

A Pipeline Primer: Who, How, Where and What The Heck?

August 5, 2011 | 11:16 AM

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A new gathering line in Lycoming County, PA

Pennsylvania's natural gas boom won't be much of one unless gas companies can get the gas to market. Natural gas travels through underground pipelines that criss-cross the United States. Some are large, interstate pipelines. Others are smaller lines that go from the well head to what's called a "gathering line." And then the gathering lines take the gas to transmission lines. Compressor stations are needed at points along the larger pipelines to pressurize the gas and make it move.

A new web of pipelines in Pennsylvania will have to be built to transport the gas. The new pipeline construction will benefit those in need of jobs, and the companies that do the building. But some residents and local politicians worry about the environmental impacts, and say the current regulatory structure needs updating. Here's what you need to know about pipelines in Pennsylvania, so far:

How many miles of underground natural gas pipelines exist in Pennsylvania?

Nobody knows. That's because Pennsylvania does not have one regulatory authority that oversees intrastate gas pipelines. In fact, out of 31 states that produce natural gas, Alaska is the only other state, besides Pennsylvania, that doesn't.

Here's what we do know about pipeline mileage. Pennsylvania's [Public Utility Commission](#) does inspect about 46,000 miles of pipelines that are categorized as public utilities. That means those pipelines deliver gas directly to a consumer, heating their home or allowing them to cook. The PUC has eight inspectors who enforce both state and federal regulations.

The federal government, through the Department of Transportation, regulates the interstate pipeline system. Those are the pipelines that travel across state boundaries. One example would be the Transcontinental, or Transco, pipeline that travels from south Texas to the major east coast markets of New Jersey and New York City. More than 55,000 miles of interstate pipelines travel through Pennsylvania.

Some counties in Pennsylvania have taken it upon themselves to figure out where pipelines cross beneath their land. Bradford County Planning Commission estimates that its county has about 500 miles of natural gas pipelines and has actually mapped those lines.



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The interstate Tennessee pipeline runs through Wayne County, Pa. with gas on its way to New Jersey and New York.

So who inspects all of these unknown miles of pipeline?

In some cases, nobody. Thousands of miles of what are called “gathering lines” do not fall under the jurisdiction of the Public Utilities Commission. And the Department of Transportation’s [Pipeline and Hazardous Materials Safety Administration](#) does not have the resources to inspect them. PHMSA has asked Pennsylvania to broaden the PUC’s jurisdiction to include these lines. That was one of the recommendations made by the [Marcellus Shale Commission](#). And [state Rep. Matt Baker](#), a Bradford County Republican, has [introduced legislation](#) that would grant the Public Utilities Commission jurisdiction over most of the pipelines, except those that are classified as class 1 — which are those that run through rural areas. State Sen. Lisa Baker, a Luzerne County Republican has a similar bill, but Senator Baker’s bill includes class 1. Many miles of these new gathering lines will be in rural areas, and so, are not currently inspected by either PHMSA or the PUC.

How many new miles of pipelines need to be built to transport the Marcellus Shale gas to markets?

Nobody knows that either. And here's the problem. The state's current network of pipelines is not equipped to carry the volume of shale gas with the necessary pressure to get it to market. The new pipelines will have to be larger in diameter. That means, if they go through forested areas, a clear cut of between 70 to 130 feet wide is needed to lay the pipe and keep it available for maintenance. [The Pennsylvania Chapter of the Nature Conservancy](#) estimates that between 10,000 to 23,000 new miles of pipeline will be needed to transport the Marcellus Shale gas yield.



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A marker indicates the location of where the proposed Marc 1 Hub pipeline will be built in Lycoming County, PA.

So, can companies just lay pipelines wherever they want?

Not really. First, rights of way needed to be secured from private and public landowners. The companies pay for those rights of way. Then permits are needed. But a confusing network of regulatory bodies handles the permitting process. [The Federal Energy Regulatory Commission](#) has to approve any interstate pipeline. The Public Utilities Commission has to approve any that serve consumers directly. But few of the new gas lines connected to [Marcellus Shale](#) drilling fall neatly into either of those categories. The [proposed Marc 1 Hub pipeline](#) that will run through Lycoming, Sullivan and Bradford counties continues up into New York. So it's an interstate line and falls within the jurisdiction of FERC.

But thousands of miles of gathering lines, which take the gas from the wellhead to the transmission lines, are in the gray area. They only need permits if they run through wetlands or cross waterways, and those permits come from yet another agency, the [Pennsylvania Department of Environmental Protection](#). Also, the DEP has oversight if the pipelines cross through areas with endangered or rare species. Sometimes county-level regulations come into play, but not always.

Who owns and operates these pipelines?

Private companies own and operate the pipelines. Sometimes a natural gas company has a subsidiary, referred to as a “mid-stream” company, that builds pipelines. But sometimes, the pipelines are built by companies that don’t actually do any drilling; they just own and operate pipelines and lease them to gas companies. Think of it like a toll road.

Do the companies who own and operate the pipelines pay a specific tax associated with the rights of way and transportation of the gas?

No.

Do any of the impact fee proposals include pipeline companies?

No.

Who likes pipelines?

Deer, elk and snowmobilers love pipelines! Miles of clear cut paths through forests make good travel routes and sources of food for grazing animals. But environmentalists worry that too many pipelines will create what’s called an “edge effect.” That means some species such as interior forest birds, amphibians, and certain wild flowers will see their habitat diminished.