

## Environmental solution to “Puentes de García Rodríguez mine”

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### ABSTRACT

“Puentes de Garcia Rodriguez” brown coal deposit consists of a Tertiary sedimentary basin, constituted by a powerful series of lignite and clay that ENDESA GENERACION exploits by opencast. It has three clearly differentiated zones: West Field, East Field and the intermediate threshold.

From the start of the exploitation until 2002, sterile material extracted was placed in an external 720 million cubic meters spoil heap. Nowadays the West field and the threshold are under opencast exploitation; the East field harbours the internal spoil heap.

Once Puentes Mine operation is finished (2007), approximately 260 million tons of lignite will have been extracted with a sterile/coal ratio of 2,65 m<sup>3</sup>/t; this means the creation of a final digging hole 6 km long, around 2 km wide and an average depth of 200 meters.

The restoration project will include the creation of a 8 km<sup>2</sup> pit lake and the restoration of the emerging slopes.

The filling will start in 2008, and time employed will depend on water availability. This period will be delayed for 30 years if only rainwater is used to fill in the hole. Studies carried out show that quality of the resultant lake water is clearly improved with a fast filling. The only contemplated setting is then the one that uses a total annual volume of 150 hm<sup>3</sup>, resulting in a four year filling time. Water sources for this purpose will be run-off water from the mine and the external spoil heap, and also water taken from Eume river at the Power Station dam.

When filling time is over (2012), the pit lake will have a volume of 540 hm<sup>3</sup>, a perimeter of 15 km and a maximum depth of 200 meters.