



Marcellus Shale Resource Guide



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Purpose

The purpose of this Resource Guide is to provide information to small businesses that are contemplating entering the oil and gas industry. Entering the oil and gas industry can be a complex process and there may be many intricacies given your particular business' situation. This guide will provide useful information to help you understand the Marcellus Shale industry, but it is also recommended you enlist the assistance of other professionals to guide you in this process.

State of the Industry

History

What is the Marcellus Shale?

Shale is a sedimentary rock formed from fine, clay-like particles deposited in low energy water environments and compressed into rock. The Marcellus Shale is a dark shale, commonly called a black shale. It is a deep geologic formation that covers more than 95,000 square miles through parts of New York, Pennsylvania, Ohio and West Virginia. Pennsylvania is at the heart of the Marcellus Shale, with the formation underlying about 60 percent of the state. It was deposited in what was a shallow sea around 390 million years ago during the Devonian period. Marcellus Shale is mostly located deep beneath Earth's surface, but because the layers of rock are tilted toward the south, the Marcellus is deeper in the south and is exposed at the surface near the north end of the Finger Lakes region.

The Marcellus Shale is a unit of marine sedimentary rock found in eastern North America. Named for a distinctive outcrop near the village of Marcellus, New York, it extends throughout much of the Appalachian Basin. The shale contains largely untapped natural gas reserves, and its proximity to the high-demand markets along the East Coast of the United States makes it an attractive target for energy development.

The Marcellus is found between 4,000 and 8,500 feet below the surface and is 50-200 feet thick. This shale formation is rich in organic materials from plants and animals. As these organics were compressed by millions of years of geologic pressures, natural gas was trapped in the shale's fractures. Even if only 10 percent of the gas is recovered, it would be enough to fuel the entire United States for two years and would be worth over \$1 trillion.

Source (<http://gomarcellusshale.com/page/about-the-marcellus>)

Shale is only one type of sedimentary rock in the Hamilton Group. Important properties of all sedimentary rocks are their porosity and permeability. Porosity is the amount of space available between grains in a sedimentary rock, and permeability is the ability of anything trapped between

grains in a sedimentary rock to flow between pores. When natural gas is trapped in a sedimentary rock with high porosity and permeability, like a sandstone, it has the ability to flow through the rock to pockets of relatively low pressure. When natural gas is trapped in a sedimentary rock with low porosity and permeability, like the Marcellus Shale, the gas is effectively trapped and cannot flow, which is why some call these “tight shales.”

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

Origins

Sea levels have risen and fallen throughout geologic history. When they rise they encroach on the low-lying areas of continents, called basins, and create shallow seas. New York, as well as Pennsylvania, Ohio, and West Virginia, were all covered by a shallow sea around 390 million years ago, and this sea deposited Marcellus Shale and many other rock units. Rivers and streams fed into this basin, and brought with them small quantities of clay-like sediments. Algae and other planktonic organisms inhabited the surface waters of this sea, and, as they died, sank to the bottom and mixed with the sediment. The Marcellus Shale’s characteristic dark color and natural gas abundance is due to the high concentration of organic matter trapped with the sediment that eventually became rock.

The deepest part of this sea was located in the eastern part of the basin, so more sediment and organic matter was able to accumulate eastward. As a result, the Marcellus Shale today is thickest in the east and thins westward. Because of the quantity of organics in the shale, where the Marcellus Shale is thicker it is likely to contain a large amount of natural gas and be of the most interest for economical extraction

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

Natural Gas in a Tight Shale

The natural gas in the Marcellus Shale is a type of fossil fuel, like coal and oil. While coal is formed from the concentration of fossilized land plant material, oil and gas are formed by the concentration of vast numbers of tiny, ocean-dwelling organisms like zooplankton, phytoplankton and algae. In all cases, organic tissues become fossil fuels because they were buried by sediment before they decomposed. Over long periods of time, the trapped carbon compounds from the organic material were subjected to heat and pressure, creating coal, oil, or natural gas.

Natural gas from Devonian shales are usually composed primarily of methane (80-95%), with a small mix of ethane and propane (3-15%) which require processing before commercial sale. When natural gas and other fossil fuels are burned to produce energy, the amount of energy produced is measured in BTUs (British thermal units) per standard cubic foot (scf), with higher BTUs indicating greater energy production. One BTU is the amount of energy it takes to heat one pound of water by 1° F. Because of the composition of the natural gas varies, the potential energy production from Devonian natural gas ranges from 900-1300 BTUs per scf.

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

What is an Unconventional Natural Gas Resource?

The Marcellus Shale is referred to as an unconventional source of natural gas because of the way natural gas is trapped within the rock. Conventional sources of natural gas are often found in permeable, porous rocks (like sandstones), where natural gas or oil flows toward an area of lower pressure and eventually can consolidate the resource in ‘pools’ or ‘pockets.’ Extracting conventional resources requires locating a pocket and removing the oil or gas.

In unconventional resources like the Marcellus Shale, the natural gas is stored within the pores of the shale and unable to flow because of the very low permeability of the shale. Therefore, extracting unconventional resources requires both horizontal drilling and hydraulic fracturing to create pathways that increase the porosity and permeability of the shale, and allow the natural gas to travel to the wellbore. Because natural gas trapped in the Marcellus Shale has not migrated outside of the shale, gas companies drilling into the Marcellus are guaranteed to drill into commercial quantities of natural gas, however the extraction methods are more expensive and labor intensive.

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

The Reason for the Boom

Scientists have been aware of the natural gas in sedimentary rocks of the Appalachian Basin for over 150 years. Fredonia, NY began to run gas-powered streetlights and to power local establishments in town as early as 1825. Geographically, the Marcellus Shale gas basin is the largest in the U.S. However, because of the lower permeability and porosity of the Marcellus, the natural gas has been impossible to extract in commercial quantities with conventional technology. For this reason, it was not considered a potential source for fossil fuel extraction until recently, and is called an “unconventional” resource.

Gas drilling activity in the Marcellus has emerged rapidly in our region due to three separate, coincident developments: rising natural gas prices and increased commercial demand, revised estimates of the amount of natural gas stored in the Marcellus Shale basin, and advances in drilling technology. Around 2000, natural gas prices began to rise dramatically, and have remained relatively high to date. Considering that national predictions expect the demand for natural gas in the U.S. to rise by 20% by 2035, finding an economical way to extract natural gas contained in unconventional resources became more important to oil and gas companies.

In 1980, the National Petroleum Council estimated that, on average, gas content in the Marcellus Shale was about 0.5 trillion scf (standard cubic feet). In 1988, this estimate was dramatically revised to 26.5 trillion scf, and in 2008 the estimate rose again to about 50 trillion scf. Most recently, based on actual production data in the Marcellus Shale gas play, the amount of natural gas estimated to be extractable in the Marcellus increased again to 363 trillion scf. Concurrently with the increasing price of natural gas and the exponential growth of estimated gas extraction potential in the Marcellus, two separate existing drilling technologies – hydraulic fracturing and horizontal drilling – began to be successfully combined for extracting natural gas from low

permeability, ‘tight’ shale like the Marcellus. Horizontal drilling allows a well to be drilled along nearly horizontal layers of rock. Hydraulic fracturing is a method of cracking the rock with high volumes of water along the well bore to release the natural gas from the shale, a process sometimes called “stimulation.” Water used in hydraulic fracturing contains chemicals that play an important role in the extraction of the natural gas, and a large quantity of water (3 to 5 million gallons) is used per well during the process. Together, the process is called high-volume, slick water hydraulic fracturing.

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

Summary

Considering the rapid pace of Marcellus Shale development in Pennsylvania, and of unconventional resources throughout the U.S., it is becoming increasingly important to understand the scientific issues associated with development.

Source (www.museumoftheearth.org/files/marcellus/Marcellus_issue1.pdf)

Current State

Production has risen more rapidly than anyone had anticipated in the Marcellus Shale formation in Pennsylvania and West Virginia. The Marcellus region, which produced less than two billion cubic feet per day in 2010, is projected to provide a stunning 18 percent of total U.S. natural gas production in February of 2014.

Source (www.forbes.com)

Pennsylvania’s Marcellus Shale produced over 1.4 trillion cubic feet of gas during the first half of 2013, according to new data released by the state Department of Environmental Protection. The numbers show a 57 percent increase in gas production compared to the same time period from last year. The DEP releases the data twice a year.

Chesapeake Energy remains the most active company, with the highest number of unconventional wells (792) and the most gas produced. Cabot Oil and Gas Corp.’s operations in Susquehanna County represent the most productive wells, with seven of the top ten in the state.

Source (<https://stateimpact.npr.org>)

In 2013, Pennsylvania ranked second among 33 states that produced natural gas. Pennsylvania went from importing 75 percent of its natural gas five years ago to being a net exporter of natural gas for the first time in 100 years.

United States Energy Information Agency (EIA) expects natural gas marketed production will grow at an average rate of 2.2 percent in 2014 and 1.2 percent in 2015. Rapid Marcellus production

growth is causing natural gas forward prices in the Northeast to fall even with or below Henry Hub prices outside of peak-demand winter months. Consequently, some drilling activity may move away from the Marcellus back to Gulf Coast plays such as the Haynesville and Barnett, where prices are closer to the Henry Hub spot price. EIA projects Gulf of Mexico production will increase by 1.7 percent in 2014 before falling 2.3 percent in 2015.

Liquefied natural gas (LNG) imports have declined over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. The first of the new facilities to liquefy gas produced in the lower-48 states for export is expected to come online in the fourth quarter of 2015.

Growing domestic production over the past several years has replaced pipeline imports from Canada, while exports to Mexico have increased. EIA expects these trends will continue through 2015. EIA projects net imports of 3.5 bcf/d in 2014 and 2.6 bcf/d in 2015, which would be the lowest level since 1987. Over the longer term, the EIA Annual Energy Outlook 2014 projects the United States will be a net exporter of natural gas beginning in 2018

Source (<http://www.eia.gov/forecasts/steo/report/natgas.cfm>)

Pennsylvania DEP

For the latest report on the Marcellus Shale, see the 2013 Oil and Gas Annual Report, published by the Pennsylvania Department of Environmental Protection Office of Oil and Gas Management. This report includes the current state of the State's energy landscape, changes and updates in permitting, inspections, compliance and enforcement, and regulation and policy updates. The report can be viewed at:

http://www.portal.state.pa.us/portal/server.pt/community/annual_report/21786

Future

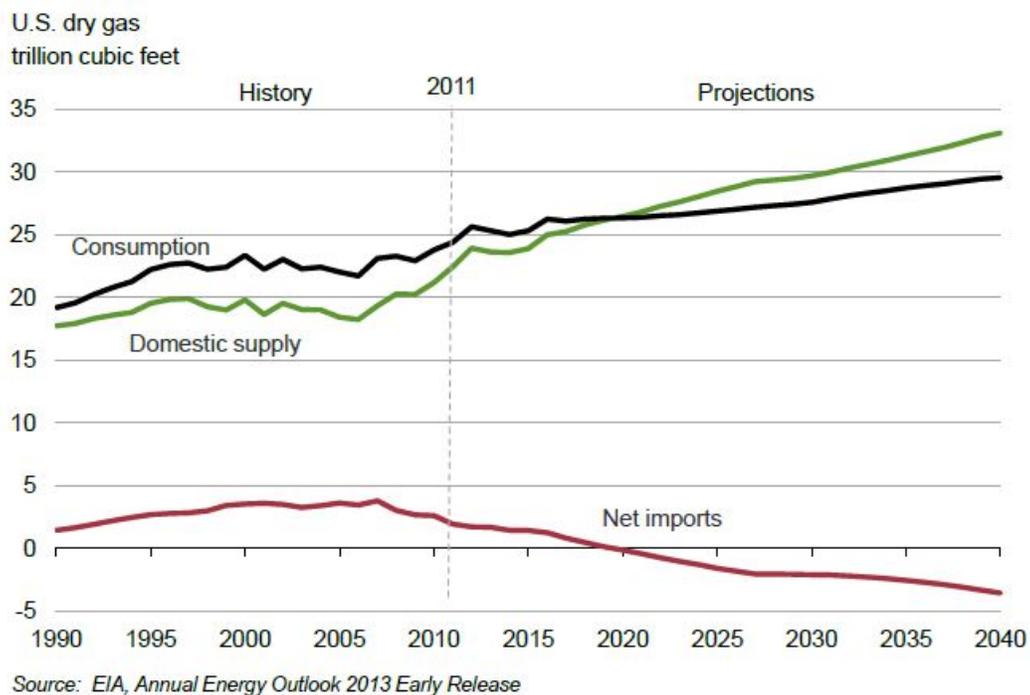
By 2020, the industry is projected to provide a total economic impact of \$18.8 billion and 211,000 jobs for the Commonwealth of Pennsylvania, along with \$1.8 billion in state and local tax revenues. Gas reserves in the Marcellus play are estimated to be 500 trillion cubic feet. Even if only 10 percent of the gas is recovered, it would be enough to fuel the entire United States for two years and would be worth over \$1 trillion. By some estimates, it may take 30 years to drill all the wells to needed to bring the gas to market. Marcellus reserves could exceed those of the largest oil field in the world (Saudi Arabia) and be the 2nd largest natural gas field (behind Qatar/Iran).

Source (<http://www.thefriendsofmarcellushale.com/pages/about01.htm>)

Source (<http://www.pioga.org/pa-oil-gas/pa-industry/>)

The following graph shows how the United States imports of dry natural gas have steadily increased from 2005, and projects the United States to be a net exporter of natural gas by the year 2020. At that point, the domestic supply of dry natural gas will exceed the domestic consumption, and remain that way through 2040.

Projected Marcellus Shale Production through 2040



Source (<http://www.eia.gov/forecasts/steo/report/natgas.cfm>)

Industry Terminology

Description of Supply Chain

There are three industry segments in the Marcellus Shale Supply Chain: Upstream, Midstream, and Downstream.

Upstream – Brings natural gas to the surface.

- Exploration
 - Geosciences (site evaluation, planning), Land Acquisition, and Testing
- Production
 - Construction & Reclamation, Engineering Services, Hot Shot, Permitting, Trucking & Heavy Hauling, Water Hauling, Welding, Well Tie-In

Midstream – Includes the storage and transportation of natural gas.

- Gathering and Transmission
 - Pipeline Construction, Compressor Station Construction, Clearing Services, ROW Maintenance, Pipe/Valve Fittings, Measurement/Regulation, Environment and Health Safety

Downstream – Includes the selling and distribution of natural gas.

- Distribution
 - Infrastructure Repair, Billing/Collections, Pipe/Valve Fittings, Meter Reading, Printing

Source: Catalyst Connection (www.catalystconnection.org)

Supplier Tier Structure and Processes

Tier 3 Supplier – Companies that supply products and services to a Tier 2 supplier. Most likely indirect suppliers

- Laborers, equipment operators, drivers, painters, welders, mechanics, manufacturers

Tier 2 Supplier – Companies that supply products and services to a Tier 1 supplier or indirectly supply a producer

- Fuel, equipment rentals, safety supplies, spare parts, trucking\

Tier 1 Supplier – Companies that supply products and services directly to a producer

- Heavy equipment, engineering services, fabrication, storm water management, security services, trailer rentals

Producer – Drilling and Exploration companies (Range Resources, Consol Energy, etc)

Industry Glossaries

These guides define and elaborate upon commonly used terms and phrases, technical names, processes, and metrics.

<http://www.glossary.oilfield.slb.com/>

<http://www.pabusinesscentral.com/a-marcellus-shale-glossary-of-terms/>

Master Service Agreement

A MSA is a contract that states responsibilities and obligations of services and/or products. It defines rates, payment terms, and other obligations for both parties. A Master Service Agreement may be required by producers and first tier companies.

Making an effective MSA: Formulate a diverse team with a multitude of backgrounds and experiences (Ex: operations, risk management, contract procurement and compliance and legal matters)

Important Issues to Consider: Definition of services, contractual provisions concerning risks, likely complaint and respondent, term of contract, training and awareness, MSA summary checklist, troubleshooting etc. .

Key Provisions: Dispute resolution, indemnification, fair notice requirement, Oilfield Anti-indemnity Statutes, general maritime law, releases, limitation of liability provisions, choice of law, force majeure, choice of forum, work order service ticket, severability/savings clauses etc.

Source (http://www.ehow.com/facts_5009784_master-service-agreement_.html)

Sample MSA – Ego Resources – <http://goo.gl/CZ7INE>

Sample MSA – Clarion SBDC – <http://web.clarion.edu/SBDC/Forms/2011-01-14MasterServiceAgreement.pdf>

Industry Opportunities

Approximately 139,889 jobs were created in 2010 as a result of direct and indirect Shale impact. The top sectors in which jobs were created are construction (23,730), retail trade (16,581), health and social services (12,815), and scientific and technical services (11,042).

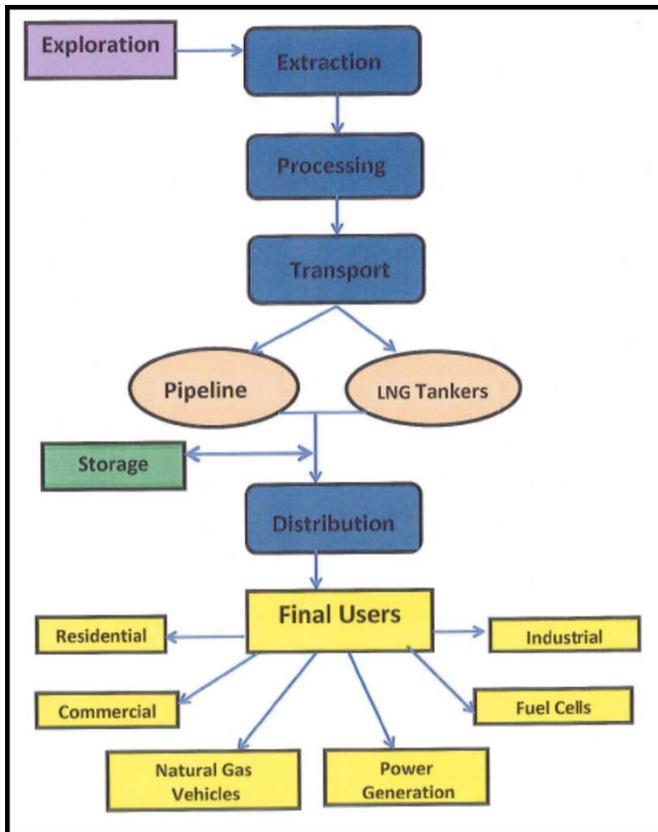


Illustration of the Shale Supply Chain Source (<http://goo.gl/10VbZR>)

Shale Industry Opportunities (General)

- NGL (Gas liquids from heavies in Natural Gas)
- Propane/Butane/Ethane
- Power Generation – Plant Construction, Industrial/Commercial Conversion
- Exporting – Terminal Construction, Pipeline, Logistics, Transportation
- Transportation – Infrastructure, Mechanics, Conversion, Training
- Workers – Lodging, Utilities, Training, Transportation, Banking/Legal/Accounting, Medical
- On Site – Food/Drink, Delivery Services, Uniforms
- Fabricators
- Suppliers (parts/materials of physical assets)

Pre-Drilling Supply Chain Opportunities

- Water Impoundment Construction, Water Management
- General Operations

- Leasing, Permitting, Legal, Seismic, Pad Development, Logging, Heavy Construction, Surveying, Mechanics, Fencing, Equipment Rental

Drilling and Well Construction Supply Chain Opportunities

Approximately \$4 million is invested into the construction of each well. Approximately 2,500 wells are produced annually, which creates a total investment of \$12 billion in well site operations.

- Drilling, Casing, Cement, Solids Management
- Transporting
 - Hauling, Traffic Control
- Servicing
 - Painting, Grease, Hoses
- Power Systems
 - Mechanical, Electrical, LNG
- Engineering, Employment Screening, Fluids, Wildlife Inventory, Fabrication, Welding, Technicians, Pipe Threading, Pressure Testing

Completion Supply Chain Opportunities

- Well-Stimulation, Water Management, Proppant and Chemical Production/Management
- Commercial Trucking, Hot Shot Hauling, Diesel Technician, Rail/River/Road Services, Equipment Rental
- Site Restoration, Pipes and Valves, Service Yards and Buildings,

Midstream Supply Chain Opportunities

- Measurement and Calibration, Gathering, Compression, Construction/Fabrication, Processing, Treating, Land Reclamation
- Commercial Trucking, Hot Shot Hauling, Diesel Technician, Rail/River/Road Services, Equipment Rental
- Machine Shops, Service Yards and Buildings, Pipe Welding

Downstream Supply Chain Opportunities

- Vehicle Conversion
 - Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG)
- Gas to Liquids
 - New engine technologies, New fuel formations
- Bi-Fuel and Dual-Fuel
- Manufacturing

- Paper, Steel, Glass
- Petro-Chemical
 - Ethane, Fertilizer, Fuel Conversion
- Power Generation

Source (Catalyst Connection, www.catalystconnection.org)

Criteria for Doing Business

Safety

- If on drilling sites, safety programs must be approved by the respective energy producer and meet the standards of respective compliance programs
- Supplier must meet compliance requirements from Mine Safety and Health Administration (MSHA) and Occupational Safety & Health Administration (OSHA)
- Must have excellent safety and operational excellence record
 - ISNetworld – Some producers and suppliers require a business to be registered in the ISNetworld database.
 - Customer Service: 1-(800)-976-1303
 - <http://www.isnetworld.com/TeamPages/Upstream.aspx>.
 - SafeLandUSA
 - <http://www.safelandusa.org/>
 - OSHA
 - <https://www.osha.gov/>
 - http://www.osha.gov/SLTC/etools/oilandgas/general_safety/h2s_monitoring.html
 - MSHA
 - <http://www.msha.gov/>
- Drill site safety
 - Equipment must meet specifications for high pressure operation
 - Flammable liquids and gases must be stored and used at site
 - Height safety training
 - Heavy equipment operation training
- Minimum safety requirements for drill sites
 - Lockout/Tagout program
 - Safety training programs for hearing conservation, first aid, confined space
 - Personal Protection Equipment
 - Fire retardant clothing, hard hat, reflective material, metacarpal gloves, leg banding, steel-toe metatarsal work boots

Marketing to the Industry

Tips for Entering the Marcellus Supply Chain

Desired Characteristics of Suppliers

- Determine where you fit in the vendor hierarchy
 - o Partner with Tier 1 and 2 suppliers
- Establish relationships with relevant companies
- Meet Safety, Environmental, and Health requirements
- Clearly define how your product or service will benefit the customer in the supply chain
- Be innovative and be solutions-oriented
- Be responsive, flexible, and reliable
- Learn to adapt to changes in drilling activity
- Be able to service geographically dispersed worksites
- Network

Innovation

- Suppliers need to distinguish themselves from competitors
 - o Innovative solutions, provide unmatched services
 - o Core competencies

Value

- Experience and knowledge is instrumental
 - o Understand drilling regulations and how products/services may be affected
 - o Show expertise through marketing, communication
- Provide bundled/packaged services
- Competitive pricing, financial viability
- Adequate staffing
- Communication
- Overall integrity of operations
- Customer focus, with flexibility and reliability
 - o Drilling is a 24/7/365 operation
 - o Deliver on promises
 - o Be honest
- Be willing to change business processes and adapt

Networking

- Personal contacts are the best way to secure business and new leads
- Attending conferences, trade shows, job fairs, educational initiatives, and seminars

- Business to Business expositions are great ways to interact with potential contractors, employers, and partners
- Trade Associations

Marketing

- Create a functional website
 - Create section on website for Marcellus suppliers
 - Highlight expertise and experience
 - Create your own case studies
 - Be clear and concise
 - Most recent progress on home page
 - Two languages
 - Create a competency statement
 - Example 1 (<http://goo.gl/rH1MCF>)
 - Example 2 (<http://goo.gl/1xgIIu>)
 - Easy navigation
- Social Media
 - LinkedIn, Facebook, YouTube
 - Promote business, highlight jobs, showcase employees and management
- Promotional items
 - Pens, stress balls, USB drives, decals, stickers
 - Custom hardhats, distinctive clothing
- Locality
 - Active in Chamber of Commerce

Personal Initiative

- Sign up for Google Alerts for activity in the area
- Talk with competitors or those supplying the industry to see how they got involved
- Read newspapers and stay up to date

Directories and Publications

- Being listed in various directories and publications can increase exposure to your business
- **Marcellus on Main Street-Marcellus Shale Coalition**
<http://marcellusonmainstreet.org/>
- **Hart Energy Services**
<http://www.hartenergy.com/>
- **Don's Directory**
<http://www.donsdirectory.com/>
- **Pennsylvania Independent Oil and Gas Association**
<http://www.pioga.org/education/pa-oil-and-gas/>
- **Shale Directories**

<http://www.shaledirectories.com/>

Shale Directories Newsletter- <http://www.shaledirectories.com/newsletter.html>

Newsletter Signup- <http://www.shaledirectories.com/newsletter-signup.html>

- Northern Tier Energy Group-Community of people working in or servicing the Oil and Gas Industry in the Appalachian Shale Play. The Group has networking events in Wellsboro and Williamsport. The contact person to join the group and attend an event is Stephanie Paluda, 84 Energy Supply
Stephanie.paluda@84lumber.biz
Cell: 412-720-8613
- Linked In-Joining gas and energy groups on Linked In will also keep you plugged into the latest news and happenings going on in the industry. Linked In will also allow you to contribute to the discussions and engage with the industry. Tri-State Shale Network, Midstream Oil & Gas and Pennsylvania Independent Oil and Gas Association are a few suggestions of groups to join.

Source (Catalyst Connection, www.catalystconnection.org)

Source (Northwest PA Oil and Gas Hub)

Prospective Suppliers

Anadarko Petroleum Corporation

PO Box 1330

Houston, TX 77251

T: (800) 800-1101

Contracting Contact: Steven Kovacs, PAContractors@anadarko.com

Atlas Energy, L.P.

800 Mountain View Drive

Smithfield, PA 15478

T: 724-439-6424

F: 714-564-2365

Procedure: Mail or fax information about your business, proof of insurance, pricing information, and references of work you have performed.

Cabot Oil & gas Corporation

5 Penn Center West, Ste 401

Pittsburgh, PA 15276

T: 412-249-3850

Procedure: Go to a field location and talk to a company man. Tell him you are interested in becoming a vendor give him your company information and he will talk to his manager.

Chevron

Register as a prospective supplier at <http://www.chevronsupplier.com/ambu/register>

Chief Oil & Gas, LLC

5956 Sherry Lane, Suite 1500

Dallas, TX 75225

T: 214-265-9590

Notes: Information website, http://www.chiefog.com/vendor_info.asp

Consol Energy

CNX Center

1000 Consol Energy Drive

Canonsburg, PA 15317

T: 724-485-4000

Contracting Contact: Ed Kopshever, edkopshever@consolenergy.com

East Resources

190 Thorn Hill Road
Warrendale, PA 15086
T: 724-772-8600
Contracting Contact: Tracy Page, tracy.page@shell.com

ECA

1380 Route 286, HWY E, Ste 221
Indiana, PA 15701
T: 724-463-8400

Procedure: Send contact information, services available, price list, counties serviced, and available equipment list to: 501 56th Street, Charleston, WV 25304.

EOG Resources

400 Southpoint Blvd, Suite 300
Canonsburg, PA 15317
T: 724-745-1102

Procedure: Talk to the department head, or someone in the field, and they will pass your information along. If the company is interested they will send you the appropriate paperwork.

Contracting Contact: Pete Misivich, pmisivich@rangeresources.com, 724-873-3231

EQT

255 Racetrack Rd, Ste 101
Washington, PA 15301
T: 1-800-242-1776

Vendor Information: <http://www.eqt.com/about/procurement/contact.aspx>

Contracting Contact: Richard Fontanesi, 412-395-3522, rfontanesi@eqt.com

Title: Sourcing Agent II
EQT Plaza
624 Liberty Avenue. Ste 1700
Pittsburgh, PA 15222
Fax: 412-395-2156

EXCO

3000 Ericsson Drive, Ste 200
Warrendale, PA 15806
T: 724-720-2500

Procedure: Contact the department for which your services are related.

Pennsylvania General Energy

120 Market Street

Warrendale, PA 16365

T: 814-723-3230

Contracting Contact: Jessica Lookenhouse, jessicalookenhouse@pageneralenergy.com

Range Resources

380 Southpoint Blvd, Ste 300

Canonsburg, PA 15317

T: 724-743-6700

Rex Energy

476 Rolling Ridge Drive

State College, PA 16801

T: 814-278-7267

Contracting Contact: Susanne Reynolds, sreynolds@rexenergycorp.com

Seneca Resources

51 Zents Blvd

Brookville, PA 15825

T: 814-849-4555

Contracting Contact: Barry Gunther, 814-220-1570

Notes: Send an inquiry email to procurement@srex.com. This email goes to the Supervisor of Procurement, Richard Bishop. An email should include the services your company currently provides, how much insurance your company currently carries, geographic regions you serve, references from other energy companies (if available), and indicate if you have a diverse supplier status (women, veterans, minorities).

Snyder Brothers, Inc.

90 Glade Drive

PO Box 1022

Kittanning, PA 16201

T: 724-548-8101

Contracting Contact: Todd Kunselman, todd.kunselman@snydercos.com

Universal Well Services, Inc.

Tier-1 Supplier that provides well cementing and hydro-fracturing services

Pennsylvania Districts:

Main Office: 18360 Technology Drive, Meadville, PA 16335; 800-758-9880

Bradford: 124 Industrial Drive, Bradford, PA 16701; 814-368-6175

Meadville: 159 Northwood Drive, Meadville, PA 16335; 814-337-1115

Mt. Braddock: 730 Braddock View Drive, Mt. Braddock, PA 15465; 724-430-6201

Punxsutawney: 114 Universal Drive, Punxsutawney, PA 15767; 814-938-2051

Williamsport: 250 Arch Street, Building 3, Williamsport, PA 17701; 570-321-5306

Industry Resources

Coalitions & Trade Association Links

Pennsylvania Independent Oil & Gas Administration [724-933-7306]

<http://www.pioga.org/pa-oil-gas/pa-industry/>

Marcellus Coalition [724-745-0100]

www.marcelluscoalition.org

<http://www.marcellusonmainstreet.org/default.aspx>

State Incentives to Promote Natural Gas Usage:

<http://marcelluscoalition.org/wp-content/uploads/2013/06/PASStateIncentives.pdf>

Federal Incentives to Promote Natural Gas Usage:

<http://marcelluscoalition.org/wp-content/uploads/2013/06/FederalIncentives.pdf>

Compliance and Training Resources

Compilation of additional safety resources

<http://goo.gl/tdzmf1>

Enerdynamics [866-765-5432]

<http://www.enerdynamics.com/gas-industry-training.asp>

Golder Associates: Pittsburgh Office [724-935-6400]

http://www.golder.com/modules.php?name=Pages&sp_id=69

ISNetwork: Customer Service [1-(800)-976 -303]

<http://www.isnetwork.com/TeamPages/Upstream.aspx>

PEC Premier: Corporate Office [1-800-892-8179]

<http://www.pecpremier.com/>

SafeLandUSA

<http://www.safelandusa.org/>

Veriforce: Customer Support [800-426-1604]

<http://www.veriforce.com/index.html>

Governmental Support Resources

Marcellus & Utica Shale Data (ODNR), Division of Geological Survey [614-265-6576]

<http://www.dnr.state.oh.us/tabid/23014/default.aspx>

New York Department of Environmental Quality: Division of Public Affairs and Education
[518-402-8013]

<http://www.dec.ny.gov/>

Ohio Department of Natural Resources: Mineral Resources Management [614-265-6633]

<http://ohiodnr.com/tabid/23415/default.aspx>

OSHA Oil & Gas Storage Standards

<http://www.osha.gov/dcsp/products/topics/storagetank/standards.html>

Pennsylvania Department of Environmental Protection

http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas/6003

Pennsylvania Department of Environmental Protection, eMap Application

<http://www.emappa.dep.state.pa.us/emappa/viewer.htm>

ShaleNET

<http://www.shalenet.org/>

U.S. Energy Information Administration

<http://www.eia.gov/naturalgas/>

Well Locator (Ohio DNR)

<http://www.dnr.state.oh.us/tabid/10358/Default.aspx>

West Virginia Department of Environmental Protection [304-926-0440]

<http://www.dep.wv.gov/Pages/default.aspx>

WV DEP Oil & Gas Well Information

<http://gis.dep.wv.gov/oog/>

Industry Information Resources and Publications

Carnegie Library

<http://www.carnegielibrary.org/research/scitech/environment/MarcellusShale.html>

Morning Star Energy Observer (February 2014)

How the Marcellus Shale Transformed the Domestic Natural Gas Landscape and What It Means for Supply in the Years Ahead

http://marcelluscoalition.org/wp-content/uploads/2014/03/Morning_star_EnergyObserverFebruary2014.pdf

Penn State

<http://marcellus.psu.edu/>

Professional Organization Links

The Natural Gas Supply Association [202-326-9300]

<http://www.ngsa.org/>

<http://www.naturalgas.org/>

American Gas Association [202-824-7000]

<http://www.aga.org/Pages/default.aspx>

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