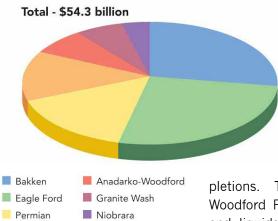
The Seven Major U.S. Shale Plays

By Ron Nickelson Director Global Recruitment Clover Global Solutions, LP

The top seven shale plays in the United States make up a huge portion of spending in land drilling and development □ \$54 billion in 2012. Production in these shale plays has helped displace some of the crude oil imports into the United States. Additionally, it has provided jobs in the E&P sector, which provide the infrastructure, equipment, and manpower for drilling projects.

Here we describe the seven major U.S. shale plays and the oil companies that operate in each. Figure 1 breaks down the expenditure for each shale play.

Fig. 1: Oilfield services expenditures in top US shales – 2012



Marcellus

All of these shale plays are focused on recovering oil or gas liquids with the exception of the Marcellus, where the majority of wells are dry gas com-

pletions. The Anadarko-Woodford Play is a crude and liquids play in West-Central Oklahoma that runs through the Anadarko

Basin. It is a relatively deep play with depths ranging from 11,500 feet to 14,500 feet. The average cost of drilling and completing a single well is \$8.5 million.

Devon Energy accounts for more than 40% of drilling activity in the Anadarko-Woodford Play. Four other companies account for another 40%: Cimarez Energy, Continental Resources, Marathon, and ExxonMobil.

One of the biggest oil discoveries in recent history, the Bakken Shale Play, has wells that are usually around 10,000 feet deep and cost over \$9 million to develop. Continental Resources and Hess are working to make drilling in the Bakken more efficient to reduce cost. Other E&P companies with major stakes in the Bakken play are Whiting Petroleum, Statoil/Brigham, Oasis Petroleum, Marathon, and EOG Resources.

The Eagle Ford Shale Play runs 400 miles from Southwest Texas to East Texas. The brittle geology in this region is good for fracking, and wells typically cost \$6.5 to \$7 million to fully develop. Four companies account for approximately 45% of drilling in this region: Chesapeake Energy, EOG, Conoco Phillips, and Marathon. Others include Pioneer, Anadarko, Talisman/Statoil, and BHP.

The Granite Wash is a collection of several plays in the Texas-Oklahoma Panhandle. It contains stacked oil and gas formations at depths of 11,000 to 15,000 feet. The leading companies in this area are responsible for 60% of the wells, which cost about \$7.5 to \$8 million each.



eia Map: Location & relative depth of US shale plays

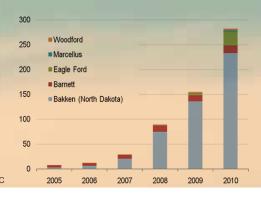


Figure 2. Oil production from shale formation (thousand barrels per day). Source HPDI, LLC

These leading operators are Chesapeake, Apache, and Linn Energy. Other companies include Devon and Forest.

Located in Pennsylvania, the wells of the Marcellus Shale Play are focused primarily on natural gas. The average well is about 6,300 feet deep and costs an average of \$5.3 million. Major players in this area include Range Resources, Anadarko, Chesapeake, Shell, and Chevron.

The Niobrara Shale Play is nestled in a corner of the Rockies connecting Colorado, Wyoming, Kansas, and Nebraska. Wells here are about 6,200 feet deep and cost between \$4.5 and \$5 million. As the operator of one in three wells, Noble Energy is the clear leader in this area. Bonanza Creek and Anadarko follow as secondary operators.

The Permian consists of several shale plays that

overlay the Permian Basin, including the Avalon, Wolfcamp, Bone Spring Field, Spraberry Field, and Yeso Oil Play. Eight operators account for 70% of drilling in the Permian: Pioneer Natural Resources, Concho Resources, Apache, Oxy, Energen, Sandridge, Cimarex, and EOG.

A Bright Future

The growing demand in shale play operations is creating jobs in these areas. Leading oil and gas companies typically run operations on more than one shale play and with the somewhat recent discoveries of the Bakken and Eagle ford, the demand for workers will not lessen much in the future. As you can see in the chart above, shale gas production has increased dramatically and provides a stable job outlook for the energy industry.

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