# ARMA 2026 Workshop: Repurposing Existing Oil and Gas Wells for Geothermal Applications

60th US Rock Mechanics / Geomechanics Symposium
1-5:30pm, Sunday June 21st, 2026, Tucson, Arizona

Can existing oil and gas wells be realistically repurposed for geothermal deployment?

With roughly 2 million legacy wells across the United States and growing interest in scalable low-carbon energy, repurposing existing oil and gas assets for geothermal has emerged as a promising but technically complex opportunity (Kang et al., 2019; IOGCC, 2021; Raimi et al. 2021; USGS, 2023). Combined with the vast subsurface heat stored in sedimentary basins, the existing well infrastructure offers significant potential for a wide range of geothermal applications, from direct-use heat extraction to power generation.

This half-day workshop will bring together experts from geothermal, oil and gas, academia, and technology development to explore the most practical and technically credible pathways for repurposing existing wells. The session will explore how decades of oil and gas technology, data, and infrastructure can be leveraged to accelerate geothermal deployment, and where major technical barriers still remain. The workshop will feature 8–10 invited presentations spanning emerging concepts, field case studies, and deployment experience, with time for discussion and Q&A after each talk.

**Tentative Presentations and Schedule:**

| Time | Presenter | Presentation Title | |
|---|---|---|---|
| **1:00–1:10** | **Guizhong Chen / Wei Fu** | **Workshop Setup and Opening Remarks** | |
| 1:10–1:35 | Dr. Suri Suryanarayana | Candidate selection, well construction, and well integrity assessment for repurposing geothermal applications | Candidate selection and well integrity foundation |
| 1:35–2:00 | Dr. Wei Fu | From Multistage Stimulation Modeling to Long-Term Thermal Forecasting: Feasibility Assessment of Repurposed Oil & Gas Sites for Geothermal Energy | Feasibility and thermal forecasting |
| 2:00–2:25 | Dr. Zeming Hu | Multi-Criteria Hybrid ML-Physics Integrity-Risk Mapping to Prioritize Legacy Wells for Geothermal Repurposing in Colorado | Screening and prioritization methodology |
| 2:25–2:50 | Dr. Danzhu Zheng | Prioritizing Wells for Repurposing or Permanent Abandonment Based on Generalized Well Integrity Risk Analysis | Integrity-risk decision framework |
| 2:50–3:15 | Dr. Julian Yao | From Resource Assessment, Well Integrity, to Financial Analysis: A Full Cycle Screening Workflow for Oil-Gas to Geothermal Well Repurposing | Screening workflow |
| **3:15–3:25** | | **10-min Break** | |
| 3:25–3:50 | Dr. Tugce Baser | Underground Thermal Energy Storage: Fundamentals and an Illinois Basin Case Study | Repurposing case: thermal storage |
| 3:50–4:15 | Dr. Saeed Salehi / Dr. Yuxing Wu | Hydrocarbon-to-Geothermal Well Repurposing: Opportunities, Challenges, and Case Studies from Oklahoma and Texas | Field examples and regional context |
| 4:15–4:40 | Dr. Guizhong Chen / Chuck Wright | Closed-Loop Geothermal Applications for Repurposing Wells | Closed-loop repurposing application |
| 4:40–5:05 | Dr. Suri Suryanarayana | Coproduction of Hydrocarbon and Heat/Power | Coproduction application |
| **5:05–5:30** | **All presenters** | **Q&A** | |

**Recommended For:**
Engineers, researchers, and professionals working in geothermal, oil & gas, geomechanics, well integrity, subsurface energy systems, and related fields.

**Workshop Organizers:**
Guizhong (Gary) Chen, NOV Corporate Technology R&D
Wei Fu, ITASCA