

To the Ministry of Finance

Recommendation of 15 May 2007

Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 1 |
| 2 | Sources | 2 |
| 3 | The Council's considerations | 3 |
| 4 | About Vedanta Resources | 4 |
| 5 | Accusations of severe environmental damage and human rights violations | 6 |
| 5.1 | Sterlite Industries - Tuticorin | 7 |
| 5.1.1 | The accusations against Sterlite's Tuticorin complex | 8 |
| 5.1.2 | More details on the operation at Tuticorin | 8 |
| 5.1.3 | Illegal production expansion | 8 |
| 5.1.4 | Health and environmental damage | 12 |
| 5.2 | Madras Aluminium Company Ltd (Malco) | 15 |
| 5.2.1 | The accusations against Malco | 15 |
| 5.2.2 | The refinery at Mettur Dam | 15 |
| 5.2.3 | Environmental and health effects | 17 |
| 5.3 | Bharat Aluminium Co | 19 |
| 5.3.1 | Forced eviction of tribal peoples | 20 |
| 5.4 | Vedanta Alumina Ltd | 21 |
| 5.4.1 | Accusations against Vedanta Alumina | 22 |
| 5.4.2 | Mining in the Niyamgiri Hills | 23 |
| 5.4.3 | The refinery at Lanjigarh | 24 |
| 5.4.4 | Misinformation and breaches of laws and procedures | 25 |
| 5.4.5 | Expected environmental impact of the refinery | 27 |
| 5.4.6 | Involvement in human rights violations | 27 |
| 6 | The company's response | 32 |
| 7 | The Council's assessment | 33 |
| 7.1 | Severe environmental damage | 33 |
| 7.2 | Human rights violations | 36 |
| 7.3 | Conclusion | 38 |
| 8 | Recommendation | 38 |

1 Introduction

At a meeting on 2 October 2006 the Council on Ethics for the *Government Pension Fund – Global* decided to assess whether the investments in the company Vedanta Resources Plc. may imply a risk of the Fund contributing to unethical acts under the Ethical Guidelines, point 4.4.

As of 31 December 2006 the *Government Pension Fund – Global* held shares worth some NOK 81 million in the company, amounting to an ownership share of 0.16 per cent.

Vedanta Resources is a British metals and mining company. Its core business is linked to mining and production of copper, aluminium, and zinc in India. The company also has operations in Australia, Zambia and Armenia. Vedanta Resources is accused of having caused environmental damage and contributed to human and labour rights violations. Other accusations include repeated breaches of national environmental legislation, illegal production expansions, irresponsible handling of hazardous waste, violations against tribal peoples, deplorable wages, and dangerous working conditions in the mines and factories. The company is also criticized for being involved in bribery and corruption.

The Council has assessed the risk of the Fund, through its investment in Vedanta Resources, contributing to two breaches of the Ethical Guidelines – severe environmental damage and human rights violations. In this context, the Council has examined four Vedanta subsidiaries that operate in India: Sterlite Industries, Madras Aluminium Company, Bharat Aluminium Company, and Vedanta Alumina. Vedanta Resources holds a controlling interest in all these companies.

In accordance with the Guidelines, point 4.5, the Council has contacted Vedanta Resources through Norges Bank requesting the company to comment on the aforementioned accusations and their basis. A letter was written to the company on 15 March 2007 soliciting comments on the draft recommendation by 10 April. At the same time, the company was informed that the Council would recommend its exclusion on 15 May if the company did not respond to the Council's enquiry. Following a request from Vedanta on 2 April, the deadline was extended to 20 April. Being contacted again on 23 April, the company indicated that a reply would be sent within a few days. As of 15 May 2007, the company has not responded to the Council's enquiry.

In order to establish whether there is a risk of complicity in severe environmental damage, a direct link must exist between the company's operations and the violations. The Council takes as its point of departure that the environmental damage must be extensive. Great importance must be placed on whether the damage causes irreversible or long-term effects, and whether it has considerable negative impact on human life and health. Moreover, there should be an assessment of the extent to which the company's acts or omissions have caused the damage, including whether the damage is a result of violations of national legislation or international norms; whether the company has failed to act in order to prevent the damage, or failed to sufficiently make amends for the scope of the damage. There must also be a probability that the company's unacceptable practice will continue in the future.

The question of whether the company contributes to gross or systematic human rights violations is assessed on the basis of whether there is an actual link between the company's operations and the alleged offences, and whether these violations have been perpetrated

with a view to serving the company's interests or facilitating operational conditions. The company must have contributed to the violations or been aware of them, but been remiss about attempting to prevent them.

The Council finds that the allegations levelled at the company regarding environmental damage and complicity in human rights violations, including abuse and forced eviction of tribal peoples, are well founded. In the Council's view the company seems to be lacking the interest and will to do anything about the severe and lasting damage that its activities inflict on people and the environment. As described in Chapter 5, the violations against the environment and human rights that have been revealed are recurrent at all the subsidiaries subject to investigation and have taken place over many years. In the Council's view, they indicate a pattern in the company's practices where such violations are accepted and make up an established part of its business activities. Such a pattern of conduct constitutes an unacceptable risk that the company's unethical practices will continue in the future. After an overall assessment the Council finds that the criteria for severe environmental damage and gross or systematic human rights violations have been met in this case.

The Council has reached the conclusion that the Ethical Guidelines, point 4.4, second clause, provide a basis for recommending the exclusion from the Government Pension Fund – Global of the company Vedanta Resources Plc., as well as the individually listed subsidiaries Sterlite Industries Ltd. and Madras Aluminium Company Ltd., due to an unacceptable risk of complicity in present and future severe environmental damage and systematic human rights violations.

2 Sources

The Council on Ethics places great importance on substantiating the recommendations for exclusion with ample and varied source material. In this case the Council has drawn on surveys and investigations conducted or commissioned by Indian authorities, reports from national and international non-governmental organisations, articles in Indian and international newspapers, and documentaries.

The Council will make specific mention of the reports from the *Indian Supreme Court Monitoring Committee on Hazardous Wastes* and the *Indian Supreme Court's Central Empowered Committee*. Both committees are appointed by the Indian Supreme Court. The *Supreme Court Monitoring Committee on Hazardous Wastes (SCMC)* was created in November 2003 to monitor the implementation of the regulations on hazardous waste and a series of orders issued by the Indian Supreme Court since 1995. The SCMC is an expert committee on waste and the environment, which reports to the Indian Supreme Court four times a year.¹ The *Central Empowered Committee (CEC)* was established by the Supreme Court in May 2002 to investigate complaints relating to the *Indian Forest Conservation Act* and the *Environmental Protection Act*. The committee is made up of former judges and civil servants with special competence in the environmental field. The CEC shall give recommendations to the Supreme Court regarding violations of the law in specific cases. To date the CEC has submitted recommendations in 400 cases to the Supreme Court, all of which have been accepted.

¹ <http://www.scmc.info/index.htm>

In addition to this, the Council has commissioned its own reports and studies by external Norwegian, British, and Indian consultants. Representatives from the Council's secretariat have visited India and had several meetings with local organisations and individuals who have in-depth knowledge of Vedanta's operations. Furthermore, the Council has gained access to letters and orders from Indian authorities to the company. The sources are referred to in footnotes throughout the document.

3 The Council's considerations

The Council has assessed whether the *Government Pension Fund – Global*, through its ownership in the British company Vedanta Resources Plc., runs the risk of contributing to unethical acts. In this context four Vedanta subsidiaries have been subject to the Council's survey: Sterlite Industries, Madras Aluminium Company, Bharat Aluminium Company, and Vedanta Alumina.

The Ethical Guidelines, point 4.4, second clause state:

” The Council issues recommendations on the exclusion of one or more companies from the investment universe because of acts or omissions that constitute an unacceptable risk of the Fund contributing to

- Gross or systematic human rights violations such as murder, torture, deprivation of liberty, forced labour, the worst forms of child labour and other exploitation of minors*
- Grave breaches of individual rights in war or conflict situations.*
- Severe environmental damage*
- Gross corruption*
- Other particularly serious violations of ethical norms”*

In particular, the Council has assessed whether Vedanta Resources causes severe environmental damage, but it has also evaluated the accusations of involvement in human rights violations. In previous recommendations the Council has elaborated on and exemplified these criteria.²

The Council must make a concrete assessment of what is to be considered *severe environmental damage* in each case, basing itself on an overall evaluation with particular emphasis on whether:

- *the damage is significant;*
- *the damage causes irreversible or long-term effects;*
- *the damage has considerable negative impact on human life and health;*
- *the damage is a result of violations of national laws or international norms;*
- *the company has neglected to act in order to prevent the damage;*
- *the company has not implemented adequate measures to rectify the damage;*

² See recommendations regarding Total S.A., Wal-Mart Stores Inc., Freeport McMoRan Inc., and DRD Gold Ltd.; available at www.etikkradet.no

- *it is probable that the company's unacceptable practice will continue.*

Moreover, the Council has assessed whether the company contributes to *gross or systematic human rights violations*. This issue will be evaluated on the basis of whether there is an actual connection between the company's operations and the alleged violations, and whether the violations have been perpetrated with a view to serving the company's interests or facilitating its operational conditions. The company must either have contributed to the violations itself, or been aware of them without seeking to prevent them.

The Council would like to stress that *existing* and *future* violations are the ones covered by the Guidelines, both with regard to environmental damage and human rights abuses. This implies that one must assess whether there is a risk that the company's unacceptable practice will continue in the future. The company's previous actions may give an indication as to how it will behave in the future, and thus form a basis for the assessment of whether there is an *unacceptable risk* that unethical actions will occur henceforth. This also means that proof of future unethical actions is not required – it is sufficient to establish the existence of an unacceptable risk.

The concrete actions and omissions that Vedanta Resources is accused of will be assessed with reference to the elements above.

4 About Vedanta Resources

Vedanta Resources Plc.³ is a British metals and mining company with operations in India, Zambia, Australia, and Armenia.⁴ Its core business is linked to the mining and production of copper, aluminium, and zinc, but the company is also involved in gold and pig iron mining and production.

The company's main operations are located in India, (19 production sites in 6 states),⁵ where the company holds significant market shares in aluminium (20 per cent), copper (40 per cent), and zinc (75 per cent).⁶ In April 2007 the company acquired the controlling interest in the metals and mining company Sesa Goa (iron ore and pig iron). In addition to this, the company owns and runs, through subsidiaries, copper mines in Zambia and Australia⁷, as well as a gold mine in Armenia.⁸

Corporate structure

During recent years Vedanta's corporate structure has been constantly changing.⁹ Volcan Investments Ltd. is Vedanta Resources' holding company and currently owns 54 per cent of the company's shares.¹⁰ Volcan is controlled "by persons related to the Executive

³ In the following also referred to as Vedanta.

⁴ <http://www.vedantaresources.com/background.htm>

⁵ Vedanta Resources 2007: Acquisition of Sesa Goa. Investor Presentation April 2007; available at http://www.vedantaresources.com/uploads/Acquisition%20of%20SG_Final.pdf

⁶ IndiaInfoline, 10 Jan 2006, <http://www.indiaonline.com/meet/me1022.html>

⁷ <http://www.vedantaresources.com/operationssummary.htm>

⁸ <http://www.vedantaresources.com/uploads/SGD%20Tender%20Successful%20-%20Final%20press%20release%20%20Oct%202006.pdf>

⁹ The company's "complex structure" delayed the UK Financial Services Authority's (FSA) approval process prior to its listing on the London Stock Exchange in 2003.

¹⁰ <http://www.vedantaresources.com/corporategovernancereport.asp>

Chairman, Mr Anil Agarwal.”¹¹. According to the annual report for 2006 Vedanta has 18 subsidiaries, of which 8 are involved in mining and metal production; see overview below.¹² Other sources reveal that Vedanta also is the principal shareholder in the mining companies Sterlite Gold (registered in Canada) and Sesa Goa.¹³ All figures refer to 31 March 2006, with the exception of the companies Sterlite Gold and Sesa Goa.

| Subsidiary | Ownership stake |
|--|-----------------|
| Sterlite Industries Ltd. | 76% |
| Madras Aluminium Company Ltd. (MALCO, India) | 80% |
| Bharat Aluminium Co. Ltd. (BALCO, India) | 40% |
| Vedanta Alumina (India) | 93% |
| Hindustan Zinc Ltd. (HZL, India) | 49% |
| Konkola Copper Mines Plc. (KCM, Zambia) | 51% |
| Copper Mines of Tasmania Pty Ltd. (CMT, Australia) | 76% |
| Thalanga Copper Mines Pty Ltd. (TCM, Australia) | 76% |
| Sterlite Gold Ltd. (Canada) | 80% |
| Sesa Goa | 51% |

The company informs that it intends to acquire outstanding stakes in several subsidiaries and to consolidate its ownership in the aluminium and copper operations. Vedanta has already exercised its option to buy the remaining shares in Balco from the Indian government.¹⁴ The company also intends to acquire the outstanding shares in Hindustan Zinc, which will be available during 2007,¹⁵ and is in the process of acquiring the remaining stake in Sterlite Gold.¹⁶

The Council is satisfied that Vedanta Resources, in its capacity as majority shareholder, exercises considerable influence over its subsidiaries.¹⁷

At the end of 2006, the Government Pension Fund – Global only held shares in Vedanta Resources. Nevertheless, the Council has deemed it right to also recommend exclusion of the subsidiaries Sterlite Industries and Madras Aluminium Company, which are listed on the stock exchange in India. The Council is not aware that Bharat Aluminium Company

¹¹ Vedanta Resources plc 2006: Annual Report 2006, p. 115. The other companies seem to be mainly holding and financial companies; available at

<http://www.vedantaresources.com/uploads/Vedanta%202006%20Annual%20Report%20V1.pdf>

¹² See footnote 11.

¹³ See footnote 5 and press release from Vedanta 10 April 2007; available at

<http://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00002387>

¹⁴ Vedanta Resources plc, *Preliminary Results for the Year Ended 31 March 2006*, 01.06.06, p.21. The acquisition is only brought into effect once the government has approved the valuation of the company.

http://www.vedantaresources.com/uploads/Preliminary%20Results%202006_Final.pdf

¹⁵ See footnote 14.

¹⁶ Press release from the company on 10 April 2007, available at

<http://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00002387>

¹⁷ Anil Agarwal and Navin Agarwal are chairmen of the boards of all Vedanta subsidiaries (with the exception of Sesa Goa as of 15 May 2007); see the respective company websites.

Ltd. and Vedanta Alumina Ltd are listed on the stock exchange. The Council has not performed a complete investigation of the Vedanta group.

5 Accusations of severe environmental damage and human rights violations

In several different contexts there have been allegations that Vedanta Resources has caused environmental damage and contributed to human rights and labour violations. With regard to its mining and industrial operations, the company has been accused of repeated breaches of national environmental legislation, illegal production expansions, irresponsible handling of hazardous waste, violations against tribal peoples, deplorable wages, and dangerous working conditions in the mines and factories. The company is also accused of being involved in bribery and corruption.

Many of the accusations have come to light in reports from non-governmental organisations such as the *Indian People's Tribunal on Environment and Human rights*¹⁸ and the *India Resource Centre*.¹⁹ International organisations and NGO networks such as the *India Committee of the Netherlands*,²⁰ *Social Watch*,²¹ and *Mines and Communities*²² have also reported on Vedanta's alleged violations and unacceptable practices. A number of these allegations have been examined and documented by subcommittees appointed by the Indian Supreme Court.²³

The Council has assessed the following:

- allegations concerning severe environmental damage at the operations of Sterlite Industries, Malco, and Vedanta Alumina;
- accusations of violations and forced relocation of tribal peoples at Vedanta Alumina's operations in Orissa and Balco's bauxite mines.

Other serious accusations outside the scope of the Council's assessment

The Council has made a note of, but has not examined in any further detail, the serious allegations against the company regarding dangerous working conditions and severe environmental damage in other parts of the company's operations, as well as corruption. Some of these accusations are briefly referred to below in order to give a more complete picture of the company's alleged contribution to violations.

Both at Sterlite Industries, Malco, and Balco accusations have been raised regarding dangerous working conditions. These are briefly described under the sections about each individual company, but have not been examined further.

¹⁸ <http://www.iptindia.org/index.php>

¹⁹ <http://www.indiaresource.org/>

²⁰ <http://www.indianet.nl/english.html>

²¹ <http://www.socialwatch.org/en/portada.htm>

²² <http://www.minesandcommunities.org/index.htm>

²³ The Indian Supreme Court Monitoring Committee on Hazardous Waste Management and the Environmental Committee of the Indian Supreme Court; see Chapter 2.

Konkola Copper Mines in Zambia are accused of severe pollution and environmental damage. The last incident occurred in November 2006 after spills from the tailings leach plant contaminated the drinking water for 50 000 people, many of whom are reported to lack other drinking water sources. The company is accused of repeatedly ignoring environmental requirements, as well as being criticized for faulty maintenance and a failure to implement measures aimed at discharge reduction and remediation.²⁴

Accusations have also been levelled at Vedanta regarding corruption, fraud, forgery, manipulation of share prices, and insider trading which involves both the company's local management, the chairman Anil Agarwal, and Indian government officials. These allegations have been voiced by many, including journalists, writers, members of parliament, NGOs and the *Supreme Court's Central Empowered Committee*, a committee that reports to the Indian Supreme Court.²⁵ The situation may be illustrated by the fact that the Securities Exchange Board of India in 1998 denied Vedanta access to the capital market for two years because of insider trading and other offences.²⁶ According to Indian media, allegations have been made that the company has paid some USD 2.6 million to politicians,²⁷ and that *Orissa's Chief Minister*, Mr. Naveen Patnaik, has bestowed undue favours on the company and its projects in Orissa.²⁸ In its recommendation to the Supreme Court, the Central Empowered Committee indicates that the company, the Ministry of Environment and Forests, and the Orissa government are involved in this: *"The casual approach, the lackadaisical manner and the haste with which the entire issue of forests and environmental clearance for the alumina refinery project has been dealt with smacks of undue favour/leniency and does not inspire confidence with regard to the willingness and resolve of both the State Government and the MoEF to deal with such matters keeping in view the ultimate goal of national and public interest."*²⁹

5.1 Sterlite Industries - Tuticorin

Sterlite Industries (India) Limited³⁰ is one of two major copper producers in India.³¹ The production is divided between two units, Tuticorin and Silvassa. The first is located on the

²⁴ Fraser, Alastair and John Lungu 2007: *For Whom the Windfalls? Winners and Losers in the Privatization of Zambia's copper mines*; available at <http://www.minewatchzambia.com/>. This case received ample coverage in the media, for instance in the Times of Zambia: *KCM Pollutes Kafue River*, <http://www.times.co.zm/news/viewnews.cgi?category=4&id=1162963634> and MineWeb: *Konkola Copper pollution licenses to remain suspended*. 15.11.06. http://www.mineweb.net/whats_new/421669.htm

²⁵ See Chapter 2 in this recommendation.

²⁶ Jayaraman, Nityanand 2005, *Vedanta Undermines Indian Communities*"; available at <http://www.corpwatch.org/article.php?id=12783>

²⁷ NewIndPress Bhubaneswar, 04.08.06, *House of boil over Vedanta*; available at <http://www.minesandcommunities.org/Action/press1181.htm>

²⁸ The Indian Express, 05.08.06: *'Favouring' VAL: Government under fire*; available at <http://www.minesandcommunities.org/Action/press1181.htm>. Vedanta Alumina's project in Orissa is described in further detail in section 5.4.

²⁹ Central Empowered Committee 21.09.05: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa*, para 32; available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

³⁰ Hereinafter called Sterlite; <http://sterlite-industries.com/index1.asp>. Sterlite Industries (India) Limited was acquired by the Agarwal family in 1986. Sterlite was listed on the Bombay Stock Exchange in 1988 and ON the National Stock Exchange in 2004; see <http://www.vedantaresources.com/corporatehistory.htm>

³¹ Sterlite has a market share of 42% per cent in India. With a market share of 44% per cent, Hindustan Copper Ltd is the other big player, see ICRA Sector Analysis 2005: *The Indian Copper Industry*; available at <http://icra.in/recentrel/Copper-200505.pdf>

southern tip of India in Tamil Nadu state, featuring a smelter, a refinery, and copper rod plants. The other includes a refinery and copper rod plants in Western India, Gujarat state³². Receiving copper anode from the Tuticorin smelter 575 km further south, the Silvassa refinery processes it.³³ The Council's assessment refers to the Tuticorin complex.

5.1.1 The accusations against Sterlite's Tuticorin complex

In particular, Sterlite has been accused of irresponsible handling of hazardous waste, illegal production expansion, and repeated and severe violations of a series of environmental requirements. Allegedly, this has happened systematically and over many years. The company's hazardous waste management and illegal emissions are thought to have generated far-reaching pollution of soil, air, groundwater and drinking water, causing considerable environmental damage and adverse health effects in the local population.

Allegations of poor security at the plant causing several fatal accidents and injuries among the workers have also been made against the company. The Indian journalist Nityanand Jayaraman has reported that at least 139 people have been seriously injured and 13 have died as a result of accidents between 1996 and 2004.³⁴

5.1.2 More details on the operation at Tuticorin

The smelter at Tuticorin is based on copper concentrate, which is imported from Sterlite's two Australian mines, among others.³⁵ Copper concentrate is the raw material for the production of copper matte. This, in turn, is refined into blister copper and then further processed into copper anode, copper cathode, and copper rods. The Tuticorin smelter has an annual production capacity of 300 000 tons of copper anode,³⁶ nearly 100 000 tons of copper cathode, and some 30 500 tons of copper rods.³⁷ Complementary facilities such as a phosphoric acid plant, a sulphuric acid plant, and a waste water treatment plant have also been built.³⁸

5.1.3 Illegal production expansion

Plant installation irregularities

In 1997 the smelter at Tuticorin was brought on stream. The location conditions imposed by the *Tamil Nadu Pollution Control Board (TNPCB)*³⁹ included a minimum distance of 25 km from the *Gulf of Mannar National Park* and a 250-metre greenbelt to be established

³² <http://www.vedantaresources.com/coppersummary.htm>

³³ <http://www.vedantaresources.com/copperexpansion.htm>

³⁴ Nityanand, Jayaraman, 2005, *Vedanta Undermines Indian Communities*. 15.11.05; available at <http://www.corpwatch.org/article.php?id=12783>

³⁵ National Environment Engineering Research Institute (NEERI): *Environmental Audit of M/s Sterlite Industries Ltd. Producing Copper Anodes, Sulphuric Acid and Phosphoric Acid at Tuticorin*. March 2005, p. 6; on file with the Council.

³⁶ Vedanta Resources plc 2006: Annual Report 2006, p. 6; available at <http://www.sterlite-industries.com/refining.asphttp://www.vedantaresources.com/uploads/Vedanta%202006%20Annual%20Report%20V1.pdf>

³⁷ See footnote 36, p. 121. In 2005-2006 the annual production of copper cathode and copper rod was 98 796 tons and 30 384 tons respectively.

³⁸ See footnote 36, p. 121.

³⁹ The Tamil Nadu Pollution Control Board (TNPCB) is the pollution authority in Tamil Nadu state; see <http://www.tnpcb.gov.in/>

around the area as an air pollution and noise buffer.⁴⁰ The authorities later reduced this requirement to 25 metres.⁴¹ Clearance was given for an annual production of 40 000 tons of *blister copper* (391 tons a day) and the daily emission of 1 060 tons of sulphuric acid.⁴²

More recently, however, it has been confirmed that Sterlite never complied with the conditions prescribed by the authorities. The company did not create any greenbelt around the site,⁴³ the facilities were constructed inside the established 25-km zone from the national park, and the company disregarded a series of production conditions imposed on the plant, as described below.⁴⁴ Neither did it conduct an environmental impact assessment as prescribed by the law. The assessments that were made were later regarded as "totally inadequate in addressing the issue of impact of pollution caused by the operation of the copper smelter."⁴⁵

Many accidents and poor waste management

In 1997, after a series of accidents and gas leaks at the plant, the Madras High Court commissioned the *National Environmental Engineering Research Institute (NEERI)* to prepare a report on the environmental status at the plant.⁴⁶ The report revealed 15 violations of the environmental requirements, including grave breaches of the *Consents to Operate under the Air and Water Acts*. Findings also included faulty waste management, a lack of emergency plans in case of serious accidents, and the absence of production permits for phosphogypsum.⁴⁷ Moreover, high arsenic and other heavy metals content was found in the groundwater. The report concluded that the closure of the operations should be considered because the emissions from Sterlite's plant represented a real threat to health, safety and the environment.⁴⁸ As a result, the court ordered the Tuticorin plant to close until the conditions had been investigated and put in order. The plant was shut down on the 23 November 1998, but reopened a month later on an experimental basis.⁴⁹ In 1999 Sterlite was granted permission to resume full production at the plant despite a new investigation which showed that not all conditions had been met.⁵⁰

⁴⁰ Letter from the TNPCB to Sterlite Industries 01.08.1994: *Regarding issue of NOC* (No Objection Certificate); on file with the Council.

⁴¹ TNPCB 22.05.1995: *Consent for the establishment of Sterlite*, Order No 16; on file with the Council.

⁴² TNPCB 14.10.1996: *Consent to Operate under the Water Act Order No 15481 and Consent to Operate under the Air Act Order No 11451*; on file with the Council.

⁴³ On its website Sterlite informs that a 25-metre greenbelt now has been established as part of the company's endeavours to protect and preserve the natural environment; see <http://sterlite-industries.com/csr.asp>. This is also confirmed in the TNPCB's inspection report of 28.02.06; on file with the Council.

⁴⁴ NEERI 1998: *Evaluation of Pollution Control and Environmental Protection Systems at M/s Sterlite Industries Limited, Tuticorin. Inspection Report*. Hon'ble high Court Judicature at Madras, 17 November 1998, p. 22; on file with the Council

⁴⁵ See footnote 44, p. 47.

⁴⁶ See footnote 44 and, for example, <http://www.indiaresource.org/issues/globalization/2004/sterlite.html>

⁴⁷ See footnote 44.

⁴⁸ See footnote 44, p. 69.

⁴⁹ TNPCB 2003: *Note to consider the grant of No Objection Certificate for the Expansion Project of the unit of M/S Sterlite Industries, 29.01.2004, Item no. 199.1.10*; on file with the Council.

⁵⁰ Jayaraman, Nityanand 2007: *Briefing note*. Commissioned by the Council, on file with the Council.

Violations of production conditions and environmental requirements

In April 2002 Sterlite applied to the Tamil Nadu Pollution Control Board for permission to significantly increase the production at Tuticorin.⁵¹ In April 2004 Sterlite was granted the first of three mandatory permits, a so-called *No Objection Certificate*.⁵² The Pollution Control Board attached a number of conditions referring to issues such as the management and disposal of hazardous waste, designed to prevent runoff, groundwater contamination, and dust dispersion from the dumps. In addition to this, the company was required to eliminate an existing phosphogypsum stack and transfer the contents to a secured deposit site. There were also specific demands regarding the reduction of airborne emissions, such as dust, sulphur, and fluorides.⁵³

On 21 September 2004 the *Supreme Court Monitoring Committee on Hazardous Waste (SCMC)*⁵⁴ inspected the facilities at Tuticorin noting that air emission requirements were not being observed and that hazardous waste management was unsatisfactory. The Committee voiced concerns over the environmental and health impact this may cause. *"The Committee was particularly concerned with the issues relating to the disposal of arsenic containing slag which is dumped in the factory premises and is in the range of several thousands of tonnes. In fact, there is a mountain of arsenic-bearing slag as also one of phospho-gypsum. Phospho-gypsum, if not contained properly, occasionally becomes airborne and may cause severe respiratory disorders in the surrounding vulnerable population."*⁵⁵ During its visit the SCMC was informed that the company was about to triple its production at the plant. On the basis of the company's failure to comply with important environmental requirements, the SCMC instructed the Tamil Nadu Pollution Control Board to appoint an Expert Committee whose mission was to conduct an environmental assessment of the plant and investigate whether Sterlite had proceeded with any illegal production expansion.⁵⁶

According to the Expert Committee, which inspected the plant in October 2004, Sterlite had constructed a new 300 000-ton copper anode smelter, a 127 000-ton refinery, a coal-fired power plant, a copper rod plant, and an oxygen plant, without having received the

⁵¹ Letter from the TNPCB to the Learned Advocate General of Tamilnadu 24.02.04: *Sterlite Industries - Issue of NOC for expansion of copper smelter plant*; on file with the Council. Sterlite applied for a permission to increase the production of copper anode from 391 to 900 tons/day, of phosphoric acid from 350 to 800 tons/day, of sulphuric acid from 1060 to 3150 tons/day, and to start the production of 875 tons of copper cathode per day; see footnote 53.

⁵² A company that wishes to start a new unit must first apply for a No Objection Certificate (NOC) from the local Pollution Control Board, and then for a Site Clearance from the Ministry of Environment and Forests (MoEF). If the company is granted these permissions, it may request a construction permit from the local Pollution Control Board (PCB), in this case the Tamil Nadu Pollution Control Board (TNPCB). The permit generally includes a series of conditions that the company has to comply with before or during the construction of the facilities. Once the facilities have been built, the company must apply for an operating permit from the state Pollution Control Board. This permit may also include a number of prerequisites.

⁵³ Letter from the TNPCB to the Environment and Forests Department, Chennai 21.04.04: *Regarding Grant of No Objection Certificate for Expansion of Sterlite Industries*; on file with the Council.

⁵⁴ See Chapter 2.

⁵⁵ SCMC 2004: *Report of the visit of the SCMC to Tamilnadu September 20-22,2004*; available at <http://www.scmc.info/reports/tamilnadu/scmctamilnadu.htm>

⁵⁶ See footnote 55. *"The SCMC is also directing the TNPCB to make a detailed visit to the plant to ascertain whether the unit has already proceeded with the expansion of the project without prior permission from the appropriate authority(ies)."*

necessary environment and safety permits from the government.⁵⁷ Sterlite had not made an environmental impact assessment of the production expansion either, despite this being an explicit prerequisite of the clearance issued by the MoEF in 1995. The SCMC draws the following conclusion: *"Thus it can be seen from the Expert Committee Report that the Company has expanded the plant without consent from the Board and without environment clearance and that it has openly violated the provisions of the EIA [Environmental Impact Assessment] Notification and the Environment Protection Act, 1986,"* and continues: *"It appears that several conditions laid down both in the order of environment clearance issued in 1995 and the consent orders have not been complied with at all."*⁵⁸

The environmental audit also documented that the waste management at the plant was unsatisfactory, and that this probably has caused substantial contamination of soil and groundwater (see section 5.1.4). Notwithstanding, the Tamil Nadu Pollution Control Board granted consent for the expanded production in April 2005.⁵⁹ By then the Ministry of Environment and Forests had issued a post-facto environmental clearance to Sterlite, the day after the Supreme Court Monitoring Committee visited the plant in September 2004.⁶⁰

The SCMC's subcommittee inspected Sterlite's unit again in May and July 2005. Once more it was established that Sterlite had not taken steps to improve waste management, and the Committee therefore recommended that the authorities should close down the plant until the company had met the environmental requirements.⁶¹ Two months later the situation at the unit was still unchanged,⁶² leading the SCMC to conclude that *"At the present moment the Sterlite unit at Tuticorin is completely in violation of the HW [hazardous waste] rules."*⁶³ The SCMC stated that arsenic-containing waste was being stored in the open without protection or containment, and that environmentally hazardous substances were leaking into the groundwater. The Committee pointed out that the company had not even started moving the landfills and did not comply with the requirements for phosphogypsum deposits. On this background the SCMC repeated the recommendation that the Tamil Nadu Pollution Control

⁵⁷ Letter from SCMC to TNPCB, 02.05.05; available <http://www.scmc.info/communications/sterlite.htm>; see also <http://www.minesandcommunities.org/Action/press766.htm>

⁵⁸ See footnote 57.

⁵⁹ SCMC 2005: *Report of SCMC Sub Committee's visit to Tamil Nadu during July 17-18, 2005*. The consent was evidently given after pressure from the Ministry of Environment and Forests, MoEF: *"TNPCB claims it received a written order from MoEF which directed it to grant consent to the unit for its expanded production"*; available at http://www.scmc.info/reports/tamilnadu/scmc_tamilnadu_third_report.htm

⁶⁰ Letter from the Ministry of Environment and Forests to Sterlite Industries 22.09.04: *Environmental Clearance for the Expansion of Copper Smelter plant by M/s Sterlite Industries*; on file with the Council. Based on the Expert Committee's report, the SPMC instructed the Tamil Nadu Pollution Control Board to send a so-called "show cause notice" to Sterlite *"as to why prosecution should not be launched against it for large-scale violations of the provisions of these environment laws"*. A show cause notice is a judicial order demanding a party to appear before the court to explain why the court should not file a lawsuit against it. The legislation referred to is the Environment Protection Act 1986 and Rules, the provisions of the Water Act 1974, and the Air Act 1981; see <http://www.scmc.info/communications/sterlite.htm>. The Council is unaware of the outcome of this.

⁶¹ See footnote 59.

⁶² Letter from the TNPCB to Sterlite Industries 14.09.05: *Issue of show cause notice under Section 25 of Water Act and Issue of Show cause notice under Section 21 of the Air Act*; on file with the Council. During an audit on 12 September 2005 the inspectors from the TNPCB found that the waste was still being deposited in unsecured pits, and that no measures had been implemented to rehabilitate the ground which had been contaminated by arsenic. Environmental requirements regarding air emissions were not being complied with nor had the mandatory health examinations been carried out.

⁶³ Letter from the SCMC to the TNPCB, 26.10.05; available at http://www.scmc.info/reports/tamilnadu/scmc_sterlite.htm

Board should immediately proceed with the closure of Sterlite's plant.⁶⁴ The Council is not aware that this has been done. An audit report from the Tamil Nadu Pollution Control Board of 28 February 2006 shows that the handling of hazardous waste and a number of other practices were still not in compliance with official regulations.⁶⁵

Additionally, correspondence between the Tamil Nadu Pollution Control Board and Sterlite shows that the company repeatedly has been requested to perform environmental impact assessments and carry out health surveys of the population, etc.⁶⁶ To the Council's knowledge, the company has yet to meet these requirements.

The question of the company's illegal operations was raised by a shareholder at Vedanta's annual meeting on 3 August 2005, but Vedanta's chairman, Mr Anil Agarwal, made no reply.⁶⁷

5.1.4 Health and environmental damage

Hazardous waste disposal

According to Vedanta's annual report for 2006, a secure landfill was constructed that year at Sterlite's Tuticorin plant "in an attempt to improve hazardous waste management". The company does not specify what this implies or what kind of waste that will be deposited in the new landfill.⁶⁸

Sterlite's unit at Tuticorin generates large quantities of hazardous waste (see Table 1), and the projected production expansion will further increase these volumes. According to Sterlite, the total amount of waste will increase from about 2 700 tons/day to 6 800 tons/day, of which 2 600 tons will be made up of phosphogypsum.⁶⁹

Table 1: Arsenic and heavy metals content in different types of waste from Sterlite's Tuticorin plant prior to the production increase⁷⁰

| | Amount tons/day | As (mg/kg) | Pb (mg/kg) | Zn (mg/kg) | Cu (mg/kg) | Ni (mg/kg) | Cd (mg/kg) | Fluoride (mg/kg) |
|--------------------|-----------------|------------|------------|------------|------------|------------|------------|------------------|
| ISA-ESP dust | 16 | 2 971 | 25 151 | 22 734 | 304 000 | 82.7 | 5 322 | |
| Converter ESP dust | 4 | 2 747 | 36 946 | 21 280 | 282 000 | 67.7 | 4 992 | |
| Slag (RHF) | 700 | 221 | 22,4 | 15.4 | 162.8 | 12.3 | 2.5 | |
| Slag (SCF) | 200 | 204.2 | 165,4 | 928.0 | 3 363 | 176.4 | 28.8 | |

⁶⁴ See footnote 63.

⁶⁵ TNPCB 28.02.2006: *Inspection Report for Renewal of Consent /Expansion for Sterlite Industries. Inspection conducted on 15.02.06*; on file with the Council.

⁶⁶ Conditions and correspondence on file with the Council.

⁶⁷ Mines and Communities 2005: *We call in on Vedanta at its AGM to find it hoisted by its own petards. London Calling August 7 2005*; available at <http://www.minesandcommunities.org/Action/press700.htm>

⁶⁸ Vedanta Resources plc 2006: Annual Report 2006, p. 34; available at <http://www.vedantaresources.com/uploads/Vedanta%202006%20Annual%20Report%20V1.pdf>

⁶⁹ Sterlite Solid Waste Management Plan – Copper Smelter Expansion, not dated; on file with the Council.

⁷⁰ National Environment Engineering Research Institute (NEERI): *Environmental Audit of M/s Sterlite Industries Ltd. Producing Copper Anodes, Sulphuric Acid and Phosphoric Acid at Tuticorin*. March 2005, Chapter 6.2 and Table 6.2; on file with the Council. The values in Table 6.2 for ETP cake, scrubber cake and phosphogypsum deviate from those stated in the text in Chapter 6.2. The Council has presented the values quoted from the text.

| | | | | | | | | |
|---------------|-------|--------|-------|-------|-------|------|-------|--------|
| ETP cake | 37 | 17 198 | 4 108 | 9 935 | 9 854 | 31,5 | 2 039 | |
| Scrubber cake | 50 | 432 | 67 | 52 | 404 | 220 | 11 | |
| Lime grit | 10 | 171 | 55,5 | 7.8 | 122 | 19 | | |
| Phosphogypsum | 1 700 | 40.3 | 29.3 | 13.8 | 101 | 19 | | 21 000 |

Slag from the smelter, waste from the treatment plant (ETP cake, scrubber cake) and the phosphoric acid plant (in the form of phosphogypsum) are deposited on site.⁷¹ In principle, dust from the electrofilters (ISA and Converter ESP) is to be recycled as part of the process.⁷² However, the TNPCB confirms that the dust is deposited.⁷³ To the Council's knowledge, it is also uncertain whether it is technically feasible to recycle all the dust from the electrofilters. This has proven to be a challenge in other smelters, partly because the dust is easily dispersible, making it physically difficult to return it to the melt before it is blown off.⁷⁴ Therefore, there is a risk that a part of this dust is also deposited.

According to the NEERI report 50-60 per cent of the phosphogypsum is sold to the cement industry. This seems to be a very high proportion. Phosphogypsum must be treated before it can be used as an additive in cement, and, as a comparison, only 1 per cent of the US annual production of phosphogypsum is reused for different purposes.⁷⁵ Internationally, the Council has not found sources that document such extensive use of phosphogypsum in cement production.

As illustrated in Table 1 waste from the various processes at the Tuticorin plant shows high concentrations of heavy metals, arsenic, and fluorides. According to Indian regulations it is therefore classified as hazardous waste.⁷⁶ With the exception of slag and lime grit, the waste fractions would also be considered hazardous waste under EU regulations.⁷⁷

Arsenic, cadmium, and lead are considered hazardous substances with carcinogenic properties,⁷⁸ whereas fluoride may lead to fluorosis, a condition that affects bone structure and teeth. The arsenic, heavy metals and fluorides contained in the waste are readily soluble compounds. Groundwater samples taken under and in the vicinity of the deposit sites show

⁷¹ See footnote 70, Chapter 6.

⁷² See footnote 70, Chapter 6.

⁷³ TNPCB 28.02.2006: *Inspection Report for renewal of Consent /Expansion for Sterlite Industries. Inspection conducted on 15.02.06*; on file with the Council.

⁷⁴ Norconsult 2007: *Health and environmental impact from the Tuticorin plant*. Report commissioned by the Council; on file with the Council.

⁷⁵ <http://www.epa.gov/radiation/neshaps/subparttr/other.htm>

⁷⁶ Measured in dry weight, the concentration (mg/kg) of several heavy metals in the waste is higher than the Hazardous Waste Management and Handling Amendment Rules' Table 2 (HWM rules 2003 laid down by the Ministry of Environment and Forests). Table 1 in the HWM rules classifies the waste according to the production process, while Table 2 classifies it according to the heavy metals concentrations; available at: <http://www.cpcb.nic.in/Hazardous/HWRules-2003.doc>. See also Letter from the SCMC to the TNPCB, 26.10.05; available at http://www.scmc.info/reports/tamilnadu/scmc_sterlite.htm

⁷⁷ See footnote 74. This assessment is based on the concentrations found in Sterlite's waste as quoted in Table 1 in the above section.

⁷⁸ <http://www.epa.gov/region5/superfund/ecology/html/toxprofiles.htm#as>

elevated values of copper, chrome, lead, cadmium and arsenic.⁷⁹ The chloride and fluoride content is also too high when compared to Indian drinking water standards.⁸⁰ According to the NEERI's environmental audit, it is probable that the groundwater contamination is caused by leachate and runoff from the landfills.⁸¹ *"In view of the above-mentioned design details and in absence of any leachate collection and removal system, the landfill system is likely to pose significant threat of leaching of various constituents from the contained wastes and contamination of groundwater."*⁸²

The plant is situated in a densely populated area, and more than 250 000 people live less than 7 km from the site.⁸³ The environmental audit shows that most villages within an 8 km radius from the Sterlite plant use the groundwater as drinking water.⁸⁴ Pollution from the landfills has made the groundwater in the area unsuitable as drinking water, but due to a lack of alternatives the groundwater is still being used as a drinking water source by the local population. Hence, the contamination will constitute a significant risk of developing chronic diseases, especially in the long term. In the USA the authorities regard phosphogypsum as a considerable health and environmental hazard due to the content of heavy metals and radioactive substances.⁸⁵ The Council has no information that gives grounds for an assessment of whether the radioactivity in the phosphogypsum produced by Sterlite poses a potential health problem.

The environmental audit shows that the plant site itself is also severely polluted. Ground samples present levels of arsenic which indicate that the whole site may be classified as hazardous waste according to Indian standards.⁸⁶ The SCMC points out that the arsenic and heavy metals content in the ground has increased significantly compared with previous surveys, and that the company should be required to rehabilitate the site.⁸⁷

The health effects are aggravated by the fact that landfills and exposed ground are also sources of air pollution. Waste handling regulations prescribe that former and current deposit sites should be covered in order to prevent dust dispersion and harmful runoff.⁸⁸ Air pollution increases the population's exposure to hazardous substances, as well as contributing to the dispersal of pollutants across a larger area. This has also been expressed in a complaint from the inhabitants of nine villages to the authorities in Tamil Nadu: *"The above villages are heavily affected by the pollution of M/S STERLITE INDIA LIMITED by*

⁷⁹ National Environment Engineering Research Institute (NEERI): *Environmental Audit of M/s Sterlite Industries Ltd. Producing Copper Anodes, Sulphuric Acid and Phosphoric Acid at Tuticorin*. March 2005; on file with the Council. 15 samples were taken for each substance. The following metal content ranges were measured in the groundwater, as mg/l. Indian drinking water standards in brackets: Copper 0.02-0.43 (0.05); Cadmium 0.01-0.05 (0.01); Chrome 0.01-0.16 (0.05); Lead 0.04-0.45 (0.1); Arsenic 0.02-0.8 (0.05).

⁸⁰ See footnote 79, p. 55.

⁸¹ See footnote 79, p. 93.

⁸² See footnote 79, p. 93.

⁸³ Jayaraman, Nityanand 2007: *Briefing note*. Commissioned by the Council; on file with the Council.

⁸⁴ See footnote 79, p. 54.

⁸⁵ <http://www.epa.gov/radiation/neshaps/subparttr/more.htm>

⁸⁶ National Environment Engineering Research Institute (NEERI): *Environmental Audit of M/s Sterlite Industries Ltd. Producing Copper Anodes, Sulphuric Acid and Phosphoric Acid at Tuticorin*, March 2005; on file with the Council, Table 6.2, and Hazardous Waste Rules; see footnote 76.

⁸⁷ Letter from the SCMC to the TNPCB, 26.10.05; available at http://www.scmc.info/reports/tamilnadu/scmc_sterlite.htm

⁸⁸ TNPCB 28.02.2006: *Inspection Report for Renewal of Consent /Expansion for Sterlite Industries. Inspection conducted on 15.02.06*; on file with the Council, and communication with Jayaraman, Nityanand 23.04.07; on file with the Council.

*the waste materials stored in that site about more than one million tonnes and the poisonous Sulphuric Acid Gas emitted during the production.”*⁸⁹

As mentioned earlier the Indian government has ordered Sterlite to conduct health surveys in the area, but this does not seem to have been observed.⁹⁰ Consequently, there is no documentation to substantiate the actual occurrence of health damage. Nevertheless, on the basis of the aforementioned information on poisonous emissions and a lack of clean-up and containment, the Council finds that there is an unacceptable risk that the pollution harms, and will continue to harm, the local population.

5.2 Madras Aluminium Company Ltd (Malco)

The Madras Aluminium Company Ltd. (MALCO) was established in 1965. In 1995, the Sterlite group acquired the company,⁹¹ and today Vedanta Resources is the principal shareholder with an ownership stake of 80 per cent.⁹²

Malco is an integrated aluminium complex including captive bauxite mines (Yercaud and Kolli Hills), a refinery, a smelter and a coal-based power plant. The complex is located near Mettur Dam (in the state of Tamil Nadu), which is one of the biggest water reservoirs in Southern India (the Stanley Reservoir).⁹³ Encompassing an area of more than 60 sq km, the mining operation uses trucks to carry the bauxite to the refinery. Transport routes run through densely populated villages, and the cargo generally remains uncovered.⁹⁴ The refinery has a production capacity of 80 000 tons of alumina, while the smelter's capacity is 40 000 tpa of aluminium.⁹⁵ In the aluminium production the smelter uses Söderberg technology.

5.2.1 The accusations against Malco

The accusations against Malco have centred on the disposal of red mud, which is a residue generated by bauxite refining. There have also been reports that Malco's mine, smelter, and power plant inflict considerable environmental impact and health burden on the local population, as well as repeated work accidents and hazardous working conditions.

In its assessment, the Council's pays particular attention to the disposal of red mud.

5.2.2 The refinery at Mettur Dam

Bauxite ore is mined as a raw material for alumina (aluminium oxide) production, which in turn is used to produce aluminium. The bauxite is washed, ground, and dissolved in a caustic solution under high pressure, producing alumina and red mud.⁹⁶ Consisting mainly

⁸⁹ Letter from Therkuverapandiapuram, Melavittan, Madathur Village Welfare Association to the Chief Election Commissioner of India, New Delhi, dated 22.03.06 and forwarded to the TNPCB on 10.04.06: *Pollution created by M/s Sterlite India Limited by the waste materials*; on file with the Council.

⁹⁰ TNPCB 28.02.2006: *Inspection Report for renewal of Consent /Expansion for Sterlite Industries. Inspection conducted on 15.02.06*; on file with the Council.

⁹¹ http://www.malco-india.com/ass_loc.asp

⁹² <http://www.vedantaresources.com/groupstructure.htm>

⁹³ <http://www.malco-india.com/mining.asp>

⁹⁴ Moody, Roger 2006: *Report on Malco and field trip to Mettur Dam*. Report commissioned by the Council; on file with the Council.

⁹⁵ <http://www.malco-india.com>. Two to three tons of bauxite are required to produce one ton of alumina, while two tons of alumina yield one ton of aluminium.

⁹⁶ <http://www.malco-india.com/refining.asp> and <http://www.world-aluminium.org/>

of silicon oxide, iron, titanium, and calcium oxide, red mud is the residue from the process. It may also contain traces of arsenic, chromium, zinc, and cadmium.⁹⁷ As a result of the caustic washing, red mud is highly alkaline (pH of 13.2 or more).⁹⁸ It is a finely grained substance that turns powdery when dry.

During a visit to the Mettur plant in April/May 2005, the *Indian People's Tribunal on Environment and Human Rights* (IPT)⁹⁹ made the following observations regarding waste management: "On 29 April, 2005, the IPT panel visited a massive "Red Mud" dump on the banks of Stanley Reservoir. A thin bund separates the Red Mud dump from the Reservoir. According to locals, at the reservoir's high water mark, water comes up to the bund level. They say heavy rains can cause a breach in the embankment that would empty the entire dump into the reservoir." The report continues: "During its visit, the Panel observed that Red Mud, in the form of a viscous sludge, was being trucked and dumped atop the existing dump. Entire hillsides are covered and filled with Red Mud. The sun-dried red mud is churned up as super-fine powder by the trucks or any passing vehicle. The panel noted that none of the workers or the drivers handling the waste had any form of protective gear except their own handkerchiefs." The IPT also points out that the dump is unsecured and easily accessible from all sides.¹⁰⁰ Other surveys commissioned by the Council confirm such findings.¹⁰¹

According to Vedanta's annual report for 2006, Malco generates more than 136 000 tons of red mud a year.¹⁰² In the same report, Vedanta conveys an impression of good waste management at the plant: "a pioneering initiative taken by Malco for red mud disposal has been welcomed by the pollution control authorities and is becoming recognised as a benchmark in the industry with other alumina manufacturers being advised to adopt this practice."¹⁰³ According to the company, all red mud produced after January 2006 is used as an additive in cement production.¹⁰⁴

In order to use red mud as an additive in cement, it has to be neutralized or treated in some other way. The company does not provide any information as to how this is done. The Council has not found sources that substantiate such comprehensive use of red mud in cement production in any other place.

⁹⁷ <http://www.world-aluminium.org/environment/challenges/residue.html>,
<http://www.cdc.gov/niosh/topics/silica/#Hazard>.

⁹⁸ <http://www.azom.com/details.asp?ArticleID=2071>

⁹⁹ The Indian People's Tribunal on Environment and Human Rights (IPT), <http://www.iptindia.org/>, is a non-governmental organisation that investigates cases related to the environment and human rights. It was founded in 1993 "to conduct fair and credible investigations focusing on issues concerning human rights and environmental justice... [Positioned] as an alternative People's Court that gives voice to the struggles of grass-root organizations and affected communities." The IPT acts through a network of judges, lawyers, human rights activists, and NGOs in order to assist local movements in bringing their issues to a national and international level.

¹⁰⁰ Indian People's Tribunal on Environment and Human Rights (ITP.) 2005: *The Indian People's Tribunal Report. On Environmental and Human Rights Violations by Chemplast Sanmar and MALCO Industries at Mettur, Tamil Nadu*. July 2005, p. 21; available at <http://www.iptindia.org/pdf/Mettur.pdf>.

¹⁰¹ Moody, Roger 2006: *Report on Malco and field trip to Mettur Dam*, p. 3; on file with the Council. Field surveys from 2005 show that the red mud is dumped less than 10 m from the reservoir's high water mark, separated by a narrow embankment.

¹⁰² Vedanta Resources plc. 2006: Annual Report 2006, p. 33:
[http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report\(1\).pdf](http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report(1).pdf)

¹⁰³ See footnote 102, p. 34.

¹⁰⁴ See footnote 102, p. 34.

To the Council's knowledge, fresh red mud was dumped in the deposit sites as late as early April 2007.¹⁰⁵ Consequently, the Council finds reason to raise doubts about Vedanta's claims of good waste management. And even if the company no longer should dispose of red mud on site, the existing dumps will still represent a threat to the local population and the environment as long as they remain unsecured.

5.2.3 Environmental and health effects

Red mud disposal

There is a considerable risk that the disposal of red mud may contaminate the water reservoir and rivers that flow out of it if the embankment bursts. It is also likely that caustic soda leaks into the groundwater rendering it unsuitable as drinking water. Heavy rainfall may cause the sludge to leak and spill over the embankment, or make the embankment burst.¹⁰⁶ The risk increases proportionately with the filling level at the dump. "*The Red Mud dump is a disaster waiting to happen,*" according to the panel from the *Indian People's Tribunal*.¹⁰⁷

The water reservoir is a drinking water source, and the population living downstream from the reservoir depends on it for farmland irrigation.

During summer the dust blows from the red mud dump into residential areas. The dust contains potentially harmful substances such as silica and residues of caustic soda.¹⁰⁸ The hearing held by the IPT during its visit to Mettur includes the following statement: "*Red mud from Malco is dumped near our house, which is carried into our house by the wind. The odour is intense and causes a lot of breathing problems...All villages lining the Red Mud dump experience breathing distress during summers when Sooravali (whirl-wind) winds blows the dust into the villages.*"¹⁰⁹ Besides, the deposit site poses a safety risk. It has not been secured, and there are reports of many incidents with livestock entering the

¹⁰⁵ An Indian journalist who visited the plant in April 2007 noted that red mud was still being disposed of in the dumps. Communication with Nityanand Jayaraman; on file with the Council.

¹⁰⁶ Indian People's Tribunal on Environment and Human Rights (ITP): *The Indian People's Tribunal Report. On Environmental and Human Rights Violations by Chemplast Sanmar and MALCO Industries at Mettur, Tamil Nadu*. July 2005, p. 21. <http://www.iptindia.org/pdf/Mettur.pdf>

¹⁰⁷ See footnote 106, p 25. The report also refers to previous ruptures in Malco's waste pits: "*On 18 March, 2004, there were heavy rains, and at night, the MALCO compound wall breached and water from the factory entered Jeeva Nagar and a lot of people's houses were washed away. They promised compensation and underground drainage. Till date, the company has not delivered on its promise.*"

¹⁰⁸ Red mud contains, among other things, significant quantities of iron, aluminium and silica, and may also contain residues of heavy metals such as arsenic, cadmium, chrome and lead. The inhalation of silica dust over time may lead to the development of silicosis, which is a chronic lung disease; lung cancer; and other severe respiratory conditions; see for example <http://www.cdc.gov/niosh/topics/silica/#Hazard>. Depending on the bauxite's composition, heavy metals such as arsenic, chrome, and cadmium may represent health hazards. See for example USEPA, Office of Solid Waste 1990: *Report To Congress On Special Wastes From Mineral Processing*; available at <http://www.epa.gov/epaoswer/other/mineral/chapter3.pdf>

¹⁰⁹ The Indian People's Tribunal on Environment and Human Rights (ITP) 2005: *The Indian People's Tribunal Report. On Environmental and Human Rights Violations by Chemplast Sanmar and MALCO Industries at Mettur, Tamil Nadu*. July 2005, p. 21. <http://www.iptindia.org/pdf/Mettur.pdf>

deposit site and suffering burns or being lost.¹¹⁰ To the Council's knowledge, these losses have not been compensated for by Malco.¹¹¹

The deposit site also seems to provide dangerous working conditions. Workers are not equipped with protection against the dust or the chemicals. During its visit, the IPT witnessed the following: "*The workers were covered from head to toe in a fine layer of Red Mud dust. None of them had any protective gear, although all had covered their noses and mouth with handkerchiefs or other pieces of cloth. Despite the caustic nature of the Red Mud, most of them were casually clad in ordinary shoes or even sandals.*"¹¹² The Council is not aware that Malco has responded to the complaints from the local population or the allegations of poor working conditions.

The aforementioned reports indicate that red mud disposal as it is practiced at Malco's plant represents a risk of severe damage to the environment and to the health of workers and local residents. Moreover, the dust from the dumps will cause the pollution to disperse over an even larger area. This is not in compliance with international guidelines for red mud disposal, which prescribe the use of contained and secured deposit sites (with bottom and side lining), as well as regular water sprinkling of the facilities to avoid dust dispersion.¹¹³ Long-term treatment may include neutralizing and covering the deposit sites with soil for planting.

Other areas of MALCO's operation

The company's mining activities, the pollution from its smelter and power plant, and the conditions workers are subject to have also been strongly criticized in light of their environmental and health impact.

Malco's bauxite ore is found in ridges, and the bauxite is mined by removing the crest of the ridge. Overburden and waste rock are mixed and dumped in the slopes rather than being used for land reclamation. This extraction method has significant adverse effects on the water balance in the area, threatening to dry out the plains below. Flora and fauna will suffer the effects of increased erosion risk. The local population describes how streams have dried up and farm land is being flooded in the rainy season, making agriculture difficult in the area.¹¹⁴

¹¹⁰ See footnote 109, p. 28.

¹¹¹ The accusations against MALCO stem from various sources. In December 2005, the West Gonur Farmers Welfare Association lodged complaints regarding pollution and loss of livestock on behalf of 80 farmers. In a letter dated 6 January 2006, the Ministry of Environment and Forests (MoEF) asked MALCO to respond to the accusations. On 11 January 2006 the West Gonur Farmers Welfare Association presented a new complaint to the authorities, reiterating the claim that red mud dumping has caused considerable pollution and death of livestock in the areas of Desai Nagar, Thengalvarai, and Thippampatti; available at http://www.sipcotcuddalore.com/pr_110106.html. The Council is not aware that MALCO has replied to the MoEF's enquiry.

¹¹² See footnote 106, p. 22-23.

¹¹³ World Bank 1998: *Pollution Prevention and Abatement Handbook*; available at http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000094946_99040905052283

¹¹⁴ Nostromo Research and the India Resource Centre 2005: *Vedanta Resources plc Counter Report 2005: Ravages through India*, p. 10:, available at <http://www.indiaresource.org/issues/globalization/2005/RavagesThroughIndia28.pdf>

The smelting and refining of aluminium may cause considerable air pollution in the form of fluorides, PAH,¹¹⁵ dust, SO₂, and significant amounts of greenhouse gases. The emissions will depend on the processing technology, the operation of the plant, and the cleaning technology. Malco's smelter uses so-called Söderberg furnaces, which are generally more polluting than the process known as prebake.¹¹⁶ In its CSR Report Vedanta informs that Malco is in the process of implementing a cleaning facility to reduce the emissions of fluoride and is taking steps to reduce the amount of dust.¹¹⁷

Local residents, however, experience that the air pollution has deteriorated, that they are falling ill, and that the working conditions at the smelter are hazardous. Reports tell of unqualified and contract labour being used for dangerous tasks without training; high incidence of accidents and injuries; and workers becoming sick because of air pollution in the furnace halls.¹¹⁸ Malco has also been accused of not paying compensation to workers who have been injured.

Furthermore, there are reports of considerable pollution from the coal-fired power plant and the handling of coal. The *Indian People's Tribunal on Environment and Human Rights* sums up its hearing in the local community thus: "Air pollution from the refinery/smelter complex, soot deposits from the Thermal power plant, and regular noise pollution (including explosions) in the Thermal power plant comprise the bulk of pollution-related complaints from the community."¹¹⁹ The coal is transported by an open conveyor belt from the storage facility and into the power plant. The conveyor belt crosses residential areas, exposing people to a substantial amount of coal dust pollution.¹²⁰ In such circumstances, there is a risk of health ailments that may be related to soot and sulphur emissions (skin burns, respiratory diseases etc.).

5.3 Bharat Aluminium Co

Bharat Aluminium Co. Ltd. (BALCO), a formerly state owned company, was acquired by Sterlite Industries in 2001.¹²¹

¹¹⁵ PAH, polyaromatic hydrocarbons, are compounds formed by all incomplete combustion of organic material. They are classified as toxic and carcinogenic substances, and are regulated by the OSPAR Convention of 1992 and the 1998 UN-ECE Protocol on Persistent Organic Pollutants; see for example http://www.unece.org/env/lrtap/pops_h1.htm and http://www.miljostatus.no/templates/pagewide_2828.aspx

¹¹⁶ Prebake technology is considered the best available technology. As a result of PAH and other emission requirements from the Norwegian Pollution Control Authority (SFT), the Söderberg furnaces at Norsk Hydro's plant in Årdal are being phased out.

¹¹⁷ Vedanta Resources plc 2005: *Delivery and Growth. Sustainable Development Report*, p. 37; available at [http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report\(1\).pdf](http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report(1).pdf)

¹¹⁸ Indian People's Tribunal on Environment and Human Rights (ITP) 2005: *The Indian People's Tribunal Report. On Environmental and Human Rights Violations by Chemplast Sanmar and MALCO Industries at Mettur, Tamil Nadu*. July 2005, p. 22; available at <http://www.iptindia.org/pdf/Mettur.pdf>

¹¹⁹ See footnote 118.

¹²⁰ See footnote 118. As the panel observed: "They complained of coal dust from the conveyor belt overhead. One provision store vendor showed us items such as toothpaste, soaps, and detergent packets from his shop. They were all covered in soot. Another young boy brought us the cloth they had used to filter the water that morning. It had a thick layer of soot and silt on it. People say the soot inside houses causes cracked feet."

¹²¹ <http://www.balcoindia.com/history.asp>

BALCO operates the *Mainpat and Bodai-Daldali bauxite mines*, both located near Chhattisgarh. According to the company, Mainpat is currently the primary operative mine with a production of 565 300 tpa of bauxite in 2005-06.¹²² The method of mining is open cast, and the excavated ore is sorted and trucked to the so-called Korba complex for further processing into aluminium and aluminium products.¹²³

Accusations against the company include labour rights violations, intimidation and harassment of workers, as well as forced eviction of tribal peoples from their villages. Balco is criticised for deplorable wage conditions and, in part, for dangerous working conditions at the Mainpat and Bodai-Daldali bauxite mines. Moreover, the company is accused of harassing striking workers and illegally cutting down 50 000 trees in connection with the expansion of the Korba project.¹²⁴

The Council has centred its assessment on the accusation of forced eviction of tribal peoples.

5.3.1 Forced eviction of tribal peoples

In 2005 Vedanta carried out test drills for bauxite at Bodai-Daldali, in the Kawardha district of south-western Chhattisgarh, and by mid 2006 a new bauxite quarry was on stream. Bodai-Daldali is in the immediate vicinity of the Kanha National Park, one of the most renowned protected forest areas in India.¹²⁵ The company's lease area covers 20 sq km atop a plateau overlooking the national park. The plateau is and has been home to four so-called *Adivasi* (tribal) villages.

Concerning the mining operation, the company has been accused of having forcefully evicted tribal peoples without sufficient compensation to provide for their subsistence. In 2005 the villagers of Baigha were driven out of their homes without due legal process and relocated to an existing community on the plains.¹²⁶ The Baigha families were given

¹²² <http://www.balcoindia.com/mining.asp>

¹²³ <http://www.balcoindia.com/mining.asp> The refinery has a yearly production capacity of 200 000 tons of alumina, which is a raw material in the subsequent production of aluminium. Aluminium is produced at two smelters with both Söderberg and prebake technology. The production capacity is 350 000 tpa of aluminium; see http://www.balcoindia.com/ass_loc.asp. In the Korba complex there are also four rolling mills, three pig casting machines, and a coal-fired power plant with a capacity of 819 MW; see <http://www.balcoindia.com/history.asp>

¹²⁴ Nostromo Research and the India Resource Centre, "*Vedanta Resources plc Counter Report 2005: Ravages through India*," p. 9; available at <http://www.indiaresource.org/issues/globalization/2005/RavagesThroughIndia28.pdf>. At the Mainpat mine representatives from India Resource Centre and Nostromo Research met "*around 30 tribal workers, un-helmeted, clad in shirts and sarees under the blazing sun, as lasteritic overburden was blasted*." The workers said that on a good day male workers could earn around 60 rupees (approx. 8 NOK) delivering one ton of ore by hand power, while women earned a little less. The workers complained that the company does not provide any kind of health care. When accidents occur the workers themselves have to arrange for transport of the injured worker to medical facilities. The workers live in purpose-built settlements near the opencast mine without access to electricity or satisfactory water supply. They are also afflicted by the hazardous dust and pollution that blow into their homes from the mining operation.

¹²⁵ <http://www.indianwildlifeportal.com/national-parks/kanha-national-park.html>

¹²⁶ Nostromo Research and the India Resource Centre 2005: *Vedanta Resources plc Counter Report 2005: Ravages through India*, p. 10. "*They had to leave behind their crops of maize, oil seed, gram and mustard, abandoning their cows, buffalos and goats, and are apparently now trying to survive on half the acreage they once possessed*"; available at <http://www.indiaresource.org/issues/globalization/2005/RavagesThroughIndia28.pdf>

housing built by Balco, but had to leave farmland, crops, and livestock behind. Apparently, they now have to survive on half of the area they once possessed.¹²⁷

It has been reported that twenty families were forced to move from Bodai-Daldali between April and July 2005.¹²⁸ Chhattisgarh's Chief Minister, Ramon Singh, has in this respect stated that the families' living conditions are unacceptable, and that the mining operation has completely devastated their homes and livelihood. He has also said that the families should be given "early and proper rehabilitation" and "sufficient and safe agricultural and housing land to compensate."¹²⁹

After a visit to Bodai-Daldali in March 2006 the Indian filmmaker Vinod Raja confirmed that another 30 families had suffered the same fate and were living under similar difficult conditions.¹³⁰ These families were forced to leave the areas that originally belonged to them once the mining operation encroached on their farmland and village.

According to information the Council has been given access to, three out of four villages (Kesra, Sapnadar and Bareema) were destroyed by February 2007, while tribal people in another village (Kudaridih) had been, or were being, expelled.¹³¹ Of the 112 individuals who lost their land, only 50 seem to have received compensation from the company, to the amount of 12 000 rupees (NOK 1680) per acre.¹³²

The Council is aware that the *Samatha Judgement* of 1997,¹³³ pronounced by the Indian Supreme Court, establishes that Adivasi (tribal) areas, so-called *Schedule V* areas, cannot be transferred to private companies (see detailed discussion in section 5.4.6). It may seem as if Balco's refinery in Korba is situated inside such an area,¹³⁴ but it is unclear whether the tribal peoples have been evicted from a *Schedule V* area.

5.4 Vedanta Alumina Ltd

Vedanta Alumina is currently building a new integrated aluminium complex in the state of Orissa, Eastern India. The operation includes the annual extraction of 3 million tons of bauxite from a mine in the Niyamgiri Hills; a 1-1.4 million tpa alumina refinery in Lanjigarh, at the foot of the Niyamgiri Hills; and a smelter of 250 000 tpa capacity at Brundamal, in the Jharsaguda district, some 350 km from the refinery.

The company has not yet received a mining licence, but tribal peoples living in the Niyamgiri Hills have been forcefully expelled from the area. The refinery is completed, and

¹²⁷ See footnote 126.

¹²⁸ Moody, Roger 2006: *BALCO Report*, p. 4. Commissioned by the Council; on file with the Council.

¹²⁹ See footnote 128.

¹³⁰ See footnote 128. Vinod Raja has made several documentaries on tribal peoples in India, and is associated with environmental and human rights movements.

¹³¹ Correspondence between the Council and an Indian freelance journalist who made investigations in the area in January-February 2007; on file with the Council.

¹³² See footnote 131.

¹³³ In its judgement, the Supreme Court declared "as void and impermissible all transfer of land belonging to the State of Andhra Pradesh at any time in the past or present in "Scheduled areas" to non-tribals and all mining leases or prospecting licenses when so ever granted by the concerned State Government in such areas to non-tribals"; see http://www.agragamee.org/discussion_appeal.htm

¹³⁴ Overseas Development Institute, UK, www.odi.org.uk/Livelihoodoptions/forum/sched-areas/about/schdVareas.htm

construction work on the smelter is under way, with production expected to start in the second half of 2009.¹³⁵

The Council's assessment refers to the planned mining operation and the refinery.

The Council is also aware that Vedanta is accused of illegally having started construction work on the smelter at Brindamal, Jharsaguda, eliciting complaints to the Orissa State Pollution Control.¹³⁶ The Council has not given an account of this case, but notes that the Orissa State Pollution Board in a letter of 8 February has ordered the company to stop the construction of the smelter until a permission from the authorities has been given: "*The Regional Officer, SPC Board, Sambalpur has reported that you have started civil construction and mechanical erection of power plant, smelter plant, and green anode plant with approach road without obtaining environmental clearance from MoEF, Govt. of India. You are therefore, directed to stop all construction activities till you obtain environmental clearance from MoEF, Govt. of India, New Delhi and report compliance.*"¹³⁷ The Council is ignorant of whether the construction activities have come to a halt.

5.4.1 Accusations against Vedanta Alumina

As regards the planned mining operation in the Niyamgiri Hills, Vedanta is accused of contributing to human rights violations, including forced evictions, threats and abuses against local residents. It is also criticized for breaking national laws and for misleading the authorities by providing false information so that the environmental clearance for the refinery was issued on a wrong basis. There are claims that the mining operation will cause severe and irreversible effects in an area of particular ecological value, and that the pollution and waste discharge from the refinery will damage the water supply and contaminate the area's drinking water sources.

In 2004/2005 the Central Empowered Committee (CEC), a committee appointed by India's Supreme Court, investigated the allegations from the local population and several NGOs by means of extensive hearings and reports. The CEC accounts form an important basis for the Council's assessment of this case.

¹³⁵ Vedanta Resources Plc 2007: *Production Results for the Fourth Quarter and Full Year Ended 31 March 2007*, press release; available at

http://www.vedantaresources.com/uploads/2007%20and%20Q4%20Production%20Release_Final.pdf

¹³⁶ Mines and Communities 2006: *Another Vedanta Violation Claimed*. 30.07.06; available at

<http://www.minesandcommunities.org/Action/press1175.htm>

¹³⁷ Letter from the State Pollution Control Board, Orissa to Vedanta Alumina, of 08.02.07, re *Public Complaint regarding Construction Activities of M/s Vedanta Alumina Ltd. at Jharsuguda*. On file with the Council.

5.4.2 Mining in the Niyamgiri Hills

In 2003 Vedanta signed a Memorandum of Understanding with the Orissa state government regarding the construction of a refinery for alumina production, a coal-based power plant, and a mining development at Lanjigarh in the district of Kalahandi.¹³⁸

The planned mining operation will be located in the north-western part of the Niyamgiri Hills, in South Orissa. The area belongs to the Eastern Ghats range and lies 65 km from Bhawanipatna city in Kalahandi district, Orissa.¹³⁹ The hill range is covered by 250 sq km of forest,¹⁴⁰ and the proposed refinery and mining site will occupy 6.6 sq km, of which the refinery itself claims some 60 000 sq m of forest.¹⁴¹

Vedanta plans to extract 3 million tpa of bauxite from the reserves, which have an expected lifespan of 23 years. Opencast mining is the proposed method.¹⁴² The bauxite will be crushed and transported by a conveyor belt to the refinery at the foot of the hill.¹⁴³ It is expected that the mining will lower the topographic level by some 10 to 15 meters.¹⁴⁴

The Niyamgiri Hills are home to several tribal peoples, among them the *Dongaria Kondh*.¹⁴⁵ The mining project will imply that 102 families must be moved from the area. Some of these have already been relocated because of the construction work on the refinery (see section 5.4.6 for further details).¹⁴⁶ Vedanta has applied for permission to mine in the area, but so far this has not been granted.

Potential environmental effects of the mining operation

The Niyamgiri Hills form a biologically rich and diverse habitat, as well as being the catchment area for several water systems. Due to the area's biodiversity, the Orissa government has proposed to preserve part of it as an elephant sanctuary.¹⁴⁷ The area is also

¹³⁸ The Central Empowered Committee (CEC) 2005: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa*, 21.09.05, p.7 and p. 50. "The agreement signed between the Orissa Mining Corporation (OMC) and M/s Vedanta for establishment of a joint venture company for bauxite mining from Niyamgiri Hills, Lanjigarh and another mine provides that though the mining lease will be in the name of the OMC and it will be responsible for securing and complying with all the statutory approvals and legal requirements, M/s Vedanta will be de facto managing the mines and will be the principal beneficiary on payment of development charges, royalty and other statutory dues"; available at

<http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

¹³⁹ Environmental Protection Group, Orissa: *A Brief Report on Ecological and Biodiversity Importance of Niyamgiri Hill and Implications of Bauxite Mining*; available at

<http://www.freewebs.com/epgorissa/niyamgiri.pdf>

¹⁴⁰ Wildlife Institute of India (WII): *Studies on impact of proposed Lanjigarh bauxite mining on biodiversity including wildlife and its habitat*. Commissioned by the Ministry of Environment and Forests (MoEF); available at: <http://www.freewebs.com/epgorissa/WII%20Report%20on%20Niyamgiri.pdf>

¹⁴¹ See footnote 138, p. 1 and footnote 140

¹⁴² See footnote 139.

¹⁴³ The Hindu Business Line, 08.08.06: *A struggle to save Niyamgiri forest*.

<http://www.thehindubusinessline.com/2004/08/08/stories/2004080801141600.htm>

¹⁴⁴ See footnote 140.

¹⁴⁵ See footnote 140.

¹⁴⁶ CEC 2005: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa* 21.09.05, p.1; available at

<http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

¹⁴⁷ Wildlife Institute of India (WII): *Studies on impact of proposed Lanjigarh bauxite mining on biodiversity including wildlife and its habitat*, Chapter 4; available at:

<http://www.freewebs.com/epgorissa/WII%20Report%20on%20Niyamgiri.pdf>; see footnote 138, p. 10.

the habitat of leopards, tigers, many bird species, and rare plants (including medicinal plants), among which several are endangered.¹⁴⁸

Bauxite is a porous rock with great water retention capacity. The rock's water conserving properties makes it absorb the precipitation in the rainy season and slowly emit it during the whole year. Many perennial streams have their springs in the Niyamgiri Hills, constituting a permanent water source for a large area.¹⁴⁹

The *Chief Conservator of Forests* at the MoEF's regional office in Bhubaneswar has inspected the planned mining site, stressing in his report a concern that the interventions may alter the inflow of precipitation and natural drainage systems.¹⁵⁰ The survey made by the *Wildlife Institute of India* also called attention to the danger that the mining operation may cause desiccation and reduce the flow to two of the larger rivers, the Vamsdhara and the Nagvalli.¹⁵¹ These are two of South Orissa's main rivers and supply millions of people with drinking water and irrigation. Moreover, the assessment is that the groundwater resources most probably will be adversely affected both with regard to quantity and quality, and that there will be a risk of perennial streams drying up. The mining project will also cause increased erosion and pollution of the water systems, which in turn will deteriorate the water quality and have a negative impact on riverine habitats.¹⁵² The *Wildlife Institute of India*, which has assessed the consequences of the mining operation, claims that: "the threats posed by the proposed project to this important ecosystem will lead to irreversible changes in the ecological characteristics of the area."¹⁵³

5.4.3 The refinery at Lanjigarh

At the foot of the Niyamgiri Hills Vedanta is building a refinery for alumina production with an annual capacity of 1-1.4 million tons. The proximity to bauxite deposits has played an important part in the choice of location.¹⁵⁴ The production process will be the same as for Malco's plant, see section 5.2.2. A 75 MW coal-fired power plant will meet the energy demand of the mine and smelter.

In addition to alumina, the refinery will produce 2-3 million tons of red mud a year. To the Council's knowledge, there are plans for red mud disposal in artificial ponds located on the banks of the Vamsdhara River.¹⁵⁵ It is this aspect in particular that has drawn much criticism. In case of flooding, the deposit site may be inundated, or cracks may form in the embankment so that the waste flows into the river. Besides, heavy metals and chemicals

¹⁴⁸ See footnotes 147 and footnote 139, pp. 7-10. The vegetation consists of more than 300 plant species, including some 50 medicinal plants. Six of the plant species are on the World Conservation Union's (IUCN) Red List. The area also harbours plant species that will represent an important genetic resource for the development of hybrids of current cultivated varieties.

¹⁴⁹ CEC 20 2005: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa 21.09.05*, p. 22. The springs of 36 water systems are located within the proposed mining area, available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

¹⁵⁰ Referred to in WII's report; see footnote 147, p. 7.

¹⁵¹ See footnote 147, p. 18.

¹⁵² See footnote 149, p. 22, and footnote 147.

¹⁵³ See footnote 147, chapter 5.5.

¹⁵⁴ See footnote 149, section 25.

¹⁵⁵ Mines and Communities 2006: *Vedanta at Centre of Many Storms*, 05.05.06; available at <http://www.minesandcommunities.org/Action/press1181.htm>. A sketch map from the Rapid Environmental Impact Assessment of the project shows that red mud dumps are planned along the river banks and, in part, will be situated on both sides.

may seep into the groundwater and affect the water quality across large areas.¹⁵⁶ Even if the waste is disposed of in dams, there is a risk that the dams may dry up in the summer season, causing the dust from the dumps to be spread by the wind in a similar way to what has been experienced at Malco's red mud deposit sites (see section 5.2.3).¹⁵⁷

The refinery will consume considerable amounts of water, and the environmental impact assessment contemplated the Vamsdhara River as a water source.¹⁵⁸ More recently the company has decided to draw water from another river, the Tel. The environmental consequences have not been evaluated, and according to the CEC the company provides misleading information and plays down the potential negative effects this may have.¹⁵⁹

5.4.4 Misinformation and breaches of laws and procedures

From the outset the mine and the refinery have been regarded as an integrated project, also by Vedanta, seeing as the location of the refinery in the vicinity of the bauxite mine is considered important to the project's profitability. Since the Niyamgiri Hills are home to several tribal peoples (see section 5.4.6) and because of the environmental implications described above, the mining project has encountered considerable local resistance. Vedanta is accused of having given misleading information to the authorities in order to increase the chances of gaining a mining licence. Other complaints include deliberate concealment of the fact that forest areas are also part of the refinery project and start-up of construction work before receiving the authorities' approval.¹⁶⁰

The *Central Empowered Committee* has investigated the case, submitting a report and a recommendation to the Supreme Court regarding the project in September 2005, as well as a supplementary report in February 2006.¹⁶¹ These reports have formed an important basis for the Council's assessment.

In 2003 Vedanta applied to the Ministry of Forests and Environment (MoEF) for an environmental clearance for the refinery. In its application the company provided wrongful information to the effect that the refinery would not require forest land. Thus Vedanta avoided having to apply for reallocation of forest land, which in turn is a prerequisite for the authorities' evaluation of the so-called *environmental clearance* for the project. The records show that the MoEF originally wished to consider the environmental clearances for the refinery and the mining operation at Niyamgiri jointly.¹⁶² However, Vedanta argued that the project could not be treated as one unit, as it would take three years to build the

¹⁵⁶ CEC 2005: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa, 21.09.05*, p. 4, available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

¹⁵⁷ Communication with the Environmental Protection Group (EPG) Orissa 11.09.06; on file with the Council.

¹⁵⁸ Environmental Protection Group, Orissa: *A Brief Report on Ecological and Biodiversity Importance of Niyamgiri Hill and Implications of Bauxite Mining*, p. 6; available at <http://www.freewebs.com/epgorissa/niyamgiri.pdf>

¹⁵⁹ See footnote 156, p. 23. The river is a major drinking water and irrigation source for hundreds of thousands of people in the downstream Bolangir district. According to the CEC the consequences of tapping 30,000 m³ water per day have not yet been assessed. There is a risk that it may reduce the water flow significantly.

¹⁶⁰ See footnote 156, p. 1. The allegations were voiced by the Wildlife Society of Orissa and the Academy of Mountains, and presented to the CEC.

¹⁶¹ See footnote 156, as well as CEC 2007: *Supplementary Report in IA no. 1324 and 1474 regarding the Alumina Refinery Plant being set up by M/S Vedanta Alumina Limited*; on file with the Council.

¹⁶² CEC 2005 20: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa, 21.09.05*, p. 17, available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

refinery, but only one year to open the mine. On 22 September 2004 the company was granted the MoEF's environmental clearance for the construction of the refinery independently of the mining project. The approval establishes that the refinery will not require the use of forest land.¹⁶³

However, the CEC's investigative report shows that Vedanta one month earlier, on 16 August 2004, while the application regarding an environmental clearance for the refinery was being processed, had submitted an application for reallocation of forest land to the Forest Department at the MoEF. From the application it appears that the company will have to use forest land for the construction of the refinery, including preservation areas.¹⁶⁴ This elicited the following declaration from the CEC: *"Thus though forest land was required for the project, the environmental clearance was sought stating that no forest land was required and during the pendency of the application for the environmental clearance, a proposal for the use of the forest land for the same project was submitted for seeking the approval under the FC [Forest Conservation] Act,"*¹⁶⁵

Vedanta continued the construction of the refinery. In February 2005 the MoEF's Forest Department issued a so-called *show cause notice* to the company for violation of the Forest Conservation Act and for having cleared and levelled woodland. On 23 May 2005, the Ministry ordered the construction work at the refinery to stop. Vedanta then argued that the refinery could be built without using forest land after all, and that the MoEF's imposition was therefore not relevant.¹⁶⁶ The company then withdrew the application regarding use of forest land, something which the Ministry accepted after recommendations from Orissa state authorities. At the same time the Ministry revoked the stop order given to the company. On this basis the CEC concluded: *"Apparently, the proposal for obtaining forest clearance has been withdrawn by M/s Vedanta to basically circumvent the 'stop work' order issued by the MoEF,"* and *"If the forestry clearance proposal itself had not been withdrawn by M/s Vedanta and the withdrawal not accepted by the MoEF, the work on the alumina refinery would necessarily have had to be stopped till the entire matter was examined by this Hon'ble Court."*¹⁶⁷

The CEC regards Vedanta's procedure in this case as a grave breach of laws and regulations. Seeing as the company has provided inaccurate information about the project, the environmental clearance has been issued on the wrong basis. The Committee also points out that the clearance for the refinery and the mining project cannot be processed separately since the operation of the refinery is dependent on bauxite from the Niyamgiri Hills, concluding: *"By delinking the alumina refinery project from the mining component an undesirable and embarrassing situation has been allowed to happen (by the MoEF) where in the event of Niyamgiri Hills forest not being approved under the FC Act for mining*

¹⁶³ See footnote 162, p.17.

¹⁶⁴ See footnote 162, p. 41-41. *"On 16.8.2004 a proposal for allowing the use of 58.943 ha. forest land, consisting of 28.943 acre of "Gramya Jungle Jogya" land and 30 ha. of reserve forest, was moved under the FC Act through the State Government to the MoEF. Out of the above, 26.123 ha. forest land was required for the refinery, 25.82 ha. for the mine access road and the balance 7.0 ha. was required for the construction of the conveyor belt for the transportation of the mineral from the mine site to the plant."*

¹⁶⁵ See footnote 162, p. 42.

¹⁶⁶ See footnote 162, p. 19.

¹⁶⁷ See footnote 162, p. 48

lease, the entire expenditure of about Rs. 4000 crore on the alumina refinery project may become infructuous as the project is unviable in the absence of Niyamgiri Hills mines."¹⁶⁸

In its report to the Supreme Court, the CEC therefore recommended that the environmental clearance for the refinery project be revoked and the mining operation at Niyamgiri banned.¹⁶⁹ The Supreme Court did not pronounce on the CEC recommendation, but referred the case to the MoEF for further analysis. The MoEF engaged the *Wildlife Institute of India* (WII) to examine the mining project's expected impact on the biodiversity of the Niyamgiri Hills. The report was to be presented in court on 13 October 2006 with the Ministry's recommendation to the Supreme Court, but during the session the MoEF requested a postponement.

The CEC prepared a new report on Vedanta, commissioned by the Supreme Court and submitted in January 2007, in which the conclusions of its previous report are confirmed and partially reinforced. The CEC concludes as follows: "*The expenditure incurred by the Company [Vedanta] on the refinery reveals the certainty of their expectation to get the clearance under the F.C. Act since they would be presenting a fait accompli situation before the concerned authorities and for this scenario M/s Vedanta alone are responsible. Such cavalier attitude towards the laws of the land needs to be discouraged.*"¹⁷⁰

The Council does not know when the case will be heard by the Supreme Court. Even if the legal issues relating to the production permit have not been solved, Vedanta informs that the refinery is practically ready, and that test production has been initiated.¹⁷¹

5.4.5 Expected environmental impact of the refinery

It seems fairly clear that the proposed location of red mud deposit sites will imply a considerable risk of environmental and health damage, similarly to what has occurred at Malco's plant. The company has attempted to bend laws and rules, it has provided misleading information regarding important parts of its operation, and the environmental impact assessment has not been satisfactorily elaborated. These factors contribute to an enhanced risk that the company will cause severe environmental and health damage.

5.4.6 Involvement in human rights violations

There are allegations that the company's Lanjigarh/Niyamgiri project has had a very negative impact on the local population's way of life. Families have been intimidated and threatened, tribal peoples have been forcefully evicted from protected areas, villages have been destroyed, and some tribal peoples face the threat of extinction because of the displacement. Moreover, the company has been accused of involvement in local police actions against protesters who oppose the evictions.¹⁷²

¹⁶⁸ See footnote 162, p. 53. 1 Indian crore is the equivalent of 10 million, 1 Indian rupee is approx. NOK 0.14. The sum in question amounts to some NOK 5.6 billion.

¹⁶⁹ See footnote 162, p. 24.

¹⁷⁰ CEC 2007: *Supplementary Report in no. 1324 and 1474 Regarding the Alumina Refinery Plant being set up by M/S Vedanta Alumina Limited*; on file with the Council.

¹⁷¹ Vedanta Resources Plc 2007: *Production Results for the Fourth Quarter and Full Year Ended 31 March 2007*, press release; available at http://www.vedantaresources.com/uploads/Q22007%20and%20Q4%20Production%20Release_Final.pdf

¹⁷² Moody, Roger 2006: *Vedanta Alumina and the Orissa Maelstrom*, commissioned by the Council; on file with the Council.

In connection with the preparations for the refinery four Adivasi villages in the area have already been levelled to the ground and the tribal peoples have been moved to new settlements.¹⁷³ There has been, and still is, considerable local opposition to the project.

According to the *Supreme Court Central Empowered Committee* (CEC) the land allocated to Vedanta in Orissa is part of a so-called *Schedule V* area.¹⁷⁴ This means that land cannot be transferred to private companies without the consent of the affected tribal peoples. According to the law, a "Gram Sabha"¹⁷⁵ (a village meeting) must be held, including all villages that will be affected by the mining project, in this case 12 villages and 5 000 inhabitants.¹⁷⁶ The approval from the *Gram Sabha* through a *No Objection Certificate* is necessary in order to validate the transfer of land.¹⁷⁷

A *Gram Sabha* was held on 26 June 2002. According to the Indian human rights organisation *Samata*, not one of the 12 villages gave a written consent to the transfer of land to Vedanta. Despite this, it seems as if the *Gram Sabha* approved it.¹⁷⁸ It is unclear why this happened. In the period leading up to the village council, local meetings and demonstrations were staged to protest against the project.¹⁷⁹ Several organisations in the area think that the local population may have been intimidated and threatened to vote against their own interests. It has been reported that Indian authorities visited the area several times to persuade the local population to voluntarily give up land in return for

¹⁷³ Environmental Protection Group Orissa 2005: *Niyamgiri under threat*; on file with the Council.

¹⁷⁴ The Indian Constitution grants certain rights to tribal peoples who live within specified geographical areas in India. The so-called "Fifth Schedule" of the Constitution contains provisions regarding the administration and control of these areas (scheduled areas and scheduled tribes), and is designed to protect the Adivasi, tribal peoples, who live in these areas; see http://www.nmpindia.org/Fifth_Schedule.htm

¹⁷⁵ Article 243 (B) of the Indian Constitution defines the Gram Sabha as an official organ at village level consisting of persons included in the electoral rolls of the villages in a district (Panchayat). According to article 243 (A) the Gram Sabha may "exercise such powers and perform such functions of the village level as the Legislature of a State may, by law, provide"; full text available at <http://www.orissa.gov.in/panchayat/73rd%20Amendment.pdf>; see also footnote 177.

¹⁷⁶ Samata 2003: *A Study on Process of Acquisition of Land for Development of Mining Industry in Schedule-V Areas with a Focus on Violations of PESA in Light of the Mining and the Industrialisation Process in the Schedule-V Areas*, p. 90; on file with the Council. The twelve villages affected by the mining project are: Kinnari, Kopaguda, Bellamba, Boringpoddar, Turiguda, Bundel, Borohota, Ottadwar, Bondoguda, Sindbahal, Basantpoda, and Jaganathpur.

¹⁷⁷ To stimulate a greater degree of participation, enhancing tribal peoples' self-government in the development of their lands, the so-called "Panchayatraj Extension to Scheduled Areas (PESA) Act" was passed in 1996. Among other provisions, the law gives the "Gram Sabha" authority to administrate and control its own resources, including land, water, forests and minerals, as well as functional powers and responsibility to ensure tribal peoples' participation in the development of their areas in accordance with their own culture and traditional rights to natural resources. The law can be accessed at <http://www.odi.org.uk/Livelihoodoptions/forum/sched-areas/about/PanchayatsExtAct.htm>

¹⁷⁸ See footnote 176.

¹⁷⁹ See footnote 180, p. 4. At a local meeting held 16 June 2002 none of the villages signed the resolution proposal presented in favour of the mining project, and four days before the "Gram Sabha" nearly one thousand people were gathered at the local customs office to hand over a protest note against the project to Orissa's Chief Minister Naveen Patnik.

promises of compensation,¹⁸⁰ and there have been accusations that the police, cooperating with security guards employed by Vedanta, were used to intimidate residents.¹⁸¹

The opposition against the project seems to have gained momentum after the *Gram Sabha*, and there have been reports that the local population during a demonstration against the project was physically attacked by gangs who allegedly are financed by Vedanta.¹⁸² A fact-finding committee from the PUCL visited four villages in the project area two weeks after this occurrence and observed visible injuries on more than twenty people. Similar alleged assaults are referred to in the CEC's investigative report: "*many were beaten up by the employees of Vedanta.*"¹⁸³ "*An atmosphere of fear was created through the hired goons, the police and the administration,*" and "*many of the tribals were badly beaten up.*"¹⁸⁴ According to *Amnesty International*, which has conducted surveys in the area, the police tried to stop local residents from protesting.¹⁸⁵ Amnesty also claims that "*a large number of subsidiary criminal elements (around 100) from neighbouring towns such as Kesinga and Bhawanipatna operate in these areas using modern four-by-four cars (numbering 25) and intimidate local communities who dare to protest,*" and "*there have been numerous instances of strong surveillance, harassment and intimidation by these elements, who, it is alleged, act on behalf of Vedanta.*"¹⁸⁶

Displacement of tribal peoples and effects on their way of life

In the CEC report on Vedanta's project from September 2005 the CEC states that the mining operation will lead to the forced displacement of 102 families.¹⁸⁷ It makes reference to, but does not assess, the serious allegations levelled at the company regarding "*the use of force for evacuating the tribals from their land, non-payment of compensation to the tribals who were traditionally using the Government land for cultivation etc. (by way of encroachment, for which the State Government stands committed to regularize), no land for*

¹⁸⁰ Moody, Roger 2006: *Vedanta Alumina and the Orissa Maelstrom*. Report commissioned by the Council; on file with the Council.

¹⁸¹ Samata 2003: *A Study on Process of Acquisition of Land for Development of Mining Industry in Schedule-V Areas with a Focus on Violations of PESA in Light of the Mining and the Industrialisation Process in the Schedule-V Areas*, p. 90; on file with the Council.

¹⁸² People's Union for Civil Liberties-Rayagada & Bhubaneswar Units 2003: *A fact-finding report on physical attack on the villagers agitating against their displacement due to the proposed Sterlite Alumina Project in Lanjigarh Block of Kalahandi district*. According to the People's Union for Civil Liberties (PUCL), an Indian human rights organisation, 250 unarmed persons, including 150 women and children, were physically attacked while they were demonstrating outside the Lanjigarh police station in an attempt to release an imprisoned opponent of the project. The villagers claimed that the attackers were members of a "youth club", Yubak Sangha, which is known to be financed by Vedanta; see <http://www.pucl.org/Topics/Industries-envirn-resettlement/2003/sterlite.htm>

¹⁸³ The Central Empowered Committee (CEC) 2005: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa*, 21.09.05, para. 3, section XV(i), available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

¹⁸⁴ See footnote 183. The report continues: "*After being forcibly removed, they (the tribals) were kept under watch and ward by the armed guards of Vedanta and no outsider was allowed to meet them. They were effectively being kept as prisoners.*"

¹⁸⁵ Communication between the Council and Mr. Ramesh Gopalakrishnan, Researcher, South Asia team, Amnesty International. His field surveys will be presented in a report on companies and human rights violations in the aluminium and steel industry in Orissa, India. The report will be publicised by Amnesty International in July-August 2007. Among other findings, the report describes Vedanta and violations against tribal peoples in Orissa, India.

¹⁸⁶ See footnote 185.

¹⁸⁷ See footnote 183, CEC p. 1.

*the settlers, (and) emotional attachment of the tribals with their land etc.*¹⁸⁸ According to Amnesty, *"life in the rehabilitation colony for them (103 displaced families) [means] living in the shadow of the company; from time to time, they have had restrictions on their freedom of movement and it is not easy for other local communities and media persons to freely interact with them. They are subject to full scale monitoring by the company which details several welfare measures for them."*¹⁸⁹ The CEC goes on to observe that this is denied by the government and the company, and that both parties claim the mining project will not have any negative impact on the tribal peoples.

It may seem as if the tribal peoples were not duly consulted with regard to the future use of their land.¹⁹⁰ The population was promised market price with an extra 30 per cent for their properties, new land in another village to those who would have to leave their homes, and work for those who had an education.¹⁹¹ These promises have evidently not been honoured by the company. Even if the company provided some compensation to the displaced families by creating a rehabilitation colony, the CEC concluded that this would not be tantamount to a sustainable livelihood since no pastures or farmland or other possibilities of income generating activities were offered.¹⁹² The rehabilitation colony has been criticized for placing tribal peoples in a community completely unsuitable to their way of life.¹⁹³ The CEC also criticised its location vis-à-vis the Niyamgiri Reserved Forest: *"The location of the rehabilitation colony has been decided totally ignoring the interest of the conservation of forests. It is just a few meters away from the Niyamgiri Reserved Forest. Adverse impact of this colony and the labour force staying near the forest is already visible."*¹⁹⁴

In the media Vedanta has denied allegations of wrongdoing, claiming that it has neither *"alienated tribal land nor caused any damage to forests."*¹⁹⁵

The area which will be encompassed by the mining operation is home to 8 000 members of the *Dongaria Kondh* tribe (living in around 90 settlements scattered across the whole area) and 2 000 members of the *Majhi Kondh* community (living in around 10 villages, mainly at the foot of the hills).¹⁹⁶ In a recent documentary that the Council has been given access to,

¹⁸⁸ See footnote 183, para. 2.

¹⁸⁹ See footnote 187, para. 30 (xxiv).

¹⁹⁰ Samata 2003: *A Study on Process of Acquisition of Land for Development of Mining Industry in Schedule-V Areas with a Focus on Violations of PESA in Light of the Mining and the Industrialisation Process in the Schedule-V Areas*, p. 90; on file with the Council. Environmental Protection Group Orissa 2005: *Niyamgiri under threat*; on file with the Council.

¹⁹¹ See footnote 190.

¹⁹² CEC 2004: *Site report of the fact-finding committee of CEC regarding its visits to Orissa from 18th-23rd December 2004*; on file with the Council. *"The Rehabilitation Package for the displaced persons given by the user agency is not in the interest of sustainable livelihood of the local communities as no land has been given for grazing purposes, raising agricultural crops and carrying out income generating activities, etc. The location of the rehabilitation colony has been decided totally ignoring the interest of conservation of forests. It is just few meters away from the Niyamgiri Reserved Forest. Adverse impact of this colony and the labour force staying near the forest is already visible. The team saw four stumps of freshly cut sal trees in Niyamgiri forests."* Findings of the Team, para. iii.

¹⁹³ Barriaux, Marianne 2006: *Tribal activists carry Indian mining protest to London*, The Guardian, 3 August 2006; available at <http://business.guardian.co.uk/story/0,,1835903,00.html>.

¹⁹⁴ See footnote 193.

¹⁹⁵ Propham, Peter 2006: *Indian villages pay high price as commodity boom comes to rural Orissa*, The Independent, 4 August 2006; available at <http://news.independent.co.uk/world/asia/article1212783.ece>

¹⁹⁶ Communication between the Council and Mr. Ramesh Gopalakrishnan, Researcher, South Asia team, Amnesty International, see footnote 185. The numbers are based on field surveys in the area in November 2006.

some concrete examples are presented of how the company's actions affect local tribes such as the *Dongaria Kondh*.¹⁹⁷ The film describes how four villages were razed by bulldozers to prepare for the construction of the refinery. It also shows how walls were erected to encircle the villagers' houses, and how these walls have barred them access to land and forests, deprived the tribe of their livelihood and thus forced them to abandon their homes. The *Dongaria Kondh* explain that they will not be able to survive without hills and forests, emphasizing the spiritual attachment to the mountain as an important element of their culture. Through many generations they have protected the mountain and avoided any intervention because the mountain is sacred to the tribe. This is also one of the reasons why considerable ecological values worthy of preservation remain intact in the Niyamgiri Hills.

The Niyamgiri Hills constitute the only traditional home to the *Dongaria Kondh*, and it is doubtful whether the tribe will survive a mining operation in the area. According to *Amnesty International* there is a real danger that the tribal people's rights to water (drinking water and irrigation), to free movement within the forest area, and to health will be significantly encroached upon by the mining operation. In the longer term the tribe's whole subsistence is threatened by destruction, with forced evictions resulting in the extinction of tribal culture. Amnesty's warning is as follows: "*This is likely to lead to a situation of forced evictions of persons belonging to the local communities, slow dispersal and eventual absorption by other communities.*"¹⁹⁸

As mentioned, tribal peoples in India who live within specified areas are protected by the Indian Constitution, as well as by national and state legislation. The so-called *Fifth Schedule* of the Indian Constitution¹⁹⁹ deals with the administration and control of *scheduled areas* and *scheduled tribes*. The provisions of the Constitution are designed to protect the tribal peoples (*Adivasi*) who live in these areas. In addition to the Constitution, both national and state laws give tribal peoples rights to land and natural resources in these areas. The *Fifth Schedule* applies to geographically defined areas in 9 Indian states: Andhra Pradesh, Jharkhand, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa, and Rajasthan.²⁰⁰

The landmark Supreme Court judgement *Samata v. State of Andhra Pradesh (AP)*²⁰¹ was pronounced in the Indian human rights organisation Samata's case against the Andhra Pradesh government, on behalf of tribal peoples who were victimized by the authorities' decision to give a private mining company the rights to mine their land. The court banned the transfer of land and concession of mining licences to non-tribal individuals/companies within Schedule 5 areas. The judgement states that the lease of land by the government to a private company in "*Scheduled areas*" is void: "...the transfer of the land in *Scheduled areas* by way of lease, for mining purposes in favour of non-tribals stands prohibited by para. 5 (2) (b) of the 5th Schedule read with Section 3 of the Regulation," and "... a transfer

¹⁹⁷ Amarendra Samarendra 2005: *Earth Worm: Company Man*, Chapt. 7-8, documentary; on file with the Council.

¹⁹⁸ See footnote 196.

¹⁹⁹ Government of India, Ministry of Law and Justice;

[http://lawmin.nic.in/legislative/1-6%20Sch.%20\(185-218\).doc](http://lawmin.nic.in/legislative/1-6%20Sch.%20(185-218).doc)

²⁰⁰ Fifth Schedule; available at http://www.mmpindia.org/Fifth_Schedule.htm

²⁰¹ *Excerpts from the site report of the CEC's fact-finding committee regarding its visits to Orissa from 18-23 December 2004, as marked by Attorney at Law Ritwik Dutta, counsel of Academy for Mountain Environics*, p. 1; on file with the Council. The unabridged judgement in *Samata v. State of Andhra Pradesh*, (K. Ramaswamy, S. Saghir Ahmad, G.B. Pattanaik JJ), 11.07.1997 is available at <http://www.mmpindia.org/samatha%20vs%20AP.htm>

*of mining leases to non-tribal natural persons or company, corporate aggregate or partnership firm etc., is unconstitutional, void and inoperative.*²⁰²

The *Majhi Kondh*, *Kutia Kondh*, and *Dongaria Kondh* tribes live in the Niyamgiri Hills in Orissa, which are a *Schedule V* area. According to the CEC these communities are found within the acreage allocated to Vedanta. The transfer of this area to the company thus seems to be at odds with the Supreme Court judgment in the *Samata v. State of Andhra Pradesh (AP)* case.²⁰³

6 The company's response

The company has been informed of the basis for the accusations regarding environmental damage and involvement in human rights violations related to its operations in India. Through Norges Bank, the Council wrote to Vedanta Resources on 15 March 2007 requesting the company to comment on the draft recommendation by 10 April. At the same time the company was informed that the Council would issue a recommendation for exclusion on 15 May if the company did not respond to the Council's enquiry. At Vedanta's request, on 2 April the deadline was extended to 20 April. On 23 April the company was contacted once more, and it then indicated that a reply would be sent within a few days. As of 15 May the company has still not responded to the Council's enquiry.

Without offering any concrete details, Vedanta's website proclaims that the company conducts its business in an environmentally and socially responsible manner, based on the principles of sustainable development.²⁰⁴ The problems it is facing with regard to the approval of industrial plants or the conflict with indigenous people and local communities receive no mention on the website, in annual reports or other company publications.

However, in the press Vedanta has commented that the mining operation in the Niyamgiri Hills has been put on hold, and that the company is awaiting the Indian government's approval.²⁰⁵ In this context, the company claims that *"there has been no forcible eviction and no single complaint has ever been filed suggesting any kind of forcible eviction from the settlement. All the people at Lanjigarh who have been displaced have been offered full rehabilitation, and compensation for purchased land has been paid out at twice the government rate."*²⁰⁶ The company also argues that *"the new accommodation is close to plenty of grazing land where those who have animals are able to graze them."*²⁰⁷

²⁰² *Samata v. State of Andhra Pradesh*, para. 94 -131, quote from para. 115 and 117. The Court based its judgment on the following national and state laws: PESA Act of 1996, Indian Constitution [73rd Amendment] Act, 1992 clause (m) (iii), para 5 (2) (b) of the 5th Schedule, Andhra Pradesh Scheduled Area Land Transfer Regulation (1 of 1959), as amended by Regulation II of 1970 (the 'Regulation'), the Mining Act (67 of 1957), the Forest Conservation Act, 1980 (for short, the 'FC Act') and the Environment Protection Act, (the "EP Act"); available at <http://www.mmpindia.org/samatha%20vs%20AP.htm>

²⁰³ See footnote 201.

²⁰⁴ Vedanta Resources plc 2005: *Delivery and Growth. Sustainable Development Report 2005*, p. 2: [http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report\(1\).pdf](http://www.vedantaresources.com/uploads/Sustainable%20Development%20Report(1).pdf)

²⁰⁵ Popham, Peter 2006: *Indian villagers pay a high price as commodity boom comes to rural Orissa*, The Independent, 4 August, 2006, available at <http://news.independent.co.uk/world/asia/article1212783.ece>

²⁰⁶ See footnote 205.

²⁰⁷ See footnote 205.

At Vedanta's 2006 shareholders meeting in London criticism from some shareholders that the annual report did not mention the protests against the Lanjigarh project elicited the following response from a company representative: "As with all large development projects, there are controversies, but the company has experienced a limited amount of protests which are not disrupting the operational environment of the company."²⁰⁸

7 The Council's assessment

Based on available documentation the Council has assessed whether the environmental damage and the human rights violations that Vedanta Resources is being linked are inconsistent with the Ethical Guidelines, point 4.4.

The Council accepts as a fact that Vedanta Resources in its capacity as majority shareholder and chair of the board has exercised, and continues to exercise, considerable influence over the subsidiaries discussed in this report.

7.1 Severe environmental damage

The first element in the evaluation of whether the company causes severe environmental damage refers to the *scale of the damage and to what extent it has irreversible or long-term effects*.

In this respect the Council has investigated three Vedanta subsidiaries that operate in India, basing its assessment on the information provided in Chapter 5. On the whole, these companies generate considerable amounts of pollution and hazardous waste. At Sterlite's Tuticorin plant the Council finds it probable that the enormous quantities of hazardous waste, the unsecured deposit sites, and the poor waste management have led to substantial and long-term heavy metal contamination of soil and groundwater that will persist even if the production should cease. With regard to Malco's activities, the Council finds that the company's handling of red mud may cause severe environmental damage. There is a high risk that the unsecured red mud dumps will pollute an important drinking water source, as well as contaminating soil and groundwater. The Council considers there to be a significant risk that such environmental damage may also occur at the new aluminium refinery at Lanjigarh. The disposal of red mud here may cause severe and long-term contamination of groundwater and water systems in the area, a threat that is enhanced by the fact that no environmental impact assessment has been adequately performed. The Council takes into account that the risk of severe environmental damage also has been pointed out by the Supreme Court's *Central Empowered Committee*.

Moreover, the Council finds that the planned mining project in the Niyamgiri Hills may entail considerable negative and irreversible effects on the whole ecosystem of the area. In addition to this area's seemingly unique natural heritage values, the Council attaches importance to the serious consequences the mining operation may have on the water resources in the area. Some thirty rivers have their springs in these hills, two of which (the Vamsdhara and a major tributary to the Nagvalli) supply hundreds of thousands of people in South Orissa and Andhra Pradesh with drinking water and irrigation. Based on the

²⁰⁸ Barriaux, Marianne 2006: *Tribal activists carry Indian mining protest to London*, The Guardian, 3 August 2006, available at <http://business.guardian.co.uk/story/0,,1835903,00.html>

available documentation, the Council finds it probable that the planned mining project may disrupt the water balance in the area and contribute to the drying up of many streams, thus degrading and even destroying the water supply for thousands of people.

Against this backdrop the Council regards the environmental damage that already has occurred or that may occur as a result of Vedanta's activities as extensive, lasting, and partly irreversible.

The Council notes that all these companies belong to particularly polluting industries, where production technology, cleaning technology, waste management and environmental management systems and control are crucial in order to reduce the environmental impact. Even if the Council has not had access to information that documents all aspects of the companies' operations, it is common knowledge that for example the Söderberg process, used by Vedanta in its aluminium smelters, emits considerable quantities of environmentally hazardous and toxic substances, including carcinogenic agents and substances regulated by several international conventions.²⁰⁹ The emissions of fluorides, green house gases, sulphur, and the disposal of cathode waste are other important issues in aluminium production. Copper production also causes more kinds of health and environmental strains than those presently evaluated by the Council.

The Council has not received information as to how emissions and waste are managed at Vedanta's coal-fired power plant, which supplies power to the company's refineries and smelters. In addition to greenhouse gas emissions, coal-fired power plants are significant sources of heavy metals emissions, including mercury, and the disposal of fly ash may cause substantial environmental impact. Vedanta Resources does not provide much information on how the company deals with this. In sum this means that the environmental and health damage (discussed below) caused by Vedanta may be more extensive than indicated by the information available to the Council's assessment.

In the Council's view, it has also been substantiated that the pollution from Vedanta's activities has had *considerable negative impact on human life and health*. The industrial plants are all located in densely populated areas, where the contamination of drinking water, dust and air pollution from Vedanta's refineries, smelters, power plants, and waste disposal sites expose the local population to large amounts of hazardous substances. The phosphogypsum dumps at Sterlite's Tuticorin plant, described in section 5.1.4, generate large amounts of dust containing heavy metals and radioactive substances. The workers and local residents inhale this dust. Similarly, heavy metals contaminate the area's groundwater. It is unfit for drinking, but the local population uses it anyway because they lack alternative sources. The Council also finds it probable that the smelter and the coal-fired power plant contribute to severe air pollution of the area. Both workers and local residents are therefore exposed to hazardous contamination from several sources and over a long period of time. In the Council's view there is a significant risk that the company may inflict severe and, in part, chronic health ailments on the population. Furthermore, the Council regards the reprehensible handling of red mud at Malco's plant as constituting a significant health hazard. The dust from the dumps is strongly alkaline and contains heavy metals, arsenic, silica and other substances, which, when dispersed by the wind cause serious health effects among workers and local residents. This seems to be a pressing problem at Malco's

²⁰⁹ This applies to e.g. benz(o)pyrene and polycyclic aromatic hydrocarbons, PAH. Both are carcinogenic and classified as hazardous substances. See footnote 205.

operation today, and to the Council's knowledge, there is a risk that this will also become a serious issue at Vedanta Alumina's planned red mud dump in Orissa.

Despite considerable discharge of hazardous substances from Vedanta's operations the Council is not aware that any systematic studies of the actual or potential health effects of the pollution have been carried out. Sterlite has been instructed to conduct such studies, but so far does not seem to have complied with the order. The pollution generated by hazardous substances and the processes used by Vedanta in copper and aluminium production, as well as potential health and environmental effects related to these, are, however, relatively extensively documented in relevant literature.²¹⁰ In Norway and internationally many of these substances are classified as hazardous because of their adverse effects on the environment and human health. Taking this into consideration as well as the available information on the company's activities, the Council finds that there is an unacceptable risk that Vedanta has inflicted, and will continue to inflict, serious and long-term health problems on the workers and local residents.

It is also evident that the mining operations have had far-reaching negative consequences for the people who used to live in the mining area. This issue is discussed specifically in section 5.4.6 on human rights violations.

The third element in the assessment is whether *the environmental damage is a result of violations of national laws international norms*.

As regards the subsidiaries Sterlite and Vedanta Alumina, the Council is satisfied that the companies repeatedly and in the course of many years have violated government requirements on hazardous waste management and discharge reductions as described in the sections 5.1.3 and 5.4.4 above. These infringements have been investigated several times and documented by, among others, two committees appointed by the Supreme Court. The Council takes as its point of departure that Sterlite has implemented large production expansions without the necessary permits and without an environmental impact assessment. This has contributed to the severe environmental damage described above. The Council also finds that Vedanta Alumina has deliberately provided misinformation to the authorities and evaded laws and procedures in order to guarantee clearance for the mining project and the construction of a new refinery in Orissa. Even if the mining licence has not been granted and the case is to be heard by the Indian Supreme Court, the company has chosen to go through with the construction work on the refinery. The Council would like to stress that the Supreme Court's *Central Empowered Committee* believes that the company has done this deliberately to prevent the authorities from withholding the mining licence.²¹¹

In this context, the Council also finds reason to point out that the Orissa state government has ordered Vedanta Alumina to stop the construction of a new power plant and an aluminium smelter at Jharsaguda because the company does not possess the necessary clearances (see section 5.3). The Council is also aware of the accusations levelled against Vedanta's subsidiary Konkola Copper Mines in Zambia regarding repeated and continued breaches of environmental requirements, which in November last year caused large-scale

²¹⁰ See for example the European Commission 2001: *Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Non Ferrous Metals Industries*. December 2001- available at <http://ec.europa.eu/environment/ippc/index.htm>

²¹¹ CEC 2007 rapport: *Supplementary Report in no. 1324 and 1474 Regarding the Alumina Refinery Plant being set up by M/S Vedanta Alumina Limited*, p. 16; on file with the Council.

spills and severe drinking water contamination.²¹² The Council has not analysed these incidents in any more detail, but finds, however, that they are part of a pattern where national legislation, procedures and requirements are systematically ignored. When regulations designed to protect people and the environment against harmful effects are systematically disregarded over a long period of time, the risk increases that severe environmental damage may occur. The gravity of the company's conduct is aggravated by the kind of activities Vedanta engages in – mining and production processes that without environmental and pollution control may generate considerable, long-term and irreversible effects on the environment and human life.

The Council has also assessed to what degree the company has *failed to act in order to prevent the damage or implement sufficient measures to reduce the extent of the damage*. In the Council's view, it is evident that the company has not done enough to prevent or reduce environmental damage, seeing as it is precisely the *lack* of such measures that are at the root of the environmental damage in question.

The last element in the Council's assessment is *whether it is probable that Vedanta's unacceptable practice will continue*. The violations analysed by the Council have taken place over many years and are still ongoing. They occur not only in one company, but in all the companies that have been investigated. In the Council's opinion, this indicates a systematic practice, where breaches of the law and an indifference to the damage the activities inflict upon people and the environment seem to be an accepted and established element of Vedanta's corporate culture. The Council therefore finds that there is little reason to believe that the company's unacceptable practice will change in the future.

7.2 Human rights violations

In the Council's opinion, it is highly probable that Vedanta's mining operations in the states of Chhattisgarh and Orissa have led to the expulsion of local farmers, and, in particular, tribals, from their homes and land. This constitutes a serious violation of fundamental human rights.

To the Council's knowledge, these violations still occur and include evictions, destruction of homes and farmland, no prior consultation as prescribed by law, and harassment and oppression of villagers. Sections 5.3.1 and 5.4.6 above discuss how the company's operations have considerable negative effects on tribal peoples' culture, religion, and way of life. The tribal peoples living inside the planned mining area in Orissa depend on farmland and forest resources for their subsistence.²¹³ They have a strong cultural, spiritual, and economic attachment to their land and forest areas. If these are allocated to mining, the communities are in danger of losing their culture and livelihood. In the case of the *Dongaria Kondh* it has been shown that the tribe will probably face extinction if Vedanta is granted clearance for the planned mining operation in the Niyamgiri Hills, Orissa.

The Council deems it important that the tribal land in Niyamgiri Hills in principle seems to be protected by the provisions of the Indian Constitution (Schedule V), and that a transfer

²¹² See footnote 24, <http://www.minewatchzambia.com/>

²¹³ The Central Empowered Committee (CEC). 21.09.05: *Report in IA no. 1324 regarding the alumina refinery plant being set up by m/s Vedanta Alumina Limited at Lanjigarh in Kalahandi district, Orissa*, para. 3, section Xvi, available at <http://www.indiaresource.org/issues/globalization/2005/CECSep2005cancellicense.html>

of land to private companies in this case may be contrary to the law. This is also pointed out by the *Central Empowered Committee* in its report to the Supreme Court.

The Council regards the breaches of norms that have been revealed as serious human rights violations. The seriousness of the violations is aggravated by the fact that they have been perpetrated against vulnerable groups, tribal peoples in particular, whose identity, culture and livelihood are linked to their traditional land. The forced displacement may thus not only harm individuals, but cause whole cultures and communities to disintegrate.

Even if Vedanta has provided some compensation through offering housing and money, it is not, in the Council's view, likely that this is sufficient to compensate for the loss of land and livelihood. Research conducted on forced displacement shows that housing and money are not enough to avoid a significant deterioration of living standards and quality of life for persons and families that have been moved against their own will. According to the international project *Mining, Minerals and Sustainable Development (MMSD)*,²¹⁴ there are a series of risk factors that contribute to impoverishment after the dislocation. Such risks include unemployment, homelessness, marginalisation, insecure food provision, loss of common land and resources, increased health risks, lack of social articulation, and loss of civil and political rights. If these risk factors are not mitigated or averted, they may lead to increased poverty or even generate ore poverty. Tribal peoples, elderly people and women are considered particularly vulnerable in this context.²¹⁵

The World Bank also calls attention to such circumstances, which form the basis of the bank's policy on "involuntary resettlement": "*Bank experience indicates that involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social, and environmental risks: production systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost.*"²¹⁶

In the Council's opinion, long-term and irreversible impact on whole cultures and local communities, in addition to individual suffering, are the results of the human rights violations that have been committed. The company's compensation programme does not seem to prevent this, but, on the contrary, may contribute to further impoverish those who have been resettled against their will.

The question is to what extent Vedanta Resources has contributed to the aforementioned human rights violations. The Council finds that there is an indisputable *connection between*

²¹⁴ "*Mining, Minerals and Sustainable Development (MMSD) was an independent two-year process of consultation and research with the objective of understanding how to maximise the contribution of the mining and minerals sector to sustainable development at the global, national, regional and local levels. MMSD was a project of the [International Institute for Environment and Development \(IIED\)](http://www.iied.org) commissioned by the [World Business Council for Sustainable Development \(WBCSD\)](http://www.wbcsd.org)". Information and reports available at <http://www.iied.org/mmsd/>*

²¹⁵ Downing, Theodore 2002: *Avoiding Poverty: Mining-Induced Displacement and Resettlement*, April 2002, no 58; available at http://www.iied.org/mmsd/mmsd_pdfs/058_downing.pdf

²¹⁶ World Bank Operational Manual – Involuntary resettlement; available at <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064610~pagePK:64141683~piPK:64141620~theSitePK:502184,00.html>

the company's operations and the violations. Undoubtedly, the forced resettlement of tribal peoples has taken place as a result of Vedanta's activities. The incidents in both Chhattisgarh and Orissa are linked to an ongoing and planned mining operation as well as the construction of a new refinery that Vedanta subsidiaries are in charge of. The Council takes as its point of departure that there is a clear connection between Vedanta's operations and the violations.

The Council has also assessed whether the violations have been perpetrated *with a view to serving the company's interests or facilitating its operational conditions.* The Council accepts as a fact that the violations have occurred in connection with an expansion of Vedanta's activities, particularly mining. Vedanta claims that the company has committed no wrongs and has "*neither alienated tribal land nor caused any damage to forests.*"²¹⁷ However, in this case the Council finds that the available documentation proves the opposite.

What is the risk that these violations will also take place in the future? To the Council's knowledge the violations are ongoing, and there is a risk that they will be stepped up if the planned mining project in Orissa becomes a reality. The violations have taken place repeatedly and through various subsidiaries. In the Council's view this may indicate a systematic pattern of behaviour on the part of the company. The Council has no indication that the company will carry out involuntary resettlements in a better way in the future. Nor is there anything to indicate that the conflict between the tribal peoples and the company will diminish once the need for further expansion and new mines arises. Hence, the Council considers there to be an unacceptable risk that previous and ongoing violations will continue in the future.

7.3 Conclusion

In this case the Council has assessed the risk of the Fund contributing to both severe environmental damage and human rights violations by maintaining its investment in Vedanta Resources. In this respect the Council has investigated four of Vedanta's subsidiaries and found the accusations against the company of severe environmental damage and involvement in violations and forced dislocation of tribal peoples to be substantiated. In the Council's opinion, the company seems to lack interest in and willingness to do something about the serious and long-term damage that its operations inflict on people and the environment. The norm breaches that have been brought to light with regard to the environment and human rights, have taken place at all the investigated subsidiaries, repeatedly and over several years. In the Council's opinion, this indicates a pattern of behaviour where such violations are accepted and have become an integral part of corporate practice. This pattern represents an unacceptable risk that the company's unethical practice will continue in the future.

8 Recommendation

The Council will, after the assessment of the substance of the accusations against Vedanta Resources Ltd., in light of point 4.4 of the Ethical Guidelines, recommend that Vedanta

²¹⁷ Propham, Peter 2006: *Indian villages pay high price as commodity boom comes to rural Orissa*, The Independent, 4 August 2006, available at <http://news.independent.co.uk/world/asia/article1212783.ece>

Resources Ltd, as well as its subsidiaries Sterlite Industries Ltd. and Madras Aluminium Company Ltd. be excluded from the investment universe of the *Government Pension Fund – Global* due to an unacceptable risk of complicity in current and future severe environmental damage and systematic human rights violations.

Gro Nystuen
Chair

(sign.)

Andreas Føllesdal

(sign.)

Anne Lill Gade

(sign.)

Ola Mestad

(sign.)

Bjørn Østbø

(sign.)