



**Flow Research, Inc.**  
27 Water Street  
Wakefield, MA 01880

781-245-3200  
781-224-7552 (fax)  
[www.flowresearch.com](http://www.flowresearch.com)

Contact: Leslie Buchanan, Flow Research:  
+1 781-245-3200, [leslie@flowresearch.com](mailto:leslie@flowresearch.com)

**For Immediate Release**

## **Flow Research: World Energy Markets Drive Growth in Gas Flow Measurement**

Wakefield, Massachusetts; March 17, 2016 — A new research study from Flow Research finds substantial growth in the gas flow measurement market. According to this new study, *The World Market for Gas Flow Measurement, 3rd Edition*, by Flow Research ([www.flowresearch.com](http://www.flowresearch.com)), the worldwide market exceeded \$1.7 billion in 2014. New-technology gas flowmeters made up \$788 million of this total, while traditional technology gas flowmeters revenues were \$930 million. Coriolis and ultrasonic are the fastest growing gas flowmeter markets.

### **Why Gas Flowmeter Calibration Is Unique**

When performing a flowmeter calibration, the best calibration is performed when it duplicates the conditions under which the flowmeter measures flow. This includes the fluid being measured, the pressure and temperature conditions, and the upstream and downstream piping. For this reason, end-users sometimes ship not only the flowmeter to be calibrated, but also the flow conditioner and accompanying piping. This is especially common with orifice plate flowmeters, and it is called a meter run.

Large ultrasonic and turbine flowmeters, those 12 inches in diameter and above, present special challenges for flowmeter calibration. The most effective calibration is performed with natural gas flowing simultaneously through the reference meter and the meter being calibrated. Large ultrasonic and turbine meters flow natural gas at extremely high speed. Facilities that can

calibrate these large flowmeters cost millions of dollars to build. This is why most large ultrasonic and turbine meters are both initially calibrated at independent labs, and then are recalibrated at independent labs.

### **Two Solutions for High Speed Gas Flow**

There are two main ways to generate the kind of high speed and high pressure flows needed for calibrating large natural gas meters. One way is to build a facility that has equipment capable of flowing natural gas through a master meter and the meter under test using equipment contained within the facility. This is called a closed loop systems. The other way is to build a flow calibration facility on an existing natural gas pipeline.

The closed loop solution is the one chosen by NMi Euroloop. NMi Euroloop was opened in 2010, primarily to address the need for high speed natural gas flow calibrations. This facility uses a combination of piston compressors, high speed blowers, and an ammonia cooling system to create the right combination of high speed, high pressure, and the correct temperature to calibrate large natural gas flowmeters. One advantage of this system is that it can run 24/7 and the facility has complete control over the natural gas used in the calibration process. The total capacity of the natural gas available at this facility is 7,000 m<sup>3</sup>. NMi Euroloop uses seven turbine meters as master meters, monitored by seven ultrasonic flowmeters.

A second solution is to build a calibration facility on a high speed natural gas pipeline that is already flowing natural gas. This is the solution chosen by CEESI in a facility built in Garner, Iowa. CEESI diverts a sufficient amount of natural gas from a TransCanada pipeline that is already flowing high speed natural gas to use it for test purposes. The natural gas is flowing at sufficient speed for calibration purposes. A portion of the natural gas is diverted and used for calibration purposes, and then returned to the natural gas pipeline.

### **The Need for More Calibration Facilities**

Simple math dictates the need for more calibration facilities, especially for gas flow measurement. Even though the market for turbine flowmeters is growing slowly, a large number of new turbine meters are sold every year worldwide. Many of these are for gas flow

measurement. The ultrasonic flowmeter market, by contrast, is growing more rapidly, especially the market for multipath ultrasonic flowmeters for custody transfer applications. Many of these are large flowmeters, but the smaller ones also need to be calibrated. Eventually, perhaps within 3-5 years, many of the flowmeters sold in 2015 will need to be recalibrated. This is in addition to the existing installed base of turbine and ultrasonic meters that were sold 3–5 years ago that may need recalibration this year. And all the meters sold in 2015 need an initial calibration.

Some flow calibration facilities report that they have waiting lists for flow calibrations. End-users also report having to wait three months or more for certain flowmeters to be recalibrated, especially large size ultrasonic and turbine meters. The growth in the flowmeter market is relentless, with most flowmeter types showing positive unit growth each year. There appears to be no corresponding growth in flowmeter calibration facilities. If flowmeter growth is outpacing the growth of calibration facilities currently, what will the situation be like in five or ten years? This problem is so critical that it may need to be addressed by an industry wide task force, rather than being left up to individual flowmeter manufacturers and independent flowlabs.

According to Dr. Jesse Yoder, president of Flow Research:

“The entire flowmeter market experienced a downturn in 2008 and 2009, along with the whole economy. By 2011, many companies found that their sales had returned to 2008 levels. However, a different kind of downturn occurred in 2014 when oil & gas prices began to decline. This had a negative impact on flowmeter suppliers selling into the oil & gas market, especially in 2015. While the future is difficult to predict, indications are that both oil & gas prices are on their way back up. In the meantime, some gas flowmeter suppliers are looking to industries such as chemical, food & beverage, and pharmaceutical on an interim basis until oil & gas prices ramp up again to more profitable levels. Given these many options and current market conditions, we see continued strong growth for the gas flowmeter market.”

### **About Flow Research**

Flow Research, with headquarters in Wakefield, Massachusetts, is the only independent market research company whose primary mission is to research flowmeters and other instrumentation products and markets worldwide. Flow Research has years of experience in doing both off-the-shelf studies and custom work. Published studies can be purchased by anyone interested in the

topics. These studies are developed through interviews with suppliers, distributors, and end-users, and are presented in a clear and consistent manner. Topics include all of the flowmeter technologies – both new and traditional – as well as temperature sensors, temperature transmitters, level products, and pressure transmitters.

A growing area of interest – especially related to custody transfer – is flowmeter calibration. Flow Research has recently completed two studies, one on gas and one on liquid, of flow calibration facilities and markets (<http://www.flowcalibration.org>).

The company also focuses on the energy industries, especially on oil and gas production and measurement. Special topics include custody transfer, multiphase measurement, and liquefied natural gas (LNG). A series of quarterly reports called the Worldflow Monitoring Service provides regular updates on both the flowmeter markets and the energy industries (<http://www.worldflow.com>).

For more information, visit <http://www.flowresearch.com> or call +1 781-245-3200.