

Environmental and Labor Issues:

This is a category B project according to the IIC's Environmental and Social Sustainability Policy because it could produce certain effects that may be avoided or mitigated by following generally recognized performance standards, guidelines, or design criteria. The main environmental and labor considerations related to the Project are: efficient resource use and pollution prevention, workplace and labor conditions, and community health and safety.

The Nuevo Imperial channel has been operating since 1922 and irrigates some 8,500 hectares across five districts. It is fed by the Cañete River through the Socsi water intake, which was remodeled in 2004. The hydroelectric plant is located in the Nuevo Imperial District, Cañete Province, Lima Department. The irrigation channels fed by the Cañete River have enabled people to develop agricultural activities in the area throughout history. In the area bordering the Nuevo Imperial channel, there are scattered human settlements and some towns, such as La Florida, Cantera Alta, and Nuevo Imperial. The Nuevo Imperial channel conducts water to the 12+500 mark, where a water intake diverts water into a pipeline—1.90 m in diameter and 1,760 m in length—that runs to the powerhouse. The average annual water flow of the plant is 6 m³/s, with a net head of some 61.5 m. The plant has one Francis turbine, a generator with a nominal capacity of 4,700 kVA, a 5 MVA transformer, and a 630 m transmission line with 60 kV. In addition to the water flow diverted to the plant, some water from the Nuevo Imperial channel is diverted to secondary channels before the water intake, as well as towards a small purification plant supplying the town of La Florida and to ensure irrigation farmers working along the channel between the water intake and the tailrace of the powerhouse have enough water for their agricultural activities.

The company submitted an Environmental Impact Assessment (EIA), prepared by Ecosolution S.A.C. in August 2006, to the Instituto Nacional de Recursos Naturales (INRENA). During the project assessment, the project team met with agricultural engineer Antonio Rufino Sánchez, who was serving as chairman of the Comisión de Regantes del Canal Nuevo Imperial—a committee representing the channel's irrigation farmers.

Soil and Water Impacts: The project only uses the water flow of the Nuevo Imperial channel; therefore, the current flow of the Cañete River—the channel's water source—will not be affected. The channel has been operating for over 90 years and can supply water to farm approximately 8,500 hectares of land. The channel is managed by the Comisión de Regantes del Canal Nuevo Imperial and all of its water flow is used by the neighboring population for irrigation and drinking purposes. The project has little impact on soil, since the water intake and powerhouse use little space and are located in an area where agricultural crops are grown. The same applies to the transmission line. The pressure shaft runs underground, allowing seasonal crops to be grown on the surface. In total, approximately one hectare of land is directly impacted by the project. There are no protected or ecologically sensitive areas close to the project.

In the project's impact area, the climate is warm and temperate, and there is little rain throughout the year. It has a sub-tropical desert climate, and people were able to settle in the area thanks to the construction of irrigation systems fed by the Cañete River. The water flow of the river is variable due to seasonal changes in rain patterns in its upper basin. However, the construction of the Platanal hydroelectric power plant, with an equalizing reservoir 4,220 m above sea level at the Paucarcocha lagoon, has regulated the flow of the river, favoring the users located in the lower basin.

Impact on Local Flora and Fauna: The project area is classified as sub-tropical desert. The natural vegetation is sparse and land is used for growing agricultural crops through irrigation. Natural vegetation is only found along the banks of rivers and streams and consists of bushes, grasses and some trees. As the project area is irrigated by a man-made channel, all of the vegetation is planted for crop-growing purposes or to create defense barriers.

There is little fauna in the project area. Two mammals that are natives of the Peruvian coastal region have been found in the project area: the leaf-eared mouse (*Phyllotis amicus*) and the Sechuran fox (*Pseudalopex sechurae*). In addition, there is a species of lava lizard (*Microlophus thoracicus*) and 14 species of birds, in addition to other introduced species. All the indigenous species found at the site are classified in the “least concern” category of the Red List of Threatened Species of the International Union for the Conservation of Nature (IUCN).

As the water flow servicing the plant comes from an irrigation channel, it does not have to comply with ecological flow rules. The channel’s flow is determined by irrigation and consumption needs, under the auspices of the Comisión de Regantes del Canal Nuevo Imperial, and is subject to the ecological flow conditions of the Cañete River—regardless of the operation of the Hidrocañete hydrological power plant. Given the characteristics of the area, the project design, and the underground pressure shaft, the project operations have no significant impact upon flora and fauna.

Impact on Air Quality: There is no significant impact on air quality, except for the impact caused by vehicles used to conduct inspections, maintenance work, or occasional repairs. This impact is insignificant when compared to the impact of vehicles used for agriculture or local transit, which traverse unpaved, dirt tracks. From the exterior, the noise generated by the plant is almost undetectable; however, in the powerhouse, hearing protection must be used.

Solid and Liquid Waste Management: The plant’s operations do not produce significant amounts of solid or liquid waste. The plant’s sewage comes from staff toilets and is treated in septic tanks. The plant is manned by three people per shift.

The solid waste management plan of the company establishes the classification and destination of the different waste types. The hazardous waste mainly consists of spent lubricating oil, contaminated cloths, paint cans, and batteries. The hazardous waste generated by plant maintenance is disposed of by solid waste management companies (EPS-RS). Domestic waste is sent to a landfill, and metallic waste is handled by recyclers.

Personal Safety and Emergency Response: Hidrocañete has an operational contingency plan for the energy generation system, including a methodology for evaluating and classifying risks based on the probability of occurrence and impact. In this regard, seismic events pose the greatest threat in the area due to the plant’s location. In addition, extreme climatic events caused by rain and landslides cannot be ruled out. Accidents could also be caused by electrical or mechanical faults at the plant. The emergency response plan establishes the communications system and the emergency brigades that must respond, especially in the event of an accident, fire, or earthquake. The company also has an annual training plan covering operational and safety matters.

The company’s internal occupational health and safety rules establish the responsibilities and rights of the plant’s employees and chiefs. It also covers other aspects such as the training of the safety committee, the use of protective gear by staff, and safe work practices. The safety committee is made up of company representatives and employees, and it meets on a monthly basis.

Social and Community Issues: The project construction did not require the relocation of people, housing, or businesses. The hydroelectric plant is able to coexist with the traditional agriculture carried out within the plant’s impact area. The quantity and quality of the irrigation water is not affected by the production of hydroelectricity.

Hidrocañete forms part of the Comisión de Regantes del Canal Nuevo Imperial as a user of the channel’s water. Therefore, it must pay a fee for water use. Hidrocañete contributes financially to the improvements, operating, and maintenance of the channel. Therefore, the hydroelectric plant is

an additional source of revenue that benefits all of the channel's users.

Monitoring and Reporting: Hidrocañete will prepare an Environmental and Social Action Plan (ESAP) to ensure compliance with national regulations and the IIC's environmental and occupational health and safety guidelines. It will also submit regular progress reports on the implementation of the ESAP.