

**Environmental Classification:** This is a category III project according to the IIC's environmental review procedure because specific impacts may result which can be avoided or mitigated by adhering to generally recognized performance standards, guidelines and design criteria. The principal environmental and social issues related to this project include: wastewater treatment, solid waste, fire safety, and worker health and safety.

**Wastewater:** The plant generates both industrial wastewater and sewage. The plant's main contributor to the industrial wastewater stream is the processing of instant coffee, which includes a wet process. Dust, stones and other impurities from the coffee beans are removed in the washing stage, some wastewater is generated in the percolation stage, at the evaporation stage, and the agglomerator stage. In addition, a portion of the coffee grinds accumulates on the floor and is washed into the industrial wastewater collection system. The roasting of ground coffee, which involves a "dry process" (washing, grinding, roasting, grinding, and packaging) generates less wastewater. However, some of the roasted ground coffee products are formulated with caramelized sugar, and it is this caramelized sugar operation that generates wastewater with elevated BOD (biochemical oxygen demand) levels. The company has completed a project to separate the industrial wastewater stream from the sewage waste, and is currently analyzing a variety of different proposals for installation of a wastewater treatment plant for industrial wastewater that will meet international levels for effluent water quality. In addition to installing a treatment plant, the company will implement various other measures to reduce the generation of liquid contaminants that need to be treated. For instance, the company will invest in a "cleaning in place" project that will allow the recycling of cleaning liquids used (i.e. acid and caustic soda) for certain machinery used to make instant coffee, thereby reducing the use and discharge of these chemicals in the liquid effluent waste stream. They will also implement methods to remove the spent coffee grinds at the source to avoid them from falling to the floor and contributing to the elevated suspended solid levels in the wastewater. The sewage waste will be connected to a municipal wastewater treatment plant to be constructed in the near future. (In the case, that there are delays in the construction of the municipal sewage collection and treatment system, the company will be required to implement an appropriate treatment system.)

**Solid Waste:** Solid waste generated at the facility consists primarily of office trash, spent coffee grounds, and residual plastic used for packaging the coffee. The domestic trash is collected by the local authorities, the plastic is sold to a company that recycles it, and 70% of the spent coffee grounds are used as fuel in the boiler combustion chamber. The remaining 30% of coffee grounds are placed in a landfill. The IIC consultant has recommended to the company that more coffee grounds be used as fuel in the boiler, thereby reducing the amount of grounds that need to be placed in the landfill.

**Air Emissions:** The plant is connected to the municipal electricity grid, and an emergency back-up generator (750 Kw) that relies on fuel oil is rarely used. Café Soluble with the guidance of the Center for Cleaner Production recently conducted a study in May 2001 to analyze methods to increase energy efficiency at the plant. The Techaire roaster that roasts coffee with caramelized sugar has "after burners" that significantly reduce smoke emissions typical when burning sugar is involved. Stack losses from the spray drier and agglomeration unit are small and do not appear to be a pollution consideration. However, the company will implement a monitoring program to ensure that emissions from the plant do not exceed international standards.

**Quality Control:** Café Soluble received the ISO 9002 certification in February 2002, and is in the process of implementing a Hazard Analysis and Critical Control Point (HACCP) system in order to identify and minimize all potential sources or points in the process where the coffee could potentially be contaminated. The well water used in the process and for drinking water on-site is tested and

complies with the World Health Organization Standards for potable water. In addition, investments to improve the hygiene in the cereal plant will be made in order to reduce the need for manual handling of the product.

**Fire Safety:** The plant is equipped with a network of fire extinguishers, and fire hydrants with foam, water, and chemicals depending on the type of fire risk in different areas (i.e. from electrical faults, burning plastic, etc.), and the company plans to install smoke detectors and improve signage of emergency evacuation routes. Fire water for the plant is obtained from a 30,000 gallon tank of well water on site. Training with respect to fire fighting and related equipment is periodically offered, and emergency/fire drills are also performed.

**Occupational Health and Safety:** The company has prepared and is implementing their Occupational Health and Safety Operational Procedures/Policy (Reglamento Técnico Operativo de Seguridad e Higiene Industrial) in which accident prevention measures are defined address risks specific to each of the different work areas in the plant (i.e. the toasting area, the boiler area, the packaging area, the electrical maintenance area, etc.). Workers are provided with the appropriate protective equipment, health insurance, and first aid. All work related accidents are recorded and analyzed continuously. The plant also has a clinic with a nurse and doctor available.

**Handling of Chemicals:** Methods for appropriately handling flammable substances are included in the company's Reglamento Técnico Operativo de Seguridad e Higiene Industrial. A very small amount of chemicals are used at the plant. However, the drums containing potentially flammable substances, such as fuel oil will need to be appropriately labeled in order to better identify the risks associated with the chemical substance (i.e. flammable, reactive, corrosive). Measures should also be taken to ensure that all chemicals stored on site are segregated, as well as labeled in a systematic way to ensure safe storage.

**Labor:** The Company has a policy that persons under 16 years of age are not permitted to work. Workers at the plant are members of a union formed by the workers of Café Soluble, and a Convenio Colectivo de Trabajo has been signed between the Manager of Human Resources of Café Soluble and the union of workers at the company (Sindicato de Empleados y Obreros). This agreement stipulates the obligations of Café Soluble to the union. For instance, the company agrees to maintain an office for the union on the company grounds, offer transportation to and from the plant, grants loans to employees in times of emergency. Other benefits are outlined in the Convenio Colectivo de Trabajo.

**Miscellaneous Social Aspects:** The Company is currently offering classes so those employees that have not completed their primary education can do so. A variety of educational talks are also given to the employees and their families on topics, such as AIDs, family planning, and managing personal finances. In addition, in January 2000 the company in conjunction with donations from its employees reconstructed a local primary school, upgrading it with bathrooms, new chalkboards, and is currently working to develop a library and playground for the school. The plant and its employees are also indefinitely providing additional financial assistance to teachers at the school.

**Monitoring and Annual Reporting:** The sponsor will develop an Environmental Management Plan (EMP), which will include a schedule for the implementation of environmental projects and a monitoring and reporting program to ensure that their facilities are complying with national laws and IIC's environmental guidelines. The EMP will also include an Environmental Management System (EMS) based on the ISO 14000 standards. The EMS will describe who will be responsible for monitoring the implementation of environmental activities. The sponsors will submit an annual report summarizing the monitoring data related to occupational health and safety, fire safety,

accident reports, air emissions, wastewater discharge, solid waste disposal, hygiene and quality control, and labor related issues.