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Assessing Subeconomic Natural Gas Resources: Phase I—Greater Green River and Wind River Basins

The development and implementation of new technologies has impacted natural gas resources previously deemed marginal to “subeconomic”, by reducing costs and increasing exploration efficiency. Estimating which technologies will result in future breakthroughs, however, requires a detailed understanding and characterization of the nation’s remaining natural gas resource base. As part of an ongoing effort, detailed resource assessments of tight gas sands in the Greater Green River (GGRB) and Wind River (WRB) Basins were completed with support from the Department of Energy’s National Energy Technology Laboratory (NETL).

In each basin, Units of Analysis (UOA) were defined and studied based on industry drilling and completion practices. Through the correlation and analysis of hundreds of log suites, key geologic and engineering parameters for each UOA were collected. These data, including depth, potential pay thickness, porosity, pressure, water saturation, and temperature, were used to produce detailed resource characterizations of the gas-in-place for each UOA. The detailed results for each UOA are subsequently used by NETL in their analytical models, and by DOE project planners for integration with current, ongoing, and future studies.

Preliminary results indicate that there is roughly 3,013 TCF of in-place resource in the GGRB, and 1,332 TCF in the Wind River Basin. Phase II of this study is currently underway, and focuses on resource assessments in the Uinta-Piceance (Utah-Colorado) and Anadarko (Oklahoma) Basins.