

Worldwide Shale Resource Plays and Potential

Jarvie, Daniel M.¹ (1) Worldwide Geochemistry, Humble, TX.

Development of shale resource plays in the United States has led to pursuit of these resources on a global scale. While these resources currently account for upwards of 10% of U.S. gas and oil resources, global development has been slow to follow suite despite the need for natural gas especially in Europe and China.

These plays include both shale-gas and shale-oil resource plays. Shale-gas plays include both biogenic and thermogenic systems, but thermogenic systems are by far the most productive. Thermogenic shale-gas plays range from low thermal maturity with modest flow rates (e.g., New Albany Shale) to gas window maturity with much higher rates (e.g., Barnett, Woodford, Fayetteville, and Muskwa shales). The highest flow rate systems are hybrid systems where mudstone is intermittently mixed with siliceous, carbonate, or silty lithofacies. Examples of this system type are the Haynesville, Bossier, Marcellus, Lewis, and Montney shales.

Shale-oil plays are systems containing producible oil (not oil shale systems requiring heating of organic matter). These are subdivided into three system types consisting of highly fractured, hybrid, or mudstone shale-oil plays (e.g., Monterey, Bakken, and Barnett shales, respectively). As need for hydrocarbon resources has escalated, efforts are now underway worldwide to develop shale-gas plays based on need and the dramatic success in the USA. This includes activity in Europe, Africa, South America, Asia, and Australia-New Zealand.

The purpose of this poster is to provide general characteristics of the existing and potential plays around the world.