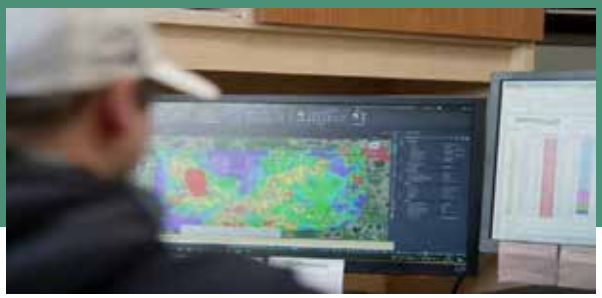
August 2026

American Resources for a Secure Future:

A National Cooperative Subsurface Assessment Program



The National Petroleum Council's (NPC) 2026 report examines the value of publicly available subsurface resource assessments. It finds that the subsurface remains one of the nation's most undercharacterized strategic assets. As demand grows for secure domestic energy and mineral resources, the nation will require renewed investment in subsurface resource assessments to identify and de-risk new opportunities.

Pillars of an Assessment Program

Data
Better preservation, standardization, and sharing of data improves modeling, increases efficiency, and reduces duplication of effort.

Technology
Advanced technology, including AI, advanced sensing, and high-performance computing, enables 3D Earth models and improves accuracy, scale, and efficiency of subsurface assessments.

Assessment
A holistic, multi-resource subsurface assessment program evaluates the subsurface as an integrated system.

Workforce
Modern subsurface assessments require an interdisciplinary workforce with expertise in geoscience, engineering, and data science.

Challenges Identified

Need for integrated decision-relevant framework and holistic multi-resource assessments. Federal and state entities provide valuable but unintegrated subsurface data under distinct mandates.

Gaps in baseline datasets, legacy data preservation, and public/private data integration. Incomplete baseline datasets, lost legacy data, and restricted industry data limit a comprehensive national view of subsurface resource potential.

Limited data standardization and interoperability. Incompatible formats and inconsistent standards create significant data integration barriers, reducing the utility of public subsurface information.

Misalignment with evolving technologies and emerging resources. Assessment methodologies and data collection have not kept pace with advancing extraction technologies, sensing capabilities, and emerging resource opportunities.

Limited subsurface workforce. Modern subsurface assessments increasingly depend on a limited pool of professionals who combine subsurface expertise with quantitative data science, modeling, and geospatial skills.

Study Scope

Oil & Gas | Geothermal | Mining | Coal | Subsurface Storage | Geologic Hydrogen (H_2)

Overarching Recommendation

Congress should work towards establishing a National Subsurface Assessment Program that builds on existing agency authorities for resource assessments, data acquisition and management, technology development, and workforce capacity to strengthen the nation's ability to holistically evaluate subsurface resource potential and support a secure energy and economic future.

Request a briefing at outreach@npc.org

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Summary of Key Recommendations

1. Accelerate holistic assessments of the Nation's subsurface resources
USGS and MMA should accelerate multi-resource assessments using DOE-supported technologies, advanced 3D subsurface modeling, AI, and integrated sensors.

2. Prioritize assessments of emerging resources
DOI should prioritize national assessments of emerging resources and collaborate with DOE to integrate emerging and existing technologies into these assessments.

3. Acquire priority baseline data to strengthen subsurface assessments
Congress should fund a joint federal-state initiative for subsurface data collection, with rapid public access through shared digital repositories.

4. Develop a National Data Portal to ease access to subsurface data
Congress should establish a National Data Portal and data standards to enhance public access to interoperable subsurface data.

5. Recover and preserve legacy subsurface data
Congress should increase funding to the USGS National Geological and Geophysical Data Preservation Program and establish a National Data Task Force to strengthen data preservation, and develop best practices, recovery strategies, and funding recommendations.

6. Evaluate access to proprietary data acquired by industry
DOI should review existing policies governing the management of proprietary subsurface data and evaluate possible pathways to accelerate access while protecting commercial investments and intellectual property.

7. Increase development of emerging technology for subsurface mapping and modeling
DOE and USGS should increase investment in advanced extraction, subsurface mapping, and modeling technologies through direct R&D funding and public-private partnerships.

8. Establish a collaborative, long term planning process
Congress should establish a long term planning process within the White House Office of Science and Technology Policy (OSTP) to identify national subsurface resource assessment priorities.

9. Develop a qualified subsurface workforce through residencies and partnerships
DOE and DOI should partner with NSF, universities, and industry to create residency, fellowship, and internship programs that build a pipeline of early-career geologists.

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