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Energy; Recent Research from University of Texas Austin Highlight Findings in Energy (Hydrogen Storage Potential of Salado Formation In the Permian Basin of West Texas, United States)

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2025 JUL 18 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- Fresh data on Energy are presented in a new report. According to news reporting out of Austin, Texas, by VerticalNews editors, research stated, "Hydrogen (H2) has the potential to become a cleaner fuel alternative to increase energy mix versatility as part of a low-carbon economy. Geological H2 storage represents a key component of the emerging H2 value chain since large-scale energy generation linked to energy generation and large-scale industrial applications will require significant upscaling of geological storage."

Financial supporters for this research include State of Texas Advanced Resource Recovery (STARR) program, **Bureau of Economic Geology**.

Our news journalists obtained a quote from the research from the University of Texas Austin, "Geological H2 storage can take place in both salt domes and bedded salt formations. Bedded salt formations offer a significant advantage for H2 storage over salt domes because of their widespread availability. This research focuses on evaluating the H2 storage potential of the Salado Formation, a bedded salt deposit in the Permian Basin of West Texas in the United States. Using data from 3268 well logs, this study analyzes an area of 136100 km2 to identify suitable depth and net halite thickness for H2 storage in salt caverns. In addition, this work applies a novel geostatistical workflow to quantify the uncertainty in the formation's storage potential. The H2 working gas potential of the Salado Formation ranges from 0.62 to 17.53 Tsm3 (1.75-49.68 PWh of stored energy) across low-risk to high-risk scenarios, with a median potential of 1.19 Tsm3 (3.37 PWh). The counties with the largest storage potential are: Lea in New Mexico, and Gaines and Andrews in Texas. These three counties account for more than 75 % of the formation's total storage potential. This is the first study to quantify uncertainty in H2 storage estimates for a bedded salt formation while providing a detailed breakdown of results by county and 1 km2 grid sections. The findings of this work offer critical insights for developing H2 infrastructure in the Permian Basin. The Permian Basin of West Texas has the potential to become an important hub for H2 production from both natural gas and/or renewable energy. Estimating H2 storage potential is an important contribution to assess the feasibility of the entire H2 value chain in Texas."

According to the news editors, the research concluded: "An interactive map accompanies this work, allowing the readers to explore the results visually."

This research has been peer-reviewed.

For more information on this research see: Hydrogen Storage Potential of Salado Formation In the Permian Basin of West Texas, United States. International Journal of Hydrogen Energy, 2025;144:496-512. International Journal of Hydrogen Energy can be contacted at: Pergamon-elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England. (Elsevier - www.elsevier.com; International Journal of Hydrogen Energy - www.journals.elsevier.com/international-journal-of-hydrogen-energy/)

Our news journalists report that additional information may be obtained by contacting Leopoldo M. Ruiz Maraggi, University of Texas Austin, Jackson School of Geosciences, Bur Econ Geol, Austin, TX 78712, United States. Additional authors for this research include Ander Martinez Donate, Leandro Melani and Lorena G. Moscardelli.

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