

- fossil energy
- environmental
- energy efficiency
- other

ULTRASONIC NATURAL GAS FLOW METERS

Description

States Impacted:

Michigan, Pennsylvania,
Texas, West Virginia, Ohio,
New York, Illinois, Indiana

Benefit Areas:

Energy Security, Gas Storage
and Delivery, Cost Savings,
Reliable Supply

Participants:

Southwest Research Institute
(SwRI), Gas Research
Institute (GRI)

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Accurate and efficient measurement of the natural gas flowing to and from storage facilities is critical to maintaining a reliable storage and delivery system. Ultrasonic meters can precisely measure gas velocity using high frequency sound pulses.

During the winter months, natural gas demand significantly exceeds production. Seasonal shortfalls are accommodated by accessing stored natural gas. In fact, during periods of peak demand, gas storage fills as much as 30 percent of the total U.S. gas demand. In order to ensure a reliable, uninterrupted supply, gas is injected into storage fields during periods of low demand (summer) and withdrawn from storage during periods of high demand (winter). In the U.S., approximately 3 trillion cubic feet (Tcf) of gas are injected into and withdrawn from storage each year.

Goals

The Ultrasonic Meter Testing Project is designed to test and evaluate meters, made by different manufacturers, that can accurately measure gas storage volumes. The project has two facets: (1) testing and evaluating ultrasonic meters at Southwest Research Institute's (SwRI's) Meter Research Facility, and (2) gathering and evaluating data from operators who have installed ultrasonic meters at gas storage facilities.

Tangible Benefits

National: This project will help ensure that Americans continue to have an on-demand affordable, reliable, and abundant supply of natural gas. This is especially important for the U.S. economy and our standard of living as gas continues to be a fuel of choice for electrical generation and a growing fuel choice in the transportation sector. Potential installation savings are 35 to 55 percent over typical measurement stations; projected operating and maintenance cost savings are from \$9,000 to \$15,000 per year. The technology also represents a large economic opportunity for U.S. manufacturers of ultrasonic meters. The potential U.S. natural-gas market for these meters is estimated at \$50 billion.

Regional: All natural-gas-producing regions will benefit. But the biggest benefits for this cost-saving technology will be in Illinois, Indiana, Michigan, New York, Ohio, Pennsylvania, Texas, and West Virginia. Each of these states has more than 20 underground gas storage sites where the technology could be used.