PRESS Release

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Over €4 million was earmarked for the scheme, which aims to boost environmental protection

EUROPEAN COMMISSION APPROVES IBERDROLA'S LIFE+ CO_2FORMARE PROJECT, TO BE CARRIED OUT AT CASTELLÓN POWER PLANT

- **The goal of this initiative is to prove that it is possible to make an efficient use of the CO_2 produced by combined cycle power plants to replace chlorinated chemicals with a view to controlling the fouling of cooling equipment at electric power plants**

- **IBERDROLA GENERACIÓN is spearheading the project, along with the Valencia Region Energy Cluster, Idesa Fabrication, the Water Technology Centre (CETAqua), Nalco Española, S.L., OX-CTA and IBERDROLA's engineering subsidiary**

The European Commission's DG Environment has approved the award of funding for IBERDROLA's LIFE+ project titled CO_2FORMARE. With a €4 million budget, this project aims to prove that the use of CO_2 from combined cycle power plants may be an effective replacement for the chlorinated chemicals currently used to control *macrofouling.*

Macrofouling refers to the impairment of the cooling systems at energy plants caused by molluscs, such as mussels and similar creatures. The larvae of these organisms attach themselves to these iron or steel structures and cause blockages in the systems, thereby preventing the water circulation that is necessary in order for these facilities to work properly.

IBERDROLA GENERACIÓN is spearheading this project, with six other Spanish partners: IBERDROLA INGENIERÍA, the Valencia Region Energy Cluster, Idesa Fabrication, the Water Technology Centre (CETAqua), Nalco Española, S.L. and the OX-CTA water treatment company.

The CO_2FORMARE project will be carried out at the Castellón combined cycle power plant, where the effect of CO_2 as an inhibitor of *macrofouling* will be verified to validate its suitability and in order that the results achieved may be rolled out to other thermal generation facilities in Europe.

The institutions in Valencia are very supportive towards this project led by the IBERDROLA Group. In this regard, both Castellón City Council, the Regional Government (Generalitat) of Valencia and the University of Jaume I have committed to joining the follow-up committee for this environmental initiative, along with the other partners.

Description of the process

In carrying out this project, the CO_2 obtained from the combustion of natural gas at the Castellón power plant will be captured using an innovative absorption technology developed by Westec Environmental Solutions. Based on co-current absorption, the method significantly increases the efficiency of the process. Once the CO_2 is dissolved in water to achieve the desired biocide effects, it is hoped that it will be effective in combating the problem of *macrofouling.*

Not only would this rule out the use of chlorinated compounds; the CO_2 from the combustion gases that would take their place would no longer be emitted into the atmosphere. This Life+ project also includes the development of equipment for automatically detecting the presence of larvae and optimising the systems used to store and dissolve the CO_2 in the water.

According to the initial estimates, a combined cycle power plant with an installed capacity of 400 megawatts (MW) could allocate up to 50,000 tonnes of CO_2 to this purpose per year, which means that the emission rate from the thermal plants to the atmosphere could be significantly reduced.

The success of the LIFE+ CO_2FORMARE project will contribute (via the application of innovative technologies) towards meeting the European Union commitments under the Kyoto Protocol, as well as others linked to the EU limit on greenhouse gas emissions by 2020.

This initiative follows others already carried out by the IBERDROLA Group to harness the CO_2 emitted by thermal generation power plants, such as the LIFE CO_2ALGAEFIX and CENIT Sost-CO_2 projects and the work done to monitor the incidence of zebra mussels at the Castejón power plant (Navarre). The LIFE programme seeks innovative solutions for environmental problems, giving priority to concrete, measurable results that are not directly linked to the development of or investment in existing technologies.

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