League of Women Voters of Pennsylvania

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Facts and Questions

Focusing on Natural Gas Extraction from Marcellus Shale*

Marcellus Shale is an ancient, underground rock formation that lies beneath about two-thirds of Pennsylvania. Tapping the natural gas resources in Marcellus Shale will promote energy independence, provide jobs, generate unanticipated revenue to those who lease their land and/or mineral rights, and broaden the tax base during tight economic times. Natural gas, the cleanest carbon-based fuel, produces less than half as much carbon pollution as coal for the same power output. Thus, it is being promoted as a relatively clean source of energy as we transition to renewable sources such as wind, solar and biofuels. However, gas extraction will have a significant impact on our water resources. Millions of gallons are used to drill a well and then to release the natural gas through "fracking," a high-pressure, water-intense process that splits the shale. In addition to potential aquifer and surface water pollution, environmentalists predict severe problems concerning air quality and the impact of drilling on the land. Marcellus Shale is also the subject of legislation, litigation, and regulation. Permits are required, and regulations need to be monitored and enforced. Many groups want to impose a severance tax to raise money to reduce the taxpayer burden for local and state governments. The PA General Assembly has already authorized the leasing of state-owned lands to increase revenue needed to balance the current budget.

To take a position, one must examine facts, raise questions, and seek answers.

FACTS	QUESTIONS
Natural gas extracted from extensive deposits of Marcellus Shale is an abundant fossil fuel source of energy for years to come.	How much natural gas can be accessed? Will the extraction process continue to be viable economically?
Fracking technology has evolved over decades of use by the oil and gas industry.	Are other alternatives available? Can improved, "greener" techniques be mandated?
Natural gas is projected to be an economic boom for decades (leases/royalties).	How can citizens have a share in this wealth? How do we prepare for the bust?
An influx of workers will be created by new jobs.	How do communities prepare for sudden growth?
Costs for transporting natural gas will be reduced because of near-market locations.	How will this impact the price of natural gas to customers in Pennsylvania?
Access roads will be needed to reach remote well sites.	How can the impact on land, water, and living things be minimized?
Heavy trucks carry equipment and water.	Can road damage be assessed so industry pays?
Millions of gallons of water will be consumed.	How will it impact water supplies?
Production wastewater will be created with high salt levels (TDS), heavy metals, and, perhaps, some radioactivity.	Can total dissolved solids (TDS) levels and other contaminants be safely and cost-effectively removed?
Once drilling is complete, unused wastewater must be removed or reused.	How will it be stored and transported? Where will it go?
Wastewater may be diluted and reused in fracking process.	What happens to the millions of gallons of toxic liquids left underground?

Focusing on

Natural Gas Extraction from Marcellus Shale* (cont.)

FACTS	QUESTIONS
Potential exists for contaminating ground and surface water by accident/oversight.	How will monitoring/enforcement be done? Will penalties be imposed fairly?
Toxic chemicals are used in fracking that may return to the surface (20–40%) or remain underground (60–80%).	What happens to the biocides and other harmful substances that enter into the ecosystem? Will living things be "safe?"
High pressure fracking can force fluids into faults and fractures.	Will seismic events and/or chemical migration result from the fracking process?
Well drilling tends to occur over several weeks with loud noise and bright lights 24–7.	How can the impact on living things be minimized during drilling?
Large diesel engines are used to run the trucks and equipment.	How will air quality be monitored and health impacts minimized?
Gas wells are vented and release hazardous hydrocarbons into the air.	How can venting be monitored and dangers minimized for living things?
Gathering pipelines will be built from the wells to transmission pipelines.	How will pipelines impact ecosystems over time? What data is needed?
Interstate transmission lines with numerous compression stations need to be built, enlarged, and maintained.	How will the air pollution, noise, and location impact living things along large pipelines? Is fragmentation by pipelines an issue?
Permits are required for drilling and, in some cases, water removal.	Is the review process adequate and does it involve the right people to assess risk?
Regulations exist regarding drilling, wastewater treatment, truck weight on given roads, disposal of toxic materials, and air and water quality.	Are the regulations adequate? Is there coordination between agencies? Is there adequate staff to monitor and enforce rules to protect public health and assets? Are oversight resources adequate?
Accidents can happen. Individuals or drilling subcontractors can act irresponsibly. Companies can fail, go bankrupt, or move out of the state.	Is there a safety net to protect from long-term or catastrophic loss? What base-line data is needed, and how is it collected? Are penalties appropriate for violations? Who pays?
State lands are being leased for drilling to provide needed revenue.	How will this impact tourism, wildlife, hunting, fishing, and conservation efforts?
Companies are paying fees for permits to drill.	Are the fees adequate to cover the costs of a comprehensive permitting process?
No taxes are imposed on natural gas as local "property" or part of the severance or extraction of a state resource.	Is this fair? If taxes are levied, who will pay, and how will generated funds be fairly allocated?

**** To read our position statement, view our study guides, or access related resources, go to www.palwv.org.***