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The World Market for Turbine Flowmeters, 3rd Edition

Overview



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www.FlowTurbine.com

The World Market for Turbine Flowmeters, 3rd Edition

Flow Research is pleased to present a new study on the worldwide turbine flowmeter market called, *The World Market for Turbine Flowmeters, 3rd Edition*.

The primary finding of the research was to determine the actual size of the turbine flowmeter market in 2019. Forecasts based on this finding and other important data points through 2024 are included.

The last edition of this study, published in 2012, found the market alive and well. While Coriolis, ultrasonic, and magnetic meters had expanded substantially – decreasing turbine meters' share of market - the turbine meter market remained essentially flat for a decade. It was *not* declining, as some experts predicted. At the same time, the installed base remained large enough to encourage substantial development, and suppliers' technology improvements made turbine meters more reliable and effective.

History of Turbine Flowmeters

Turbine flowmeters have been around for many years. The ancient Greeks ground their flour using horizontal turbine wheels, and the word "turbine" is derived from a Latin word that means "spinning thing."

In more modern times, the generally accepted view places the invention of the first turbine meter to 1790 by Reinhard Woltman, a German engineer who studied the loss of energy in open canals and published several works on hydraulic engineering. Today's bulk meters, used to measure water flow in large quantities, are still called Woltman flowmeters.

It wasn't until World War II and later, however, that turbine meters began being used in industrial environments. Today, there are at least eight distinct types of turbine flowmeters, but they all use a rotor that spins in proportion to flowrate.

Reasons for Growth

Despite intense competition from ultrasonic, multiphase, and other New-Technology flowmeters, turbine flowmeters have remained and will continue to be a viable and popular choice for a variety of applications. In particular, they excel at measuring clean, steady, medium to high-speed flows of low-viscosity fluids. They offer simplicity, effective turndown ratios, and the capability of customized solutions for various applications.

Turbine flowmeters also have a significant cost advantage over ultrasonic and Coriolis meters, especially in larger pipe sizes, although suppliers report increasing difficulty competing with ultrasonic and magnetic flowmeters in these line sizes. The price of turbine meters may also compare favorably to differential pressure (DP) flowmeters, especially in cases where one turbine flowmeter can replace several DP flowmeters. Users who are already familiar with turbine technology and do not want to spend the extra money required to invest in a new technology are likely to stay with turbine flowmeters.

Suppliers report that some customers are choosing electronic multipath ultrasonic meters over mechanically-based turbine meters as they are viewed as needing less maintenance and having non-intrusive designs. However, the higher costs of these meters and the high costs to calibrate them, combined with some uncertainty of their in-service accuracy and performance, is helping turbine meters hold their own in a competitive environment. Product improvements such as dual rotor designs offer improved accuracy and flow range, less pressure drop, and reduced flow swirl effects.

Other technology improvements, especially to the moving parts, are making turbine meters more reliable. By making the ball bearings out of more durable material, such as ceramic and sapphire, turbine suppliers have been able to add significantly to the life of the bearings. Other recently introduced improvements include bi-directional flow, self-lubrication, significantly reduced pressure drop, and redundant meters.

Comprehensive company profiles and product analyses of major manufacturers worldwide, including:

- Aichi Tokei Denki
- Badger Meter – Cox
- Bürkert
- Daniel
- Faure Herman
- Flow Technology (Roper)
- Goldcard Smart Group
- Great Plains Industries
- GWF
- Hoffer Flow Controls
- Honeywell Elster
- Itron
- McCrometer (Danaher)
- Neptune Technology Group (Roper)
- Satam
- TASI Group
- TechnipFMC

Rationale for Study

Turbine flowmeters are undergoing immense competitive pressure from more recently invented flowmeter technologies, yet remain a solid choice for many applications in today's modern process control environment.

With significant growth returning to the oil and gas and other energy markets since the 2nd Edition, we believe it is an optimal time to see what happened to the turbine flowmeter market after the downturn that many companies experienced in 2015, 2016 and beyond, and the impact that the pandemic has caused to demand. We are pleased to have addressed all of these issues and to have updated quantifiable information on this important market.

The primary goal of this new edition was to determine the size of the turbine flowmeter market in 2019 for all of the significant technology types and to forecast market size through 2024. This study:

- Determines the worldwide and regional market shares in 2019 by turbine flowmeter type
- Forecasts market growth through 2024 for all of the significant technology types used in this market

- Provides product shipment data by distribution channel and customer type
- Determine market shares for the leading suppliers of the turbine flowmeter market
- Determine average selling prices for turbine flowmeters by region and meter type
- Identifies the process industries where turbine flowmeters are used, focusing especially on high growth areas
- Identifies market growth sectors
- Analyzes products from the main companies selling into the turbine flowmeter market
- Offers strategies to manufacturers who sell into the turbine flowmeter market
- Profiles the main turbine flowmeter suppliers

Background

Flow Research has been following the turbine flowmeter market since we published the first edition of our worldwide turbine flowmeter study in 2002. We published a second edition in 2012 and provide quarterly updates on the market in the *Market Barometer* (www.worldflow.com). We also have published four complete market updates in the four Volume X studies we have published since 2012, most recently in April 2022.

In conducting this study, we contacted all known manufacturers of turbine flowmeters worldwide to assemble a picture of the total turbine flowmeter market. We asked suppliers to provide detailed information about geographic segmentation, industries sold into, types of turbine flowmeters sold, and many other product segments. As a result, the study identifies where growth is occurring in the market, and the underlying factors driving that growth.

Flow Research uses the perspective of all three segments – manufacturer, distributor/representative, and end-user – when analyzing target markets. We maintain regular communication with all three of these groups in order to be best positioned to note both subtle and significant shifts in technologies or buying patterns. We also use this steady flow of new information in support of our two quarterly publications, *Market Barometer* and *Energy Monitor*. (See www.worldflow.com)

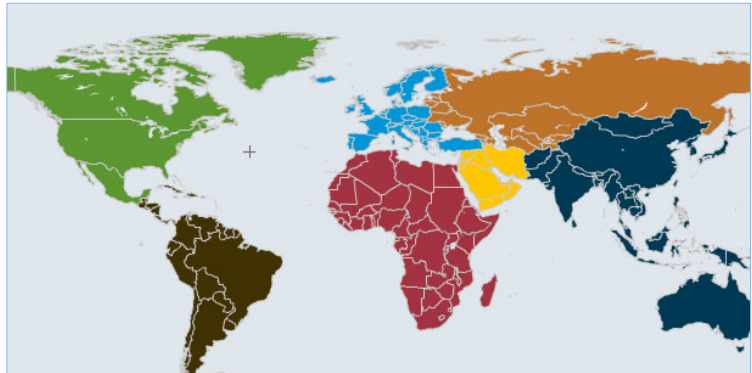
Key turbine flowmeter market issues addressed in this study:

- Where growth is and is not occurring in terms of application, industry, and geography – and why
- Factors causing the market to grow
- Features end-users are looking for in turbine flowmeters
- Impact of new-technology flowmeters on turbine flowmeter sales
- Role of installed base in maintaining turbine flowmeter growth
- Acceptance rate of communication protocols such as Foundation Fieldbus in the market
- New product and technology developments
- New measurement standards
- Growth strategies for turbine flowmeter suppliers

Segmentation

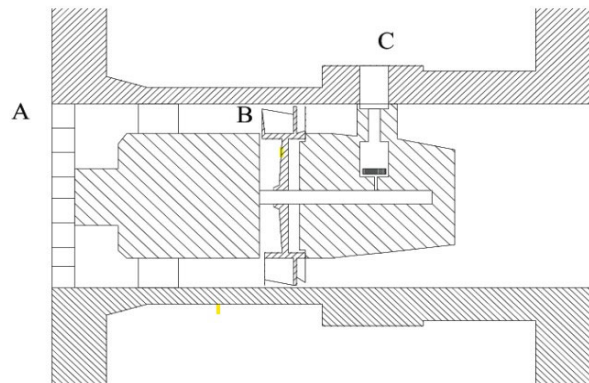
Geographic Segmentation

- North America
(U.S. and Canada)
- Western Europe
- Eastern Europe/FSU
(incl. Central Europe and
Former Soviet Union)
- Mideast and Africa
- Japan
- China
- Rest of Asia/Pacific
- Latin America
(Mexico, Central and South
America)



Technology Types

- Axial
- Single Jet
- Multi-Jet
- Paddlewheel
- Pelton Wheel
- Propeller
- Woltman
- Helical
- Compound
- Fire Service
- Other



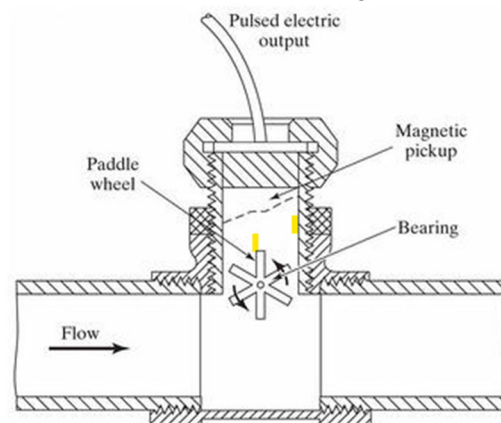
Schematic diagram of an axial turbine meter

Mounting Type

- Insertion
- Inline

Fluid Type

- Municipal and Industrial Water
- Municipal and Industrial Gases
- Petroleum Liquids
- Industrial Liquids



Schematic view of a paddlewheel type

Industries

- Oil & Gas
- Refining
- Gas Utility
- Chemical
- Food & Beverage
- Pharmaceutical/Life Sciences
- Pulp & Paper
- Metals & Mining
- Power
- Water & Wastewater
- District Energy
- Agriculture/Irrigation
- Aerospace
- Other



A petroleum liquid processing facility

Sales by Distribution Channel

- Direct Sales
- Independent Reps
- Distributors
- E-Business

Sales by Customer Type

- End Users
- OEMs
- Systems Integrators
- Engineering and Consulting Firms

This study also includes:

Supplier Market Shares

- Worldwide
- Eight Geographic Regions

Company Profiles

(See box on Page 3)

Growth Factors and Strategies for Success

- Discussion of market forces at work
- Factors contributing to growth
- Factors limiting growth
- Strategic action perspectives
- Real-world success stories

Publication Date

The publication date for this study is August 2022.

Flow Research, Inc.

Flow Research is the only market research company whose primary mission is to research process control instrumentation markets. 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, level devices, and studies specifically focused on certain major markets such as the oil and gas markets. Flow Research leads 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.com or by calling us at +1 781-245-3200.

Dr. Jesse Yoder, President of Flow Research and the lead analyst for this study, has 35 years of experience writing about and analyzing process control and instrumentation markets. 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. Dr. Yoder spent 10 years as an adjunct philosophy professor at the University of Massachusetts Lowell and Lafayette College. He has received two patents for new flowmeter designs. Several prototypes of these designs have been built and are currently being tested. He has written over 280 market studies and published over 300 journal articles on flow and instrumentation. His recent book, *The Tao of Measurement* with Richard E. Morley as co-contributor, was published in 2015 by the International Society of Automation (ISA).

Dr. Yoder has finished writing a two-book set called [*Advances in Flowmeter Technology*](#) for Taylor and Francis that discusses the history, operating principles, growth factors, representative companies, and frontiers of research for all 10 types of flowmeters. The first volume, *New-Technology Flowmeters*, published September 6, 2022, will be followed by a second volume, *Conventional Flowmeters*.

Belinda Burum, Vice President, joined Flow Research in 2002. She worked in journalism and advertising before entering high tech as a writer, marketing communications manager, and customer references consultant. Over the years, she has helped Flow Research in many ways, including work on many projects, studies, and publications. She also is managing the updates to our more than 200 websites. More recently she has been in charge of company profiles, writing press releases, and writing *Flowtimes*, the company newsletter.

Norm Weeks, Senior Market Analyst, joined Flow Research in November 2004 after 24-years with Verizon specializing in innovative solutions for major enterprises, introducing new products and lifecycle management strategies, and product market management. He served as Director of the Urban Fellows Institute in New York. At Flow Research, his contributions to project development, research, analysis and writing are significant. In addition to studies, custom projects are a specialty. He also contributes to White Papers, Worldflow and other publications.

Leslie Buchanan, Publication Production Associate, and Research Associate, joined Flow Research in March 2010, with skills from a variety of work and life experiences in both the US and abroad. Early on, she worked with the contacts database, assisted with customer liaison, and took on our publication formats. She has since become increasingly involved in many capacities with Flow Research studies, projects, Worldflow, and other publications.

Victoria Tuck, Administrative Assistant, joined Flow Research in June, 2012. She has experience in both the fast-paced law firms of Boston, and in various nonprofit organizations. She handles a variety of office functions – essential to keep any business running – as well as assisting in other ways, including the contacts database and news for the Worldflow publications.

Kaleigh Flaherty, Marketing Manager, joined Flow Research in May 2021. She graduated from Coastal Carolina University in December 2021 with a major in marketing. She has brought her marketing talents and skills, graphic design and creative content initiatives to Flow Research, adding her positive attitude to our work atmosphere. She manages our social media platforms and data filing. She also assists with our customer contacts and client outreach.

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

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

The World Market for Coriolis Flowmeters, 6 th Edition	www.FlowCoriolis.com
The World Market for Magnetic Flowmeters, 7 th Edition	www.FlowMags.com
The World Market for Ultrasonic Flowmeters, 6 th Edition	www.FlowUltrasonic.com
The World Market for Vortex Flowmeters, 6 th Edition	www.FlowVortex.com
The World Market for Primary Elements, 2 nd Edition	www.FlowPlate.com
The World Market for Pressure Transmitters, 5 th Edition	www.PressureResearch.com
The World Market for Thermal Flowmeters, 2 nd Edition	www.FlowThermal.com
The World Market for Positive Displacement Flowmeters, 3 rd Ed.	www.FlowPD.com
The World Market for Turbine Flowmeters, 3 rd Edition	www.FlowTurbine.com
The World Market Mass for Flow Controllers, 3 rd Edition	www.FlowMFC.com
The World Market for Multiphase Flowmeters, 2 nd Edition, and Module A: The World Market for Watercut Meters	www.FlowMultiphase.com www.WatercutMeters.com
The World Market for Flowmeters, 8 th Edition, and, Module A: Strategies, Industries, and Applications	www.FlowVolumeX.com
The World Market for Gas Flow Calibration Facilities	www.FlowCalibartion.org
The World Market for Liquid Flow Calibration Facilities	
The World Market for Natural Gas and Gas Flow Measurement, 2 nd Edition (six volumes)	www.GasFlows.com
Flowmeters in the Oil & Gas Industry	www.OilFlows.com
The World Market for Steam Flow Measurement	www.SteamFlows.com
Worldwide Survey of Flowmeter Users, 2 nd Edition	www.FlowResearch.com
The World Market for Level Devices: Radar, Magnetic Level Indicators, and Ultrasonic	www.LevelResearch.com
The World Market for Liquid Analytical Instruments	www.FlowAnalytical.com

Worldflow Monitoring Service

In addition, Flow Research provides quarterly updates on the flow and energy industries in the *Market Barometer* and *Energy Monitor*. *Market Barometer* provides current information on process control instrumentation and the companies within the industry. *Energy Monitor* analyzes the current state of the Oil & Gas, Refining, Power, and Renewable industries, and the implications for instrumentation suppliers. Both reports are part of the Worldflow Monitoring Service. More details are available at www.worldflow.com.



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Blaise Pascal

The Flow Research Gold Partner Program

To produce studies that most closely match our clients' needs, Flow Research has instituted the Gold Partner Program. 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 regular 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 segmentations, and can also suggest changes to the proposed segmentation. While the decision to adopt particular segmentations ultimately lies with Flow Research, and is based on input from all contributors, we 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 Gold Partner 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 Partner Program applies to any particular study, please contact Flow Research. We look forward to working with you!

For answers to any questions you may have regarding the above, please contact Norm Weeks at +1 781 245-3200, or norm@flowresearch.com.

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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.

www.FlowTurbine.com