

## A tool for social responsibility by Electric Power Generation Businesses

Duke Energy Peru is an electric power generation company with a clear understanding that the sustainability of its business will only be possible to the extent that its operations in different countries of America production three outcomes: 1) income, 2) welfare for surrounding communities, 3) minimized impact on the environment and natural resources.

This formula was tested at the Thermoelectric Power Station of Aguaytia, located in the Peruvian Jungle, known for its biodiversity and serious social problems associated to poverty and illegal coca leaf production.

### Lessons Learned

- Social problems stemming from poverty can compromise the sustainability of electric power generation
- In turn, the very same social problems may provide an opportunity to the company to promote social responsibility projects with a focus on sustainability, whereby an efficient use of water may generate benefits
- Social responsibility projects such as “Piscicultura de Peces Amazónicos” (*Fish Farming of Amazonian Native Fish*) or “Cultivo de Cacao Fino de Aroma” (*Farming of Fine or Flavor Cocoa*) have strengthened the community-company relationship
- Measuring the Water Footprint of the Aguaytia Thermoelectric Power Station enabled to spot opportunities for improvement in water management within the company, and also outside the company through social responsibility projects.

## The issue

### Case background/context

The Aguaytia Thermal Power Plant (CTA) is a 177MW capacity natural gas-fired electric power plant. It is located in South America, in the Peruvian Jungle, specifically, in the Department of Ucayali and Province of Aguaytía. The CTA is a single-cycle plant which means that its operation does not require large quantities of water. Nonetheless, it uses water for its firefighting system and in a closed cooling water system.

For many decades, the city of Aguaytía had been immersed in a poverty and extreme poverty socio-economic context. In addition, its inhabitants were engaged in activities such as the growing of coca leaf, which is the main input for cocaine processing. As a result, the ecosystem in the area had been affected by the use of chemical products and fertilizers. The unlawful activity involving the growing of coca leaf in places close to the CTA posed a potential “social risk” which was threatening the electric power generation activity. The main reason why the population was attracted to this unlawful activity was the lack of job opportunities and an inability for households to lawfully earn income.

## The response

### The main objective of the case

In turn, the water resources available in the zone provide the company a significant opportunity to conduct social responsibility projects associated to the proper use of these resources, and allow improving the quality of life of people by affording them the chance to perform lawful economic activities for the benefit of their families. Social responsibility projects were the tool used to minimize the risk.

Two main projects were conducted with a focus on both social and environmental sustainability. The first, ‘Fish Farming of Amazonian Native Fish’, involves the capture of surface runoff from rainfall to maintain the amount and quality of water required by fish in fish farms. Commencing in 2007 the project promotes inhabitants from the surroundings be provided with ponds for the breeding of native fish from the zone, to cover the unsatisfied demand for protein from the local market. At the present time, 70 ponds (family fish farms) have been built on land that was not fit for farming. Three native fish species; ‘paich’, ‘paco’ and ‘gamitana’, are being produced.

In the second is the ‘Farming of Fine or Flavor Cocoa’. The social responsibility project began in July 2008 and is based on providing the local population with technical training on the production of organic cocoa. These crops are an alternative to coca crops and are welcome by the population inasmuch as it allows them to earn income lawfully and to give peace of mind to their families. An opportunity within the project was identified to use technical irrigation on crops so that production can be maintained and even improved during low water periods.



The water footprint of the CTA was measured in 2014 and, as a result, opportunities improvements in water management were identified within the same plant; for example, it was established that the firewater reservoir may be filled with rain water, such as it is done for fish farms.

Other opportunities were also identified in order for social responsibility projects to be more efficient in the management of this resource. Accordingly, by way of example, in the case of fish farms, consideration is being given to planting fruit bushes around each pit so that they fulfill a double function: on the one hand, provide shadow to lower the water temperature, thus reducing evaporation, and, on the other hand, fruits can substitute one portion of the daily consumption of fish and lower production costs.

### The results

#### Outcomes

Ever since its inception in 2007, more than 27 families have been beneficiaries of the Fish Farms project. Until the end of 2013, sales reached 143,242 kilos of meat promoted by the project, which meant US\$ 380,000 worth of sales revenue and had a positive impact on the nutrition of people from the region and on the 27 families engaged in this business. Furthermore, as Paiche is an endangered species its production in fish farms has reduced pressure over the fishing of this species from rivers, thereby contributing to its preservation in its natural habitat. Furthermore, 90 farmers have benefited from the Flavor Cocoa project, which represents 130 cultivated hectares out of which 93 hectares are under production without having used chemical fertilizers for such purpose.

The energy generation activity in the last few years has been conducted peacefully and the community-company relationship has been strengthened. Water management in social projects has meant an opportunity to implement social responsibility projects with the utilization of rain water, thereby using a resource which was heretofore wasted.

Duke Energy Perú is the first electric power generation company in the country to have carried out a measurement of its water footprint, which has contributed to the continuous improvement of water management within and outside the company, in social responsibility projects.

The main challenge of corporate responsibility projects has been to persuade people that this activity is good for them and their families. Beneficiaries have progressively discovered that it is also a profitable alternative to coca crops.

These lessons are replicated in the various countries where Duke Energy International conducts operations, through the implementation of social responsibility projects.