

**INTER-AMERICAN DEVELOPMENT BANK**



***ARGENTINA***

***LOMA NEGRA  
AR-L1089***

***ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT  
(ESMR)***

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**Loma Negra**  
**Environmental and Social Management Report (ESMR)**

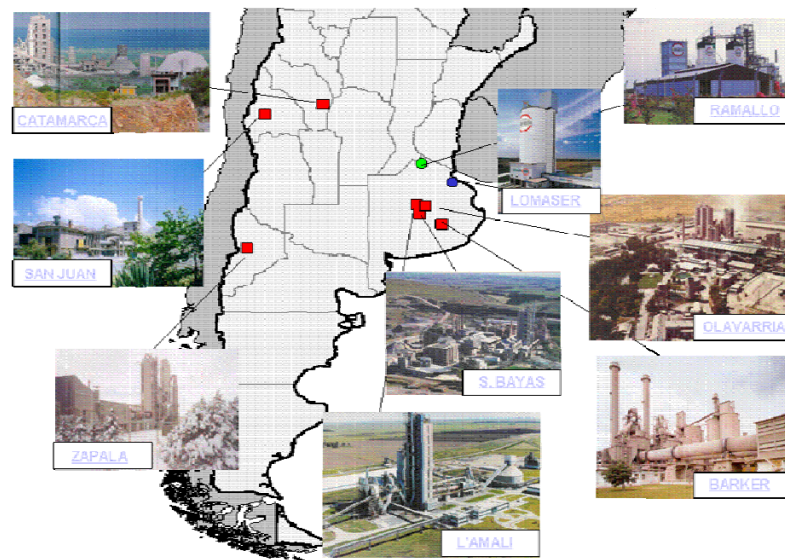
**TABLE OF CONTENTS**

1	INTRODUCTION .....	3
2	PROJECT DESCRIPTION .....	3
	A. Capacity investments .....	4
	B. Environmental Investments .....	5
3	ENVIRONMENTAL AND SOCIAL SETTING .....	7
4	INSTITUTIONAL AND REGULATORY CONTEXT .....	7
5	IMPACTS AND RISKS .....	8
	A. Impacts and Risks from the CapEx investments .....	8
	B. Impacts and Risks from Loma Negra Operations .....	9
6	ENVIRONMENTAL, SOCIAL, AND HEALTH AND SAFETY MANAGEMENT .....	11
7	PUBLIC CONSULTATION .....	12
8	RECOMMENDATIONS .....	13

## 1 Introduction

- 1.1 Loma Negra is the market leader in the production of cement and ready-mixed concrete in Argentina, and has nine production plants, with five associated limestone quarries: six plants are distributed in the Provinces of Buenos Aires, and there is one each in Neuquen (Zapala), Catamarca, and San Juan (see below). Through its subsidiaries Cofesur and Recycomb, the Company also has involvement in rail transportation and fuel production for internal consumption. In 2005, the Brazilian group Camargo Correa S.A. (CCSA) acquired the majority of Loma Negra's stock.
- 1.2 The project being considered, involves Capital Expenditure (CapEx) investments in equipment at existing Loma Negra cement plants to increase efficiency and capacity, as well as investments in environmental improvement measures, in particular controls in operational dust emissions, as well as general housekeeping and management processes and practices.

### UBICACION DE PLANTAS



## 2 Project Description

- 2.1 Cement production activities at Loma Negra facilities vary slightly but consist mainly of:
- Transferring the raw material (limestone, gypsum and weathered limestone) to the cement plant area either through conveyor belts or trucks depending on quarries' proximity to the cement plant
  - Storage of the raw material, usually open air
  - Crushing/screening to produce the desired particle size (less than 100 mm)
  - Drying the weathered limestone for those that plants that use it in their process
  - Milling raw materials into a flour-like powder
  - Mixing raw materials with additives and combustible material (e.g. fly ash, slag, coal) until homogeneous
  - Pre-heating in heat-exchange towers and fusion into rotary kiln at 1400 degrees Celsius to produce clinker
  - Flash cooling in water of clinker

- Drying clinker then milling with additives to obtain the right type of cement
  - Transportation through conveyor belts to the final storage silos from where it is either delivered in bulk or bagged to several sizes at the plant before delivery
  - Delivery can be either via trucks or railway
- 2.2 Some plants-specific activities include the following: Production of lime (Olavarría plant); Grinding and use of a mix of coal and petcoke in the process (Olavarria, Catamarca and L'Amali); Dedication to milling and bagging activities (Sierras Bayas and Ramallo);
- 2.3 Loma Negra owns several active quarries that supply limestone, gypsum, and weathered limestone to its cement production plants. Quarrying is performed using explosives. Some quarries are not active for lack of profitability (granite, lime and San Alfredo quarries near Olavarria), while others are either abandoned (old lime quarry near Baker) or closing progressively.
- 2.4 While natural gas is the primary fuel for the the plants, "Recyfuel" a fuel made from the byproducts of industrial processes like petroleum refineries is occasionally used as an alternative in some of the plants. Recyfuel is produced by Recycomb, a company partially owned by Loma Negra. The quantities of Recyfuel used for fuel varies in relation to factors such as energy costs, availability of the fuel, and technical considerations related to the burning process. In the past seven years of use, the percentage of energy production from this fuel in the L'Amalí plant has ranged from around 2% to as much as 6% and 7% in 2002 and 2003. In 2007 it was 2.6%. The company plans to try to have the use at around 5%. This activity is highly regulated by the local authorities, and monitored by Loma Negra for air emissions.
- 2.5 The L'Amali plant is presently the most energy efficient one and has a quarry that produces excess raw material distributed to other plants. Three of the plants are located in a rural area (l'Amali, Catamarca and Barker), while the others are sited in industrial areas.
- 2.6 The CapEx program being considered under this loan is part of a longer-term program of facility expansions and environmental upgrades that started in 2007 and are expected to complete in December 2012. The environmental upgrades are the direct result of recommendations made by an international environmental consulting firm following a comprehensive auditing program initiated in 2005, when Loma Negra was acquired by CCSA. The areas of investment covered by the loan include primarily capacity expansions and environmental upgrades and improvements, as follows:

#### ***A. Capacity investments***

- 2.7 The budget for capacity investments is projected in US\$87 MM. More than 80% of the budget is basically concerned with three main projects:
- **Cement Mill in Catamarca Plant:** The plant currently is limited in its cement production by its milling capacity. A new vertical cement mill will enable the plant to reach 100% of kiln capacity, thus, allowing the plant to increase the cement production by 40%. This efficient technology is expected to reduce energy consumption by 30% and will also allow the plant to operate outside of peak electricity demand hours. The project has started and will be finished in 2009.
  - **Cement Mill in L'Amalí plant:** The new cement mill will increase cement capacity in L'Amalí plant, doubling its current production level. Currently, the clinker production reaches more than 2 million tons/year while the capacity for milling remains in 1 million ton/year. The new mill will allow the plant to use the clinker produced in the plant for producing cement, avoiding clinker

transportation to other plants. To produce cement in L'Amalí plant entails to use a more energy efficiency process, since raw mills and preheating towers installed in this plant allow to achieve a high energy performance comparing with other plants such as Olavarría). The project has started and will be finished in 2009.

- **Cement Mill in Barker Plant:** Refurbishment of an old mill increasing the milling capacity and reducing bottle necks in Barker.

## ***B. Environmental Investments***

2.8 With the intention of reaching high environmental standards in all its facilities, Loma Negra has approved an ambitious plan to reach these standards by 2012. A key purpose of these investments is to reduce dust emissions mainly by installing new filters in the clinker coolers and grinding mills, and by reducing dust from open air material storage and transport through the construction of warehouses for raw material and final product, and closed transport systems. The plants with higher budgets are Barker, Zapala, Catamarca and Olavarría, covering 80% of total budget, although works are also being completed at San Juan and Ramallo. Specific investments include the following:

2.9 Dust control from crushing and grinding activities, the kilns and clinker coolers, and material storage and transport using bag filters and automated dust capture and return systems and spray dust suppression systems.

### ***2.9.1 Olavarría Plant***

- Installation of dust suppression system in the lime kiln's cooler to replace the obsolete system of cyclones (kiln #7). It will consist of a bag filter system with its corresponding gas conditioning tower, optimizations in the electro-filters treating the gas emissions and recovered dust transportation system.
- Installation of filters for the transfer areas along the conveyor belts used for the transportation of the clinker produced by kiln #7.
- Installation of filters for the dosing scales and collector belts of mills #1 and #2. The work is estimated for completion in May 2009.
- Enclosure of the lime storage area, which is an important source of fugitive emissions. Construction will start in October 2008.
- Recovery and filtration of fugitive emissions from the feeding area of mills #1, 2 and 3. This includes the installation of a filter system over the supply hoppers, and the re-design of conveyor belts and how they feed into the milling towers.

### ***2.9.2 Sierras Bayas***

- Installation of bag filters on bulk cargo storage areas
- Installation of bag filters on the air extraction system in the cement transport tunnel
- Refurbishment of existing systems of dust suppression systems in the silos.

### ***2.9.3 Barker Plant***

- Construction of enclosed areas to store the clinker produced in excess during non winter months (to have enough material for milling during the winter when the kilns are stopped). There is no specific starting or completion date.

- Replacing existing low efficiency electrofilters at kilns #1 and #2 with new bag filters and a conditioning tower with a two-stage filter (air and water) for the kiln gases. The dust will be returned to the process, with no waste generated. The works have started and are scheduled for completion in May of 2009.
  - The upgrade of Mill #1, while primarily a project for production increase will have environmental benefits as well. The upgrade will include the installation of a process of closed circuit milling, incorporating a high efficiency dust separator cyclone which will ensure that dust emissions meet regulatory limits. Installed equipment will include two primary bag filter systems and a secondary bag filter system, all of the latest generation with automated control systems; Works are scheduled for completion in November of 2008.
- 2.9.4 ***L'Amali Plant.*** The investment plan does not include specific environmental improvements, but the new mill that is planned at the plant will include a dust suppression system with four filters in the hopper building, three filters in mill building and two filters in the cement silo elevator. The project was initiated in December of 2007 and completion is expected in September of 2009.
- 2.9.5 ***Catamarca Plant.*** The investment plan includes the installation of dust suppression through the installation of new bag filters; containment of work areas; strengthening or optimizing existing filters; initiation of the use of spraying. Investments include:
- Installation of new filters for dust in the kiln cooler and refurbishment of the kiln electro-filter.
  - Installation of bag filters in cement storage silo IV associated with increased production from the planned new mill; the Krupp crushing sector, in addition to the construction of containment; bag filters along conveyor belts DO1 to DO3; bag filters for the stone extraction process and the clinker warehouse.
  - Refurbishment and/or optimizing of existing filter systems in the mill hoppers, cement silos, and clinker transportation area.
  - Dust control in grinding areas by means of a “superkon” system of spraying using a compound of water and mineral oil in the final product collection area and through sprinklers.
  - Enclosure of clinker storage area and conveyor belts and dust suppression sprinklers.
  - Strengthening the filters for ‘flour’ and cement milling to the full filter capacity
- 2.9.6 ***Zapala Plant.*** *The investment consists of improving sinter drying, handling and transportation with closed conveyor belts, system of aspiration and bag filters. Installation is 10% completed. In addition, there will be dust control abatement equipment installed for the transport of cement by conveyor belt from the mills to the hoppers and for the transport of cement to the hoppers from trucks, grinding and shaking; and in the areas where dust is generated from truck and transportation, and grinding activities of cement and clinker. Filters will be installed on the cooler and for secondary grinding.*
- 2.10 **Remediation of past environmental liabilities** including the decommissioning and disposal of abandoned buildings and equipment, removal and disposal of contaminated soils from poor housekeeping practices (small fuel spills, waste disposal, etc.); removing and disposing of PCB contaminated oils; installing contained fuel storage and handling facilities; and restoring disused quarries. Many of these activities have already been completed, and key remaining activities include:
- Modification of storage areas for dangerous waste
  - Modification of fuel loading areas to avoid discharge of spills to drain systems

- Containment of equipment washing areas
  - Restoration of quarries
- 2.11 In terms of the quarries, plans for their closure and/or restoration are being developed on an individual basis. At the Pampita quarry associated with the L'Amalí Plant, a plan for remediating the quarry is being carried out. The filling of sector E of the quarry with clay and fertile soil on the upper level and reforestation with autochthonous species is planned to restore part of the original landscape and to avoid soil erosion. The total surface to be remediated is around 50,000 square meters, and as of May 2008, 7,000 square meters has been completed.
- 2.12 At the Catamarca Plant, two quarries closure is included in the investment plan; the enclosure of the perimeter of Ancaján quarry, the closure of the quarry itself and its associated installations.
- 2.13 At Olaverría, there is a program for the improvement of the maintenance of the three currently inactive quarries. These quarries are hydraulically linked, and are flooded. The water is used for industrial purposes by the plant. The program includes measures to regulate the water levels in the quarries and to prevent runoff of sediments into the water (reforestation, erosion control, etc.).

### **3 Environmental and Social Setting**

- 3.1 The facilities are all located in areas designated for industrial use, and are not located on environmentally sensitive areas or protected areas. The plants are generally built at the outskirts of towns, with buffer zones of trees and other green spaces, although three of them are located in rural areas. There are residential areas near the buffer zones, particularly small “workers villages” near the plants. The quarries tend to be near the plants, but further removed from the communities. There is one indigenous community near land belonging to (but currently not use by) the Zapala plant.
- 3.2 In terms of natural disasters Argentina is at risk from earthquakes and volcanic activity, especially in the west. Flooding is also a risk, especially in the areas around Buenos Aires; however at the plant sites themselves, flooding is not an issue.

### **4 Institutional and regulatory context**

- 4.1 As the facilities are existing operations and the additional equipment is not considered to present significant impacts, the company is not required by local regulations to prepare environmental impact assessments. The company is, however, required to have Certificates of Environmental Aptitude (CAA); these require a sworn statement every two years regarding the current environmental status of each facility. These analyses have been prepared for each of the plants in which the components of the projects will impact and reviews by the authorities have either been completed, or are in progress. Based on the Due Diligence activities, Loma Negra has prepared and submitted all required paperwork to regulatory agencies and has either received related authorization/certificate or is awaiting its issuance by the regulatory agency.
- 4.2 In 2005 a comprehensive auditing program (“the audit”) by an international environmental consulting firm was initiated when Loma Negra was acquired by CCSA. In terms of overall environmental and social compliance with local requirements, the audit report listed several areas of non-compliance with local standards and requirements, in particular dust emissions and certain license requirements. Many of these issues have now been resolved, and currently there are no significant outstanding regulatory issues in terms of their operations and environmental and social impacts other than those being addressed by the works planned and described in Section 2B. There are still permit applications in process, and a few submittals pending.

- 4.3 The Environmental and Social Strategy (ESS) for this project was reviewed through the IDB Environmental and Social Review (ESR) process and approved on July 18, 2008 and the ESS posted on the IDB website.<sup>1</sup> The project was classified as a “B” under the IDB Policy OP-703. Details of the impacts are discussed below.
- 4.4 An Environmental Analysis was completed at the request of the IDB, and posted on the IDB website.<sup>2</sup> The IDB’s environmental and social due diligence activities have confirmed that Loma Negra is in compliance with the applicable directives of the IDB Environmental and Safeguards Compliance Policy, including Directive B.4 (other risks), B.10 (Hazardous Materials) and B.11 Potential to cause air, soil or water contamination. Additionally, the Project complies with the Disaster Risk Management (OP-704) and the Disclosure of Information Policies (OP-102).

## 5 Impacts and Risks

- 5.1 All of the plants included in the investment program are existing operational facilities, and the project itself consists only in the installation of new equipment, (mills and dust control filters), and physical improvements (such as to materials storage areas), within the existing footprint of the facilities. Therefore, the impacts from activities related to IDB involvement can be divided into two types of impacts and risks: those directly associated with the investments within the CapEx program; and those associated with the corporate environmental and social performance and past liabilities of Loma Negra.
- 5.2 Overall, the level of impact from the project itself is considered to be significantly positive, especially in relation to the reduction of dust emissions. Potential negative impacts from the project are considered to be minor, as the project components result primarily in the installation of equipment and small works. However, there will be incremental increases in overall emissions and energy consumption that, especially when combined across the nine plants in the group, could lead to moderate overall impacts. Environmental, health and safety, and social risks, especially associated with past activities and operations, present a moderate risk in terms of liabilities and compliance. As a result,

### A. *Impacts and Risks from the CapEx investments*

- 5.3 There will be limited environmental construction impacts associated with the installation works directly in the process areas where the new equipment will be installed and where the raw materials areas will be upgraded. There are potential health and safety risks and impacts related to the construction works (disruption of routine processes, work at height, influx of construction contractors with limited knowledge of facility-specific risks). These are typical health and safety risks that will be addressed through the plant health and safety plans.
- 5.4 The most significant impact from the project is positive: the reduction in dust emissions. At the time of the audit in 2002, Loma Negra’s operations were routinely not in compliance with dust emission requirements, and the investment, when completed, will lead to emission levels within established standards. A review of the design information for the planned investments indicates that overall there should be a decrease in point source emissions as well as fugitive emissions through the extensive enclosure and dust abatement program planned. For example, the projected future emissions from kilns #1 and #2 at the Barker plant will see a 98% decrease in dust emissions from 2,110 mg/Nm<sup>3</sup> to 35 mg/Nm<sup>3</sup>). The World Bank Group (WBG), General

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<sup>1</sup> <http://www.iadb.org/projects/Project.cfm?project=AR-L1089&Language=English>

<sup>2</sup> <http://www.iadb.org/projects/Project.cfm?project=AR-L1089&Language=English>



Manufacturing Guidelines for Cement and Lime manufacturing (2007) standard<sup>3</sup> is 100 mg/Nm<sup>3</sup> and the Argentinean standard<sup>4</sup> is 250 mg/Nm<sup>3</sup>. The results are consistent for all of the investments, indicating that the company facilities will be able to operate with emissions that will be below the limits established by the Argentinean government, as well as the WBG guidelines.

- 5.5 Emissions from other parameters such as CO<sub>2</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub> will not change significantly from the project investments other than incremental increases related to production increases. Process efficiencies have been used as much as possible to minimize these increases. Water consumption will not change as a result of the project, and is not considered a significant issue with the current operations.
- 5.6 There will also be some energy consumption reductions (primarily natural gas combustion) due to the more energy efficient systems being installed; and though energy consumption is expected to increase by 19% due to the increased production, the energy consumption per unit weight of cement produced is expected to decrease by about 38%, a significant improvement. For the production of cement, it is expected that all the plants will be within the industry standard for energy consumption of 90-150 kWh/t equivalent cement recommended by the World Bank Group<sup>5</sup> with the exception of Olivaría, with 424 kWh/t. For some of the other products, such as special cement, these values are exceeded, and further energy efficiencies should be examined. Also, there is the potential for the plants to switch their fuel source from natural gas to pet coke, and also to use another fuel called “Recyfuel” a product made from the byproducts of industrial processes like petroleum refineries that can be used as alternative fuel in cement kilns that presently use natural gas. GHG emissions from all the facilities are estimated to be 2.8 billion tons per year and will likely increase due to the increased production levels, however the CO<sub>2</sub> emissions per unit ton produced will likely decrease due to the increased production efficiency.
- 5.7 While the incremental increases in impacts at the individual plants is not considered significant, it is possible that when combined across all of the facilities, there could be a more significant cumulative impacts, especially in Buenos Aires where several facilities are clustered and therefore needs to be quantified.
- 5.8 More energy efficiencies are planned for the plants, and also in the community through an energy efficiency outreach program.

## ***B. Impacts and Risks from Loma Negra Operations***

- 5.9 In addition to impacts and risks directly related to the project, there are potential risks presented by the past and ongoing activities of the facility. In general, these risks, and their associated potential impacts have been identified by Loma Negra (primarily through the audit process and the subsequent development of their action plan); however, it is important that this issues continue to be managed and addressed. The key issues are discussed below.

### **• Health and Safety Risks.**

- 5.10 The presence of dust on the plant and quarry sites, as well as in adjacent residential areas presents a potentially significant health risk, especially in the cases of the Zapala, Olavarria, Barker and Sierras Bayas plants. For example, air quality analyses performed in Sierras Bayas on September

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<sup>3</sup> World Bank Group EHS Guidelines for cement and lime manufacturing– April 2007.

<sup>4</sup> Decree 3395/96 (BA Province).

<sup>5</sup> World Bank Group EHS Guidelines for cement and lime manufacturing– April 2007.

2007, showed values of PM10 particulate matter 85 times above the local regulatory limit. With the implementation of the improvements, the risks will be reduced significantly, and remaining dust contamination should dissipate naturally. However, areas of previous dust contamination should be monitored to ensure that there are no pockets of residual accumulation that require remediation.

- 5.11 Emissions from the use of alternative fuels (dangerous wastes recycled into fuel) present a risk of emissions that contain dangerous compounds such as heavy metals, VOCs, and dioxins. The volumes of this material used are relatively low (see Section 2.4). The plant has a comprehensive management and monitoring system that relies on controlling the blend of this waste with natural gas and achieving a complete burn of these compounds through controlling kiln temperatures depending on the fuel used. Regular monitoring plan does not include all the parameters recommended for this kind of activity (see Section 6), and therefore the full risk from this activity cannot be evaluated, however, the results for the parameters that are included indicate no issues with those compounds.

- *Noise*

- 5.12 Noise issues from plant operations are primarily limited to impacts to workers at the plants. Loma Negra enforces the use of Personal Protective Equipment (PPE) to protect workers from elevated levels of noise.

- *Transport of dangerous materials and waste*

- 5.13 The “Recyfuel” is transported to the L’Amali plant by truck. The transport of this hazardous material through the towns, especially the residential areas has been identified by the communities and local authorities as a matter of a concern. Recycomb has prepared a contingency plan for transporting dangerous substances across the Buenos Aires province. The plan, called R205-R51 consist of training programs developed for emergency institutions (i.e. fire brigades and hospitals) located along route 205 from Recycomb plant, near to Cañuelas city to Saladillo city, and along route 51 from Saladillo to Olavarría.

- *Community relations*

- 5.14 Relationships with communities are good in general terms. Loma Negra has an extensive community support program in place which includes funding to community centers, education programs for students and educators, and a community energy efficiency program. Loma Negra is perceived as a company interested in the problems of the communities. The only issue of concern raised by the communities is the issue of the transport of Recyfuel, described in the previous section.

- *Quarries*

- 5.15 Active quarries are located near the plants but not beside villages, and dust from transportation to and from the quarries is not considered a significant issue for residential areas. There are risks, however, of potential water contamination from the quarries, especially those that have groundwater that is part of aquifers used for drinking or irrigation purposes. In addition, restoration of disused quarries, or abandoned sections of quarries is necessary to ensure that there are now long-term impacts to the land areas used by the quarries. The investment program includes provisions for the closure and restoration of the disused quarries, and remediation or management of issues detected at some of the active ones (see Section 2B). However, at the

disused Barker quarry, there are no current plans, and there is a potential for interaction between water inside the quarry and septic wells of nearby Villa Cacique, reducing the absorption capacity of the wells. Additionally, water from the quarry is pumped to a stream that could cause its contamination.

- 5.16 Quarries lack of security has lead to illegal use by others, encroachment by community residents, and some ownership disputes, in the past. The ownership disputes have been resolved, and works planned as part of the investment, such as perimeter fences and quarry closures should resolve the remaining issues.

## **6 Environmental, Social, and Health and Safety Management**

- 6.1 Based on the recommendations of the audit conducted by ERM, Loma Negra prepared an action plan, including budgets to address the recommendations. As of the end of June 2008, many of the recommendations have already been completed, such as the construction of treatment plants for effluent, removal and disposal of equipment containing PCBs, and the demolition of unused facilities. In terms of the dust issue, some plants have already had filters and other control technologies installed. The remaining dust control measures are being installed as part of the project, as are the renovations to the raw material storage areas. The project, therefore, will be directly facilitating the reduction of many of these risks. The completion of the action plan is expected to provide a significant improvement in the environmental conditions of the facilities.
- 6.2 Loma Negra is managing environmental and social issues both at the corporate level, and at each plant. The corporate policy is driven by the established Camargo Correa policies and procedures. Loma Negra has created a Health and Safety and Environment (HSE) Management framework, with an overall corporate supervisor supported by HSE supervisors at each plant. The Loma Negra group is currently preparing a corporate environmental management system under ISO 14001 for certification in the next few years. Meanwhile, the individual plants are in various stages of preparation of their operative procedures, for managing local equipments and operations, including emergency plans.
- 6.3 Currently, HSE policy and some general HSE procedures are being implemented in all the plants. The final approval of the HSE manual will be ready at the end of October, and it will be distributed on all the plants for implementation in the beginning of 2009. It is expected that at the end of 2009 or the beginning of 2010 L´Amalí and Olavarria plants could achieve ISO 14001 and OHSAS 18000 certificates, while Zapala and Catamarca plants could achieve these certifications by the end of 2010. The remaining plants would follow those.
- 6.4 In addition to the overall management procedures that follow the ISO 14001 and OHSAS 18001 Standards guidelines, plans and systems already exist that are being implemented at all plants like the: Safety task analysis, Work permits (work at height, confined space, hot work etc.), Emergency preparedness and response, Waste management, Management of wastewater treatment plant, Management of alternative fuel, training, etc. Details of key plans include:
- 6.4.1 **Waste management, including dangerous waste.** Solid and liquid industrial waste management, including separation, classification, and disposal. It also includes recovery of recyclable materials (wood, metal, etc.) and collection of paper bags that can be donated to charities. Dangerous wastes are taken away by Recycomb for treatment at their Urilaberrea facility.

- 6.4.2 **Contingency and Spill Management Plans.** The Contingency Plan contains roles and responsibilities and actions required in the event of emergencies, and contains programs for prevention of incidents. There is also a Spill Management Plan.
- 6.4.3 **Reporting and Tracking of Incidents.** An electronic maintenance program is under implementation at corporate level, which allows registration of any incident in the system, and to follow up the implementation and effectiveness of corrective and preventive measures. This system is also used for registering and following-up accident cases, and is arising as a very effective tool for implementing the operational procedures of the HSE system at corporate level.
- 6.4.4 **Monitoring Plans.** The plants have extensive monitoring programs, specific to the activities of the plant and/or quarry, and include programs such as
- Air emissions and air quality monitoring
  - Liquid effluent monitoring
  - Water quality monitoring (when onsite wells are used for potable water)
  - Groundwater monitoring (especially at quarries)
  - Heavy metal content of clinker
  - Noise monitoring
- 6.4.5 At L'Amalí there is special monitoring of the kiln gases when the Recyfuel is being used to prevent emission of potentially hazardous substances. These include dust (PM 10), CO, NO<sub>x</sub>, SO<sub>2</sub>, SO<sub>3</sub>, HCl, heavy metals and VOCs. The percentage of alternative fuel used is documented, and the operational conditions of the kiln. This is conducted every three months. The monitoring parameters are consistent with those recommended by the WBG; however they do not include Total Organic Carbon, and Dioxins–furans. To be in complete alignment with the WBG standards, these parameters should be added to the monitoring program.
- 6.4.6 **Corporate and Social Responsibility.** In addition, Loma Negra has a well developed CSR (Corporate and Social Responsibility) program with the local communities, implemented through the Loma Negra Foundation.
- 6.4.7 **Environmental, Health and Safety Action Plan (EHSAP).** The Bank has identified a series of specific issues related to Loma Negra's operations, which are either outstanding implementations of the actions identified in the audit, or findings of the Bank's due diligence activities. The Bank will require that these issues be included into an Environmental, Health and Safety Action Plan (EHSAP). Activities beyond those already included in the investments that will need to be developed in this EHSAP include (but not be limited to):
- Development of ISO 14001 and OHSAS 18000 systems for each of the operational plants;
  - Review of safety risk management related to the transport of Recyfuel to the Loma Negra Plant (particularly through residential areas).
  - Development and implementation of the greenhouse gas emissions calculation program, including individual and cumulative emissions.
  - A review of quarry remediation and/or closure requirements and update of quarry plans.
- 6.4.8 In addition to correcting the identified issues, the EHSAP will require Loma Negra to complement its corporate Environmental, Health and Safety Management System to include the requirements of the IDB and its policies.

## 7 Public Consultation

- 7.1 External communication is a formal part of Loma Negra's corporate responsibility policy and activities. Plant visits are regularly organized for local communities or schools as well as workshops on investments and innovations at the facilities for both employees and local communities. Formal Public Consultation was not conducted as part of this investment program but rather communication on planned activities and interviews with local community representatives and government agencies confirmed the existence of good communication channels between the facilities and local communities.

## **8 Recommendations**

- 8.1 IDB will require as part of the Loan Agreement that the Company and all portions of the Project shall, at all times during the life of the Loan Agreement, comply with each of the following:

1. All applicable environmental, health and safety and labor Argentinean regulatory requirements associated with any environmental, health and safety related permits, authorizations, or licenses that apply to the Project or the Company, including environmental, health and safety requirements of the Project contracts, and any subsequent modifications.
2. Applicable IDB's environmental and social policy and requirements including the Environment and Safeguards Compliance Policy (OP-703); the Disaster Risk Management Policy (OP-704); and the Disclosure of Information Policy (OP-102).
3. All aspects and components of the various Project-related environmental, health and safety plans/documents.
4. Applicable aspects of the International Finance Corporation's Performance Standards on Social & Environmental Sustainability April 30, 2006;<sup>6</sup> Applicable aspects of the following World Bank Group Guidelines: World Bank Group EHS Guidelines for cement and lime manufacturing - April 2007; Environmental, Health, And Safety (EHS) Guidelines - General EHS Guidelines, 2007.<sup>7</sup>
5. Implement a corporate environmental and social management plan and procedures that can be applied across all of the Loma facilities; as well as plant specific plans and procedures at each of the facilities.
6. The requirements of Loma Negra's Environmental and Social, and Health and Safety Management Systems that is consistent with the principles of ISO 14001 and OHSAS 18001.

- 8.2 Prior to Financial Closure the Company will be required to:

7. Submit an Environmental, Health and Safety Action Plan (EHSAP) to complete the environmental mitigation and corrective actions included in the Environmental Analysis (EA) and the Environmental Audit reports of the sites, and the issues identified in the IDB Environmental and Social Due Diligence. This EHSAP Plan shall include the proposed actions, programs and plans to be adopted to improve environmental, social, health and safety management procedures, and correct any pending non-compliance and/or liability, time schedule for implementation including due dates and key milestones and the estimated costs

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<sup>6</sup>[http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/pol\\_PerformanceStandards2006\\_full/\\$FILE/IFC+Performance+Standards.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/pol_PerformanceStandards2006_full/$FILE/IFC+Performance+Standards.pdf)

<sup>7</sup>[http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui\\_EHSGuidelines2007\\_GeneralEHS/\\$FILE/Final+-+General+EHS+Guidelines.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_GeneralEHS/$FILE/Final+-+General+EHS+Guidelines.pdf)

8. Submit an Air Quality Monitoring Plan, consistent with the standards and parameters detailed in the World Bank Group EHS Guidelines Environmental, Health, and Safety Guidelines Cement and Lime Manufacturing – April 2007 and World Bank Group General EHS Guidelines: Environmental Air Emissions And Ambient Air Quality – April 2007
  9. Submit a Greenhouse Gas Monitoring Plan, including a program for estimating greenhouse gas emissions and calculating cumulative impacts from emissions.
- 8.3 Prior to each disbursement, the Company will be required to certify compliance with all environmental social, and health and safety requirements in the Loan Agreement.
  - 8.4 During the life of the Loan Agreement, the Company will present to IDB, the applicable documents, reports and plans indicated in the EHSAP, and prepare and submit Environmental and Social Compliance Reports (ESCR).
  - 8.5 The Bank may request an environmental, social and health and safety audit to address significant non-compliances with environmental and social requirements, as defined by IDB.
  - 8.6 The Bank will monitor the environmental, social, health and safety aspects in the Loan Agreement via internal Bank supervision actions (e.g., site visits, review of documentation) and will contract an external independent Environmental and Social Consultant to perform more detailed supervision/monitoring actions during the life of the Loan Agreement. In addition, the Bank will have the right, as part of the Loan Agreement, to contract for the performance of independent environmental, health, and safety audits, if needed.