

PROGRAM facts

Strategic Center
for Natural Gas & Oil

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U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY



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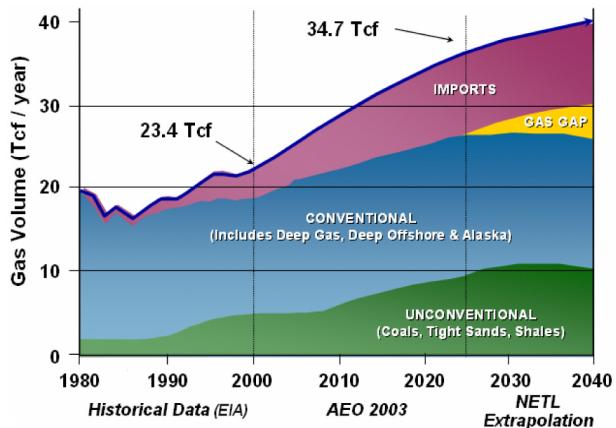


RESOURCE ASSESSMENTS AND TECHNOLOGY MODELING

NETL recognizes that much of the natural gas resources that the nation will need to meet future demand are currently undiscovered, unknown, or undervalued. Our work in Resource Assessment and Technology Modeling is designed to identify and characterize these future sources of supply and provide insight into the technological barriers that must be overcome to make them technically and economically recoverable.

A detailed understanding of the nature of remaining gas resources is a clear prerequisite to formulating an effective R&D program to expand gas recoverability. In the past, NETL supported the initial characterization of coal-bed methane resources, greatly advanced the understanding of gas shale reservoirs, helped bring to light the enormous potential low-permeability resources in western basins, and enabled the development of regional gas atlases and national gas databases (GASIS) to collect and upgrade available resource information.

Demand for natural gas is expected to grow as much as 50% by 2025. Unconventional gas resources, much of which are currently not economically-recoverable, are expected to bear much of the burden of meeting this demand.



Current Activities – Resource Assessment:

NETL continues to characterize emerging resources of particular importance, including:

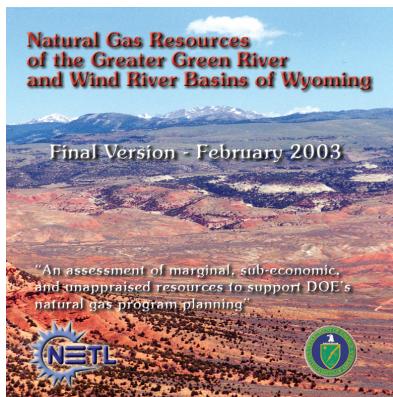
- The Trenton-Black River reservoir of the Appalachian basin
- Potential for gas production from unmineable coal beds in the Illinois basin
- Deep gas resources of the Gulf Coast.
- Tight and deep formations of the Greater Green River, Wind River and Uinta basins of the Rocky Mountain region and the Anadarko basin of Oklahoma/Texas.

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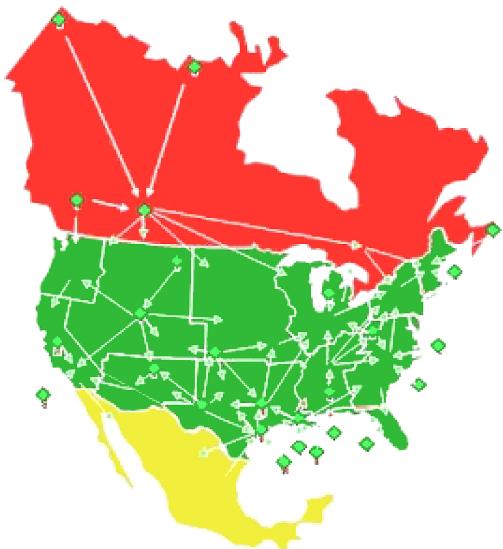
Phase I report from NETL's in-house assessment of sub-economic resources in key western basins

In addition to supplying improved data on resource potential to industry, these studies better inform NETL's internal program planning efforts through technology modeling designed to identify the R&D opportunities with the greatest potential to render these high-risk, high-cost resources economically-recoverable.

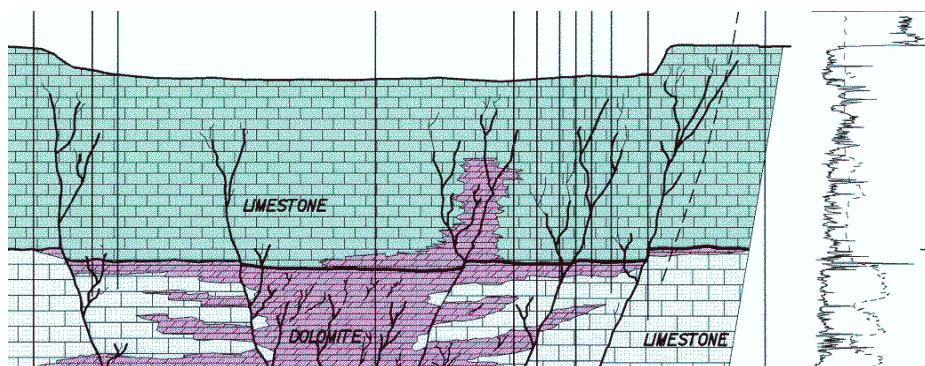
Current Activities – Technology Modeling

NETL has developed and operates the Gas Systems Analysis Model (GSAM) and the Total Oil Recovery Information System (TORIS), the nation's most advanced models of the impact of technology on resource recoverability. These models require accurate representations of the remaining resource base, and the current state-of-the-art of costs and technology. Current work includes

- Integration of GSAM and TORIS into a comprehensive Oil and Gas modeling system
- Complete update of all costing data in the model, including a specific review of the nature of deep drilling costs.
- Validation and calibration of GSAM's type curve models for natural gas production



NETL developed and operates GSAM, which measures the potential impact of specific technology and policy options on more than 20,000 uniquely-characterized natural gas resource elements.



The deep, altered dolomites of the Trenton-Black River Play represent the hottest emerging play in the mature Appalachian basin.