

Environmental protection strategies in the Bahía de Alcudia project (Spain)

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Abstract

Spain has been using brackish and seawater desalination since 1965 to meet part of its supply needs in important areas of its territory, and practically in all its islands. For these over 40 years the companies which operate in the Spanish market have needed to solve different challenges in the application of these new technologies. One of the main is related to their environmental impacts. In this issue the requirements and needs have been increased progressively. Although it is preferable not to locate the desalination plants near to areas of high ecological value, in some cases it is not possible, mainly in islands. In these cases good environmental impact studies are required to analyze the natural characteristics of the location area and modify the projects, if required, to guarantee the reduction of these impacts.

This article tries to show the necessary studies to minimize these impacts at different stages in the development of a desalination project: design, construction, operation and maintenance, considering in detail a specific case located in Balearic Islands (Seawater desalination plant of Alcudia). For this project, different aspects related to the environmental impact have been considered: energy consumption, wastes generation (brine), aesthetic impact, intake systems and product water distribution. In the studied case, although the high environmental value of its location area, the previous studies have allowed to adapt the project to minimize its environmental impact, and to achieve the strict conditions imposed by the regulatory agencies. Besides we have detailed the main stages of the procurement in Spain of the environmental approvals, according to local and European Union legislations. The surveillance requirements which apply during its whole life are also considered

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