

Enel's communication to the CEO Water Mandate

November 2015



About Enel

Enel is a multinational power company and a leading integrated player in the world's power and gas markets, with a particular focus on Europe and Latin America. Enel Group operates in over 30 countries across 4 continents, producing energy through a net installed capacity of nearly 96 GW and distributes electricity and gas through a network of approximately 1.9 million kilometers. With 61 million users worldwide, Enel has the largest customer base among European competitors and figures among Europe's leading power companies in terms of installed capacity and reported EBITDA.

Over the last ten years Enel has established a leading position in terms of sustainability worldwide. In setting up the new organization and strategic guidelines for the Group we have decided to profoundly innovate the mission and structure of the business orienting the Group towards full integration and alignment with the principles and goals of sustainability.

Being sustainable today means being competitive today and tomorrow; it means creating long lasting value by responding – through the offer of products and services and a close relation with the local area and customers – to the needs of the communities where the Company operates.

The integration of sustainability into the operational strategies and choices of the business is the concept which guides our process of change. Likewise, the industrial plan pursues new growth objectives focused on renewables, the digitalization and modernization of grids, improving operational efficiency and rationalizing thermoelectric capacity, to be achieved through a flexible portfolio of small and medium size projects which offer a quick return on investment, to be developed with the full support of the communities which host them.

In order to accompany and lead this change, in the new matrix-based organization at Enel, a Parent Company, which reports directly to the Chief Executive Officer, manages and coordinates innovation and sustainability centrally, with a specific presence in every country. Besides these visible signs and the organizational concepts, in terms of operations new tools will be made available and put into place with a focus on models of "shared value" between the Company and the communities where we operate. Ensuring the gradual and rapid spread of the principles and processes of shared value, in the various stages of the value chain (from business development, to plant construction, to operations and management) and in the various areas of the Company, has been a priority during recent months.

Management of water resource clearly plays a relevant role in our sustainability strategy.

The "water issue"

Water is an essential and limited natural resource which is under the pressure of a combination of socio-economic and environmental factors such as population growth, an expanding middle class with changing lifestyles, the economic development of Emerging Countries, land-use, pollution and climate change, whose

effects are expected on freshwater systems as well as on the function and operation of existing water infrastructure and water management practices. Globally, water demand will grow by 55% between 2000 and 2050 and this is expected to result in strong competition between energy-related uses of water and the other uses, i.e human consumption, sanitation, agriculture and industry uses.

For the energy sector, constraints on water can challenge the reliability of existing operations as well as the physical, economic and environmental viability of future projects. This raises concerns about how to use water sustainably and effectively and calls for integrated solutions capable of managing linkages and feedbacks involved, ensuring availability of water for multiple purposes.

Enel has a long-lasting tradition of management of water resources, built on its industrial experience in constructing and operating hydropower plants in Italy and all over the world.

Not considering the use in hydropower plants (where the water is returned to its original source), Enel draws off water in the thermoelectric and nuclear electricity production processes mainly for cooling, desulfurization, and reducing nitrogen oxides purposes. Nevertheless, Enel usually returns approximately 99% of the water that it abstracts to its original water body with its chemical properties unchanged and with minimal changes in terms of temperature (always within the limits set by the laws in the countries where Enel operates).

Since 2012, we have applied the Global Water Tool of WBCSD to our plants' distribution, obtaining that in 2014 only around 5% of the Group's total production used and/or consumed fresh water in water-stressed areas.

How we operate

Enel has long been aware of the importance of water resources for local communities and for key ecosystems.

In 2012, Enel has also set a specific target of water consumption reduction of 10% by 2020 compared to 2007 at Group level.

Integrated management is a consolidate business practice, which is based on the following guidelines:

- efficient use of water resources and protection of water quality in production processes;
- treatment of waste waters and their minimization and control of losses;
- management of the flow rates of rivers with specific programs to guarantee the volumes necessary to preserve the underlying ecosystem (minimum flows);
- integrated management of water basins, through measurement of the water quality and the application, where necessary, of corrective measures to improve the physical and environmental conditions of basins, safeguarding at the same time the various local uses which meet the specific needs of the local area where the plant is located

Our best practices

- **Zero liquid discharge**, is a project aiming at avoiding industrial wastewater discharges from coal-fired power plants in Italy (currently Brindisi, Torre Valdaliga Nord and La Spezia plants). Plants are equipped with a combination of physical/chemical, evaporation and crystallization technologies

that transform the last flow of waste water coming from DeSOx in solid salt and water which can hence be re-used without any further external discharge (100% waste water recovered)

- **Measures to improve the efficiency of the use of water in solar PV plants** of Enel Green Power in Chile (Chanares, 40MW- Diego De Almagro, 32MW and Lalackama, 78MW Power Plants)
Measures include: i) installation of a soiling measurement system to schedule the cleaning of the PV modules only when it is really needed; ii) use of low water consumption machines to clean up the PV panels; iii) reuse of the cleaning water; iv) scouting of dry solution for cleaning; v) nanotechnology coating solutions; vi) dust abatement strategies
- **Adoption of a technique to recycle water in geothermal drilling** in 3 sites of Enel Green Power in Italy: "Closed Loop" treatment to recycle water from the mud; by this technique an amount of about 2300 tonnes of water is saved every year
- **Implementation of proper drainage systems through** our Cafè Curibamba project in Peru, improving water supply for three communities. This project is funded by Enel, via its local subsidiary Edegel, aimed at improving the quantity and quality of coffee production for the communities situated near the hydroelectric plant at Chimay. This project represents also an example of our Creating Shared Value (CSV) model.