

Without hydraulic fracturing, as much as 80 percent of oil and natural gas production from new energy sources such as shale would be impossible to produce. To learn more, visit energyfromshale.org.

Building a Well

Fracking usually takes about 2-3 days in the 2-3 month development process for a brand new well, which could produce oil or natural gas for the next 20-30 years.

Drilling

After careful geologic mapping, a drilling rig drives a drill bit often a mile or deeper to reach a target zone where oil or gas exists, then may push it another mile or more horizontally across the target zone. Once a well is drilled, layers of steel pipe – called casing – are cemented into place around the wellbore. This seals off the path where oil or gas will flow up to the surface, separating it from shallow fresh water zones.



Fracking

Engineers use heavy-duty, high-horsepower pumps to stimulate (jump start) oil and gas production by injecting a mixture of water, sand and additives under high pressure down the wellbore and then through small perforations in the deep horizontal lateral. The pressure of the fluid creates tiny openings (fractures) in the rock where oil or natural gas is trapped. The sand props open the fractures, allowing oil or gas to flow up the wellbore.

Producing

A wellhead and some tanks are about all that's left after the drilling rig and the frack pumps are gone. Trucks or pipelines collect oil from a well site. Pipelines gather natural gas, which is often transported to a processing plant where valuable liquids such as propane or ethane are extracted from the raw natural gas.

