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Renewable energy fueled desalination in Israel

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ABSTRACT

The projected negative effects of climate change on the global water distribution and a steady rise in demand have made water scarcity a prominent topic on political agendas. Confronted with the prospect of increasingly severe water shortages, many governments turn to desalination as the panacea for their problems. This is particularly true for Israel, which is currently exploiting most of its available renewable water resources and has been confronted with severe droughts during the past years. Conventional desalination, however, is based on fossil fuels, causing it to be inherently unsustainable. Desalination based on renewable energy can prove to be a viable alternative to conventional desalination. This article evaluates the feasibility of large-scale renewable energy desalination plants in Israel. In doing so, it examines the economical and environmental aspects of large-scale renewable energy desalination plants and analyses the water market in Israel. In the long run, the disadvantages of fossil fuels and the benefits of renewable energy for the Israeli economy advocate the rapid introduction of renewable energy for desalination and other uses. The most promising form of renewable energy in Israel is concentrating solar power. Recommendations and suggestions on how to facilitate the introduction of concentrating solar power are presented in the end of this article.

Keywords: Desalination; Seawater; Renewable energy; Large scale; Economic analysis; Israel

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