

# Salt Caverns for Compressed Air Energy Storage in Israel

Shimshon Brokman, Dr. Dan Weiner, and Dr. Shmuel Olek

R & D Division, The Israel Electric Corp. P.O.Box 10, Haifa 31000, Israel

## Abstract

The main activities and interim results of geo-mechanics and techno-economic studies are reported concerning two local sites suitable for Compressed Air Energy Storage (CAES) salt caverns. Both sites are not the classical "salt dome", and the design of an economical storage is a challenging task. The first site is the Shiqma salt deposit, which is located on the Mediterranean coast at a depth of over 1200 m in a bedded subsurface channel, and with only 80 m thick of pure salt at the bottom of an evaporation section. Mt. Sdom is the second site, located on the west coast of the Dead Sea. It is formed by a diapiric "salt wall" which has been rising since Pleistocene time. The Sdom salt wall consists mainly of steeply to vertical dipping rock salt beds with interbedded anhydrite, marl, sand shale layers of the Sdom Formation. The proposed storage in caverns at Shiqma utilizes six of them, each with a volume of 29,000 m<sup>3</sup> and estimated cost of US \$ 26 million. The storage at Mt. Sdom comprises two caverns, with a total volume of 400,000 m<sup>3</sup>, and an estimated cost of US \$ 20 million. Further steps toward implementation of the CAES program in the future are outlined.

©2023 – Solution Mining Institute

Full Paper is Available in the SMRI Library([www.solutionmining.org](http://www.solutionmining.org))