The World Market for Gas Flow Measurement, 4th Edition

– OVERVIEW –

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Core Study: The World Market for Gas Flow Measurement, 4th Edition

Flow Research is pleased to present a new edition of our study on gas flow measurement worldwide, ***Core Study: The World Market for Gas Flow Measurement, 4th Edition***, and its companion studies, ***Module A: Applications and Strategies for Gas Flow Measurement*** and ***Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil & Gas Industry.***

Our objective is to give suppliers, systems integrators, and end-users the information they need to make informed decisions in pursuing new business and in gaining higher returns in this immense market. The ***Core Study*** is designed to provide the most comprehensive picture of the worldwide gas flow measurement market available today. It examines the gas flow measurement market on both a worldwide and regional basis, covering each flow technology used for gas flow measurement. The research shows where growth is occurring and where it is not, and where to expect the highest returns. ***Module A*** discusses gas applications and data for each of the flowmeter types and gives strategies for competing in the markets. ***Module B*** provides data on each region's gas picture, market influences, and flowmeters in the oil & gas industry. Each of the studies presents different data sets and market views. They are designed to be a complementary set for the best understanding of the whole market but can be purchased separately.

This research is a continuation of our resolve to view flow measurement from many perspectives, whether it is by fluid type, flow technology type, industry or application. In offering these different perspectives, we give suppliers, system integrators, and end-users the knowledge and understanding they need to successfully maneuver within the markets they serve.

Flow Research has been following the market for gas flow measurement regularly since wepublished the first edition of our worldwide gas flow measurement study in 2004. Our user interviews show that the interest in natural gas flow measurement is at a very high level. New opportunities have also emerged in the measurement of other gases.

This study achieves multiple goals:

- Determines worldwide market size for gas flow measurement in 2019 for each technology
- Forecasts market growth through 2024 for each technology used in this market
- Analyzes factors contributing to and limiting growth
- Identifies market growth sectors
- Provides average selling prices in the market worldwide and by region
- Determines supplier market shares for the gas flow measurement market in 2019, worldwide and by technology type
- Provides company profiles of the main suppliers of flowmeters used for gas flow measurement
- Analyzes the gas flow measurement products of the main suppliers in this market

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Natural Gas Is a Major Portion of theTotal Market for Gas Flow Measurement

The worldwide natural gas market has experienced extraordinary growth over the last decade, and with this growth has come exceptional interest in its future. The global search for new sources of energy has been spurred on by the emergence of major new demands on energy supplies from China, India, and other developing economies. Natural gas has become an important answer to the question, "How will these new energy demands be satisfied?"

Recent discoveries of new gas fields and new production methods have boosted natural gas availability. While gas exploration is an on-going process, gas production has been experiencing a revolution due to new extraction technologies comingon line. These technologies not only boostthe volume of natural gas available to the market, but also increase the complexity of its management.

The production of natural gas is still found primarily in traditional topside locations, but increasingly the growth in production has been at offshore and subsea locations. These latter fixed sites have required the evolution of line sharing and pooling technologies. And, most recently, gas production has begun to include the use of floating LNG ships. These many innovations have constantly stretched and tested the limits of gas flow measurement applications.

The seeming abundance of natural gas has been welcomed by the world community for several major reasons. First, of course, is that it can help to meet the energy needs of every country and is available now. Second, it is currently at a favorable price point due to its surging supply. Third, it can be delivered in a number of forms and through a variety of means, making it a highly versatile commodity and potentially lowering its cost of distribution. And, fourth, natural gas is considered a relatively clean alternative to crude oil and petroleum fuels – an important factor in a world becoming convinced of the need to implement environmental protections now.

Flow Research believes this is an optimal time to quantify the growth in the gas flow measurement market, and to take an in-depth look at its present and future prospects.

Market Changes and Dynamics

This study's fourth editioncontinues our analysis of theworldwide gas flow measurement market we beganin 2004. There has been an enormous amount ofchange since that time, both from the standpoint of technologyas well as from corporate and even country perspectives.

Natural gas – traditionally a major source of energy for the entire world – is now an even more valued commodity. It is largely considered a cleaner and more economical alternative to oil as an energy source, and an interim step toward renewable supplies. New technology is making recovery and delivery of natural gas more feasible than ever before, even from subsea wells. And newly developed natural gas reserves in North America and elsewhere are making it possible for Western countries to be less dependent on foreign suppliers.

Other gases are also changing in their availability, utility, and worth – and how and where they are measured. Modern assembly lines dependent on robotic equipment rely on compressed air,

there is an emerging market in hydrogen gas as a vehicular fuel source, and requirements in the continuous emissions measurement and control arena for gases are constantly being tightened.

All of these changes are helping to create a world much different than just five years ago. Gas trade routes have substantially changed as the demand for natural gas is met by a rapid increase in new LNG supplies. What were once emerging regional economies in China and India are now leading centers of natural gas consumption. The United States became a net exporter of natural gas in 2017, even as domestic demand steadily increased. Today, many observers wonder what forms the gas industry will take, given gas prices and world market volatility.

This studydescribes in detail the effects these dynamics and other factors have had on the gas flowmeter market since our last full report on the subject in 2016. We believe that this report is the most comprehensive and up-to-date review of the gas flowmeter market available today.

Forecasts Adjusted Due to Events in the First Half of 2020

When the forecasts in this study were first done in early 2020, they showed growth for most flowmeter types in 2020. However, as we observed the effects of the novel coronavirus pandemic on the energy markets, and talked to flowmeter suppliers and end-users, we realized that 2020 was likely to be a down year for the flowmeter markets. The effect is somewhat similar to 2016, when the flowmeter market declined due to the drop in oil prices. Therefore, we have adjusted forecasts for flowmeter revenue and unit sales for 2020. These latest forecasts were completed in July 2020.

Despite the projected decline in flowmeter sales in 2020, we believe that the same forces that have traditionally propelled the flowmeter markets to new growth will be back in place in 2021 and beyond. These include an expanding population, an increased need for energy as countries continue to industrialize, and a continued reliance on oil and natural gas as sources of energy even as the world turns more towards renewables as a long-term solution for energy needs. We also believe that, as countries open up, travel resumes, and normal business commerce is reinstated, that there will be pent-up demand for energy that may have a positive effect on the flowmeter markets. The extent to which this pent-up demand occurs in 2021 depends on events between July and the end of 2020.

Segmentation

Our researchof the worldwide gas flowmeter market is based on an examination of the following individual market segments:

Geographic Regions

- Worldwide
- North America (United States and Canada)
- Western Europe
- Eastern Europe/FSU (Former Soviet Union)
- Mideast/Africa
- Japan
- China
- Asia/Pacific (including India)
- Latin America (Mexico, Central and South America)

Gas Flowmeter Technologies

New-Technology Flowmeters

- Coriolis
- Ultrasonic
- Vortex
- Thermal

Conventional Flowmeters

- Differential Pressure Transmitters
- Primary Elements
- Positive Displacement
- Turbine
- Variable Area

Fifteen Chapters of In-depth Market Analysis

The study reviews each of the included gas flowmeter technologies in a dedicated, comprehensive chapter. These technology chapters include discussions of the particular gas flowmeter's **advantages and disadvantages**. They also detail specific **products** offered by leading manufacturers and provide technical reviews describing material types, line sizes, accuracy levels and other distinguishing data.

The study provides **Market Size** as well as five-year **Growth Forecasts** for each gas flowmeter type in both revenues and units. We present all this data both on a worldwide basis and broken down by each of the eight geographic regions.

In addition, the technology chapters provide **Average Selling Prices** as well as five-year **Price Projection** forecasts for each gas flowmeter type, both on a worldwide basis and by the eight geographic regions.

Chapter Descriptions

We use a consistent research methodology for collecting data as well as for presenting it throughout the study itself. We believe this careful consistency facilitates the use of the study findings.

Below is a summary of the contents of each chapter in this study, including examples of individual chapter highlights:

Chapter 1: **Executive Summary**

- Introduction and summary capturing major themes, data, and conclusions

Chapter 2: **Scope and Method**

- Overviews of study objectives and methodology
- Definitions of flowmeter technologies
- Overview of Flow Research products, services, and capabilities

Chapter 3: **Paradigm Case Analysis**
- Review and discussion of the ideal applications for each gas flowmeter technology

Chapter 4: **The Worldwide Gas Flowmeter Market**
- Natural Gas is a cleaner alternative
- Natural Gas should continue to grow despite today's low prices
- Gas flowmeter technologies
- Market Size and Growth Forecasts for All Gas Flowmeters by Type Worldwide
    - in Dollars
    - in Units

Chapter 5: **Coriolis Gas Flowmeters, Market Size, and Forecasts**
- Advantages: Accuracy/Reliability/and more
- Product analyses of leading companies such as Micro Motion and Endress+Hauser
- Growth factors: "Best-in-class" accuracy now available in large line sizes

Chapter 6: **Ultrasonic Gas Flowmeters, Market Size, and Forecasts**
- Advantages: Approved for custody transfer/Versatile configurations/and more
- Product analyses of leading companies such as Elster and SICK
- Growth factors: "More calibration facilities have been built."

Chapter 7: **Vortex Gas Flowmeters, Market Size, and Forecasts**
- Advantages: Multivariable types provide mass flow measurement/and more
- Product analyses of leading companies such as azbil and Sierra Instruments
- Growth factors: Provides accurate and reliable flow measurement at a competitive price

Chapter 8: **Thermal Gas Flowmeters, Market Size, and Forecasts**
- Advantages: Medium cost/well-suited for stack flow measurement/and more
- Product analyses of leading companies such as ABB and Fluid Components International
- Growth factors: Continuous Emissions Monitoring requirements

Chapter 9: **Differential Pressure Transmitters for Gas Flow, Market Size, and Forecasts**
- Advantages: Lower cost/technology is well understood/and more
- Product analyses of leading companies such as Emerson-Rosemount and Siemens
- Growth factors: Advanced design features in differential pressure flow transmitters

Chapter 10: **Primary Elements for Gas Flow, Market Size, and Forecasts**
- Advantages: Inexpensive material replacement/Variety of types/and more
- Product analyses of leading companies such as Emerson-Daniel and Cameron
- Growth factors: Growth in the use of multivariable DP flowmeters

Chapter 11: **Positive Displacement Gas Flowmeters, Market Size, and Forecasts**
- Advantages: Good for low flowrates/accommodate high viscosities/and more
- Product analyses of leading companies such as Badger Meter and OVAL Corporation
- Growth factors: New applications and improved PD components

Chapter 12: **Turbine Gas Flowmeters, Market Size, and Forecasts**

- Advantages: Low to medium cost/good turndown ratios/and more
- Product analyses of leading companies such as Emerson-Daniel and Hoffer Flow Controls
- Growth factors: Turbine flowmeters are widely accepted

Chapter 13: **Variable Area Gas Flowmeters, Market Size, and Forecasts**

- Advantages:Very low cost/don't require electricity/and more
- Product analyses of leading companies such as KROHNE and Yokogawa
- Growth factors:Variable area flowmeters are a low-cost solution

Chapter 14: **Gas Flowmeter Supplier Market Shares**

- Provides market shares of the major suppliers of flowmeters for gas flow measurement
- Market shares are provided for the total worldwide market for each flow technology

Chapter 15: **Supplier Profiles**

- Provides information on all major gas flowmeter suppliers worldwide, including:
  - Company Overview
  - Company History and Organization
  - Product Lines
  - Strategies

Company Profiles

Below is a partial list of companies profiled in this study:

- ABB
- AMETEK (Solartron)
- azbil
- Baker Hughes
- Emerson (including Daniel, Micro Motion, Rosemount)
- Endress+Hauser
- Goldcard Smart Group
- Honeywell (including Elster Group)
- KROHNE
- Schlumberger (including Cameron)
- Schneider Electric (Foxboro)
- SICK AG
- Siemens
- Yokogawa

And More

Module A: Applications and Strategies for Gas Flow Measurement

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Oman Gas Company (Photo by Flow Research)

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Module A: Applications and Strategies for Gas Flow Measurement

Module A: Applications and Strategies for Gas Flow Measurement examines the gas flow measurement market from the perspective of gas flowmeters and gas applications. It is a companion study to ***Core Study: The World Market for Gas Flow Measurement, 4th Edition*** and ***Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil & Gas Industry***. Together the three studies examine the gas flowmeter market, gas flowmeter types, applications and market influences, suppliers, flowmeters in the oil & gas industry, and regional market influences. These include gas production and consumption, as well as providing strategies for suppliers. The complementary set provides the best understanding of the whole market, although the individual studies can also be purchased separately.

The Oil & Gas Industry accounts for a large portion of the gas flowmeter market, as well as a significant portion of the flowmeter market in general. To create a comprehensive, multi-perspective view of the gas market, meters, and applications, ***Module A*** covers many gas flow measurement applications and market influences by gas flowmeter types, and ***Module B*** provides data on each region's gas picture, market influences, and flowmeters in the oil & gas industry.

Gas flow measurement applications and their associated revenues have grown significantly during the last few years. A major driver of this growth worldwide has been the expansion in demand for natural gas and related energy products. There has also been significant new growth in capital projects in large regional economies such as North America, India, China, and the Mideast during this time as well. Given the recent volatility of some major oil and gas countries, we believe that this is an optimal time to quantify the growth in this market, and to take another in-depth look at an expanding market.

Forecasts Adjusted Due to Events in the First Half of 2020

There have been a number of global events, including the novel coronavirus pandemic, affecting markets. We have taken these events into consideration in making our current forecasts.

Module A achieves multiple purposes:

- Examines gas types and gas applications
- Examines strengths, weaknesses and specific applications for each gas flowmeter type: Coriolis, ultrasonic, vortex, thermal, differential pressure transmitters, primary elements, positive displacement, and turbine flowmeters
- Reports on 2019 shipments worldwide for each of the gas flowmeter types by application
- Provides growth rate forecasts to 2024 for gas flowmeters used in all gas applications
- Provides strategies for competing in these markets.

Key topics addressed in Module A

- Gas measurement applications by flow measurement technology
- Best areas for future growth
- Tactical and strategic recommendations for suppliers

Segmentation

Our research on the worldwide gas flowmeter market is based on an examination of the individual market segments by region and flow measurement technology type, and these are common throughout. ***Module A*** discusses gases and gas applications, and gas applications for each of the flowmeter types. Individual chapters are devoted to each of the gas flowmeter types.

Geographic Regions

- Worldwide
- North America (United States and Canada)
- Western Europe
- Eastern Europe/FSU (Former Soviet Union)
- Mideast/Africa
- Japan
- China
- Asia/Pacific (including India)
- Latin America (Mexico, Central and South America)

Gas Flowmeter Types

New-technology Flowmeters

- Coriolis
- Ultrasonic
- Vortex
- Thermal

Traditional Technology Flowmeters

- Differential Pressure Transmitters
- Primary Elements
- Positive Displacement
- Turbine

Each gas flowmeter type's chapter includes:

- 2019 shipments of the flowmeter type by gas application worldwide and for each region
- Forecasts to 2024 for the flowmeter type by gas application worldwide and for each region
- Advantages and disadvantages of the flowmeter type
- Applications for the flowmeter type (see lists that follow)
- Factors affecting the market for the flowmeter type

Chapters in Module A

Applications by Gas Flowmeter Type

New-Technology Flowmeter Applications

Coriolis

- Custody Transfer of Natural Gas (CTNG)
- Allocation Metering
- Process Measurement
- Industrial Gases
- Compressed Natural Gas (CNG)
- Utility Metering
- Other

Ultrasonic

- Custody Transfer of Natural Gas (CTNG)
- Check Metering
- Leak Detection
- Process Gas Measurement
- CNG
- Flare/Stack Gas
- Other

Vortex

- Custody Transfer of Natural Gas (CTNG)
- Non-Custody Transfer of Natural Gas
- Industrial Gases
- Other

Thermal

- Continuous Emissions Monitoring (CEM)
- Flare Gas/Flue Gas
- Landfill Gas Recovery
- Biogas Recovery
- Biomass Fermentation and Recovery
- Coal Mine Methane Recovery
- Boiler Inlet
- Wastewater Treatment
- Air/Compressed Air
- Sanitary/Hygienic
- Natural Gas Submetering
- Other

Traditional Technology Flowmeter Applications

Differential Pressure (DP) Transmitters and Primary Elements

- Custody Transfer of Gas
- Non-Custody Transfer of Gas
- Wet Gas Metering
- Allocation Metering of Gas
- LNG
- CNG
- Gas Gathering Stations
- In-plant Measurement
- HVAC
- Other

Positive Displacement

- Upstream Gas
- Gas Distribution
- Gas Utility
- Other

Turbine

- Custody Transfer of Natural Gas
- Utility / Billing
- In-plant Processing
- Shale Gas / LNG
- Other

Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil and Gas Industry

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Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil & Gas Industry

Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil & Gas Industry includes both production and consumption numbers for natural gas by region. It also provides data on flowmeter shipments into the oil & gas industry by region. It is very difficult to separate oil from gas at the upstream level since the fluid coming out of wells often contains both oil and gas. ***Module B*** recognizes this by providing data on flowmeters by type that are sold into the oil & gas industry. Together with the ***Core Study*** and ***Module A***, the three studies examine the gas flowmeter market, gas flowmeter types, applications and market influences, average selling prices, suppliers, market shares, flowmeters in the oil & gas industry, regional gas production and consumption numbers, and strategies for suppliers. The complementary set provides the best understanding of the whole market, butthe individual studies can also be purchased separately.

The Oil & Gas Industry accounts for a large portion of the gas flowmeter market, as well as a significant portion of the flowmeter market in general. To create a comprehensive, multi-perspective view of the gas market, meters and applications, ***Module A*** covers many gas flow measurement applications and market influences by gas flowmeter types, and ***Module B*** provides data on each region's gas picture, market influences, and flowmeters in the oil & gas industry.

Forecasts Adjusted Due to Events in the First Half of 2020

When oil prices restabilized, there was significant new growth in capital projects in large regional economies such as North America, India, China, and the Mideast. Recently there have been more fluctuations of oil prices and volatility insome major oil and gas countries, as well as other global events including the novel coronavirus pandemic. We have taken these events into consideration in making our current forecasts. We believe that this is an important time to take another in-depth look at gas in this market.

Module Bachieves multiple purposes:

- Provides a world view of the market from multiple perspectives and identify growth areas
- Examines the oil & gas Industry flow measurement market by regions
- Reports on 2019 shipments for flowmeters in the oil & gas industry for each region by flowmeter type: Coriolis, magnetic, ultrasonic, vortex, thermal, differential pressure transmitters, primary elements, positive displacement, and turbine flowmeters
- Provides growth rate forecasts to 2024 for gas flowmeters in the oil & gas industry
- Provides data on each region's natural gas production and consumption
- Provides forecasts for each region's natural gas production and consumption
- Provides growth factors for flowmeters in the oil & gas industry

Key topics addressed in Module B

- Main drivers of growth for flowmeters in the Oil & Gas Industry
- Natural gas production and consumption by region
- Discussions of market forces at work worldwide and by region

Segmentation

Our research on the worldwide gas flowmeter market is based on an examination of the individual market segments by region and flow measurement technology type, and these are common throughout. ***Module B*** discusses flowmeters in the oil & gas industry worldwide and by region. This allows for regionally oriented discussions of gas production, consumption, market influences, and growth factors. Individual chapters are devoted to the worldwide market for all oil & gas industry flowmeters and to each region, with data by flowmeter types in both dollars and units.

Geographic Regions

- Worldwide
- North America (United States and Canada)
- Western Europe
- Eastern Europe/FSU (Former Soviet Union)
- Mideast/Africa
- Japan
- China
- Asia/Pacific (including India)
- Latin America (Mexico, Central and South America)

Oil & Gas Industry Flowmeter Types

New-technology Flowmeters

- Coriolis
- Magnetic
- Ultrasonic
- Vortex
- Thermal

Conventional Flowmeters

- Differential Pressure Transmitters
- Primary Elements
- Positive Displacement
- Turbine

Module B Chapters

Chapter One: Executive Summary
Chapter Two: Scope and Method
Chapter Three: Flow Measurement in the Oil & Gas Industry
Chapter Four: Worldwide
Chapter Five: North America
Chapter Six: Western Europe
Chapter Seven: Eastern Europe/FSU
Chapter Eight: Mideast/Africa
Chapter Nine: Japan
Chapter Ten: China
Chapter Eleven: Asia/Pacific
Chapter Twelve: Latin America

Each regional chapter includes:

- Data on natural gas production and consumption in the region and forecasts
- Growth factors for natural gas production and consumption in the region
- Discussion of major companies in the region
- Growth factors for flowmeters in the oil & gas industry for the region
- Market size and forecast discussion
- 2019 shipments of flowmeters sold into the oil & gas industry for that region, by flowmeter type, in dollars and units, with forecasts to 2024

Flow Research, Inc.

Flow Research is the only market research company whose primary mission is to research process control instrumentation markets. Flow Research market research studies can be purchased by anyone interested in the topics. We create these studies through interviews with suppliers, distributors, and end-users.

Topics include all of the flowmeter technologies – both new and conventional – as well as pressure transmitters; temperature sensors and transmitters, infrared thermometers and thermal imagers; level devices; analytical instrumentation; selected API-certified valves; and studies specifically focused on certain major markets for flowmeters such as the oil and gas markets. Flow Research also started a working group focusing on flowmeter calibration, and has completed two studies on flowmeter calibration facilities.

Further information on studies, links for articles and more can be found by visiting the Flow Research website at www.flowresearch.comor by calling us at +1 781-245-3200.

Research Team Background

Dr. Jesse Yoder is President of Flow Research Inc., a company he founded in 1998. Dr. Yoder has 33 years of experience as a writer and as an analyst in process control and instrumentationbeginning as president and founder of Idea Network. He is the lead analyst for this study. Since 1990, he has written over 280 market research studies, most of them about flow and instrumentation. Dr. Yoder has also written over 300 articles on flow and instrumentation for trade journals. Many can be found at www.flowarticles.com.

In addition to the years he has spent writing market studies, Dr. Yoder spent 10 years as a technical writer. Almost four years of this were spent writing technical manuals and training guides for the process control division of Siemens. He also taught technical writing at the graduate level at Northeastern University and the University of Massachusetts Lowell. Dr. Yoder spent 10 years as an adjunct philosophy professor at the University of Massachusetts Lowell and Lafayette College.

Dr. Yoder has received two US patents for the flowtube meter, a new dual tube/dual sensor method of measuring flow, in 2015 and 2017. This meter has two prototypes built and is under test at CEESI in Nunn, Colorado.

His latest book, *The Tao of Measurement*, with Dick Morley as co-contributor, was published in 2015 by the ISA. Topics covered include temperature, pressure, flow, time, length, and area. He is currently working on a 2-volume set, *Advances in Flowmeter Technology*, to be published in 2021 by CRC Press: *New-technology Flowmeters;* and *Conventional Flowmeters*.

Belinda Burum, Vice President, worked in journalism and advertising before entering high tech 30 years ago as a writer, marketing communications manager, and customer references consultant. She joined Flow Research in 2002, and has been involved with many Flow Research projects and publications since.

Norm Weeks, Senior Market Analyst, joined Flow Research in 2004 after a 24-year stint with Verizon. At Verizon, Norm specialized in creating innovative solutions for national and international enterprises, introducing new products and lifecycle management. At Flow Research, his contributions in development, research, and writing areappreciably significant to studies, White Papers, and other publications. Custom projects are a specialty.

Leslie Buchanan, Research and Publication Production Associate, joined Flow Research in 2010 with skills from a variety of work and life experiences here and abroad. She assists with research and writing, and handles many aspects of Flow Research studies and publications production.

Vicki Tuck, Administrative Assistant, joined Flow Research in 2012 with experience in both the fast-paced law firms of Boston, and in various nonprofit organizations. She assists with administrative tasks, including database and collecting news for the Worldflow publications.

Gabriella DeCologero, Director of Marketing, joined Flow Research in June 2019. She is in charge of our social media outreach, and has brought her graphic design talents to our marketing efforts. Gabriella is also assisting in our customer contacts and outreach.

The Flow Research *Gold Partner* Program

To produce studies that most closely match our clients' needs, Flow Research instituted the Gold PartnerProgram. This program enables companies who wish to participate at a high level in a study's research to influence its scope and segmentation. In addition, Gold Partners receive regular updates from Flow Research on study progress, and receive a significant discount on the standard retail price of the study.

Procedure: Early in the planning phase of a study, Gold Partners receive a proposal that includes the proposed segmentation. Gold Partners can propose additional segmentation, and can also suggest changes to the proposed segmentation. While the decision to adopt particular segmentation ultimately lies with Flow Research, and is based on input from all contributors, we will do our best to accommodate the specific needs of each of our clients.

During the research phase of a study, Flow Research will issue regular reports that provide updates on the progress of the research. These reports will be sent to Gold Partners, who are then invited to provide any additional input or comments into the study.

Being a founding sponsor requires making an early commitment to purchase the study. However, in return, Gold Partners receive a significant discount off the regular price of the study. Payment can be made either in one amount at the beginning of the study, or split into two, with the second payment due upon delivery of the study.

For additional details, or to find out how the Gold PartnerProgram applies to any particular study, please contact Flow Research. We look forward to working with you!

If you have any questions about the Gold PartnerProgram, please contact Norm Weeks at +1 781 245-3200, or norm@flowresearch.com.

Flow Research studies contribute to an ongoing view of the flowmeter market

Listed below is a summary of recent and upcoming Flow Research studiesin the area of process control instrumentation. These studies are further described atwww.FlowStudies.com.

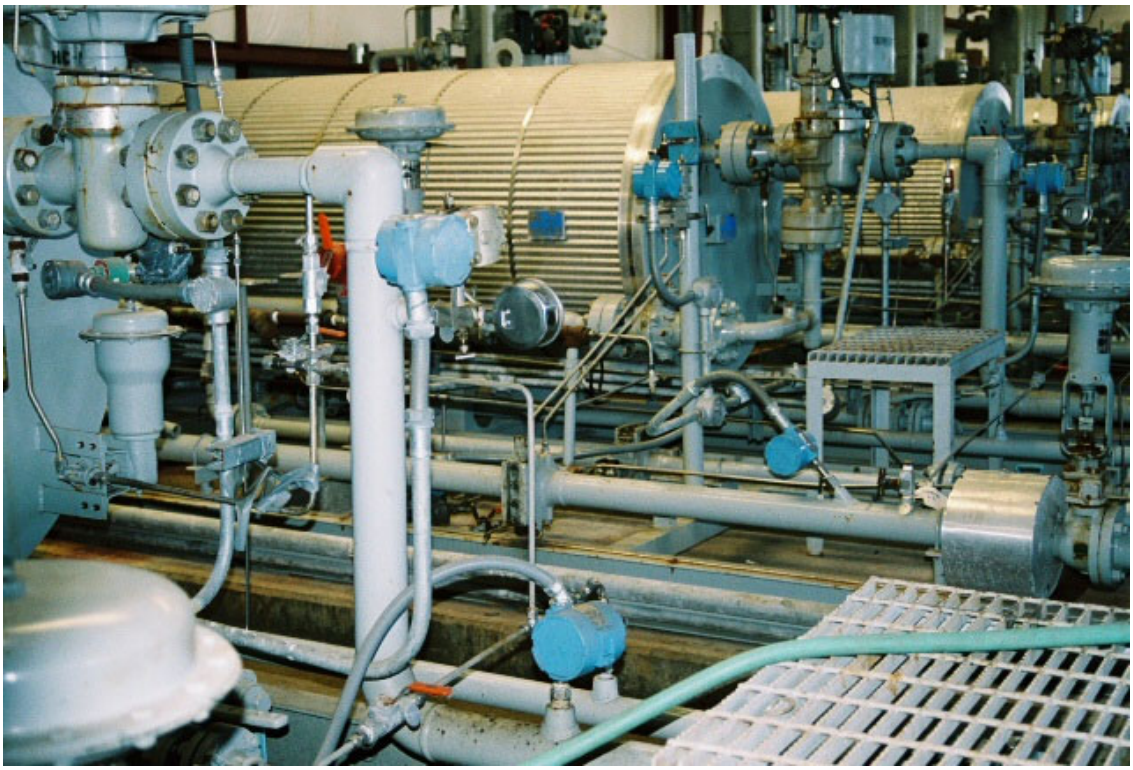
Recent and Currently Scheduled Flow Research Studies	*Websites*
New-Technology Flowmeter Studies	
The World Market for Coriolis Flowmeters, 6th Edition	*www.flowcoriolis.com*
The World Market for Magnetic Flowmeters, 6th Edition	*www.flowmags.com*
The World Market for Ultrasonic Flowmeters, 6th Edition	*www.flowultrasonic.com*
The World Market for Vortex Flowmeters, 6th Edition	*www.flowvortex.com*
The World Market for Thermal Flowmeters, 2nd Edition	*www.flowthermal.com*
Traditional Technology Flowmeter Studies	
The World Market for Pressure Transmitters, 5th Edition	*www.pressureresearch.com*
The World Market for Positive Displacement Flowmeters, 3rd Edition	*www.flowpd.com*
The World Market for Turbine Flowmeters, 3rd Edition	*www.flowturbine.comm*
Emerging Technology	
The World Market for Multiphase Flowmeters, 2nd Edition	*www.flowmultiphase.com*
Multiphase: Module A: The World Market for Watercut Meters	*www.watercutmeters.com*
Mass Flow Controllers	
The World Market for Mass Flow Controllers, 3rdEdition	*www.flowmfc.com*
The World Market Update for Mass Flow Controllers	*www.flowmfc.com*
Cross-Technology Flowmeter Studies	
Volume X: The World Market for Flowmeters, 7th Edition	*www.flowvolumex.com*
Volume X Module A: Strategies, Industries, and Applications, 7th Edition	*www.flowvolumex.com*
Core Study: The World Market for Gas Flow Measurement, 4thEdition	*www.gasflows.com*
Module A: Applications and Strategies for Gas Flow Measurement	*www.gasflows.com*
Module B: Gas Production, Consumption, and Flow Measurement in the Oil and Gas Industry	*www.gasflows.com*
The World Market for Oil and Oil Flow Measurement	*www.oilflows.com*
Calibration	
Core Study: Worldwide Gas Flow Calibration Facilities and Markets	*www.flowcalibration.org*
Module A: Worldwide Liquid Flow Calibration Facilities and Markets	*www.flowcalibration.org*

Besides writing and publishing studies of this type, Flow Research specializes in custom projects and also conducts user surveys that include a detailed analysis of customer perceptions. In addition, Flow Research provides quarterly updates on the flow and energy industries in the **Market Barometer** and the **Energy Monitor**. Both publications are part of the Worldflow Monitoring Service. **Market Barometer** analyzes the current state of the flowmeter markets, and covers related topics such as other instrumentation and flow calibration. **Energy Monitor** analyzes the current state of the oil & gas, refining, power, and renewables industries, and the implications for instrumentation suppliers. More details are available at www.worldflow.com.

For more information on Flow Research, please visit our website at www.flowresearch.com.

The World Market for Gas Flow Measurement 4th Edition

– Overview –



Gas processing plant — Photo by Flow Research

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Why Flow Research?

We specialize in flowmeter markets and technologies.

We have researched all flowmeter types.

We study suppliers, distributors, *and* end-users.

Our worldwide network of contacts provides a unique perspective.

Our mission is to supply the data to help your business succeed.