the TNPCB and the Government of Tamil Nadu. In December 2018, NGT set aside the impugned orders and directed the TNPCB to renew the CTO.

However, in February 2019, the Hon'ble Supreme Court set aside NGT's order on the grounds of maintainability and left it open for Vedanta Limited to file a writ petition before the Madras High Court against all the above orders. Hon'ble Supreme Court has further left it open for Vedanta Limited to apply for interim reliefs considering that the plant has been shut down since 09 April 2018, and to apply before the Chief Justice of the High Court for an expeditious hearing.

Vedanta Limited duly filed writ petitions before the Madras High Court on 22 February 2019, which heard our miscellaneous petitions seeking interim relief on 1 March 2019. The court directed the TNPCB and the Government of Tamil Nadu to file their counters and scheduled them for further hearing on 23 April 2019. On 23 April 2019, the matter was posted for further hearing on 11 June 2019.

Meanwhile, the Company's Silvassa refinery and rod plant continues to operate as usual, enabling us to cater to the domestic market.

Our copper mine in Australia has remained under extended care and maintenance since 2013. However, we continue to evaluate various options for its profitable restart, given the Government's current favourable support and prices.

Prices

	FY2018	FY2017	% change
Average LME cash settlement prices (US$ per tonne)	6,337	6,451	(2)%

Data from the International Copper Study Group showed refined output and demand growth estimates for 2019 indicating a market deficit of 280kt. Wood Mackenzie reported that the world refined copper production for CY2019 will be 23.90 million tonnes against 23.54 million tonnes in CY2018, while refinery consumption is estimated to be around 24.18 million tonnes against 23.68 million tonnes in CY2018.

Average LME copper prices decreased by 2% compared with FY2018.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% change
Revenue	1,537	3,828	(60)%
EBITDA	(36)	162	-
EBITDA margin (%)	(2)%	4%	-
Depreciation and amortisation	21	25	(17)%
Operating Profit before special items	(57)	137	-
Share in Group EBITDA (%)	(1)%	4%	-
Capital Expenditure	37	84	(55)%
Sustaining	28	34	(17)%
Growth	9	50	(81)%

During the year, EBITDA was US$(36) million and revenue was US$1,537 million, a decrease of 60% on the previous year's revenue of US$3,828 million. The reduction in revenue and EBITDA was mainly due to the shutdown of the Tuticorin smelter.

Outlook

To be advised following the restart of Tuticorin

Strategic priorities

Our focus and priorities will be to:

- engage with the Government and relevant authorities to enable the restart of operations at Copper India;
- sustain operating efficiencies, reducing our cost profile; and
- continuously upgrade technology to ensure high-quality products and services that sustain market leadership and surpass customer expectations.

COPPER ZAMBIA

The year in summary

Copper Zambia had another challenging year in terms of production, but we are now turning the corner with an approach focusing on industrial architecture, process stabilisation and growth projects to drive all of KCM's strategic business priorities. The turnaround actions required are understood and under way, and although there is much to be done, it remains a world-class asset with a 50-year mine life. It remains an integral part of our vision for the future. We are confident that the new approach and re-engineering of design parameters will secures our 50-year vision for mining at KCM.

At the Konkola underground mine, we are focusing on infrastructure reliability, stabilization of partnering approach and accelerated dewatering and development rates for Konkola's growth vision. Sustained process controls are steadily delivering results at the Tailings Leach Plant (TLP).

Mr Christopher Sheppard was appointed as the CEO of KCM in March 2019. He will provide leadership in delivering KCM's vision of over 50 years of sustainable mining operations in Zambia. With over 35 years of mining experience behind him, he will be steering all of KCM's strategic business priorities.

Safety

We deeply regret that there were four fatal accidents at the Konkola underground mine and one at the Nchanga underground mine during FY2019. Incidents were thoroughly investigated, and the lessons learned have been actioned for implementation with the rest of the organisation. Our LTIFR for the year was 0.56 (FY2018: 0.30)

KCM continued driving its renowned safety programme "Chingilila", envisioned to train mine captains to become safety ambassadors who regularly visit every working area to improve the safety awareness in the field and in the workplace. In over 400 leaders were trained in Company safety procedures and practices.

During the year, the British Safety Council audited our OHS management system, which again showed an improvement in reporting near-misses and we expect to improve the corrective action preventive action (CAPA) closure rate.

Environment

Improving our water management practices remains a top priority for the business. During the year, we successfully reduced our specific water consumption from 171 to 160 m^3/T for the business. Further improvement projects are under way which will not only improve the current performance but will start to set standards for the industry in water and air quality.

Production performance

Particulars	FY2019	FY2018	% Change
Production (kt)			
Total mined metal	91	91	-
Konkola	30	37	(20)%
Nchanga	13	13	(1)%
Tailings Leach Plant	49	41	19%
Finished copper	177	195	(9)%
Integrated	90	84	7%
Custom	87	111	(22)%

Operations

Mined metal production in FY2019 was 91,000 tonnes, flat y-o-y. Custom volumes decreased to 87,000 tonnes, 22% lower compared FY2018 mainly due to lower concentrate availability in the market and introduction of a 5% import duty on concentrates from 1st January 2019.

Konkola

At Konkola, production decreased to 30,000 tonnes, down 20% y-o-y, due to poor performance from one of the business partner at Shaft 3 area, shaft's structural maintenance for improving the hoisting capacities and reliability and lower equipment availability than planned resulting in lagging developments and consequently the lower production. A new Business Partner with better mining expertise has already been identified and productive engagement is on with the partners with a targeted resource mobilisation by Q1 FY 2020.

Nchanga

At Nchanga, production was at 13,000 tonnes, down 1% y-o-y, primarily due to heavy monsoon impacting feeds from open-pits and temporary suspension of Nchanga underground operations from Q4 FY2019 due to low availability of acid as a result of rationalised operations at our Nchanga smelter following the introduction of an import duty on copper concentrates.

Tailings Leach Plant

TLP's production stood at 49,000 tonnes, up 19% y-o-y, mainly due to improved feed-grades and higher copper recoveries as a result of consistent pumps and plant availability and stabled process controls partially offset by temporary suspension of Nchanga underground operations from Q4 FY 2019.

Smelter and refinery

Production of finished copper (excluding TLP) decreased to 41,000 tonnes in FY2019, compared to 43,000 tonnes in FY2018. Custom volumes decreased to 87,000 tonnes, 22% lower compared FY2018 mainly due to lower concentrate availability in the market and introduction of a 5% import duty on concentrates from 1st January 2019.

Unit costs (integrated production)

	FY2019	FY2018	% Change
Unit costs (US cents per lb) excluding royalty	276.2	239.1	16%
Unit costs (US cents per lb) including royalty[1]	366.2	314.8	16%

(1) Including sustaining capex and interest cost

In FY2019, the unit cost of production (excluding royalties) increased by 16% to US cents 276.2 per lb on y-o-y basis as a result of significant depreciation of Kwacha against the US dollar , higher waste stripping costs planned for enhanced ore exposure at open-pit, additional cost incurred on sourcing acid for TLP ramp-up, focussed preventive maintenance programmes akin to improved plant availabilities, lower cobalt credits as a result of current mining sequence and a one- off credit related to Energy Regulation Board (ERB) tariff provision in FY 2018.

Financial performance

(US$ million, unless stated)

	FY2019	FY2018	% Change
Revenue	1,085	1,283	(15)%
EBITDA	(63)	73	-
EBITDA margin	(6)%	6%	
Depreciation and amortisation	102	112	(9%)
Operating loss before special items	(165)	(39)	-
Share in group EBITDA (%)	(2)%	2%	
Capital expenditure	36	24	49%
Sustaining	36	24	49%
Growth	-	-	

Revenue in FY2019 was lower at US$1,085 million, compared with US$1,283 million in the previous year. This was mainly due to lower metal prices and reduction in custom sales volumes.

EBITDA for the year stood at US$(63) million compared with US$73 million in FY2018. This was mainly due to incremental process improvement cost, significant depreciation of the Kwacha against US dollar lower cobalt credits and a one-off credit related to Energy Regulation Board (ERB) tariff provision in FY2018.

Outlook

Full-year production for FY2020 is expected to reach 90-100 kt from integrated production with equivalent contribution from custom production. Integrated C1 cost for FY2020 is expected at US cents 240-250 pound.

Konkola underground mine

The Konkola underground mine remains a key priority. The operational philosophy re-designed to include industrial architecture, contractor partnering, accelerated dewatering & development under a reliable life of mine plan, is central to the ramp-up plan. A feasibility study to develop a deeper flat level is under way as part of the "dry mine" project.

Nchanga operations

At Nchanga, the focus continues to be plant reliability at the TLP, and on driving productivity in the open cast mines through right balance between waste and ore excavation.

Smelter and refinery

A 35 days planned biennial maintenance shutdown is scheduled in June-July 2019 as part of preventive maintenance programme to improve the plant reliability and improved feed rates of above 80 tonnes per hour (tph). We are equally focused to improve the capacity re-build for our 500 tpd sulphur burning plant to support leaching operations.

Our strategic priorities

Our focus and priorities will be to:

- deliver volume growth through successful implementation of vendor partnering model;
- increase production of underground mine at Konkola with an additional, deeper horizontal development;
- refocus and strengthen industrial architecture & infrastructure to delivery stability in short term and growth in long term;
- improve equipment availability and reliability;
- ensure a reliable Tailings Leach facility with the potential to increase recoveries;
- reduce the cost base through the contractor business-partnering model and value-focused initiatives; and
- strengthen the team expertise with strong mining, maintenance and health & safety specialists.

PORT BUSINESS

Vizag General Cargo Berth (VGCB)

During FY2019, VGCB operations showed a decrease of 8% in discharge and 5% in dispatch compared to FY2018. This was mainly driven by lower availability of railway rakes in the region.

PRINCIPAL RISKS AND UNCERTAINTIES

As a global natural resources company, our businesses are exposed to a variety of risks. It is therefore essential to have in place the necessary systems and a robust governance framework to manage risk, while balancing the risk-reward equation expected by stakeholders.

Our risk management framework is designed to be simple & consistent and provide clarity on managing and reporting risks to the Board. Together, our management systems, organisational structures, processes, standards and Code of Conduct and Ethics form the system of internal control that governs how the Group conducts its business and manages the associated risks. The Board has ultimate responsibility for the management of risks and for ensuring the effectiveness of internal control systems. The Board's review includes the Audit Committee's report on the risk matrix, significant risks and the mitigating actions we put in place. Any weaknesses identified by the review are addressed by enhanced procedures to strengthen the relevant controls, and these are reviewed at regular intervals.

The Audit Committee is in turn assisted by the Group-level Risk Management Committee in evaluating the design and effectiveness of the risk mitigation programme and control systems. The Group Risk Management Committee (GRMC) meets every quarter and comprises the Group Chief Executive Officer, Group Chief Financial Officer, Non-Executive Director and Director-Management Assurance. The Group Head-Health, Safety, Environment & Sustainability is invited to attend these meetings. GRMC discusses key events impacting the risk profile, principal risks and uncertainties, emerging risks and progress against planned actions.

Since it is critical to the delivery of the Group's strategic objectives, risk management is embedded in business-critical activities, functions and processes. The risk management framework helps the Company by aligning operating controls with the objectives of the Group. It is designed to manage rather than eliminate the risk of failure to achieve business objectives and provides reasonable and not absolute assurance against material misstatement or loss. Materiality and risk tolerance are key considerations in our decision-making. The responsibility for identifying and managing risk lies with every manager and business leader.

In addition to the above structure, other key risk governance and oversight committees in the Group include the following:

- Finance Standing Committee (FSC) having oversight on treasury related risks. The FSC comprises of CEO, Non-Executive Director, Group CFO.
- Board level Sustainability Committee which reviews sustainability related risks.
- Group Project/Capex Council which evaluates the risks while reviewing any capital investment decisions as well as institutes risk management framework in projects.

In addition to the above, there are various group level councils such as Procurement Council, Tax Council, HSE Council, Insurance Council, CSR Committee, etc. who work towards identifying various risks in the Group and work towards mitigating them.

The Group has a consistently applied methodology for identifying risks at the individual business level for existing operations and for ongoing projects. The Group's risk appetite is set by the Board. It has been defined taking into consideration the Group's risk tolerance level and is clearly linked to its strategic priorities. The risk appetite forms the basis of the Board's assessment and prioritisation of each risk based on its likely impact on the business operations. A risk scale aligned to the Board's overall risk appetite and consisting of qualitative and quantitative factors has been defined to facilitate a consistent assessment of the risk exposure across the Group.

The governance framework continues to operate in the same manner post delisting of the Company. At a business level, formal discussions on risk management occur at review meetings at least once a quarter. The respective businesses review their major risks, and changes in their nature and extent since the last assessment and discuss the control measures which are in place and further action plans. The control measures stated in the risk matrix are also periodically

reviewed by the business management teams to verify their continued effectiveness. These meetings are chaired by the respective business CEOs and attended by CXOs, senior management and appropriate functional heads. Risk officers have been formally nominated at each of the operating businesses as well as at Group level, whose role is to create awareness of risks at senior management level and to develop and nurture a risk management culture. Risk mitigation plans form an integral part of the performance management process. Structured discussions on risk management also happen at business level with regard to their respective risk matrix and mitigation plans. The leadership team in the businesses is accountable for governance of the risk management framework and they provide regular updates to the GRMC.

Each of the businesses has developed its own risk matrix, which is reviewed by their respective management committee/executive committee, chaired by their CEOs. In addition, each business has developed its own risk register depending on the size of its operations and number of SBUs/ locations. Risks across these risk registers are aggregated and evaluated and the Group's principal risks are identified based on the frequency, and potential magnitude and impact of the risks identified.

This element is an important component of the overall internal control process, from which the Board obtains assurance. The scope of work, authority and resources of Management Assurance Services(MAS) are regularly reviewed by the Audit Committee. The responsibilities of Management Assurance Services (MAS) include recommending improvements in the control environment and reviewing compliance with our philosophy, policies and procedures. The planning of internal audits is approached from a risk perspective. In preparing the internal audit plan, reference is made to the risk matrix, and inputs are sought from senior management, business teams and members of the Audit Committee. In addition, we make reference to past audit experience, financial analysis and the current economic and business environment.

Each of the principal subsidiaries has procedures in place to ensure that sufficient internal controls are maintained. These procedures include a monthly meeting of the relevant management committee and quarterly meeting of the audit committee of that subsidiary. Any adverse findings are reported to the Audit Committee. The Chairman of the Audit Committee may request MAS and/or the external auditor to look at certain areas identified by risk management and the internal control framework. The findings by MAS are presented monthly to the Executive Committee and to the Audit Committee periodically. Due to the limitations inherent in any system of internal control, this system is designed to meet the Group's particular needs, and the risks to which it is exposed, rather than to eliminate risk altogether. Therefore, it can only provide reasonable and not absolute assurance against material misstatement or loss.

Principal Risks and Uncertainties

Vedanta's principal risks and uncertainties as set out below may impact the following areas of the Group's business:

Area	Impact
Business model (BM)	Ability to conduct our operations across the value chain in order to generate revenue and make profit from operations.
Future performance (FP)	Ability to deliver on our financial plans in short/medium term.
Solvency (S)	Ability to meet all our financial obligations.
Liquidity (L)	Ability to meet our short-term obligations/liabilities as they fall due.
Health, safety, environment and communities (HSEC)	Ability to send our employees and contractors home safe and healthy every day and work with our communities and partners to achieve the Group's sustainable development goals.
Reputation (R)	Ability to maintain investor confidence and our social licence to operate.

The order in which these risks appear in the section below does not necessarily reflect the likelihood of their occurrence or the relative magnitude of their impact on our business. The risk direction of each risk has been reviewed based on events, economic conditions, changes in business environment and regulatory changes during the year. While Vedanta’s risk management framework is designed to help the organisation meet its objectives, there can be no guarantee that the Group’s risk management activities will mitigate or prevent these or other risks from occurring.

The Board, with the assistance of management, carries out periodic and robust assessments of the principal risks and uncertainties of the Group and tests the financial plans for each of risks and uncertainties mentioned below.

Impact	Mitigation
Financial risks	
Fluctuation in commodity prices (including oil) and currency exchange rates	
Impact criteria: BM, FP, S, L	**Risk direction: ◄►**
Prices and demand for the Group's products may remain volatile/uncertain and could be influenced by global economic conditions. Volatility in commodity prices and demand may adversely affect our earnings, cash flow and reserves. Our assets, earnings and cash flows are influenced by a variety of currencies due to the diversity of the countries in which we operate. Fluctuations in exchange rates of those currencies may have an impact on our financials.	■ The Group has a well-diversified portfolio which acts as a hedge against fluctuations in commodities and delivers cash flows through the cycle. ■ Pursue low-cost production, allowing profitable supply throughout the commodity price cycle. ■ Vedanta considers exposure to commodity price fluctuations to be an integral part of the Group's business and its usual policy is to sell its products at prevailing market prices and not to enter into price hedging arrangements other than for businesses of custom smelting and purchased alumina, where back-to-back hedging is used to mitigate pricing risks. Strategic hedge, if any, is taken after appropriate deliberations & due approval from ExCo. ■ Our Forex policy prohibits forex speculation. ■ Robust controls in forex management to hedge currency risk liabilities on a back-to-back basis. ■ Finance standing committee reviews all forex and commodity-related risks and suggests necessary courses of action as needed by business divisions. ■ Seek to mitigate the impact of short-term movements in currency on the businesses by hedging short-term exposures progressively, based on their maturity. However, large or prolonged movements in exchange rates may have a material adverse effect on the Group's businesses, operating results, financial condition and/or prospects. ■ Notes to the financial statements in the Annual Report give details of the accounting policy followed in calculating the impact of currency translation.
Access to capital	
Impact criteria: FP, S, L, R	**Risk direction: ▲**
The Group may not be able to meet its payment obligations when due or may be unable to borrow funds in the market at an acceptable price to fund actual or proposed commitments. A sustained adverse economic downturn and/or suspension of its operation in any business, affecting revenue and free cash flow generation, may cause stress on the Company's ability to raise financing at competitive terms. *Risk has been increased compared to last year, due to increased credit spreads with tighter liquidity and other external factors.*	■ A focused team continues to work on proactive refinancing initiatives with an objective to contain cost and extend tenor. ■ The team is actively building the pipeline for long term funds for near to medium term requirements both for refinancing and growth capex. ■ Track record of good relations with banks, and of raising borrowings in last few years. ■ The Group’s structured investments, including the Volcan transaction, are exposed to underlying equity price variance of Anglo shares. ■ Regular discussions with rating agencies to build confidence in operating performance. ■ Business teams ensure continued compliance with the Group’s treasury policies that govern our financial risk management practices.
Major project delivery	
Impact criteria: BM, FP, L, R	**Risk direction: ◄►**
Shortfall in achievement of expansion projects stated objectives leading to challenges in achieving stated business milestones – existing & new growth projects.	■ Enlisting internationally renowned engineering and technology partners on all projects. ■ Empowered organisation structure has been put in place to drive growth projects. ■ Strong focus on safety aspects in the project. ■ Geo-technical audits are being carried out by independent agencies. ■ Reputable contractors are engaged to ensure completion of the project on indicated time lines.

	■ Mines being developed using best in class technology and equipment and ensuring the highest level of productivity and safety. ■ Stage gate process to review risks and remedy at multiple stages on the way. ■ Robust quality control procedures have also been implemented to check safety and quality of services / design / actual physical work.
Sustainability risks	
Health, safety and environment (HSE)	
Impact criteria: BM, HSEC, R	**Risk direction: ◄►**
The resources sector is subject to extensive health, safety and environmental laws, regulations and standards. Evolving requirements and stakeholder expectations could result in increased cost or litigation or threaten the viability of operations in extreme cases. **Emissions and climate change**: Our global presence exposes us to a number of jurisdictions in which regulations or laws have been, or are being, considered to limit or reduce emissions. The likely effect of these changes could be to increase the cost for fossil fuels, impose levies for emissions in excess of certain permitted levels, and increase administrative costs for monitoring and reporting. Increasing regulation of greenhouse gas (GHG) emissions, including the progressive introduction of carbon emissions trading mechanisms and tighter emission reduction targets, is likely to raise costs and reduce demand growth.	■ HSE is a high priority area for Vedanta. Compliance with international and local regulations and standards, protecting our people, communities and the environment from harm and our operations from business interruptions are key focus areas. ■ Policies and standards are in place to mitigate and minimise any HSE-related occurrences. Safety standards issued / continue to be issued to reduce risk level in high risk areas. Structured monitoring and a review mechanism and system of positive compliance reporting are in place. ■ The Company has implemented a set of standards to align its sustainability framework with international practice. A structured sustainability assurance programme continues to operate in the business divisions covering environment, health, safety, community relations and human rights aspects, and is designed to embed our commitment at operational level. ■ All businesses have appropriate policies in place for occupational health-related matters, supported by structured processes, controls and technology. ■ Strong focus on safety during project planning/execution, and contract workmen safety. ■ Building safety targets into performance management to incentivise safe behaviour and effective risk management. ■ A "Leadership in Action" program has been launched for identification of critical risks to identify critical risk controls and to measure, monitor and report the control effectiveness. ■ Leadership remains focused on a zero-harm culture across the organisation. ■ Carbon forum with business representation monitors developments and sets out defensive policies, strategy and actions. ■ Defined targets and action plans in place to reduce the carbon intensity of our operations. This includes reducing emission intensity, increasing renewable mix and green cover at locations. New Emission norms for thermal power plants will require capex – working towards the same. ■ Institutionalise systems to manage carbon risks and opportunities across the business over the life cycle of its products. ■ Engage with stakeholders in creating awareness and developing climate change solutions.
Managing relationship with stakeholders	
Impact criteria: BM, FP, HSEC, R, S, L	**Risk direction: ▲**
The continued success of our existing operations and future projects are in part dependent on broad support and a healthy relationship with our respective local communities. Failure to identify and manage local concerns and expectations can have a negative impact on relations and therefore affect the organisation's reputation and social licence to operate and grow.	■ CSR approach to community programmes is governed by the following key considerations: the needs of the local people and the development plan in line with the new Companies Act in India; CSR guidelines; UN Millennium Development Goals (UNMDG); CSR National Voluntary Guidelines of the Ministry of Corporate Affairs, Government of India; and the UN's sustainable development goals. ■ Our BU teams are proactively engaging with communities and stakeholders through a proper and structured engagement plan, with the objective of working with them as partners.

Risk has been increased compared to last year, due to community related incidents at some of our facilities.	■ Business ExCos factor in these inputs, and then decide upon focus areas of CSR and budgets while also aligning with strategic business priorities. ■ At KCM, in line with our commitment to contribute towards the growth of the economy and from sustainability perspective, we undertake to constructively engage with all key stakeholders such as the Zambian government, local communities, suppliers, employees and the shareholders in an optimal & productive manner. ■ All BUs follow well-laid processes for recording and resolving all community grievances. ■ Every business has a dedicated Community Development Manager, who is a part of the BU Exco. They are supported with dedicated teams of community professionals, totalling nearly 110 people. ■ Our business leadership teams have periodic engagements with the local communities to build relations based on trust and mutual benefit. Our businesses seek to identify and minimise any potentially negative operational impacts and risks through responsible behaviour - acting transparently and ethically, promoting dialogue and complying with commitments to stakeholders. ■ Periodic meetings with existing and potential SRI Investors, lenders and analysts, as well as hosting a Sustainable Development Day in London, helps in two-way engagement and understanding the material issues for stakeholders. ■ CSR communication and engagement with all stakeholders – within & outside communities.
Tailings dam stability	
Impact criteria: BM, FP, HSEC, R	**Risk direction: ◄►**
A release of waste material leading to loss of life, injuries, environmental damage, reputational damage, financial costs and production impacts. A tailings dam failure is considered to be a catastrophic risk – i.e. a very high severity but very low frequency event that must be given the highest priority.	■ The Risk Management Committee included tailings dams on the Group Risk Register with a requirement for annual internal review and three-yearly external review. ■ Operation of tailings dams is executed by suitably experienced personnel within the businesses. ■ Vedanta is currently reviewing approach to tailings dam management, particularly upstream raised dams, in the wake Brumadihno in Brazil. ■ Golder Associates has been engaged to review tailings dam operations, including improvement opportunities/remedial works required and the application of Operational Maintenance and Surveillance (OMS) manuals in all operations. This is an oversight role in addition to technical design and guidance arranged by respective business units. Technical guidelines are also being developed. ■ Those responsible for dam management received training from Golders Associates and will receive on-going support & coaching from international consultants. ■ Management standard implemented with business involvement. ■ System of monitoring of tailings dams instituted.
Operational risks	
Challenges in Aluminium and Power business	
Impact criteria: BM, FP, S, L, R	**Risk direction: ◄►**
Our projects have been completed and may be subject to a number of challenges during operationalisation phase. These may also include challenges around sourcing raw materials and infrastructure-related aspects and concerns around Ash utilization / evacuation.	■ Global uncertainties reflected as fall in Aluminium LME prices. ■ Continue to pursue new coal linkages to ensure coal security. Operations at Chotia coal mines also started. ■ Local sourcing of Bauxite from Odisha. ■ Jharsuguda facilities have ramped up satisfactorily. ■ New Ash Dyke being built in Jharsuguda. ■ Dedicated teams working towards addressing the issue of new emission norms for power plants. ■ Global technical experts have been inducted to strengthen operational excellence.

- Continuous focus on plant operating efficiency improvement programme to achieve design parameters, manpower rationalisation, logistics and cost reduction initiatives.
- Continuous augmentation of power security and infrastructure.
- Strong management team continues to work towards sustainable low-cost of production, operational excellence and securing key raw material linkages.
- Talwandi Saboo (TSPL) power plant matters are being addressed structurally by a competent team.

Operational turnaround at KCM

Impact criteria: BM, FP, S, L, R

Risk direction: ▲

Lower production and higher cost at KCM may impact our profitability.

Risk has been increased compared to last year, due to challenging external & operating environment.

- Management team reviewing operations and engaging with all stakeholders in light of operating challenges.
- Focus at Konkola is to stabilize infrastructure framework, improve operational efficiency, equipment availability, dewatering and developments aiming to enhance volumes. Committed to improving KCM operating performance.
- To improve performance, KCM team is working on stabilization of business partnering model with outsourced contractors.
- Several cost-saving initiatives and restructuring reviews under way at KCM to preserve cash.
- Process improvement actions put in place through focused operating teams to improve production performance.
- Working on the optimized engineering design for accelerated dewatering and development to increase production from Konkola mine.
- All environmental projects are being monitored closely for timely closure.
- Concentrate sourcing tie-ups with high grade mines being pursued.
- VAT refunds are being pursued.

Discovery risk

Impact criteria: BM, FP

Risk direction: ◄►

Increased production rates from our growth-oriented operations place demand on exploration and prospecting initiatives to replace reserves and resources at a pace faster than depletion. A failure in our ability to discover new reserves, enhance existing reserves or develop new operations in sufficient quantities to maintain or grow the current level of our reserves could negatively affect our prospects. There are numerous uncertainties inherent in estimating ore and oil and gas reserves, and geological, technical and economic assumptions that are valid at the time of estimation. These may change significantly when new information becomes available.

- Dedicated exploration cell with continuous focus on enhancing exploration capabilities.
- Appropriate organisation and adequate financial allocation in place for exploration.
- Strategic priority is to add to our reserves and resources by extending resources at a faster rate than we deplete them, through continuous focus on drilling and exploration programme.
- Exploration Executive Committee (ExCo) has been established to develop and implement strategy and review projects group wide.
- Exploration-related systems being strengthened and standardised group wide and new technologies being utilised wherever appropriate.
- International technical experts and agencies are working closely with our exploration teams to enhance our capabilities.

Breaches in IT / cybersecurity

Impact criteria: FP, R

Risk direction: ◄►

Like many global organisations, our reliance on computers and network technology is increasing. These systems could be subject to security breaches resulting in theft, disclosure or corruption of key/strategic information. Security breaches could also result in misappropriation of funds or disruptions to our business

- Group-level focus on formulating necessary frameworks, policies and procedures in line with best practices and international standards.
- Implementation and adoption of various best-in-class tools and technologies for information security to create a robust security posture.
- Special focus to strengthen the security landscape of plant technical systems (PTS) through various initiatives.

operations. A cybersecurity breach could have an impact on business operations.	■ Adoption of various international standards relating to Information Security, Disaster Recovery & Business Continuity Management, IT Risk Management and setting up internal IT processes and practices in line with these standards. ■ Periodic assessment of entire IT systems landscapes and governance framework from vulnerability and penetration perspective through reputed expert agencies and addressing the identified observations in a time-bound manner.
Loss of assets or profit due to natural calamities	
Impact criteria: FP, R	**Risk direction: ◄►**
Our operations may be subject to a number of circumstances not wholly within the Group's control. These include damage to or breakdown of equipment or infrastructure, unexpected geological variations or technical issues, extreme weather conditions and natural disasters – any of which could adversely affect production and/or costs.	■ Vedanta has taken appropriate group insurance cover to mitigate this risk. ■ An external agency reviews the risk portfolio and adequacy of this cover and assists us in our insurance portfolio. ■ Our underwriters are reputed institutions and have capacity to underwrite our risk. ■ Established mechanism of periodic insurance review in place at all entities. However, any occurrence not fully covered by insurance could have an adverse effect on the Group's business. ■ Continuous monitoring and periodic review of security function. ■ Continue to focus on capability building within the Group.
Cairn related challenges	
Impact criteria: BM, FP, L, S	**Risk direction: ◄►**
Cairn India has 70% participating interest in Rajasthan Block. The production sharing contract (PSC) of Rajasthan Block runs till 2020. The Government of India has granted its approval for ten-year extension at less favourable terms, pursuant to its policy for extension of Pre-NELP Exploration Blocks, subject to certain conditions. Ramp up of production vs envisaged may have impact on profitability.	■ Ongoing dialogue with the Government and relevant stakeholders to address the conditions prescribed. ■ The applicability of the Pre-NELP Extension Policy to the RJ Block is currently sub judice. ■ The growth projects are being implemented through an Integrated Contracting approach. Contracts have built in mechanism for risk and reward. ■ Project management committee & project operating committee is being put in place to provide support to the outsourcing partner and address issues on time to enable better quality control as well as timely execution for growth projects. ■ Third party is engaged to conduct a study on growth projects with key objectives of providing assurance on project delivery, highlight risks, identify areas needing management intervention and suggest opportunities to deliver the outcome.
Compliance risks	
Regulatory and legal risk	
Impact criteria: BM, R	**Risk direction: ◄►**
We have operations in many countries around the globe. These may be impacted because of legal and regulatory changes in the countries in which we operate resulting in higher operating costs, and restrictions such as the imposition or increase in royalties or taxation rates, export duty, impacts on mining rts/bans, and change in legislation.	■ The Group and its business divisions monitor regulatory developments on an ongoing basis. ■ Business-level teams identify and meet regulatory obligations and respond to emerging requirements. ■ Focus has been to communicate our responsible mining credentials through representations to government and industry associations. ■ Continue to demonstrate the Group's commitment to sustainability by proactive environmental, safety and CSR practices. Ongoing engagement with local community/media/NGOs. ■ SOX compliant subsidiaries. ■ Common compliance monitoring system being implemented in group companies. Legal requirements and a responsible person for compliance have been mapped in the system. ■ Legal counsels within the Group continues to work on strengthening the compliance and governance framework and the resolution of legal disputes.

	■ Competent in-house legal organisation is in place at all the businesses and the legal teams have been strengthened with induction of senior legal professionals across all group companies. ■ Standard operating procedures (SOPs) have been implemented across our businesses for compliance monitoring. ■ Contract management framework has been strengthened with the issue of boiler plate clauses across the group which will form part of all contracts. All key contract types have also been standardised. ■ Framework for monitoring performance against anti-bribery and corruption guidelines is also in place.
Tax related matters	
Impact criteria: FP, L, R	**Risk direction: ◄►**
Our businesses are in a tax regime and changes in any tax structure or any tax-related litigation may impact our profitability.	■ Tax Council reviews all key tax litigations and provides advice to the Group. ■ Continue to engage with concerned authorities on tax matters. ■ Robust organisation in place at business and group-level to handle tax-related matters. ■ Continue to consult and obtain opinion from reputable tax consulting firms on major tax matters to mitigate the tax risks on the group and its subsidiaries

CONSOLIDATED INCOME STATEMENT

(US$ million)

		Year ended 31 March 2019			Year ended 31 March 2018*		
	Note	Before Special items	Special items (Note 7)	Total	Before Special items	Special items (Note 7)	Total
Revenue	6	14,031	-	14,031	15,294	-	15,294
Cost of sales		(11,532)	-	(11,532)	(12,062)	33	(12,029)
Gross profit		**2,499**	**-**	**2,499**	**3,232**	**33**	**3,265**
Other operating income		229	-	229	154	-	154
Distribution costs		(276)	-	(276)	(277)	-	(277)
Administrative expenses		(541)	-	(541)	(417)	-	(417)
Impairment reversal / (charge) [net], loss on PP&E	7	-	38	38	-	650	650
Operating profit		**1,911**	**38**	**1,949**	**2,692**	**683**	**3,375**
Investment revenue	8	480	-	480	465	-	465
Finance costs	9	(1,267)	9	(1,258)	(1,239)	(108)	(1,347)
Other gains and (losses) [net]	10	(75)	-	(75)	(16)	11	(5)
Profit before taxation (a)		**1,049**	**47**	**1,096**	**1,902**	**586**	**2,488**
Net tax expense (b)	11(a)	**(656)**	**(16)**	**(672)**	**(675)**	**(338)**	**(1,013)**
Profit for the year from continuing operations (a+b)		**393**	**31**	**424**	**1,227**	**248**	**1,475**
Attributable to:							
Equity holders of the parent		(253)	16	(237)	163	76	239
Non-controlling interests		646	15	661	1,064	172	1,236
Profit for the year from continuing operations		**393**	**31**	**424**	**1,227**	**248**	**1,475**

* *Restated refer Note 1(b)*

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018*
Profit for the year from continuing operations	**424**	**1,475**
Items that will not be reclassified subsequently to income statement:		
Remeasurement of net defined benefit plans	(6)	1
Tax effects on net defined benefit plans	4	1
Loss on fair value of financial asset investment	(6)	-
Total (a)	**(8)**	**2**
Items that may be reclassified subsequently to income statement:		
Exchange differences arising on translation of foreign operations	(608)	58
Gain on fair value of available-for-sale financial assets	-	14
Gains/ (losses) of cash flow hedges recognized during the year	16	(62)
Tax effects arising on cash flow hedges	(7)	24
(Gains)/ losses on cash flow hedges recycled to income statement	(28)	55
Tax effects arising on cash flow hedges recycled to income statement	9	(19)
Total (b)	**(618)**	**70**
Other comprehensive (loss)/ income for the year (a+b)	**(626)**	**72**
Total comprehensive (loss)/ income for the year	**(202)**	**1,547**
Attributable to:		
Equity holders of the parent	(484)	271
Non-controlling interests	282	1,276
Total comprehensive (loss)/ income for the year	**(202)**	**1,547**

* *Restated refer Note 1(b)*

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

(US$ million)

	Note	As at 31 March 2019	As at 31 March 2018*
Assets			
Non-current assets			
Goodwill		12	12
Intangible assets		108	123
Property, plant and equipment		17,322	15,401
Exploration and evaluation assets		404	2,326
Leasehold land		63	57
Financial asset investments	13	707	25
Non-current tax assets		504	521
Other non-current assets		1,010	659
Deferred tax assets		778	917
		20,908	**20,041**
Current assets			
Inventories		2,060	2,038
Trade and other receivables		1,504	1,527
Financial instruments (derivatives)		11	24
Current tax assets		1	2
Short-term investments	14	4,164	4,808
Cash and cash equivalents	15	1,133	798
		8,873	**9,197**
Total assets		**29,781**	**29,238**
Liabilities			
Current liabilities			
Borrowings	16(a)	5,456	5,460
Trade and other payables		6,878	6,078
Financial instruments (derivatives)		66	22
Retirement benefits		17	18
Provisions		38	22
Current tax liabilities		61	54
		12,516	**11,654**
Net current liabilities		**3,643**	**2,457**
Non-current liabilities			
Borrowings	16(a)	10,524	9,734
Trade and other payables		244	118
Financial instruments (derivatives)		14	18
Deferred tax liabilities		776	749
Retirement benefits		71	62
Provisions		371	351
Non equity non-controlling interests		12	12
		12,012	**11,044**
Total liabilities		**24,528**	**22,698**
Net assets		**5,253**	**6,540**
Equity			
Share capital		29	30
Share premium		202	202
Treasury shares		-	(558)
Share-based payment reserve		-	13
Hedging reserve		(98)	(93)
Other reserves		(97)	155
Retained earnings		(964)	(79)
Equity attributable to equity holders of the parent		**(928)**	**(330)**
Non-controlling interests		6,181	6,870
Total equity		**5,253**	**6,540**

* *Restated refer Note 1(b)*

Financial Statements of Vedanta Resources Limited (formerly Vedanta Resources plc) with registration number 4740415 were approved by the Board of Directors on 20 May 2019 and signed on their behalf by

Srinivasan Venkatakrishnan

Chief Executive Officer

CONSOLIDATED CASH FLOW STATEMENT

(US$ million)

	Note	Year ended 31 March 2019	Year ended 31 March 2018
Operating activities			
Profit before taxation		1,096	2,488
Adjustments for:			
Depreciation and amortisation		1,482	1,271
Investment revenues		(480)	(465)
Finance costs		1,258	1,347
Other (gains) and losses (net)		75	5
Loss /(Profit) on disposal of PP&E		9	(1)
Write-off of unsuccessful exploration costs		7	-
Share-based payment charge		18	19
Impairment (reversal)/ charge (net), loss on PP&E		(38)	(650)
Other non-cash items		-	10
Operating cash flows before movements in working capital		**3,427**	**4,024**
Increase in inventories		(10)	(355)
Increase in receivables		(335)	(607)
Increase in payables		577	247
Cash generated from operations		**3,659**	**3,309**
Dividend received		6	4
Interest income received		159	224
Interest paid		(1,278)	(1,312)
Income taxes paid		(547)	(567)
Dividends paid		(113)	(164)
Net cash inflow from operating activities		**1,886**	**1,494**
Cash flows from investing activities			
Purchases of property, plant and equipment and intangibles		(1,327)	(1,104)
Proceeds on disposal of property, plant and equipment		18	10
Proceeds from redemption of short-term investments	16(b)	12,588	16,863
Purchases of short-term investments	16(b)	(11,949)	(13,422)
Purchases of financial asset investments	16(b)	(254)	-
Consideration paid for business acquisition (net of cash and cash equivalents acquired)	4(a) & 4(b)	(752)	(134)
Net cash (used in)/ from investing activities		**(1,676)**	**2,213**
Cash flows from financing activities			
Issue of ordinary shares		1	0
Purchase of shares under DSBP scheme		-	(2)
Dividends paid to non-controlling interests of subsidiaries		(1,028)	(1,414)
Share purchase by subsidiary		(21)	(31)
Sale of treasury shares		19	-
Exercise of stock options in subsidiary		1	5
Repayment of working capital loan (net)	16(b)	(90)	(612)
Proceeds from other short-term borrowings	16(b)	1,324	1,115
Repayment of other short-term borrowings	16(b)	(2,433)	(4,362)
Buyback of non-convertible bond	16(b)	-	(1,129)
Proceeds from medium and long-term borrowings	16(b)	2,855	3,640
Repayment of medium and long-term borrowings	16(b)	(461)	(1,817)
Net cash from/ (used in) financing activities		**167**	**(4,607)**
Net increase/ (decrease) in cash and cash equivalents		**377**	**(900)**
Effect of foreign exchange rate changes		(42)	16
Cash and cash equivalents at beginning of the year		**798**	**1,682**
Cash and cash equivalents at end of the year	**15 & 16(b)**	**1,133**	**798**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the year ended 31 March 2019

(US$ million)

	Attributable to equity holders of the parent									
	Share capital	**Share premium**	**Treasury Shares**	**Share-based payment reserves**	**Hedging reserve**	**Other reserves**	**Retained earnings**	**Total**	**Non-controlling Interests**	**Total equity**
At 1 April 2018	**30**	**202**	**(558)**	**13**	**(93)**	**155**	**(79)**	**(330)**	**6,870**	**6,540**
Profit/(loss) for the year	-	-	-	-	-	-	(237)	(237)	661	424
Other comprehensive loss for the year	-	-	-	-	(5)	(242)	-	(247)	(379)	(626)
Total comprehensive income/(loss) for the year	**-**	**-**	**-**	**-**	**(5)**	**(242)**	**(237)**	**(484)**	**282**	**(202)**
Transfers	-	-	-	-	-	(10)	10	-	-	-
Dividends paid	-	-	-	-	-	-	(113)	(113)	(1,008)	(1,121)
Sale/cancellation of treasury shares	(2)	-	557	-	-	-	(536)	19	-	19
Exercise of stock options	1	-	1	(19)	-	-	18	1	-	1
Recognition of share-based payment	-	-	-	6	-	-	-	6	-	6
Non-controlling interest on business combination (Note 4(a))	-	-	-	-	-	-	-	-	29	29
Change in fair value of put option liability/conversion option asset/derecognition of non controlling interest	-	-	-	-	-	-	(15)	(15)	5	(10)
Other changes in non-controlling interests**	-	-	-	-	-	-	(12)	(12)	3	(9)
At 31 March 2019	**29**	**202**	**-**	**-**	**(98)**	**(97)**	**(964)**	**(928)**	**6,181**	**5,253**

** *Includes purchase of shares by Vedanta Limited through ESOP trust for its stock options and share based payment charge by subsidiaries.*

For the year ended 31 March 2018*

(US$ million)

	Attributable to equity holders of the parent									
	Share capital	**Share premium**	**Treasury Shares**	**Share-based payment reserves**	**Hedging reserve**	**Other reserves**	**Retained earnings**	**Total**	**Non-controlling Interests**	**Total equity**
At 1 April 2017	**30**	**202**	**(558)**	**28**	**(91)**	**140**	**(160)**	**(409)**	**6,424**	**6,015**
Profit for the year	-	-	-	-	-	-	239	239	1,236	1,475
Other comprehensive income/(loss) for the year	-	-	-	-	(2)	34	-	32	40	72
Total comprehensive income/(loss) for the year	**-**	**-**	**-**	**-**	**(2)**	**34**	**239**	**271**	**1,276**	**1,547**
Acquisition of shares under DSBP scheme	-	-	(1)	-	-	-	(2)	(3)	-	(3)
Transfers	-	-	-	-	-	(19)	19	-	-	-
Dividends paid/ payable	-	-	-	-	-	-	(164)	(164)	(828)	(992)
Exercise of stock options	0	-	1	(27)	-	-	26	0	-	0
Recognition of share-based payment	-	-	-	12	-	-	-	12	-	12
Non-controlling interest on business combination (Note 4(b))	-	-	-	-	-	-	-	-	17	17
Recognition of put option liability/conversion option asset/derecognition of non controlling interest	-	-	-	-	-	-	(15)	(15)	(22)	(37)
Other changes in non-controlling interests**	-	-	-	-	-	-	(22)	(22)	3	(19)
At 31 March 2018	**30**	**202**	**(558)**	**13**	**(93)**	**155**	**(79)**	**(330)**	**6,870**	**6,540**

* *Restated refer Note 1(b)*

** *Includes purchase of shares by Vedanta Limited through ESOP trust for its stock options and additional stake purchased during the year in erstwhile Cairn India Limited and share based payment charge by subsidiaries*

OTHER RESERVES COMPRISE

(US$ million)

	Currency translation reserve	Merger reserve[2]	Financial asset investment revaluation reserve	Other reserves[3]	Total
At 1 April 2017	**(2,168)**	**4**	**7**	**2,297**	**140**
Exchange differences on translation of foreign operations	26	-	-	-	26
Gain on fair value of available-for-sale financial assets	-	-	7	-	7
Remeasurements	-	-	-	1	1
Transfer from/(to) retained earnings[1]	-	-	-	(19)	(19)
At 1 April 2018	**(2,142)**	**4**	**14**	**2,279**	**155**
Exchange differences on translation of foreign operations	(238)	-	-	-	(238)
Loss on fair value of financial asset investments	-	-	(3)	-	(3)
Remeasurements	-	-	-	(1)	(1)
Transfer from/(to) retained earnings[1]	-	-	-	(10)	(10)
At 31 March 2019	**(2,380)**	**4**	**11**	**2,268**	**(97)**

(1) *Transfer to other reserve during the year ended 31 March 2019 includes US$ Nil million of legal reserve (31 March 2018: US$ 4 million) and withdrawal of US$ 12 million from debenture redemption reserve (31 March 2018: US$ 23 million of debenture redemption reserve). Further, US$ 2 million has been transferred to Capital redemption reserve on account of reduction in share capital due to cancellation of treasury shares.*

(2) *The merger reserve arose on incorporation of the Company during the year ended 31 March 2004. The investment in Twin Star had a carrying amount value of US$20 million in the accounts of Volcan. As required by the Companies Act 1985, Section 132, upon issue of 156,000,000 Ordinary shares to Volcan, Twin Star's issued share capital and share premium account have been eliminated and a merger reserve of US$4 million arose, being the difference between the carrying value of the investment in Twin Star in Volcan's accounts and the nominal value of the shares issued to Volcan.*

(3) *Other reserves includes legal reserves of US$ 4 million (31 March 2018: US$ 4 million), debenture redemption reserve of US$ 144 million (31 March 2018 US$ 156 million) and balance mainly includes general reserve and capital redemption reserve. Debenture redemption reserve is required to be created under the Indian Companies Act from annual profits until such debentures are redeemed. Legal reserve is required to be created by Fujairah Gold by appropriation of 10 % of profits each year until the balance reaches 50% of the paid up share capital. This reserve is not available for distribution except in circumstances stipulated by the Articles of Incorporation. Under the erstwhile Indian Companies Act, 1956, general reserve was created in relation to Group's Indian subsidiaries through an annual transfer of net income to general reserve at a specified percentage in accordance with applicable regulations. The purpose of these transfers is to ensure that the total dividend distribution is less than total distributable reserves for that year. The said requirement was dispensed with w.e.f. 1 April 2013 and there are no restrictions of use of these reserves.*

GROUP OVERVIEW:

Vedanta Resources Limited ((“Vedanta” or “VRL” or “Company”) formerly known as Vedanta Resources plc or “VRPLC”) is a company incorporated and domiciled in the United Kingdom. Vedanta and its consolidated subsidiaries (collectively, the “Group”) is a diversified natural resource group engaged in exploring, extracting and processing minerals and oil and gas. The Group engages in the exploration, production and sale of zinc, lead, silver, copper, aluminium, iron ore and oil & gas and have a presence across India, South Africa, Namibia, Ireland, Australia, Liberia and UAE. The Group is also in the business of commercial power generation, steel manufacturing and port operations in India and manufacturing of glass substrate in South Korea and Taiwan.

Buy back and delisting of Vedanta Resources plc Shares

On 31 July 2018, Volcan Investments (“Volcan”) and Vedanta announced that they had reached agreement on the terms of a recommended cash offer (the "Offer") by Volcan for the remaining issued and to-be-issued share capital of Vedanta not currently owned by Volcan.

The Volcan Offer was declared unconditional in all respects on 3 September 2018 and Volcan announced that Vedanta had applied for its shares to be cancelled from listing on the Official List of the UK Listing Authority and to trading on the main market for listed securities of the London Stock Exchange, such cancellation took effect on 1 October 2018.

At the General Meeting of Vedanta shareholders held on 1 October 2018, the resolution put to shareholders in relation to the re-registration of VRPlc as a private limited company was duly passed on a poll. Re-registration of VRPlc as a private limited company became effective on 29 October 2018 pursuant to which the name has been changed to Vedanta Resources Limited.

Following the delisting of the Company’s shares from the Official list of the London Stock Exchange, 6,904,995 ordinary shares of US 10 Cents each, which were issued on the conversion of certain convertible bonds issued by one of Vedanta's subsidiaries and held through a global depositary receipt (GDR), were redeemed and the GDR listing was cancelled.

Details of Group’s various businesses are as follows :

- Zinc India business is owned and operated by Hindustan Zinc Limited (“HZL”).
- Zinc international business is comprised of Skorpion mine and refinery in Namibia operated through THL Zinc Namibia Holdings (Proprietary) Limited (“Skorpion”), Lisheen mine in Ireland operated through Vedanta Lisheen Holdings Limited (“Lisheen”) (Lisheen mine ceased operations in December 2015) and Black Mountain Mining (Proprietary) Limited (“BMM”), whose assets include the operational Black Mountain mine and the Gamsberg mine project located in South Africa.
- The Group’s oil and gas business is owned and operated by Vedanta Limited (prior to merger this was owned and operated by erstwhile Cairn India Limited) and its subsidiary, Cairn Energy Hydrocarbons Limited and consists of exploration and development and production of oil and gas.
- The Group’s iron ore business is owned by Vedanta Limited, and by two wholly owned subsidiaries of Vedanta Ltd. i.e. Sesa Resources Limited and Sesa Mining Corporation Limited and consists of exploration, mining and processing of iron ore, pig iron and metallurgical coke and generation of power for captive use. Pursuant to Honourable Supreme Court order, operations in the state of Goa are currently suspended. The Group’s iron ore business includes Western Cluster Limited (“WCL”) in Liberia which has iron ore assets and is wholly owned by the Group. WCL’s assets include development rights to Western Cluster and a network of iron ore deposits in West Africa. WCL’s assets have been fully impaired.

- The Group's copper business comprises three operations divided into two segments, namely (i) Copper India/Australia, comprising Vedanta Limited’s custom smelting operations in India (including captive power plants at Tuticorin in Southern India) and (ii) Copper Zambia comprising Konkola Copper Mines plc’s (“KCM”) mining and smelting operations in Zambia.
- The Group’s copper business in India has received an order from Tamil Nadu Pollution Control Board (“TNPCB”) on 09 April 2018, rejecting the Group’s application for renewal of consent to operate under the Air and Water Acts for the 400,000 tpa copper smelter plant in Tuticorin for want of further clarification and consequently the operations were suspended. The Group has filed an appeal with TNPCB Appellate authority against the said order. During the pendency of the appeal, TNPCB through its order dated 23 May 2018 ordered for disconnection of electricity supply and closure of our copper smelter plant. Post such order, the state government on 28 May 2018 ordered the permanent closure of the plant. (Refer Note 3(a)(I)(x))
- In addition, the Group owns and operates the Mt. Lyell copper mine in Tasmania, Australia through its subsidiary, CMT and a precious metal refinery and copper rod plant in Fujairah, UAE through its subsidiary Fujairah Gold FZC. The operations of Mt Lyell copper mine were suspended in January 2014 following a mud slide incident and were put into care and maintenance since 09 July 2014 following a rock fall incident in June 2014.
- Furthermore, the Group’s Zambia operations (i.e. KCM) is largely an integrated copper producer with various facilities at Konkola, Nchanga, Nkana and Nampundwe, Zambia including mines, concentrators, smelters, acid plants, a tailings leach plant (“TLP”) and a refinery.
- The Group’s Aluminium business is owned and operated by Vedanta Limited and by Bharat Aluminium Company Limited (“BALCO”). The aluminium operations include a refinery and captive power plant at Lanjigarh and a smelter and captive power plants at Jharsuguda both situated in the State of Odisha in India. BALCO’s partially integrated aluminium operations are comprised of two bauxite mines, captive power plants, smelting and fabrication facilities in central India.
- The Group’s power business is owned and operated by Vedanta Limited, BALCO, and Talwandi Sabo Power Limited (“TSPL”), a wholly owned subsidiary of Vedanta Limited, which are engaged in the power generation business in India. Vedanta Limited power operations include a thermal coal- based commercial power facility of 600 MW at Jharsuguda in the State of Odisha in Eastern India. BALCO power operations included 600 MW (2 units of 300 MW each) thermal coal based power plant at Korba, of which a unit of 300 MW was converted to be used for captive consumption vide order from Central Electricity Regulatory Commission (CERC) dated 1 January 2019. Talwandi Sabo Power Limited (“TSPL”) power operations include 1,980 MW (three units of 660 MW each) thermal coal- based commercial power facilities. Power business also includes the wind power plants commissioned by HZL and a power plant at MALCO Energy Limited (“MEL”) (under care and maintenance) situated at Mettur Dam in State of Tamil Nadu in southern India.
- The Group’s other activities include Electrosteel Steels Limited (“ESL”) acquired on 4 June 2018. ESL is engaged in the manufacturing and supply of billets, TMT bars, wire rods and ductile iron pipes in India.
- The Group’s other activities also include Vizag General Cargo Berth Private Limited (“VGCB”) and Maritime Ventures Private Limited (“MVPL”). Vizag port project includes mechanization of coal handling facilities and upgradation of general cargo berth for handling coal at the outer harbour of Visakhapatnam Port on the east coast of India. MVPL is engaged in the business of rendering logistics and other allied services inter alia rendering stevedoring, and other allied services in ports and other allied sectors. VGCB commenced operations in

the fourth quarter of fiscal 2013. The Group's other activities also include AvanStrate Inc. ("ASI"). ASI is involved in manufacturing of glass substrate in South Korea and Taiwan.

NOTES TO PRELIMINARY ANNOUNCEMENT

1(a). General information and accounting policies

This preliminary results announcement is for the year ended 31 March 2019. While the financial information contained in this preliminary results announcement has been prepared in accordance with the recognition and measurement criteria of International Financial Reporting Standards ("IFRS"), this announcement does not itself contain sufficient information to comply with IFRS. For these purposes, IFRS comprise the Standards issued by the International Accounting Standards Board ("IASB") and Interpretations issued by the IFRS Interpretations Committee ("IFRIC") that have been endorsed by the European Union. The financial information contained in the preliminary announcement has been prepared on the same basis of accounting policies as set out in the previous financial statements unless otherwise stated. The amendments applicable with effect from 01 April 2018 did not have any significant impact on the amounts reported in the financial statements. The Company expects to publish full financial statements that comply with IFRSs in due course.

1(b). Restatement/Reclassification:

(i) The Group has revised the presentation of forward premium relating to derivative instruments to present it along with the mark-to-market gain/loss on these instruments, as these more appropriately reflect the substance of the forward premiums on derivative transactions. As a result of the change, forward premium expense amounting to US$ 103 million has been reclassified from 'Finance cost' to 'Cost of sales' (31 March 2019 : US$ 40 million and 31 March 2018 : US$ 88 million) and 'Other gains and losses' (31 March 2019 : US$ 9 million and 31 March 2018 : US$ 15 million). The net cash inflow from operating activities in the consolidated cash flow statement remains unchanged.

(ii) The classification of export incentives from government has also been revised to present it under 'other operating income', as the revised classification is more appropriate. As a result of the change, export incentives amounting to US$ 66 million has been reclassified from 'revenue' to 'other operating income' for the comparative year ended 31 March 2018.

(iii) In the comparative period, the Group acquired equity stake in AvanStrate Inc. (ASI). As permitted by IFRS 3, the Group had used provisional fair values that were determined as at 31 March 2018 for consolidation. In the current year, these fair values were finalised. Hence, the comparative year amounts have been restated accordingly. Please refer note 4(b) for further details.

None of the above had any effect on the equity as at 01 April 2017.

1(c). Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position are set out in the Operational and Financial Review. The financial position of the Group, its cash flows, liquidity position and borrowing facilities are described in the Finance Review on pages 10 to 19.

The Group requires funds both for short-term operational needs as well as for long-term investment programmes mainly in growth projects. The Group generates sufficient cash flows from the current operations which together with the available cash and cash equivalents and liquid financial asset investments provide liquidity both in the short term as well as in the long term. Anticipated future cash flows, together with undrawn fund based committed facilities of US$ 1 billion, and cash, short term investments and structured investment net of deferred consideration payable for such investments of US$ 5,688 million as at 31 March 2019, are expected to be sufficient to meet the liquidity requirement of the Group in the near future.

During FY2019, Moodys revised the outlook on ratings for Vedanta Resources Limited to Negative from Stable while affirming the corporate family rating at Ba3 in February 2019. This was on account of expectation of weaker earnings on account of downside risk to commodity prices and increased risk of movement of funds outside Vedanta. S&P affirmed the ratings at B+ while revising the Outlook to Negative in March 2019 on account of weaker operating performance due to commodity slowdown which along with higher debt could keep its metrics weaker than required for current rating levels.

The Board is satisfied that the Group's forecasts and projections, taking into account reasonably possible changes in trading performance on cash flows and forecast covenant compliance, the transferability of cash within the Group, the flexibility the Group has over the timings of its capital expenditure and other uncertainties, show that the Group will be able to operate within the level of its current facilities for the foreseeable future. For these reasons the Group continues to adopt the going concern basis in preparing its financial statements.

After making enquiries, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report and Accounts.

2. Compliance with applicable law and IFRS

The financial information contained in this preliminary results announcement has been prepared on the going concern basis. This preliminary results announcement does not constitute the Group's statutory accounts as defined in section 434 of the Companies Act 2006(the "Act") but is derived from those accounts. The statutory accounts for the year ended 31 March 2019 have been approved by the Board and will be delivered to the Registrar of Companies following approval by the Company's shareholders. The auditors have reported on those accounts and their report was unqualified, with no matters by way of emphasis, and did not contain statements under section 498(2) of the Act (regarding adequacy of accounting records and returns) or under section 498(3) (regarding provision of necessary information and explanations). The information contained in this announcement for the year ended 31 March 2018 also does not constitute statutory accounts. A copy of the statutory accounts for that year has been delivered to the Registrar of Companies. The auditors' report on those accounts was unqualified, with no matters by way of emphasis, and did not contain statements under sections 498(2) or (3) of the Companies Act 2006.

3(a). Significant accounting estimates and judgments

The preparation of consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions, that affect the application of accounting policies and the reported amounts of assets, liabilities, income, expenses and disclosures of contingent assets and liabilities at the date of these consolidated financial statements and the reported amounts of revenues and expenses for the years presented. These judgments and estimates are based on management's best knowledge of the relevant facts and circumstances, having regard to previous experience, but actual results may differ materially from the amounts included in the financial statements.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised and future periods affected.

The information about significant areas of estimation uncertainty and critical judgements in applying accounting policies that have the most significant effect on the amounts recognised in the financial statements are as given below:

I. Significant Estimates:

(i) Oil & Gas reserves

Significant technical and commercial judgements are required to determine the Group's estimated oil and natural gas reserves. Oil & Gas reserves are estimated on a proved and probable entitlement interest basis. Proven and probable reserves are estimated using standard recognised evaluation techniques. The estimate is reviewed annually. Future development costs are estimated taking into account the level of development required to produce the reserves by reference to operators, where applicable, and internal engineers.

Net entitlement reserves estimates are subsequently calculated using the Group's current oil price and cost recovery assumptions, in line with the relevant agreements.

Changes in reserves as a result of factors such as production cost, recovery rates, grade of reserves or oil and gas prices could impact the depletion rates, carrying value of assets and environmental and restoration provisions.

(ii) Carrying value of exploration and evaluation oil and gas assets

The recoverability of a project is assessed under IFRS 6. Exploration assets are assessed by comparing the carrying value to higher of fair value less cost of disposal or value in use, if impairment indicator exists. Change to the valuation of exploration assets is an area of judgement. Further details on the Group's accounting policies on this are set out in accounting policy above. The amounts for exploration and evaluation assets represent active exploration projects. These amounts will be written off to the consolidated income statement as exploration costs unless commercial reserves are established, or the determination process is not completed and there are no indications of impairment. The outcome of ongoing exploration, and therefore whether the carrying value of exploration and evaluation assets will ultimately be recovered, is inherently uncertain.

During the financial year ended 31 March 2018, the Group had recognized impairment reversal (net) against exploration and evaluation oil and gas assets. The details of impairment reversal and the assumptions and sensitivities used are disclosed in note 7.

(iii) Carrying value of developing/producing oil and gas assets

Management performs impairment tests on the Group's developing/producing oil and gas assets where indicators of impairment or impairment reversal of previous recorded impairment are identified in accordance with IAS 36.

During the financial year ended 31 March 2018, the Group had recognised impairment reversal of its developing/ producing oil and gas assets in Rajasthan. During the current year, an impairment reversal has been recorded in the oil and gas assets in Krishna Godavari (KG) basin. The details of impairment charge/reversal and the assumptions and sensitivities used are disclosed in note 7.

In the current year, the management has reviewed the key assumptions i.e. future production, oil prices, discount to price, Production sharing contract (PSC) life, discount rates, etc. for all of its oil and gas assets. Based on analysis of events that have occurred since then, there did not exist any indication that the assets may be impaired or previously recorded impairment charge may reverse except for the assets in KG basin. Hence, detailed impairment analysis has not been conducted in the current financial year, except for assets in KG basin.

(iv) Mining properties and leases

The carrying value of mining property and leases is arrived at by depreciating the assets over the life of the mine using the unit of production method based on proved and probable reserves. The estimate of reserves is subject to assumptions relating to life of the mine and may change when

new information becomes available. Changes in reserves as a result of factors such as production cost, recovery rates, grade of reserves or commodity prices could thus impact the carrying values of mining properties and leases and environmental and restoration provisions.

Management performs impairment tests when there is an indication of impairment. The impairment assessments are based on a range of estimates and assumptions, including:

Estimates/assumptions	Basis
Future production	proved and probable reserves, resource estimates (with an appropriate conversion factor) considering the expected permitted mining volumes and, in certain cases, expansion projects
Commodity prices	management's best estimate benchmarked with external sources of information, to ensure they are within the range of available analyst forecast
Exchange rates	management best estimate benchmarked with external sources of information
Discount rates	cost of capital risk-adjusted for the risk specific to the asset/ CGU

Details of impairment charge/reversal and the assumptions used are disclosed in note 7.

(v) Assessment of Impairment of Goa iron ore mines:

Pursuant to an order passed by the Hon'ble Supreme Court of India on 07 February 2018, the second renewal of the mining leases granted by the State of Goa in 2014-15 to all miners including Vedanta were cancelled. Consequentially all mining operations stopped with effect from 16 March 2018 until fresh mining leases (not fresh renewals or other renewals) and fresh environmental clearances are granted in accordance with the provisions of The Mines and Minerals (Development and Regulation) (MMDR) Act. Significant uncertainty exists over the resumption of mining at Goa under the current leases. The Group had assessed the recoverable value of all its assets and liabilities associated with existing mining leases which led to a non-cash impairment charge in March 2018. There are no significant changes subsequent to the financial year ended 31 March 2018.

Details of this impairment charge and method of estimating recoverable value is disclosed in note 7.

(vi) Restoration, rehabilitation and environmental costs

Provision is made for costs associated with restoration and rehabilitation of mining sites as soon as the obligation to incur such costs arises. Such restoration and closure costs are typical of extractive industries and they are normally incurred at the end of the life of the mine or oil fields. The costs are estimated on an annual basis on the basis of mine closure plans and the estimated discounted costs of dismantling and removing these facilities and the costs of restoration are capitalised as soon as the obligation to incur such costs arises. The provision for decommissioning oil and gas assets is based on the current estimate of the costs for removing and decommissioning producing facilities, the forecast timing and currency of settlement of decommissioning liabilities and the appropriate discount rate.

A corresponding provision is created on the liability side. The capitalised asset is charged to the consolidated income statement through the depreciation over the life of operation of the asset and the provision is increased each period via unwinding the discount on the provision. Management estimates are based on local legislation and/or other agreements. The actual costs and cash outflows may differ from estimates because of changes in laws and regulations, changes in prices, analysis of site conditions and changes in restoration technology.

(vii) Provisions and liabilities

Provisions and liabilities are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances which may be subject to change especially when taken in the context of the legal

environment in India. The actual cash outflows may take place over many years in the future and hence the carrying amounts of provisions and liabilities are regularly reviewed and adjusted to take into account the changing circumstances and other factors that influence the provisions and liabilities.

(viii) The HZL and BALCO call options

The Group had exercised its call option to acquire the remaining 49% interest in BALCO and 29.5% interest in HZL. The Government of India has however, contested the validity of the options and disputed their valuation performed in terms of the relevant agreements. In view of the lack of resolution on the options, the non-response to the exercise and valuation request from the Government of India, the resultant uncertainty surrounding the potential transaction and the valuation of the consideration payable, the Group considers the strike price of the options to be at fair value, accordingly, the value of the option would be nil, and hence, the call options have not been recognised in the financial statements.

(ix) Recoverability of deferred tax and other income tax assets

The Group has carry forward tax losses, unabsorbed depreciation and MAT credit that are available for offset against future taxable profit. Deferred tax assets are recognised only to the extent that it is probable that taxable profit will be available against which the unused tax losses or tax credits can be utilized. This involves an assessment of when those assets are likely to reverse, and a judgement as to whether or not there will be sufficient taxable profits available to offset the assets. This requires assumptions regarding future profitability, which is inherently uncertain. To the extent assumptions regarding future profitability change, there can be an increase or decrease in the amounts recognised in respect of deferred tax assets and consequential impact in the consolidated income statement.

Additionally, the Group has tax receivables on account of refund arising on account of past amalgamation and relating to various tax disputes. The recoverability of these receivables involve application of judgement as to the ultimate outcome of the tax assessment and litigations. This pertains to the application of the legislation, which in certain cases is based upon management's interpretation of country specific tax law, in particular India, and the likelihood of settlement. Management uses in-house and external legal professionals to make informed decision.

(x) Copper operations India

In an appeal filed by the Group against the closure order of the Tuticorin Copper smelter by Tamil Nadu Pollution Control Board ("TNPCB"), the appellate authority National Green Tribunal ("NGT") passed an interim order on 31 May 2013 allowing the copper smelter to recommence operations and appointed an Expert Committee to submit a report on the plant operations. Post the interim order, the plant recommenced operations on 23 June 2013. Based on Expert Committee's report on the operations of the plant stating that the plant's emission were within prescribed standards and based on this report, NGT ruled on 08 August 2013 that the Copper smelter could continue its operations and recommendations made by the Expert Committee be implemented in a time bound manner. The Group has implemented all of the recommendations. TNPCB has filed an appeal against the order of the NGT before the Supreme Court of India.

In the meanwhile, the application for renewal of Consent to Operate (CTO) for existing copper smelter, required as per procedure established by law was rejected by TNPCB in April 2018. Vedanta Limited has filed an appeal before the TNPCB Appellate Authority challenging the Rejection Order. During the pendency of the appeal, there were protests by a section of local community raising environmental concerns and TNPCB vide its order dated 23 May 2018 ordered closure of existing copper smelter plant with immediate effect. Further, the Government of Tamil Nadu, issued orders dated 28 May 2018 with a direction to seal the existing copper smelter plant

permanently. The company believes these actions were not taken in accordance with the procedure prescribed under applicable laws.

Subsequently, the Directorate of Industrial Safety and Health passed orders dated 30 May 2018, directing the immediate suspension and revocation of the Factory License and the Registration Certificate for the existing smelter plant. Separately, the company has filed a fresh application for renewal of the Environmental Clearance for the proposed Copper Smelter Plant 2 (Expansion Project) dated 12 March 2018 before the Expert Appraisal Committee of the MoEF wherein a sub-committee was directed to visit the Expansion Project site prior to prescribing the Terms of Reference.

In the meantime, the Madurai Bench of the High Court of Madras in a Public Interest Litigation held vide its order dated 23 May 2018 that the application for renewal of the Environmental Clearance for the Expansion Project shall be processed after a mandatory public hearing and in the interim, ordered the company to cease construction and all other activities on site for the proposed Expansion Project with immediate effect. The Ministry of Environment and Forests (MoEF) has delisted the expansion project since the matter is sub judice. Separately, SIPCOT vide its letter dated 29 May 2018, cancelled 342.22 acres of the land allotted for the proposed Expansion Project. Further the TNPCB issued orders on 07 June 2018 directing the withdrawal of the Consent to Establish (CTE) which was valid till 31 March 2023.

The company has approached Madras High Court by way of writ petition challenging the cancellation of lease deeds by SIPCOT pursuant to which an interim stay has been granted. The company has also filed Appeals before the TNPCB Appellate Authority challenging withdrawal of CTE by the TNPCB, the matter is pending for adjudication.

The company has appealed this before the National Green Tribunal (NGT). NGT vide its order on 15 December 2018 has set aside the impugned orders and directed the TNPCB to pass fresh orders for renewal of consent and authorization to handle hazardous substances, subject to appropriate conditions for protection of environment in accordance with law. The State of Tamil Nadu and TNPCB approached Supreme Court in Civil Appeals on 02 January 2019 challenging the judgment of NGT dated 15 December 2018 and the previously passed judgment of NGT dated 08 August 2013. The Supreme Court vide its judgment dated 18 February 2019 set aside the judgments of NGT dated 15 December 2018 and 08 August 2013 on the basis of maintainability alone.

The company has also filed a writ petition before Madras High Court challenging the various orders passed against the company in 2018 and 2013. The case was heard on 01 March 2019 wherein the company pressed for interim relief for care and maintenance of the plant. The Madras High Court has directed the State of Tamil Nadu and TNPCB to file their counter to our petition for interim relief.

The company is taking appropriate legal measures to address the matters.

Even though there can be no assurance regarding the final outcome of the process and the timing of such process in relation to the approval for the expansion project, as per the company's assessment, it is in compliance with the applicable regulations and expects to get the necessary approvals in relation to the existing operations and the expansion project and is not expecting any material impairment loss on this account. The carrying value of the assets under operation and under expansion as at 31 March 2019 is US$ 290 million and US$ 147 million respectively.

The company has carried out an impairment analysis considering the key variables and concluded that there exists no impairment. The company has done an additional sensitivity with a delay in commencement of operations both at the existing and expansion plants by three years and noted that the recoverable amount of the assets would still be in excess of their carrying values.

(xi) Assessment of impairment at Konkola Copper Mines (KCM)

The KCM operations in Zambia have been experiencing lower equipment availability, throughput constraints and other operational challenges for quite some time which led to the production ramp-up, specifically at the Konkola mine, during the year being lower than expected.

Additionally, changes in fiscal regime during the year including imposition of customs duty on imported concentrate has further impacted the Company's ability to procure copper concentrate from outside Zambia, which is pertinent for optimized concentrate blending at smelter and generate enough acid from its dedicated 1,850 tpd acid facility at smelter for its integrated operation at Tail Leaching Plant (TLP).

Due to these factors, the Group has reviewed the carrying value of its property, plant and equipment at KCM as at balance sheet date, estimated the recoverable amounts of the assets and concluded that no impairment was required as the recoverable amount (estimated based on fair value less costs of disposal) exceeded the carrying amount as at 31 March 2019. Refer to 3(a)(I)(iv) for key estimates and assumptions. Additionally, the model assumes as a key assumption, the production ramp-up over a period of next four years through successful implementation of development plans at the Konkola mine and the associated capex and funding assumptions.

The Group has also carried out a sensitivity analysis on key variables like movement in copper prices, discount rate and delayed production ramp-up. Based on the sensitivity analysis carried out for each individual assumption while keeping other assumptions as constant, the recoverable amount is still expected to exceed the carrying value. Mining companies have made representations to the Government for roll back of the additional taxes. In the absence of this, which is a critical requirement from a future investment perspective in key identified areas, coupled with non-achievement of planned production ramp-up, there could be significant risk of impairment.

The carrying value of assets as at 31 March 2019 is US$ 1,513 million (31 March 2018: US$ 1,576 million).

xii) PSC Extension

Rajasthan Block

On 26 October 2018, the Government of India (GoI), acting through the Directorate General of Hydrocarbons (DGH) has granted its approval for a ten-year extension of the Production Sharing Contract (PSC) for the Rajasthan Block (RJ), with effect from 15 May 2020 subject to certain conditions. The GoI has granted the extension under the Pre-NELP Extension Policy, the applicability whereof to PSC for RJ is sub-judice and pending before the Hon'ble Delhi High Court. To address two of the conditions stated by DGH, Vedanta Limited has taken the following steps:

- Submission of Audited Accounts and End of year statement: Vedanta Limited and one of the joint venture partners have divergent views on the cost oil entitlement and therefore the End of Year statement for the year ended March 31, 2018 and Investment Multiple as at 31 March 18 could not be finalized. To resolve this, the Company has initiated arbitration proceedings against the joint venture partner. Consequentially, profit petroleum pertaining to the said Block for the year ended March 31, 2019 and applicable Investment Multiple calculated based on management's cost oil computation (resulting into Government's share of profit petroleum @ 40% for DA-1 & DA-2 and @20% for DA-3 for FY 2018-19), remains provisional. The computation is after considering relevant independent legal advice.
- Profit Petroleum: DGH has raised a demand for the period up to 31 March 2017 for Government's additional share of Profit Oil based on its computation of disallowance of cost incurred over the initially approved Field Development Plan (FDP) of pipeline project and

retrospective allocation of certain common costs between Development Areas (DAs) of Rajasthan Block. The company believes that it has sufficient as well as reasonable basis (pursuant to PSC provisions & approvals) for having claimed such costs and for allocating common costs between different DAs and has responded to the government accordingly. Group's view is also supported by an independent legal opinion.

Pursuant to the aforesaid approval of 26 October 2018, the Group has recomputed its reserves till 2030 and has reclassified exploration costs of US$ 1,994 million to property plant and equipment. This has led to a reduction in depletion charge of US$ 126 million for the period from 26 October 2018 till 31 March 2019.

Ravva Block

The Government of India has granted its approval for a ten-year extension of PSC for Ravva Block with effect from 28 October 2019, subject to certain conditions. The extension has been granted with a 10% increase in GOI share of profit oil. Management has reviewed the conditions and is confident of fulfilling or disposing of such conditions.

The Group does not expect any material adjustment to the financial statements on account of the aforesaid matters.

II. Significant Judgements:

(i) Assessment of IFRIC 4- Determining whether an arrangement contains a lease

The Group has ascertained that the Power Purchase Agreement (PPA) entered into between one of the Subsidiary and a State Grid qualifies to be an operating lease under IAS 17 "Leases". Accordingly, the consideration receivable under the PPA relating to recovery of capacity charges towards capital cost have been recognised as operating lease rentals and in respect of variable cost that includes fuel costs, operations and maintenance etc. is considered as revenue from sale of products/services.

Significant judgement is required in segregating the capacity charges due from State Grid, between fixed and contingent payments. The Group has determined that since the capacity charges under the PPA are based on the number of units of electricity made available by its Subsidiary which would be subject to variation on account of various factors like availability of coal and water for the plant, there are no fixed minimum payments under the PPA, which requires it to be accounted for on a straight-line basis.

(ii) Contingencies

In the normal course of business, contingent liabilities may arise from litigation, taxation and other claims against the Group. A tax provision is recognised when the Group has a present obligation as a result of past events, and it is probable that the Group will be required to settle that obligation.

Where it is management's assessment that the outcome cannot be reliably quantified or is uncertain the claims are disclosed as contingent liabilities unless the likelihood of an adverse outcome is remote. Such liabilities are disclosed in the notes but are not provided for in the financial statements.

When considering the classification of a legal or tax cases as probable, possible or remote there is judgement involved. This pertains to the application of the legislation, which in certain cases is based upon management's interpretation of country specific applicable law, in particular India, and the likelihood of settlement. Management uses in-house and external legal professionals to make informed decision.

Although there can be no assurance regarding the final outcome of the legal proceedings, the Group does not expect them to have a materially adverse impact on the Group's financial position or profitability.

(iii) Revenue recognition and receivable recovery in relation to the power division

In certain cases, the Group's power customers are disputing various contractual provisions of Power Purchase Agreements (PPA). Significant judgement is required in both assessing the tariff to be charged under the PPA in accordance with IFRS 15 and to assess the recoverability of withheld revenue currently accounted for as receivables.

In assessing this critical judgment management considered favorable external legal opinions the Group has obtained in relation to the claims and favorable court judgements in the related matter. In addition, the fact that the contracts are with government owned companies implies the credit risk is low.

(iv) Special items

Special items are those items that management considers, by virtue of their size or incidence (including but not limited to impairment charges and acquisition and restructuring related costs), should be disclosed separately to ensure that the financial information allows an understanding of the underlying performance of the business in the year, so as to facilitate comparison with prior periods. Also, tax charges related to Special items and certain one-time tax effects are considered Special. Such items are material by nature or amount to the year's result and require separate disclosure in accordance with IFRS.

The determination as to which items should be disclosed separately requires a degree of judgement. The details of special items is set out in note 7.

3(b). Application of new and revised standards

The Group has adopted with effect from 01 April 2018, the following new standards and amendments.

IFRS 15 – Revenue from contracts with customers

The Group has adopted IFRS 15 Revenue from contracts with Customers with effect from 01 April 2018 which outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The standard replaces most of the current revenue recognition guidance. The core principle of the new standard is for companies to recognise revenue when the control of the goods and services is transferred to the customer as against the transfer of risk and rewards. As per the Group's current revenue recognition practices, transfer of control happens at the same point as transfer of risk and rewards thus not effecting the revenue recognition. The amount of revenue recognised reflects the consideration to which the Group expects to be entitled in exchange for those goods or services.

Under this standard, services provided post transfer of control of goods are treated as separate performance obligation and requires proportionate revenue to be deferred along with associated costs and to be recognised over the period of service. The Group provides shipping and insurances services after the date of transfer of control of goods and therefore has identified it as a separate performance obligation. As per the result of evaluation of contracts of the relevant revenue streams, it is concluded that the impact of this change is immaterial to the Group and hence no accounting changes have been done.

The Group has products which are provisionally priced at the date revenue is recognised. Revenue in respect of such contracts are recognised when control passes to the customer and is measured at the amount the entity expects to be entitled – being the estimate of the price expected to be received at the end of the measurement period. Post transfer of control of goods, subsequent

movements in provisional pricing are accounted for in accordance with IFRS 9 "Financial Instruments" rather than IFRS 15 and therefore the IFRS 15 rules on variable consideration do not apply. These 'provisional pricing' adjustments i.e. the consideration received post transfer of control has been included in total revenue on the face of the Consolidated Income statement. The accounting for revenue under IFRS 15 does not, therefore, represent a substantive change from the Group's previous practice for recognising revenue from sales to customers.

Further, export incentives received from Government that were included within revenue are now included within other operating income.

The Group has adopted the modified transitional approach as permitted by the standard under which the comparative financial information is not restated. The accounting changes required by the standard are not having material effect on the recognition or measurement of revenues and no transitional adjustment is recognised in retained earnings at 01 April 2018. Additional disclosures as required by IFRS 15 have been included in these financial statements.

IFRS 9: Financial Instruments

IFRS 9 has reduced the complexity of the current rules on financial instruments as mandated in IAS 39. It has fewer classification and measurement categories as compared to IAS 39. It eliminates the rule-based requirement of segregating embedded derivatives from financial assets and tainting rules pertaining to held to maturity investments. For financial assets which are debt instruments, IFRS 9 establishes a principle-based approach for classification based on cash flow characteristics of the asset and the business model in which an asset is held. For an investment in an equity instrument which is not held for trading, IFRS 9 permits an irrevocable election, on initial recognition, on an individual share-by- share basis, to present all fair value changes from the investment in other comprehensive income. No amount recognised in other comprehensive income on such equity investment would ever be reclassified to profit or loss. It requires the entity, which chooses to designate a liability as at fair value through profit or loss, to present the portion of the fair value change attributable to the entity's own credit risk in the other comprehensive income. IFRS 9 replaces the 'incurred loss model' in IAS 39 with an 'expected credit loss' model. The measurement uses a dual measurement approach, under which the loss allowance is measured as either 12 month expected credit losses or lifetime expected credit losses. The standard also introduces new presentation and disclosure requirements.

For transition, the Group has elected to apply the limited exemptions in IFRS 9 relating to the classification, measurement and impairment requirements for financial assets and accordingly has not restated comparative periods.

The Group has adopted IFRS 9 from 01 April 2018. The areas impacted on adopting IFRS 9 on the Group are detailed below.

Classification and measurement

The measurement and accounting treatment of the Group's financial assets is materially unchanged with the exception of equity securities previously categorised as available for sale. These will be held at fair value through other comprehensive income, meaning the recycling of gains and losses on disposal and impairment losses is no longer permitted for this category.

Impairment

Based on the Group's assessment, under expected credit loss model, the impairment of financial assets held at amortised cost does not have a material impact on the Group's results, given the low exposure to counterparty default risk as a result of the credit risk management processes that are in place.

Hedge accounting

The Group has adopted the IFRS 9 hedge accounting requirements. The adoption of the new standard has no effect on the amounts recognised in relation to the existing hedging arrangements.

Amendment to IAS 23: Borrowing Cost

The amendment clarifies that an entity considers any borrowings made specifically for the purpose of obtaining a qualifying asset as part of the general borrowings, when substantially all of the activities necessary to prepare that asset for its intended use or sale are complete. The amendment is applicable to borrowing costs incurred on or after the beginning of the annual reporting period in which the entity first applies those amendments. The amendment is effective from 01 January 2019, with earlier application permitted. The Group has applied the amendment prospectively from the current reporting year i.e. for the borrowing costs incurred on or after 01 April 2018.

Based on the Amendment, the Group has now capitalised certain borrowing costs on general borrowings. This has resulted in capitalization of interest expense of US$ 78 million for the year ended March 31, 2019 and a corresponding increase in depreciation of US$ 1 million. The consequent incremental impact on profit for the year net of tax was US$ 53 million.

The change did not have any significant impact on the Group's consolidated balance sheet and the consolidated statement of cash flows.

Other Amendments

The adoption of IFRIC 22 "Foreign Currency Transactions and Advance Consideration" and other minor changes to IFRS's applicable for the year ended 31 March 2019 did not have a significant impact on the Group's financial statements.

4. Business Combination and others

a) Electrosteel Steels Limited

On 4 June 2018, the Group, through its subsidiary Vedanta Star Limited (VSL) acquired management control over Electrosteel Steels Limited (ESL) as the previous Board of Directors of ESL was reconstituted on that date. Further, on 15 June 2018, pursuant to the allotment of shares to VSL, the Group holds 90% of the paid-up share capital of ESL through VSL. The acquisition will complement the Group's existing Iron Ore business as the vertical integration of steel manufacturing capabilities has the potential to generate significant efficiencies. ESL was admitted under corporate insolvency resolution process in terms of the Insolvency and Bankruptcy Code, 2016 of India. The financial results of ESL from the date of acquisition to 31 March 2019 have been included in the Consolidated Financial Statements of the Group.

The fair value of the identifiable assets and liabilities of ESL as at the date of the acquisition were as follows:

(US$ million)

Particulars	Fair Value
Property, Plant and Equipment	718
Non-current tax assets	1
Other non-current assets	8
Non-current assets	**727**
Inventories	122
Trade and other receivables	57
Short-term investments	46
Cash and cash equivalents	36
Current Assets	**261**
Total Assets (A)	**988**
Liabilities	
Borrowings	1
Trade and other payables	168
Provisions (Non-Current)	2
Total Liabilities (B)	**171**
Net Assets (C=A-B)	**817**
Satisfied by:	
Total Cash Consideration (D)	**788**
Non-Controlling interest on acquisition (10% of net assets after adjustment of borrowings from immediate parent (VSL) of US$ 527 million) (E)	29
Bargain Gain/Goodwill (C-D-E)	**-**
Acquisition costs recognised in Consolidated Income Statement	**(3)**

Since the date of acquisition, ESL has contributed US$ 600 million and US$ 40 million to the Group revenue and profit before taxation respectively for the year ended 31 March 2019. If ESL had been acquired at the beginning of the year, the Group revenue would have been US$ 14,127 million and the profit before taxation of the Group would have been US$ 1,092 million.

The gross carrying amount of trade and other receivables equals the fair value of trade and other receivables. None of the trade and other receivables was impaired and the full contractual amounts were expected to be realized. Property has been valued using the Market approach - Sales comparison method (SCM). This method models the behaviour of the market by comparing with similar properties that have been recently sold/ rented or for which offers to purchase/ rentals have been made. Plant and equipment have been valued using the cost approach - Depreciated replacement cost (DRC) method. For estimating DRC, gross current replacement cost is depreciated in order to reflect the value attributable to the remaining portion of the total economic life of the plant and equipment. The method takes into account the age, condition, depreciation, obsolescence (economic and physical) and other relevant factors, including residual value at the end of the plant and equipment's economic life.

Non-controlling interest has been measured at the non-controlling interest’s proportionate share of ESL’s identifiable net assets.

(b) Avanstrate Inc.

(a) On 28 December 2017, the Group acquired 51.63% equity stake in AvanStrate Inc. (ASI) for a cash consideration of JPY 1 million ($ 0.01 million) and acquired debts for JPY 17,058 million (US$ 151 million). Additionally, a loan of JPY 815 million ($7 million) was extended to ASI. ASI is involved in manufacturing of glass substrate. Provisional fair values that were determined as at 31 March 2018 for consolidation were finalised during the current year.

As per the shareholding agreement (SHA) entered with the other majority shareholder holding 46.6% in ASI, the Group has call option, conversion option to convert part of its debt given to ASI

into equity of ASI as well as it has issued put option to the other majority shareholder. These are exercisable as per the terms mentioned in the SHA.

The final fair value of the identifiable assets and liabilities of ASI as adjusted for measurement period adjustments as at the date of the acquisition were as follows. The comparative year amounts have been restated accordingly.

(US$ million)

Particulars	Provisional Fair Value	Fair Value Adjustments	Fair Value at Acquisition
Property, Plant and Equipment	242	-	242
Intangible assets	32	-	32
Deferred tax assets	20	-	20
Other non-current assets	6	-	6
Non-Current Assets	**300**	**-**	**300**
Inventories	22	-	22
Trade and other receivables	36	-	36
Cash and cash equivalents	24	-	24
Current Assets	**82**	**-**	**82**
Total Assets (A)	**382**	**-**	**382**
Borrowings (excluding borrowings from immediate parent)	99	-	99
Deferred tax liabilities	78	6	84
Trade and other payables	23	-	23
Total Liabilities (B)	**200**	**6**	**206**
Net Assets (C=A-B)	**182**	**(6)**	**176**
Satisfied by:			
Cash Consideration paid for 51.63% stake & Debt acquired	158	-	158
Less: Fair Value of Conversion option asset on debt acquired net of the fair value of Put option liability towards acquisition of Non-controlling interests	-	(17)	(17)
Total Purchase Consideration (D)	**158**	**(17)**	**141**
Non-Controlling interest on acquisition (48.37% of net assets after adjustment of fair value of borrowings from immediate parent of US$ 158 million) (E)	12	5	17
Bargain Gain (C-D-E)	**12**	**6**	**18**
Acquisition costs recognised in Consolidated Income Statement	**(7)**	**-**	**(7)**

The gross carrying amount of trade and other receivables equals the fair value of trade and other receivables. None of the trade and other receivables was impaired and the full contractual amounts were expected to be realised. Property, plant and equipment have been valued using cost approach - cost of reproduction new (CRN) method. For estimating CRN, appropriate indices were used to develop trend factors that have been applied on the acquisition/historical costs of the different assets over the period during which the asset has been commissioned or in other words life spent. The estimated CRN was further adjusted for applicable physical deterioration to arrive at fair value. The physical deterioration was based on the estimated age and remaining useful life. Fair value of assumed debt was determined using yield-method, wherein, the expected cash flows including interest component and principal repayments have been discounted at an appropriate market interest rate.

Non-controlling interest has been measured at the non-controlling interest's proportionate share of ASI's identifiable net assets.

(c) Acquisition of new hydrocarbon blocks

In August, 2018, Vedanta Limited was awarded 41 hydrocarbon blocks out of 55 blocks auctioned under the open acreage licensing policy (OALP) by Government of India (GOI). The blocks awarded to Vedanta Limited comprise of 33 onshore and 8 offshore blocks. Vedanta Limited will share a specified proportion of the net revenue from each block with GOI and has entered into 41 separate revenue sharing contracts (RSC) on 1 October 2018.

The bid cost of US$ 551 million represents Vedanta Limited's total committed capital expenditure on the blocks for the committed work programs during the exploration phase. Vedanta Limited has provided bank guarantees for minimum work programme commitments amounting to US$ 309 million for the 41 exploration blocks.

5. Segment information

The Group is a diversified natural resources Group engaged in exploring, extracting and processing minerals and oil and gas. The Group produces zinc, lead, silver, copper, aluminium, iron ore, oil and gas and commercial power and have a presence across India, Zambia, South Africa, Namibia, UAE, Ireland, Australia, Liberia, Japan, South Korea and Taiwan. The Group is also in the business of port operations and manufacturing of glass substrate and steel.

The Group's reportable segments defined in accordance with IFRS 8 are as follows:

- Zinc- India
- Zinc-International
- Oil & Gas
- Iron Ore
- Copper-India/Australia
- Copper-Zambia
- Aluminium
- Power

'Others' segment mainly comprises of port/berth, steel and glass substrate business and those segments which do not meet the quantitative threshold for separate reporting.

Management monitors the operating results of reportable segments for the purpose of making decisions about resources to be allocated and for assessing performance. Segment performance is evaluated based on the EBITDA of each segment. Business segment financial data includes certain corporate costs, which have been allocated on an appropriate basis. Inter-segment sales are charged based on prevailing market prices except for power segment sales to aluminium segment amounting to US$ 10 million for the year ended 31 March 2019 (31 March 2018: US$ 21 million), which were at cost.

The following tables present revenue and profit information and certain asset and liability information regarding the Group's reportable segments for the years ended 31 March 2019 and 31 March 2018. Items after operating profit are not allocated by segment.

(a) Reportable segments

Year ended 31 March 2019

(US$ million)

	Zinc-India	Zinc-International	Oil and gas	Iron Ore	Copper-India*/ Australia	Copper-Zambia	Aluminium	Power	Others	Elimination	Total operations
REVENUE											
Sales to external customers	2,955	392	1,892	415	1,537	1,025	4,180	924	711	-	14,031
Inter-segment sales	-	-	-	1	0	60	3	10	7	(81)	-
Segment revenue**	**2,955**	**392**	**1,892**	**416**	**1,537**	**1,085**	**4,183**	**934**	**718**	**(81)**	**14,031**
Segment Result											
EBITDA[1]	1,516	100	1,100	90	(36)	(63)	316	219	151	-	3,393
Depreciation and amortisation[2]	(268)	(61)	(611)	(35)	(21)	(102)	(240)	(86)	(58)	-	(1,482)
Operating profit / (loss) before special items	**1,248**	**39**	**489**	**55**	**(57)**	**(165)**	**76**	**133**	**93**	**-**	**1,911**
Investment revenue											480
Finance costs											(1,267)
Other gains and (losses) [net]											(75)
Special items											47
PROFIT BEFORE TAXATION											**1,096**
Segments assets	2,704	872	3,983	547	1,074	1,844	7,432	2,635	1,270	-	22,361
Financial asset investments											707
Deferred tax assets											778
Short-term investments											4,164
Cash and cash equivalents											1,133
Tax assets											505
Others											133
TOTAL ASSETS											**29,781**
Segment liabilities	733	197	1,421	190	585	578	2,909	243	207	-	7,063
Borrowings											15,980
Current tax liabilities											61
Deferred tax liabilities											776
Others											648
TOTAL LIABILITIES											**24,528**
Other segment information											
Additions to property, plant and equipment, exploration and evaluation assets and intangible assets***	522	228	550	5	39	39	245	8	776	-	2,412
Impairment reversal[3]	-	-	38	-	-	-	-	-	-	-	38

Year ended 31 March 2018

(US$ million)

	Zinc-India	Zinc-International	Oil and gas	Iron Ore	Copper-India*/ Australia	Copper-Zambia	Aluminium	Power	Others	Elimination	Total operations
REVENUE											
Sales to external customers	3,354	535	1,480	481	3,828	1,181	3,541	854	40	-	15,294
Inter-segment sales	-	-	-	4	0	102	4	23	2	(135)	-
Segment revenue**	**3,354**	**535**	**1,480**	**485**	**3,828**	**1,283**	**3,545**	**877**	**42**	**(135)**	**15,294**
Segment Result											
EBITDA[(1)]	1,902	220	849	48	162	73	414	258	37	-	3,963
Depreciation and amortisation[(2)]	(233)	(28)	(461)	(69)	(25)	(112)	(257)	(75)	(11)	-	(1,271)
Operating profit / (loss) before special items	**1,669**	**192**	**388**	**(21)**	**137**	**(39)**	**157**	**183**	**26**	**-**	**2,692**
Investment revenue											465
Finance costs											(1,239)
Other gains and (losses) [net]											(16)
Special items											586
PROFIT BEFORE TAXATION											**2,488**
Segments assets	2,575	862	3,706	613	1,447	2,017	7,440	2,950	425	-	22,035
Financial asset investments											25
Deferred tax assets											917
Short-term investments											4,808
Cash and cash equivalents											798
Tax assets											523
Others											132
TOTAL ASSETS											**29,238**
Segment liabilities	638	170	851	250	1,368	758	2,061	268	30	-	6,394
Borrowings											15,194
Current tax liabilities											54
Deferred tax liabilities											749
Others											307
TOTAL LIABILITIES											**22,698**
Other segment information											
Additions to property, plant and equipment, exploration and evaluation assets and intangible assets***	473	255	163	22	84	27	221	11	280		1,536
Impairment reversal/(charge)[(3)]	-	-	1,448	(759)	-	-	-	-	-	-	689

(1) *EBITDA is a non-IFRS measure and represents earnings before special items, depreciation, amortisation, other gains and losses, interest and tax.*
(2) *Depreciation and amortisation is also provided to the chief operating decision maker on a regular basis.*
(3) *Included under special items (Note 7).*
* *The annual consent to operate (CTO) under the Air and Water Acts for copper smelters in India was rejected by the State Pollution Control Board on 09 April 2018 for want of further clarification and consequently the operations have presently been suspended. The matter is presently pending in High Court (refer note 3(a)(I)(x)).*
** *Export incentive has been reclassified from 'segment revenue' to 'other operating income'. Refer Note 1 (b)*
*** *Including acquisition through business combination*

5. Segment information (continued)

(b) Geographical segmental analysis

The Group's operations are located in India, Zambia, Namibia, South Africa, UAE, Liberia, Ireland, Australia, Japan, South Korea and Taiwan. The following table provides an analysis of the Group's revenue by region in which the customer is located, irrespective of the origin of the goods.

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
India	8,643	8,212
China	1,089	2,181
UAE	164	613
Malaysia	696	826
Others	3,439	3,462
Total	**14,031**	**15,294**

The following is an analysis of the carrying amount of non-current assets, excluding deferred tax assets, derivative financial assets, financial asset investments and other non-current financial assets analysed by the geographical area in which the assets are located:

(US$ million)

	Carrying amount of non-current assets	
	As at 31 March 2019	As at 31 March 2018
India	16,094	16,045
Zambia	1,534	1,624
Namibia	144	171
South Africa	605	570
Taiwan	176	188
Others	147	130
Total	**18,700**	**18,728**

Information about major customer

No customer contributed 10% or more to the Group's revenue during the year ended 31 March 2019 and 31 March 2018.

Disaggregation of revenue

Below table summarises the disaggregated revenue from contracts with customers:

(US$ million)

Particulars	Year ended 31 March 2019
Zinc Metal	2,437
Lead Metal	563
Silver Bars	367
Oil	1,809
Gas	75
Iron ore	99
Pig Iron	294
Metallurgical coke	8
Copper Products	2,353
Aluminium Products	4,017
Power	682
Steel Products	600
Others	624
Revenue from contracts with customers	**13,928**
Revenue from contingent rents	242
Gains/(losses) on provisionally priced contracts (refer note 6)	(139)
Total Revenue	**14,031**

6. Total Revenue

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Sale of products (including excise duty)	**13,758**	**15,188**
Less: Excise duty	-	(164)
Sale of products (net of excise duty)	**13,758**	**15,024**
Sale of services	31	31
Revenue from contingent rents	242	239
Total Revenue	**14,031**	**15,294**

Revenue from sale of products and from sale of services for the year ended March 31, 2019 comprises of revenue from contracts with customers of US$ 13,928 million and a net loss on mark-to-market of US$ 139 million on account of gains/ losses relating to sales that were provisionally priced as at 31 March 2018 with the final price settled in the current year, gains/ losses relating to sales fully priced during the year, and marked to market gains/ losses relating to sales that were provisionally priced as at 31 March 2019. It further includes US$ 668 million for which contract liabilities existed at the beginning of the year.

Revenue from sale of products are recorded at a point in time and those from sale of services and are recognised over a period of time.

7. Special items

(US$ million)

	Year ended 31 March 2019			Year ended 31 March 2018		
	Special items	Tax effect of Special items	Special items after tax	Special items	Tax effect of Special items	Special items after tax
Reversal of provision of DMF[1]	-	-	-	46	(16)	30
Gratuity- change in limits[2]	-	-	-	(13)	3	(10)
Gross profit special items	**-**	**-**	**-**	**33**	**(13)**	**20**
Impairment reversal of oil and gas assets[3]	38	(13)	25	1,448	(570)	878
Impairment of iron ore assets[4]	-	-	-	(759)	225	(534)
Total impairment reversal/ (charge) (net)	**38**	**(13)**	**25**	**689**	**(345)**	**344**
Loss on unusable assets under construction- Aluminium[5]	-	-	-	(39)	14	(25)
Operating special items	**38**	**(13)**	**25**	**683**	**(344)**	**339**
Financing special items[6]	9	(3)	6	(108)	6	(102)
Bargain gain net of acquisition cost[7]	-	-	-	11	-	11
Special items	**47**	**(16)**	**31**	**586**	**(338)**	**248**

1. *During the year ended 31 March 2018, the Group had recognised the reversal of provisions of US$ 46 million relating to contribution to the District Mineral Foundation. Effective 12 January 2015, the Mines and Minerals Development and Regulation Act, 1957 prescribed the establishment of the District Mineral Foundation (DMF) in any district affected by mining related operations. The provisions required contribution of an amount equivalent to a percentage of royalty not exceeding one-third thereof, as may be prescribed by the Central Government of India. The rates were prescribed on 17 September 2015 for minerals other than coal, lignite and sand and on 20 October 2015 for coal, lignite and sand as amended on 31 August 2016. The Supreme Court order dated 13 October 2017 had determined the prospective applicability of the contributions from the date of the notification fixing such rate of contribution and hence DMF would be effective;*
   a) for minerals other than coal, lignite and sand from the date when the rates were prescribed by the Central Government; and;
   b) for coal, lignite and sand, DMF would be effective from the date when the rates were prescribed by the Central Government of India or from the date on which the DMF was established by the State Government by a notification, whichever is later.
   Pursuant to the aforesaid order, the Group had recognised a reversal of DMF provision for the period for which DMF is no longer leviable.
2. *The Indian subsidiaries of the Company participate in a defined benefit plan (the "Gratuity Plan") covering certain categories of employees. In a few of these companies, the maximum liability was capped at the statutory prescribed limit of INR 1 million (US$ 0.02 million). Consequent to the increase in the statutory limit to INR 2 million (US$ 0.03 million), the increase in provision representing past service cost had been recognised as a special item.*
3. *During the year, the Group has recognized net impairment reversal of US$ 38 million in respect of Oil & Gas Block KG-ONN-2003/1 (CGU) on booking of commercial reserves and subsequent commencement of commercial production. The impairment reversal has been recorded against Oil & Gas producing facilities. The recoverable amount of the Group's share in KG-ONN-2003/1 (CGU) was determined to be US$ 30 million.*
   The recoverable amount of the KG-ONN-2003/1 CGU was determined based on the fair value less costs of disposal approach, a level-3 valuation technique in the fair value hierarchy, as it more accurately reflects the recoverable amount based on our view of the assumptions that would be used by a market participant. This is based on the cash flows expected to be generated by the projected oil and natural gas production profiles up to the expected dates of cessation of production sharing contract (PSC)/cessation of production from each producing field based on the current estimates of reserves and risked resources. Reserves assumptions for fair value less costs of disposal tests consider all reserves that a market participant would consider when valuing the asset, which are usually broader in scope than the reserves used in a value-in-use test. Discounted cash flow analysis used to calculate fair value less costs of disposal uses assumption for short-term oil price of US $ 62 per barrel for the year ended March 31, 2019 and scales up to long-term nominal price of US $ 65 per barrel by year ended March 31, 2022 derived from a consensus of various analyst recommendations. Thereafter, these have been escalated at a rate of 2.5% per annum. The cash flows are discounted using the post-tax nominal discount rate of 11.8% derived from the post-tax weighted average cost of capital. The sensitivities around change in crude price and discount rate are not material to the financial statements.
   During the year ended 31 March 2018, the Group had recognised net impairment reversal of US$1,448 million on its assets in the oil and gas segment comprising of:
   a) reversal of previously recorded impairment charge of US$1,465 million relating to Rajasthan oil and gas block ('CGU') mainly following the progress on key Growth Projects expected to result in the enhanced recovery of resources in a commercially viable manner leading to a higher forecast of oil production and adoption of an integrated development strategy for various projects leading to savings in cost. Of this reversal, US$ 500 million reversal has been recorded against oil and gas properties and US$965 million reversal has been recorded against exploratory and evaluation assets. The recoverable amount of the CGU, US$2,514 million, was determined based on the fair value less costs of disposal approach, a Level-3 valuation technique in the fair value hierarchy, as it more accurately reflects the recoverable amount based on our view of the assumptions that would be used by a market participant. This is based on the cash flows expected to be generated by the projected oil and natural gas production profiles up to the expected dates of cessation of production sharing contract (PSC)/cessation of production from each producing

field based on current estimates of reserves and risked resources. Reserves assumptions for fair value less costs of disposal discounted cash flow tests consider all reserves that a market participant would consider when valuing the asset, which are usually broader in scope than the reserves used in a value-in-use test. Discounted cash flow analysis used to calculate fair value less costs of disposal is based on assumption for oil price of US$62 per barrel for FY2019 and scales up to the long-term nominal price of US$65 per barrel over the next three years thereafter derived from a consensus of various analyst recommendations. Thereafter, these have been escalated at a rate of 2.5% per annum. The cash flows are discounted using the post-tax nominal discount rate of 10.1% derived from the post-tax weighted average cost of capital after factoring in the risks ascribed to PSC extension including successful implementation of key Growth Projects. Based on the sensitivities carried out by the Group, change in crude price assumptions by US$ 1/bbl and changes to discount rate by 0.5% would lead to a change in recoverable value by US$64 million and US$53 million respectively.

b) Impairment charge of US$17 million representing the carrying value of assets relating to exploratory wells in Block PR-OSN-2004/1 which was relinquished during the year ended 31 March 2018.

4. *During the year ended 31 March 2018, the Group had recognised an impairment charge of US$ 759 million as against the net carrying value of US$ 865 million on its iron ore assets in Goa in the Iron Ore segment. Pursuant to an order passed by the Hon'ble Supreme Court of India on 7 February 2018, the second renewal of the mining leases granted by the State of Goa in 2014–15 to all miners including Vedanta were cancelled. Consequently, all mining operations stopped with effect from 16 March 2018 until fresh mining leases (not fresh renewals or other renewals) and fresh environmental clearances are granted in accordance with the provisions of The Mines and Minerals (Development and Regulation) (MMDR) Act.*

   Significant uncertainty exists over the resumption of mining at Goa under the current leases. The Group had assessed the recoverable value of all its assets and liabilities associated with existing mining leases which led to a non-cash impairment charge in March 2018. The recoverable value of the mining reserve (grouped under 'mining property and leases') was been assessed as Nil, as there is no reasonable certainty towards re-award of these mining leases. Similarly, upon consideration of past precedence, the provision for restoration and rehabilitation with respect to these mines has been assessed as Nil, as the Group believes that the same would be carried out by the future successful bidder at the time of mine closure. The net recoverable value of other assets and liabilities was assessed at US$114 million based on the fair value less cost of sales methodology using a Level 3 valuation technique. The fair value was determined based on the estimated selling price of the individual assets using depreciated replacement cost method.

5. *During the year ended 31 March 2018, the Group had recognised a loss of US$ 39 million relating to certain items of capital work-in-progress at the aluminium operations, which were no longer expected to be used.*
6. *During the year ended 31 March 2019, the Group has partly reversed the provision for interest of US$ 9 million for dues towards SSNP pursuant to the Honourable Supreme Court of India order. A charge of US$ 17 million in this matter was recognised pursuant to an unfavourable arbitration order during the year ended 31 March 2018.*

   Additionally during the year ended 31 March 2018, the Group had recognised US$ 91 million loss as financing special items arising on the bond buybacks completed during the year.
7. *On 28 December 2017, the Group through its wholly owned subsidiary, acquired 51.6% equity stake in AvanStrate Inc. (ASI) for a cash consideration of JPY 1 million ($ 0.01 million) and acquired debts for JPY 17,058 million (US$ 151 million) and incurred acquisition expenses of US$ 7 million. Additionally, a loan of JPY 815 million (US$ 7 million) was extended to ASI. The transaction was accounted for on a provisional basis in the financial statements for the year ended 31 March 2018 under IFRS 3 and the resultant bargain purchase gain, net of US$ 7 million of acquisition expenses, was recorded in the consolidated income statement. Provisional fair values that were determined as at 31 March 2018 for consolidation were finalised during the current year and consequentially amounts for the year ended March 31, 2018 have been restated (Refer note 4(b)).*

8. Investment revenue

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Fair value gain on financial assets held for trading/ fair value through profit or loss (FVTPL) (1)	265	258
Interest Income:		
Interest income- financial assets held for trading/FVTPL	129	108
Interest income- bank deposits at amortised cost	23	21
Interest income- loans and receivables at amortised cost	31	38
Interest income- others	17	34
Dividend Income:		
Dividend Income- available-for-sale investments/investments held at FVOCI	0	0
Dividend income- financial assets held for trading/ FVTPL	6	4
Foreign exchange gain (net)	27	2
Net loss arising on qualifying hedges and non-qualifying hedges	(18)	-
Total	**480**	**465**

(1) Includes mark to market gain of US$ 137mn relating to structured investment (Refer note 17)

9. Finance costs

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Interest expense – financial liabilities at amortised cost	1,295	1,204
Other finance costs (including bank charges)	69	68
Total interest cost	**1,364**	**1,272**
Unwinding of discount on provisions	13	13
Net interest on defined benefit arrangements	9	8
Special items (note 7)	(9)	108
Capitalisation of finance costs/borrowing costs	(119)	(54)
Total	**1,258**	**1,347**

All borrowing costs are capitalised using rates based on specific borrowings and general borrowings with the interest rate of 8.0% per annum for the year ended 31 March 2019.

10. Other gains and (losses) (net)

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Foreign exchange loss (net)	(65)	(11)
Change in fair value of financial liabilities measured at fair value	(1)	(1)
Net (loss)/ gain arising on qualifying hedges and non-qualifying hedges	(9)	(4)
Bargain gain net of acquisition cost (note 7)	-	11
Total	**(75)**	**(5)**

11. Tax

(a) Tax charge/ (credit) recognised in Consolidated Income Statement (including on special items)

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Current tax:		
Current tax on profit for the year	554	516
Charge/(credit) in respect of current tax for earlier years	(1)	6
Total current tax (a)	**553**	**522**
Deferred tax		
Origination and reversal of temporary differences	103	140
Charge in respect of deferred tax for earlier years	-	13
Charge in respect of Special items (note 7)	16	338
Total deferred tax (b)	**119**	**491**
Net tax expense ((a)+(b))	**672**	**1,013**
Profit/ (loss) before taxation	**1,096**	**2,488**
Effective tax rate (%)	**61.3%**	**40.7%**

Tax expense

(US$ million)

Particulars	Year ended March 31, 2019	Year ended March 31, 2018
Tax effect of special items (note 7)	16	338
Tax expense – others	656	675
Net tax expense	**672**	**1,013**

11(b). A reconciliation of income tax expense applicable to profit/ (loss) before taxation at the Indian statutory income tax rate to income tax expense/ (credit) at the Group's effective income tax rate for the year ended 31 March 2019 is as follows. Given majority of the Group's operations are located in India, the reconciliation has been carried out from Indian statutory income tax rate.

(US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Profit before taxation	**1,096**	**2,488**
Indian statutory income tax rate	34.944%	34.608%
Tax at statutory income tax rate	**383**	**861**
Disallowable expenses	81	21
Non-taxable income	(27)	(37)
Tax holidays and similar exemptions	(116)	(158)
Effect of tax rates differences of subsidiaries operating in other jurisdictions	(22)	73
Dividend distribution tax	158	63
Unrecognized tax assets (net)*	204	165
Changes in deferred tax balances due to change in income tax rate from 34.608% to 34.944%	-	12
Capital Gains subject to lower tax rate	(2)	(12)
Charge/(credit) in respect of previous years	(1)	19
Others	14	6
Total	**672**	**1,013**

* *Deferred tax charge for the year ended 31 March 2019 includes US$ 121 million (31 March 2018: US$ Nil million) representing reversal of deferred tax asset created on carry forward losses not expected to be utilised during the statutory permitted period.*

Certain businesses of the Group within India are eligible for specified tax incentives which are included in the table above as tax holidays and similar exemptions. Most of such tax exemptions are relevant for the companies operating in India. These are briefly described as under:

The location based exemption

In order to boost industrial and economic development in undeveloped regions, provided certain conditions are met, profits of newly established undertakings located in certain areas in India may benefit from a tax holiday. Such a tax holiday works to exempt 100% of the profits for the first five years from the commencement of the tax holiday, and 30% of profits for the subsequent five years. This deduction is available only for units established up to 31 March 2012. However, such undertaking would continue to be subject to the Minimum Alternative tax ('MAT').

The Group has such types of undertakings at Haridwar and Pantnagar, which are part of Hindustan Zinc Limited (Zinc India). FY 2018 was the last year of eligibility for deduction for Haridwar unit. In the current year, Pantnagar is the only unit eligible for deduction at 30% of taxable profit.

The location based exemption: SEZ Operations

In order to boost industrial development and exports, provided certain conditions are met, profits of undertaking located in Special Economic Zone ('SEZ') may benefit from a tax holiday. Such a tax holiday works to exempt 100% of the profits for the first five years from the commencement of the tax holiday, 50% of profits for five years thereafter and 50% of the profits for further five years provided the amount allowable in respect of deduction is credited to Special Economic Zone Re-Investment Reserve account. However, such undertaking would continue to be subject to the Minimum Alternative tax ('MAT').

The Group has setup SEZ Operations in its aluminium division of Vedanta Limited (where no benefit has been drawn).

Sectoral Benefit - Power Plants and Port Operations

To encourage the establishment of infrastructure certain power plants and ports have been offered income tax exemptions of up to 100% of profits and gains for any ten consecutive years within the 15 year period following commencement of operations subject to certain conditions. The Group currently has total operational capacity of 8.4 Giga Watts (GW) of thermal based power generation facilities and wind power capacity of 274 Mega Watts (MW) and port facilities. However, such undertakings would continue to be subject to MAT provisions.

The Group has power plants which benefit from such deductions, at various locations of Hindustan Zinc Limited (where such benefits have been drawn), Talwandi Sabo Power Limited, Vedanta Limited and Bharat Aluminium Company Limited (where no benefit has been drawn).

The Group operates a zinc refinery in Export Processing Zone, Namibia which has been granted tax exempt status by the Namibian government.

In addition, the subsidiaries incorporated in Mauritius are eligible for tax credit to the extent of 80% of the applicable tax rate on foreign source income.

The total effect of such tax holidays and exemptions was US$ 116 million for the year ended 31 March 2019 (31 March 2018: US$158 million).

12. Underlying Attributable Profit/(Loss) for the year

Underlying earnings is an alternative earnings measure, which the management considers to be a useful additional measure of the Group's performance. The Group's Underlying profit/ loss is the profit/ loss for the year after adding back special items, other losses/(gains) [net] (note 10) and their resultant tax (including taxes classified as special items) and non-controlling interest effects. This is a Non-IFRS measure.

(US$ million)

	Note	Year ended 31 March 2019	Year ended 31 March 2018
(Loss)/ Profit for the year attributable to equity holders of the parent		(237)	239
Special items	*7*	(47)	(586)
Other gains/(losses) [net]	*10*	75	16
Tax and non-controlling interest effect of special items (including taxes classified as special items) and other gains/ (losses) [net]		(17)	497
Underlying attributable (loss)/ profit for the year		**(226)**	**166**

13. Financial asset investments

Financial asset investments represent investments classified and accounted for as fair value through profit or loss or through other comprehensive income.

(US$ million)

	As at 31 March 2019	As at 31 March 2018
At 1 April 2018	25	11
Purchase of structured investment (refer note 17)	541	-
Movements in fair value (including on investments purchased during the year)	143	14
Exchange difference	(2)	(0)
At 31 March 2019	**707**	**25**

Financial asset investment represents quoted investments in equity shares and other investments that present the Group with an opportunity for returns through dividend income and gains in value. These securities are held at fair value. These are classified as non-current as on 31 March 2019 and 31 March 2018.

14. Short-term investments

(US$ million)

	As at 31 March 2019	As at 31 March 2018
Bank deposits[(1)]	122	483
Other investments	4,042	4,325
Total	**4,164**	**4,808**

(1) Includes US$ 28 million(31 March 2018: US$ 31 million) on lien with banks , US$ 19 million(31 March 2018: US$ 6 million) of margin money, US$ 47 million(31 March 2018: US$ 9 million) maintained as debt service reserve account and US$ 9 million(31 March 2018: US$ 12 million)of restricted funds held as collateral in respect of closure costs.

Bank deposits are made for periods of between three months and one year depending on the cash requirements of the companies within the Group and earn interest at the respective fixed deposit rates.

Other investments include mutual fund investments and investment in bonds which are recorded at fair value with changes in fair value reported through the income statement. These investments do not qualify for recognition as cash and cash equivalents due to their maturity period and risk of change in value of the investments.

15. Cash and cash equivalents

(US$ million)

	As at 31 March 2019	As at 31 March 2018
Cash and cash equivalents consist of the following		
Cash at bank and in hand	620	604
Short-term deposits	441	158
Restricted cash and cash equivalents(1)	72	36
Total	**1,133**	**798**

(1) *Restricted cash and cash equivalents includes US$ 15 million (31 March 2018: US$ 36 million) kept in a specified bank account to be utilised solely for the purposes of payment of dividends to non-controlling shareholders, which is being carried as a current liability. Restricted cash and cash equivalents further include US$ 57 million (31 March 2018 : Nil) kept in short term deposits under lien with banks as margin money.*

Short-term deposits are made for periods of between one day and three months, depending on the immediate cash requirements of the Group, and earn interest at the respective short-term deposit rates.

16(a). Borrowings

(US$ million)

	As at 31 March 2019	As at 31 March 2018
Current borrowings consist of:		
Banks and financial institutions	4,132	3,607
Current maturities of long-term borrowings	1,324	1,853
Current borrowings (A)	**5,456**	**5,460**
Non-current borrowings consist of:		
Banks and financial institutions	6,585	5,892
Non- convertible bonds	3,142	3,360
Non-convertible debentures	2,034	1,779
Redeemable Preference shares	0	463
Others	87	93
Non-current borrowings	**11,848**	**11,587**
Less: Current maturities of long-term borrowings	(1,324)	(1,853)
Non-current borrowings, net of current maturities (B)	**10,524**	**9,734**
Total (A+B)	**15,980**	**15,194**

The Group has discounted trade receivables on recourse basis US$ 196 million (31 March 2018: US$ 120 million). Accordingly, the monies received on this account are shown as borrowings as the trade receivables do not meet de-recognition criteria. The Group facilities are subject to certain financial and non-financial covenants. The primary covenants which must be complied with include fixed charge cover ratio, net borrowing to EBITDA ratio, total net assets to borrowings ratio and net interest expense to EBITDA ratio. The Group has complied with the covenants as per the terms of the loan agreement.

16(b). Movement in net debt[(1)]

(US$ million)

	Cash and cash equivalents	Short term investments	Financial asset investment net of related liabilities and derivatives[(1)]	Total cash and short-term investments	Debt due within one year	Debt due after one year	Total Net Debt
					Debt carrying value	Debt carrying value	
At 1 April 2017	**1,682**	**8,043**	**-**	**9,725**	**(7,659)**	**(10,570)**	**(8,504)**
Cash flow	(924)	(3,441)	-	(4,365)	3,859	(694)	(1,200)
Net debt on acquisition through business combination (note 4(b))	24	-	-	24	-	(99)	(75)
Other non-cash changes [(2)]	-	209	-	209	(1,669)	1628	168
Foreign exchange currency translation differences	16	(3)	-	13	9	1	23
At 1 April 2018	**798**	**4,808**	**-**	**5,606**	**(5,460)**	**(9,734)**	**(9,588)**
Cash flow	341	(639)	254	(44)	1,199	(2,394)	(1,239)
Net cash flow on acquisition through business combination (note 4(a))	36	46	-	82	(1)	-	81
Other non-cash changes[(2)]	-	187	137	324	(1,449)	1,398	273
Foreign exchange currency translation differences	(42)	(238)	-	(280)	255	206	181
At 31 March 2019	**1,133**	**4,164**	**391**	**5,688**	**(5,456)**	**(10,524)**	**(10,292)**

(1) *Net debt is a Non-IFRS measure and represents total debt after fair value adjustments under IAS 32 and IFRS 9 as reduced by cash and cash equivalents, short-term investments and structured investment, net of the deferred consideration payable for such investments (referred above as Financial asset investment net of related liabilities) (refer note 17), if any*

(2) *Other non-cash changes comprise of amortisation of borrowing costs, foreign exchange difference on net debt and reclassification between debt due within one year and debt due after one year. It also includes US$ 324 million (31 March 2018: US$ 209 million) of fair value movement in investments and accrued interest on investments.*

17. Related party transactions with Volcan Investments Limited

US$ million)

	Year ended 31 March 2019	Year ended 31 March 2018
Recovery of expenses	0	0
Dividend paid	73	111
Interest paid on bonds held by Volcan	1	5
Bonds redeemed during the period**	8	82
Value of bonds held by Volcan	13	21
Purchase of structured investment*	541	-
Deferred consideration payable*	299	-
Fair Value of structured investment at year end*	690	-
Net amount receivable at the year end	0	1

*** Includes premium on redemption of bonds of US$ Nil and US$ 6 million for the year ended 31 March 2019 and 31 March 2018 respectively.*

Volcan Investments Limited is a related party of the Group by virtue of being an ultimate controlling party of the Group.

Bank guarantee has been provided by the Group on behalf of Volcan in favour of Income tax department, India as collateral in respect of certain tax disputes of Volcan. The guarantee amount is US$ 17 million (31 March 2018 : US$ 18 million).

Pursuant to a buy back offer by Volcan, the Group has rendered 1.7 million shares held by its separate investment trust to Volcan and received US$ 19 million as consideration towards the same.

*In December 2018, as part of its cash management activities, Cairn India Holdings Limited (CIHL), a step-down subsidiary of the Company, entered into a tripartite agreement with Volcan and one of its subsidiaries. Under the agreement, CIHL purchased an economic interest in a structured investment for the equity shares of Anglo American Plc (AA Plc), a company listed on the London Stock Exchange, from Volcan for a total consideration of US$ 541 million (GBP 428 million) (of which US$ 254 million (GBP 200 million) has been paid up to March 31 2019), determined based on an independent third-party valuation. The ownership of the underlying shares, and the associated voting interests, remained with Volcan and the investment would mature in two tranches in April 2020 and October 2020. As part of the agreement, CIHL also received a put option (embedded derivative) from the aforementioned subsidiary, the value of which was not material at initial recognition. In February 2019, certain terms of the aforesaid agreement were modified, and it was converted into a biparty agreement between CIHL and Volcan. The revision in the terms did not have any material effect on the fair value of the instrument on that date.

As per the revised agreement, if the share price of AA Plc remain above the Put exercise price, CIHL would be entitled to an amount determined based on the share price of AA Plc multiplied by 15 million and 11 million shares respectively on the aforementioned two maturity dates. Alternatively, CIHL also has an option to realise the instrument for US$ 358 million (GBP 274 million) and US$ 247 million (GBP 189 million) on the respective maturity dates.

Other information:

Alternative performance measures

Introduction

Vedanta Group is committed to providing timely and clear information on financial and operational performance to investors, lenders and other external parties, in the form of annual reports, disclosures, RNS feeds and other communications. We regard high standards of disclosure as critical to business success.

Alternative Performance Measure (APM) is an evaluation metric of financial performance, financial position or cash flows that is not defined or specified under International Financial Reporting Standards (IFRS).

The APMs used by the group fall under two categories:

- Financial APMs: These financial metrics are usually derived from financial statements, prepared in accordance with IFRS. Certain financials metrics cannot be directly derived from the financial statements as they contain additional information such as profit estimates or projections, impact of macro-economic factors and changes in regulatory environment on financial performance.
- Non-Financial APMs: These metrics incorporate non – financial information that management believes is useful in assessing the performance of the group.

APMs are not uniformly defined by all the companies, including those in the Group's industry. APM's should be considered in addition to, and not a substitute for or as superior to, measures of financial performance, financial position or cash flows reported in accordance with IFRS.

Purpose

The Group uses APMs to improve comparability of information between reporting periods and business units, either by adjusting for uncontrollable or one-off factors which impacts upon IFRS measures or, by aggregating measures, to aid the user of the Annual Report in understanding the activity taking place across the Group's portfolio.

APMs are used to provide valuable insight to analysts and investors along with Generally Accepted Accounting Practices (GAAP). We believe these measures assist in providing a holistic view of the company's performance.

Alternative performance measures (APMs) are denoted by ◊ where applicable.

◊ APM terminology*	Closest equivalent IFRS measure	Adjustments to reconcile to primary statements
EBITDA	Operating profit/(loss) before special items	Operating Profit/(Loss) before special items Add: Depreciation & Amortisation
EBITDA margin (%)	No direct equivalent	Not applicable
Adjusted revenue	Revenue	Revenue Less: revenue of custom smelting operations at our Copper & Zinc business
Adjusted EBITDA	Operating profit/(loss) before special items	EBITDA Less: EBITDA of custom smelting operations at our Copper & Zinc business
Adjusted EBITDA margin	No direct equivalent	Not applicable
Underlying profit/(loss)	Attributable Profit/(loss) before special items	Attributable profit/(loss) before special items Less: NCI share in other gains/(losses) (net of tax)
Project Capex	Expenditure on Property, Plant and Equipment (PPE)	Gross Addition to PPE Less: Gross disposals to PPE Add: Accumulated Depreciation on disposals Less: Decommissioning liability Less: Sustaining Capex
Free cash flow	Net cash flow from operating activities	Net Cash flow from operating activities Less: purchases of property, plant and equipment and intangibles less proceeds on disposal of property, plant and equipment Add: Dividend paid and dividend distribution tax paid Add/less: Other non-cash adjustments
Net debt*	Net debt is a Non-IFRS measure and represents total debt after fair value adjustments under IAS 32 and IFRS 9 as reduced by cash and cash equivalents, liquid investments and structured investment, net of the deferred consideration payable for such investments (referred as Financial asset investment net of related liabilities), if any.	No Adjustments
ROCE	No direct Equivalent	Not Applicable

* *In December 2018, the Group has made a structured investment which is classified as Financial Assets investments. We believe liquidity of the investment makes its comparable to the other assets included previously in the debt calculation; therefore inclusion gives more reliable and relevant information.*

ROCE for FY2019 is calculated based on the working summarised below. The same method is used to calculate the ROCE for all previous years (stated at other places in the report).

Particulars	Year ended 31 March 2019
Operating Profit Before Special Items	1,911
Less: Cash Tax Outflow	(386)
Return on Capital Employed (a)	**1,525**
Opening Capital Employed (b)	16,128
Closing Capital Employed (c)	15,545
Average Capital Employed (d)= (a+b)/2	**15,836**
ROCE (a)/(d)	**9.6%**

Adjusted Revenue, EBITDA & EBITDA Margin for FY 2019 is calculated based on the working summarised below. The same method is used to calculate the adjusted revenue and EBITDA for all previous years (stated at other places in the report).

Particulars	Year ended 31 March 2019
Revenue	14,031
Less: Revenue of Custom smelting operations	2,065
Adjusted Revenue(a)	**11,966**
EBITDA	3,393
Less: EBITDA of Custom smelting operations	(45)
Adjusted EBITDA(b)	**3,438**
Adjusted EBITA Margin (b)/(a)	**29%**

GLOSSARY AND DEFINITIONS

Adapted Comparator Group

The new comparator group of companies used for the purpose of comparing TSR performance in relation to the LTIP, adopted by the Remuneration Committee on 1 February 2006 and replacing the previous comparator group comprising companies constituting the FTSE Worldwide Mining Index (excluding precious metals)

Adjusted EBITDA

Group EBITDA net of EBITDA from custom smelting operations at Copper India, Copper Zambia & Zinc India operations.

Adjusted EBITDA margin

EBITDA margin computed on the basis of Adjusted EBITDA and Adjusted Revenue as defined elsewhere

Adjusted Revenue

Group Revenue net of revenue from custom smelting operations at Copper India, Copper Zambia & Zinc India operations.

Aluminium Business

The aluminium business of the Group, comprising of its fully-integrated bauxite mining, alumina refining and aluminium smelting operations in India, and trading through the Bharat Aluminium Company Limited and Jharsuguda Aluminium (a division of Vedanta Limited), in India

Articles of Association

The articles of association of Vedanta Resources Limited

Attributable Profit

Profit for the financial year before dividends attributable to the equity shareholders of Vedanta Resources Limited

BALCO

Bharat Aluminium Company Limited, a company incorporated in India.

BMM

Black Mountain Mining Pty

Board or Vedanta Board

The board of directors of the Company

Board Committees

The committees reporting to the Board: Audit, Remuneration, Nominations, and Sustainability, each with its own terms of reference

Businesses

The Aluminium Business, the Copper Business, the Zinc, lead, silver, Iron ore, Power and Oil & Gas Business together

Cairn India

Erstwhile Cairn India Limited and its subsidiaries

Capital Employed

Net assets before Net (Debt)/Cash

Capex

Capital expenditure

CEO

Chief executive officer

CFO

Chief Financial Officer

CII

Confederation of Indian Industries

CO2

Carbon dioxide

CMT

Copper Mines of Tasmania Pty Limited, a company incorporated in Australia

Company or Vedanta

Vedanta Resources Limited

Company financial statements

The audited financial statements for the Company for the year ended 31 March 2019 as defined in the Independent Auditors' Report on the individual Company Financial Statements to the members of Vedanta Resources Limited

Copper Business

The copper business of the Group, comprising:

- A copper smelter, two refineries and two copper rod plants in India, trading through Vedanta Limited, a company incorporated in India;
- One copper mine in Australia, trading through Copper Mines of Tasmania Pty Limited, a company incorporated in Australia; and
- An integrated operation in Zambia consisting of three mines, a leaching plant and a smelter, trading through Konkola Copper Mines LIMITED, a company incorporated in Zambia

Copper India

Copper Division of Vedanta Limited comprising of a copper smelter, two refineries and two copper rod plants in India.

Cents/lb

US cents per pound

CRRI

Central Road Research Institute

CRISIL

CRISIL Limited (A S&P Subsidiary) is a rating agency incorporated in India

CSR

Corporate social responsibility

CTC

Cost to company, the basic remuneration of executives, which represents an aggregate figure encompassing basic pay, pension contributions and allowances

CY

Calendar year

DDT

Dividend distribution tax

Deferred Shares

Deferred shares of £1.00 each in the Company

DFS

Detailed feasibility study

DGMS

Director General of Mine Safety in the Government of India

Directors

The Directors of the Company

DMF

District Mineral Fund

DMT

Dry metric tonne

Dollar or $

United States Dollars, the currency of the United States of America

EAC

Expert advisory committee

EBITDA

EBITDA is a non-IFRS measure and represents earnings before special items, depreciation, amortisation, other gains and losses, interest and tax.

EBITDA Margin

EBITDA as a percentage of turnover

Economic Holdings or Economic Interest

The economic holdings/interest are derived by combining the Group's direct and indirect shareholdings in the operating companies. The Group's Economic Holdings/Interest is the basis on which the Attributable Profit and net assets are determined in the consolidated accounts

E&OHSAS

Environment and occupational health and safety assessment standards

E&OHS

Environment and occupational health and safety management system

ESOP

Employee share option plan

ESP

Electrostatic precipitator

Executive Committee

The Executive Committee to whom the Board has delegated operational management. It comprises of the Chief Executive Officer and the senior management of the Group

Executive Directors

The Executive Directors of the Company

Expansion Capital Expenditure

Capital expenditure that increases the Group's operating capacity

Financial Statements or Group financial statements

The consolidated financial statements for the Company and the Group for the year ended 31 March 2019 as defined in the Independent Auditor's Report to the members of Vedanta Resources Limited

Free Cash Flow

Net Cash flow from operating activities Less: purchases of property, plant and equipment and intangibles Add proceeds on disposal of property, plant and equipment Add: Dividend paid and dividend distribution tax paid

Add/less: Other non-cash adjustments

FY

Financial year i.e. April to March.

GAAP, including UK GAAP

Generally Accepted Accounting Principles, the common set of accounting principles, standards and procedures that companies use to compile their financial statements in their respective local territories

GDP

Gross domestic product

Gearing

Net Debt as a percentage of Capital Employed

GJ

Giga joule

Government or Indian Government

The Government of the Republic of India

Gratuity

A defined contribution pension arrangement providing pension benefits consistent with Indian market practices

Group

The Company and its subsidiary undertakings and, where appropriate, its associate undertaking

Gross finance costs

Finance costs before capitalisation of borrowing costs

HIIP

Hydrocarbons initially-in place

HSE

Health, safety and environment

HZL

Hindustan Zinc Limited, a company incorporated in India

IAS

International Accounting Standards

IFRIC

IFRS Interpretations Committee

IFRS

International Financial Reporting Standards

INR

Indian Rupees

Interest cover

EBITDA divided by gross finance costs (including capitalised interest) excluding accretive interest on convertible bonds, unwinding of discount on provisions, interest on defined benefit arrangements less investment revenue

IPP

Independent power plant

Iron Ore Sesa

Iron ore Division of Vedanta Limited, comprising of Iron ore mines in Goa and Karnataka in India.

Jharsuguda Aluminium

Aluminium Division of Vedanta Limited, comprising of an aluminium refining and smelting facilities at Jharsuguda and Lanjigarh in Odisha in India.

KCM or Konkola Copper Mines

Konkola Copper Mines LIMITED, a company incorporated in Zambia

Key Result Areas or KRAs

For the purpose of the remuneration report, specific personal targets set as an incentive to achieve short-term goals for the purpose of awarding bonuses, thereby linking individual performance to corporate performance

KPIs

Key performance indicators

KTPA

Thousand tonnes per annum

Kwh

Kilo-watt hour

LIBOR

London inter bank offered rate

LIC

Life Insurance Corporation

LME

London Metals Exchange

London Stock Exchange

London Stock Exchange Limited

Lost time injury

An accident/injury forcing the employee/contractor to remain away from his/her work beyond the day of the accident

LTIFR

Lost time injury frequency rate: the number of lost time injuries per million man hours worked

LTIP

The Vedanta Resources Long-Term Incentive Plan or Long-Term Incentive Plan

MALCO

The Madras Aluminium Company Limited, a company incorporated in India

Management Assurance Services (MAS)

The function through which the Group's internal audit activities are managed

MAT

Minimum alternative tax

MBA

Mangala, Bhagyam, Aishwarya oil fields in Rajasthan

MIC

Metal in concentrate

MOEF

The Ministry of Environment, Forests and Climate change of the Government of the Republic of India

mt or tonnes

Metric tonnes

MU

million Units

MW

Megawatts of electrical power

NCCBM

National Council of Cement and Building Materials

Net (Debt)/Cash

Net debt is a Non-IFRS measure and represents total debt after fair value adjustments under IAS 32 and IFRS 9 as reduced by cash and cash equivalents, liquid investments and structured investment, net of the deferred consideration payable for such investments (referred as Financial asset investment net of related liabilities), if any.

NGO

Non-governmental organisation

Non-executive Directors

The Non-Executive Directors of the Company

Oil & Gas business

Oil & Gas division of Vedanta Limited, is involved in the business of exploration, development and production of Oil & Gas.

Ordinary Shares

Ordinary shares of 10 US cents each in the Company

ONGC

Oil and Natural Gas Corporation Limited, a company incorporated in India

OPEC

Organisation of the Petroleum Exporting Countries

PBT

Profit before tax

PPE

Property plant and equipment

Provident Fund

A defined contribution pension arrangement providing pension benefits consistent with Indian market practices

PSC

A "production sharing contract" by which the Government of India grants a license to a company or consortium of companies (the 'Contractor") to explore for and produce any hydrocarbons found within a specified area and for a specified period, incorporating specified obligations in respect of such activities and a mechanism to ensure an appropriate sharing of the profits arising there from (if any) between the Government and the Contractor.

PSP

The Vedanta Resources Performance Share Plan

Recycled water

Water released during mining or processing and then used in operational activities

Relationship Agreement

The agreement between the Company, Volcan Investments Limited and members of the Agarwal family which had originally been entered into at the time of the Company's listing in 2003 and was subsequently amended in 2011 and 2014 to regulate the ongoing relationship between them, the principal purpose of which is to ensure that the Group is capable of carrying on business independently of Volcan, the Agarwal family and their associates.

Return on Capital Employed or ROCE

Operating profit before special items net of tax outflow, as a ratio of average capital employed

RO

Reverse osmosis

Senior Management Group

For the purpose of the remuneration report, the key operational and functional heads within the Group

SEWT

Sterlite Employee Welfare Trust, a long-term investment plan for Sterlite senior management

SHGs

Self help groups

SBU

Strategic Business Unit

STL

Sterlite Technologies Limited, a company incorporated in India

Special items

Items which derive from events and transactions that need to be disclosed separately by virtue of their size or nature

Sterling, GBP or £

The currency of the United Kingdom

Superannuation Fund

A defined contribution pension arrangement providing pension benefits consistent with Indian market practices

Sustaining Capital Expenditure

Capital expenditure to maintain the Group's operating capacity

TCM

Thalanga Copper Mines Pty Limited, a company incorporated in Australia

TC/RC

Treatment charge/refining charge being the terms used to set the smelting and refining costs

TGT

Tail gas treatment

TLP

Tail Leaching Plant

tpa

Metric tonnes per annum

TPM

Tonne per month

TSPL

Talwandi Sabo Power Limited, a company incorporated in India

TSR

Total shareholder return, being the movement in the Company's share price plus reinvested dividends

Twin Star

Twin Star Holdings Limited, a company incorporated in Mauritius

Twin Star Holdings Group

Twin Star and its subsidiaries and associated undertaking

US cents

United States cents

Underlying profit/ (loss)

Attributable profit/(loss) before special items Less: NCI share in other gains/(losses) (net of tax)

Vedanta Limited (formerly known as Sesa Sterlite Limited/ Sesa Goa Limited)

Vedanta Limited, a company incorporated in India engaged in the business of Oil & Gas exploration and production, copper smelting, Iron Ore mining, Alumina & Aluminium production and Energy generation.

VFJL

Vedanta Finance (Jersey) Limited, a company incorporated in Jersey

VGCB

Vizag General Cargo Berth Private Limited, a company incorporated in India

Volcan

Volcan Investments Limited, a company incorporated in the Bahamas

VRCL

Vedanta Resources Cyprus Limited, a company incorporated in Cyprus

VRFL

Vedanta Resources Finance Limited, a company incorporated in the United Kingdom

VRHL

Vedanta Resources Holdings Limited, a company incorporated in the United Kingdom

Water Used for Primary Activities

Total new or make-up water entering the operation and used for the operation's primary activities; primary activities are those in which the operation engages to produce its product

WBCSD

World Business Council for Sustainable Development

ZCI

Zambia Copper Investment Limited, a company incorporated in Bermuda

ZCCM

ZCCM Investments Holdings Limited, a company incorporated in Zambia

ZRA

Zambia Revenue Authority