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## **Energy Potential of a Huge, Underdeveloped North American Gas Resource**

Basin-center and deep-basin gas assets -- or more accurately, anomalously pressured gas accumulations -- represent a huge, untapped North American energy resource. For example, in the Wind River Basin, Wyoming (~8,500 mi<sup>2</sup>), the USGS estimates the in-place anomalously pressured gas resource is approximately 900 Tcf. However, cumulative production to date from stratigraphic units containing this resource is less than 1 Tcf. Thus, while a huge, "unconventional" North American natural gas resource is in place, in most cases, the lack of essential new exploration and exploitation technologies and techniques has constrained development of this resource, despite a recent dramatic increase in exploration interest and activity.

Optimum and efficient exploitation of the North American anomalously pressured gas resources requires a new strategic plan with the dedicated objective of substantially increasing the rate and magnitude of converting these resources to energy reserves. Integrating data acquired using new seismic techniques has allowed the implementation of such a plan. A variety of functions derived from detailed, process-oriented velocity analyses and trace-to-trace continuity volumes are being used to accurately evaluate the following petroleum system attributes basinwide in the Wind River Basin: gas distribution; gas migration conduits; relative gas content in the targeted reservoir interval; distribution of microfracture swarms; and linear fault orientations within the anomalously pressured rock/fluid volume. This work will greatly reduce exploration uncertainty when searching for anomalously pressured gas resources; results will be used to illustrate the validity and utility of this new exploration approach for anomalously pressured gas resources.