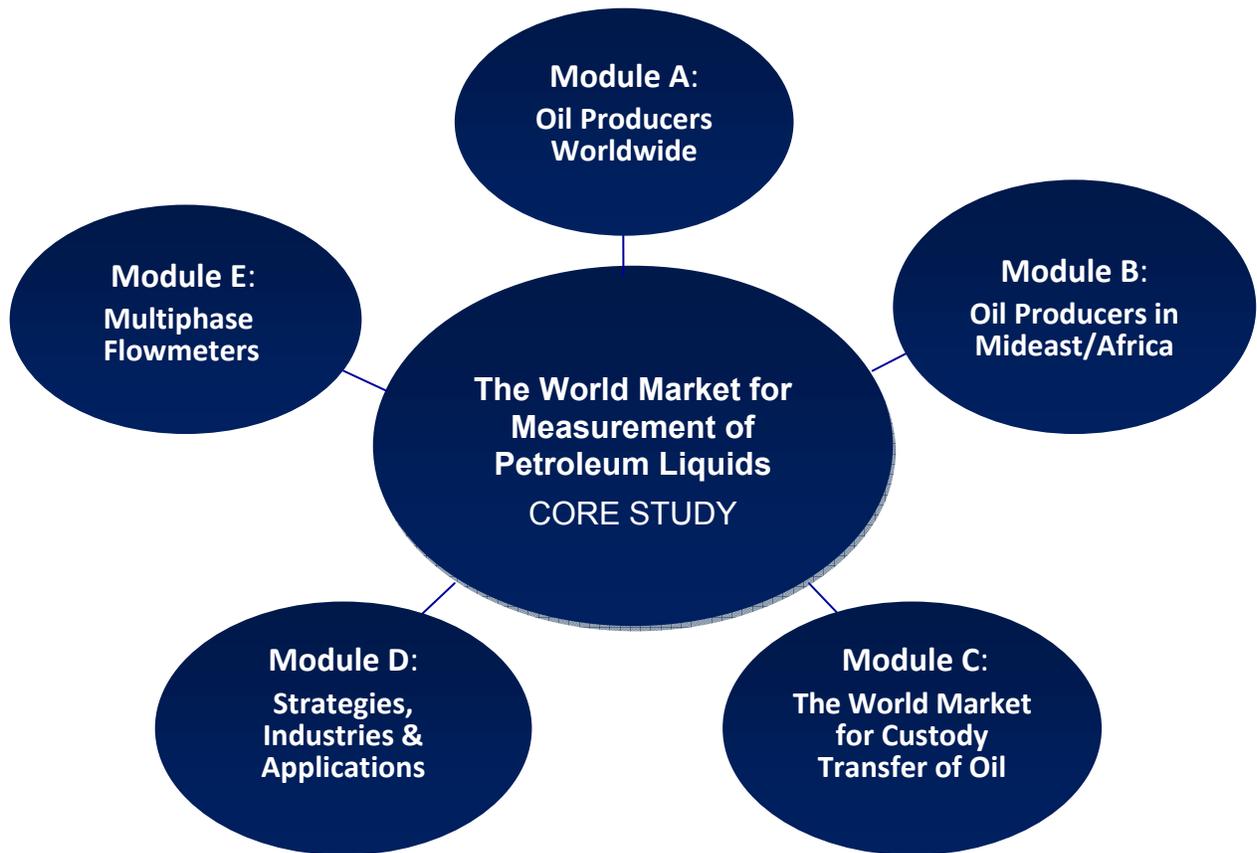


The World Market for Oil and Oil Flow Measurement

Overviews of the *Core Study* and Modules A through E



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Core Study & Modules A-E
The World Market for Oil Flow Measurement
Flow Research, Inc. www.oilflows.com

The World Market for Oil and Oil Flow Measurement

A Modular Approach to the Oil Flow Market

The World Market for Oil and Oil Flow Measurement includes a core oil flow measurement study and five modules. The five modules can be individually ordered as standalone reports. Together, however, they provide a comprehensive picture of the worldwide oil flow market from multiple perspectives.

The in-depth research in the modules complements and builds on the detailed results of the Core Study. The study shows where growth is occurring and where it is not, and where to expect the highest returns. Strategies for succeeding in regional and worldwide markets are provided, along with descriptions of industries and applications that are key to understanding a complex marketplace.



*Pumping station outside Denver, Colorado
Photo by Flow Research*

The World Market for Oil and Oil Flow Measurement achieves multiple objectives:

- Determine worldwide supplier market size for oil flow measurement in 2011 for each of the seven relevant technology types
- Forecast market growth through 2016 for all seven types of flowmeters used in this market
- Identify the industries and applications where oil flow measurement is used and provide shipments by application and industry
- Identify market growth sectors
- Create company and country profiles of the main suppliers into the oil flow measurement market as well as the main oil providers throughout the world, with a special focus on the Mideast
- Analyze the flowmeter products of the main companies selling into this market
- Provide flowmeter product descriptions and average selling prices in this market
- Offer strategies to manufacturers for selling and succeeding in the oil flow measurement market
- Analyze the custody transfer market for oil
- Analyze the multiphase flowmeter markets for the oil industry

We believe Flow Research has the ideal qualifications for doing this study. We have been following the oil market regularly in our instrumentation studies, and have provided periodic updates in our *Market Barometer* and *Energy Monitor* publications (www.worldflow.com). We have also done user interviews that show that the interest in oil flow measurement remains at a very high level.

You can trust Flow Research to give you data and insights you can use today.

***Key Issues Addressed in
The World Market for Oil and Oil Flow Measurement***

The Core Study and its modules address the following key issues:

- What is the technological state of the market today?
- Which applications are growing – and which are not?
- What regions of the world hold the greatest growth prospects – and why?
- Are there new competing technologies to the traditional devices – and what are they?
- What is the current breakdown in use between insertion and inline device types?
- Are there new flow measurement standards that must be understood?
- What industries represent the greatest growth potential – and why?
- What are the features that end-users are looking for in oil flow measurement?

**The World Market for
Measurement of
Petroleum Liquids
CORE STUDY**

The World Market for Measurement of Petroleum Liquids Core Study

Oil is hotter than ever, and that means oil flow measurement revenues are on the rise.

Oil is a major source of energy worldwide, and new extraction technologies are making recovery and delivery of oil more feasible than ever before, even from difficult subsea wells.

In addition to the expansion in demand for oil and related energy products, oil flowmeter market drivers also include significant new capital project growth in large regional economies such as India, China, and the Mideast.

Flow Research believes this is an optimal time to quantify the growth in the oil flow market, and to take an in-depth look at how this market is expanding.

The World Market for Measurement of Petroleum Liquids determines the size of the oil flow measurement market in 2011. It shows where growth is occurring (and where it is not) and where to expect the highest returns. The Core Study has multiple goals:

- Determine worldwide market size for oil flow measurement in 2011
- Determine worldwide market shares for the oil flow measurement market in 2011
- Forecast market growth through 2016 for all seven types of flowmeters used in this market
- Identify market growth sectors
- Create company profiles of the main suppliers into the oil flow measurement market
- Analyze products for the main companies selling into the oil flow measurement market
- Provide product descriptions and average selling prices in this market
- Analyze factors contributing to and limiting growth

What's in this for my company?

- Identify emerging applications
- Pinpoint growth areas
- Understand world and regional markets
- Get to know your competition – what other suppliers manufacture, where, and for whom
- Use the best information to make the best decisions

The Core Study determines the market size of the oil flow measurement market in 2011, with forecasts to 2016 for each of seven technology types. It also identifies worldwide market shares for the oil flow measurement market in 2011.

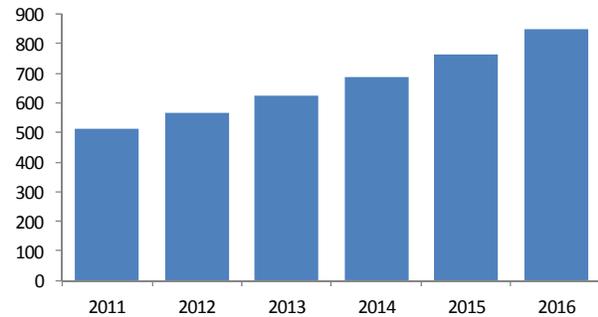
The study covers the following technologies used in oil flow measurement:

- Coriolis
- Ultrasonic
- Vortex
- Differential Pressure
- Primary Elements
- Positive Displacement
- Turbine

The study provides the following geographic breakouts for each of the flowmeter technologies:

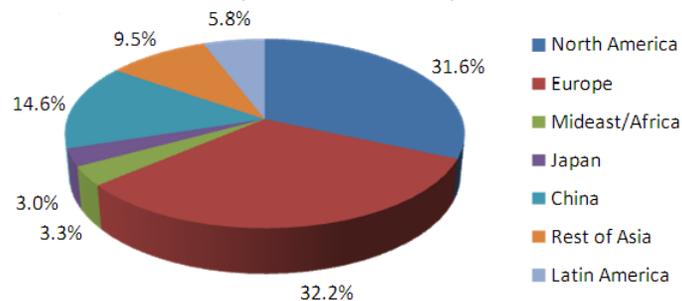
- Worldwide
- North America
- Europe, including Eastern Europe and FSU
- Mideast/Africa
- Japan
- China
- Rest of Asia
- Latin America

Shipments of New-Technology Flowmeters for Petroleum Liquids Worldwide by Technology (Millions of Dollars)



Compound Annual Growth Rate (CAGR) = 10.7%

2016 Shipments of Coriolis Flowmeters for Petroleum Liquids by Region (Percent of Dollars)





Module A:
Oil Producers
Worldwide

Module A

Oil Producers Worldwide

Including Petroleum Production, Distribution, and Measurement

Publication Date: September 2013

Overview

Flow Research is proud to present a new study on oil producers worldwide.

Module A: Oil Producers Worldwide is one component of a broader set of research, *The World Market for Oil and Oil Flow Measurement* which examines suppliers, producers, applications, industries, custody transfer, and multiphase flowmeters. Module A is oriented toward companies that want to enhance their instrumentation sales worldwide to the larger oil producers, but who also seek to acquire an in-depth perspective on the entire oil flowmeter market and oil producers. For those focused mainly on particular regions, Module A has been organized into four books which can be purchased individually, if desired:

- Module A-Book One: Executive Summary
 - Including segmented worldwide oil and oil flowmeter data
- Module A-Book Two: The Americas
 - North, Central, and South America
- Module A-Book Three: Europe and Mideast/Africa
 - Western and Central Europe, Russia, the FSU, Mideast/Africa
- Module A-Book Four: Asia
 - Including separate chapters on Japan and China

Module A achieves multiple purposes:

- Identifies the major producers of oil in every region worldwide
- Provides detailed descriptions of company histories, organization, and business interests, including pipelines and field reserves
- Determines company partnerships and affiliations
- Specifies what types of technologies these companies are using and where
- Determines petroleum product volumes in seven critical categories:
 - Production, amounts of petroleum produced oil being exported and imported
- Determine the amount of oil being produced and consumed

www.worldoilflow.com



This study provides significant data on flowmeter usage and the oil market worldwide and by geographic region, with an in-depth focus on major countries and companies. It highlights oil developments by region, country, and suppliers. It also covers the flowmeter market size in 2011 and forecasts through 2016 for the seven flowmeter types used in the oil industry.

Rationale for Study

Oil 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 oil and related energy products. There has also been significant new growth in capital projects in large regional economies such as India, China, and the Mideast during this time. Given the recent volatility of the major oil countries in the Mideast and Africa, 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.

Oil and Flowmeter Data by Regions and Countries

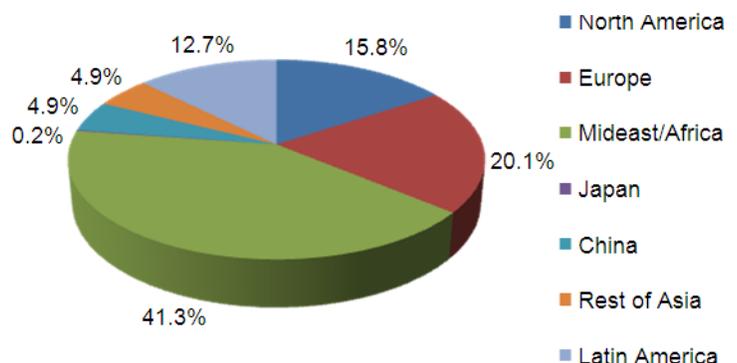
Module A provides significant data on flowmeter usage and the oil market. The study highlights oil developments by region, country, and suppliers. An overview chapter features comparison data on the largest suppliers. The study also provides country-by-country data for:

- Crude Oil Production
- Proved Crude Oil Reserves
- Crude Oil Imports
- Crude Oil Exports
- Refined Petroleum Product Imports
- Refined Petroleum Product Exports
- Refined Petroleum Product Consumption

Module A covers the 2011 market size and forecasts through 2016 for the seven flowmeter types used in the oil industry:

- Coriolis
- Ultrasonic
- Vortex
- Differential Pressure
- Primary Elements
- Positive Displacement
- Turbine

**Crude Oil Production
Worldwide by Region in 2011
(Percent of Thousands of Barrels per Day)**



Our analysts also share regional trends underlying growth in the various technologies.

Key topics addressed in Module A

- Oil production, imports, exports, consumption, and reserves by country, region, and worldwide
- Oil production and export data is further broken down by crude and refined types
- Oil flowmeter data is segmented by technology type and region
- Company and country/regional profiles of the largest producers are provided
- Strategies for marketing to producers are described
- Trends in flow measurement relative to these large companies are discussed

Regional chapters on the contain profiles of major oil-producing countries as well as companies:

North America

- United States: Chevron, ConocoPhillips, ExxonMobil
- Canada



Europe

- Norway: Statoil
- Russia: LUKOIL and Gazprom
- United Kingdom: BP



Mideast and Africa

- Saudi Arabia: Saudi Aramco



Japan: JX Nippon Oil & Energy Company

China: China National Petroleum Corp., PetroChina



Rest of Asia

- Indonesia: Pertamina
- India
- Malaysia: Petronas
- Australia



Latin America

- Mexico: Petroleas Mexicanos (PEMEX)
- South America
 - Venezuela: Petróleos de Venezuela S.A. (PDVSA)
 - Brazil: Petróleo Brasileiro S.A. (Petrobras)



Module B

Oil Producers in the Mideast and Africa

Publication Date: Q4 2012

Overview

Flow Research is proud to present a new study focused on oil producers in perhaps the most important region in the world, the Mideast.

Module B: Oil Producers in the Mideast and Africa, is one component of a broader set of research, *The World Market for Oil and Oil Flow Measurement*, which examines suppliers, producers, applications, industries, custody transfer, and multiphase flowmeters. Module B is oriented towards instrumentation companies that want to increase their sales to the Mideast.

This module is based on extensive research - including onsite interviews with 15 oil producers in the United Arab Emirates (UAE), Saudi Arabia, Qatar, and Oman - to better understand oil flow measurement trends in this region. We asked companies what kinds of flowmeters they are using and what their expectations are for the future. The result provides a very clear picture of flowmeter usage in the Mideast. The module includes:

- Flowmeter usage in the Mideast and Africa
- Oil imports, exports, consumption, and reserves by country
- Oil data broken down by both crude and refined volumes
- Flowmeter usage and expectations for the future
- Strategies for marketing to producers
- Country summaries and company profiles of the largest producers

Rationale for Study

Oil 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 oil and related energy products. There has also been significant new capital projects growth in the Mideast during this time as well. Given the recent volatility of the major oil countries in the Mideast and Africa, 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.

www.mideastoilflow.com

Oil and Flowmeter Data by Regions and Countries

Module B provides significant data on both flowmeter usage and the oil market in the Mideast and Africa. The study highlights oil developments by region, country, and suppliers. An overview chapter features comparison data on the largest suppliers. The study also provides comprehensive country-by-country data on the following seven petroleum categories:

- Crude Oil Production
- Proved Crude Oil Reserves
- Crude Oil Imports
- Crude Oil Exports
- Refined Petroleum Product Imports
- Refined Petroleum Product Exports
- Refined Petroleum Product Consumption



Module B covers the market size and forecast through 2016 for the seven flowmeter types used in the oil industry:

- Coriolis
- Ultrasonic
- Vortex
- Differential Pressure
- Primary Elements
- Positive Displacement
- Turbine



Key topics addressed in Module B

- Oil imports, exports, consumption, and reserves by country and region
- Oil production and export data is further broken down by crude and refined types
- Flowmeter data by type and region
- Company and country/regional profiles of the large producers
- Strategies for marketing to producers
- Trends in flow measurement relative to these large companies

Our analysts also share regional trends underlying growth in the various technologies and their perspectives on future opportunities for instrumentation suppliers.

Chapters on the regions contain profiles on major oil-producing countries as well as companies, including:

Mideast

Iran:
National Iranian Oil Company (NIOC)



National Iranian Oil Company

Kuwait:
Kuwait Petroleum Corporation (KPC)



Kuwait Petroleum Corporation

Saudi Arabia:
Saudi Aramco

United Arab Emirates:
Abu Dhabi National Oil Company (ADNOC)

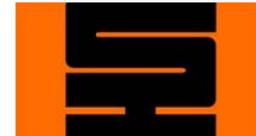


Saudi Aramco

Africa

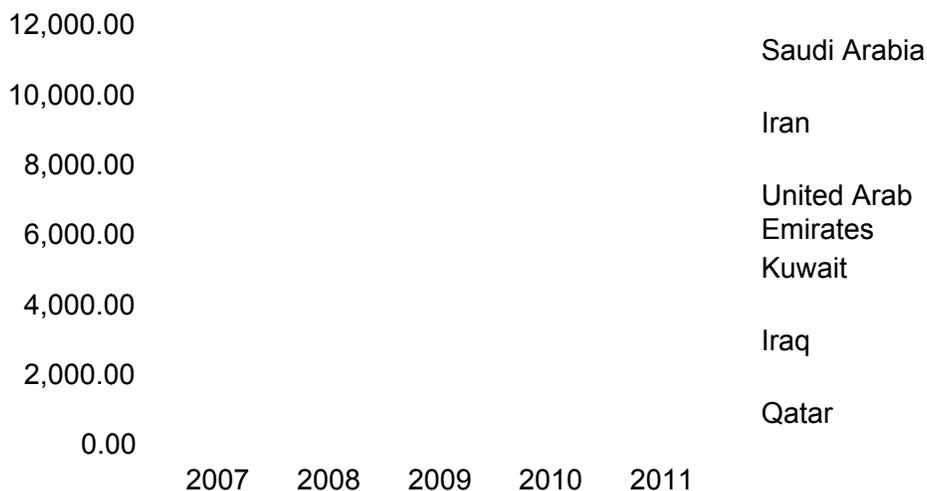
Algeria:
Sonatrach

Angola:
Combustiveis de Angola (Sonangol)



Sonatrach

Leading Crude Oil Producing Countries in the Mideast
(Thousands of Barrels per Day)



Module C:
The World
Market for
Custody Transfer
of Oil

Module C

The World Market for Custody Transfer of Oil

Overview

Publication Date: September 2012

Flow Research is conducting a new study on the worldwide custody transfer of oil, *The World Market for Custody Transfer of Oil*. This study is Module C of the broader study, *The World Market for Oil and Oil Flow Measurement*.

The study has multiple purposes:

- To determine worldwide market size and market shares for custody transfer of oil in 2011
- To forecast market growth for all types of custody transfer flowmeters through 2016
- To identify the industries and applications where custody transfer flowmeters are used, and to identify market growth sectors
- To provide a product analysis for the main companies selling into the custody transfer flowmeter market
- To provide strategies to manufacturers for selling into this flowmeter market
- To provide company profiles of the main suppliers of custody transfer flowmeters.



A pump jack near Houston, Texas

Rationale for Study

We have been researching all fourteen flowmeter technologies for more than a decade in our comprehensive studies. And, in consultation with a wide spectrum of flowmeter manufacturers, we have reported on these technologies through our two quarterly publications (*Market Barometer* and *Energy Monitor*), and through our regular contributions to industry journals such as *Flow Control* and *Processing* magazines. We are entirely focused on the business of industrial process flow, pressure, temperature, and analytical instrumentation.

www.CustodyTransfer.com/oilflow_2011/welcome.htm

Consumption of Oil Rising Fast

The demand for oil measurement is increasing substantially. Custody transfer is obviously one of the most integral steps in the supplier to consumer process chain. Oil changes hands, or ownership, at a number of points between the producer and the end-user. There are several flowmeter technologies in this market: some are well-established, whereas others are emerging.

New-technology flowmeters such as Coriolis and ultrasonic offer increased reliability, reduced pressure drop, and high accuracy. At the same time, suppliers are making improvements to the traditional technology meters and improving their performance. Turbine flowmeters are being made with stronger bearings, offering longer life. And improvements in pressure transmitters mean greater stability and accuracy when they are used to make pressure or flow measurements.

Optimal time to quantify custody transfer flowmeter market

We believe that this has been an optimal time to quantify the existing size and future growth in the custody transfer flowmeter market, and to take an in-depth look at the new technologies, manufacturers, and applications in what promises to be one of the fastest growing markets in the worldwide flowmeter industry.

Module C contains market data on Coriolis, differential pressure (DP), turbine, and ultrasonic flowmeters for custody transfer of oil, compares their use, and projects the growth in these technologies through 2016. What's included:

- Market data on Coriolis, ultrasonic, turbine, and DP flowmeters used for custody transfer applications
- Market shares worldwide and by geographic region for each flowmeter type
- Shipments by geographic region, industry and application
- Comparison of flowmeter types in custody transfer
- Flowmeter growth projections through 2016
- Strategies for selling into this market

Company Profiles

Complete company profiles on the leading custody transfer flowmeter suppliers will be included. The following is a partial list of the companies profiled in this study:

- | | |
|----------------------------------|-------------------------------|
| • ABB | • GE Sensing |
| • Azbil (Yamatake) | • Hoffer Flow Control |
| • Badger Meter | • Honeywell |
| • Bopp & Reuther | • IDEX Corp – Liquid Controls |
| • Brodie International | • Invensys Group – Foxboro |
| • Cameron Measurement Systems | • ITRON - Actaris |
| • Emerson Process – Daniel | • KROHNE |
| • Emerson Process – Micro Motion | • OVAL Corporation |
| • Endress+Hauser | • Siemens |
| • Faure Herman | • Yokogawa |
| • FMC Technologies | • Others |

In conducting this study, we contacted all known manufacturers of custody transfer flowmeters worldwide. Flow Research had already identified recent entrants into this growing market and now reports detailed information about each company. In so doing, we have assembled a comprehensive picture of the custody transfer flowmeter market.

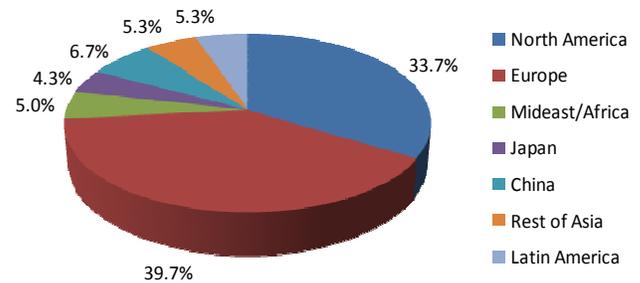
We asked suppliers to provide detailed information about geographic segmentation, industries sold into, types of flowmeters sold, and many other product segments. As a result, the study identifies where growth is occurring in the market, as well as the underlying factors for that growth. Our already completed end-user survey provides additional perspectives on this market.

Segmentation

The segmentation for this study includes worldwide and regional breakouts, and other important categories including:

Custody Transfer Flowmeters by Type

- Coriolis
- Ultrasonic
- Turbine
- Differential Pressure (DP)
- Primary Elements



Custody Transfer Flowmeters by Application

- Upstream
- Downstream

Shipments of Ultrasonic Flowmeters for Custody Transfer of Petroleum Liquids by Region

Flowmeter Revenues by Sales Channel

- Direct Sales
- Independent Representatives
- Distributors
- E-Business

Flowmeters by Customer Type

- End-Users
- OEMs
- Systems Integrators
- Engineers/Consultants

Strategies for Success

- Discussion of market forces at work
- Technical developments
- Strategic action perspectives
- Forming alliances to enhance product offerings

Also included:

- Average price data
- Obstacles to growth
- Reasons behind custody transfer metering success
- Quantified growth rates worldwide and by region



Module D

Strategies, Industries, & Applications

Overview

Publication Date: Q4 2012

Flow Research is proud to present a new study on oil producers worldwide entitled, **Module D: Strategies, Industries, & Applications**. This study is one component of a broader study, **The World Market for Oil and Oil Flow Measurement** which examines suppliers, producers, applications, industries, custody transfer, and multiphase flowmeters. Module D provides strategies for companies already in the flowmeter market as well as for those considering joining. Module D accomplishes multiple purposes:

- Provides a world view of the oil market and identifies future growth areas
- Discusses recent political developments and how they may affect market forces in the near future
- Reports on product lines and shipments worldwide for Coriolis, ultrasonic, vortex, differential pressure, primary elements, positive displacement, and turbine flowmeters
- Discusses distribution channels and customer types
- Provides growth rate forecasts by both application and industry
- Provide realistic strategies for success for those entering or already in the oil flowmeter market

Rationale for Study

Oil 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 oil and related energy products. There has also been significant new capital projects growth in large regional economies such as India, China, and the Mideast during this time as well. Given the recent volatility of the major oil and gas countries in the Mideast and Africa, we believe that this has been an optimal time to quantify the growth in this market, and to take another in-depth look at an expanding market.

Key topics addressed in Module D

- Tactical and strategic recommendations for suppliers in each market segment
- Discussion of market forces at work
- Best areas for future growth
- Strategic action perspectives
- Real world success stories

www.oilflows.com/oilflow_2011/modd.htm

Breakouts by industry and application

Module D provides shipments by industry and application for Coriolis, ultrasonic, vortex, differential pressure, primary elements, positive displacement, and turbine flowmeters, as well as essential information on:

- Application areas
- Sales by distribution channel
- Oil measurement sales by customer type
- Tactical and strategic recommendations for suppliers in each market

For each technology, the module provides shipments by industry and application both worldwide and by the following geographic regions: North America, Europe (including Central Europe and the FSU), Mideast/Africa, Japan, Rest of Asia, and Latin America. Data includes dollars and percentages of shipments by flowmeter type in 2011 and forecasted through 2016.

Industries for All Flowmeter Types

- Oil & Gas
- Refining
- Chemical
- Food & Beverage
- Pharmaceutical
- Pulp & Paper
- Metals & Mining
- Power
- Water/Wastewater
- Other

Applications by Oil Flowmeter Type

This study segments applications differently for each type of oil flowmeter.

New-Technology Flowmeter Applications	Traditional Tech Flowmeter Applications
<p>Coriolis</p> <ul style="list-style-type: none"> • Downstream Custody Transfer • Upstream Allocation Metering • Process Oil Measurement • Other 	<p>Differential Pressure (DP) Transmitters and Primary Elements</p> <ul style="list-style-type: none"> • Custody Transfer of Oil • Upstream Allocation Metering • Fiscal Metering (billing) • Other
<p>Ultrasonic</p> <ul style="list-style-type: none"> • Custody Transfer of Oil • Check Metering (oil) • Process Oil Measurement • Allocation Metering • Other 	<p>Positive Displacement</p> <ul style="list-style-type: none"> • Custody Transfer of Oil • Utility/Billing • Processing (in a plant) • Fuel Metering • Other
<p>Vortex</p> <ul style="list-style-type: none"> • Custody Transfer of Oil • Process Oil Measurement • Other 	<p>Turbine</p> <ul style="list-style-type: none"> • Custody Transfer of Oil • Refining (at the refinery) • Distribution (downstream from the refinery) • Other

Module E

The World Market for Multiphase Flowmeters

Overview

Publication Date: March 2012

Flow Research has completed a new study on the worldwide multiphase flowmeter market. The primary goal was to determine the size of this flowmeter market in 2010. Forecasts through 2015 are included. The study is called *The World Market for Multiphase Flowmeters*. This study is Module E of the broader study, *The World Market for Oil and Oil Flow Measurement*.

The study achieves multiple purposes:

- Determines worldwide market size and market shares for multiphase flowmeters in 2010
- Forecasts market growth for multiphase flowmeters through 2015
- Identifies the industries and applications where multiphase flowmeters are used, and identifies market growth sectors
- Provides product analyses for the main companies selling into the multiphase flowmeter market
- Provides strategies to manufacturers for selling into the multiphase flowmeter market
- Provides company profiles of the main suppliers of multiphase flowmeters.



Flow Research photo of oil field pump jack near Houston, TX

Rationale for Study

We have been reporting on all fourteen flowmeter technologies for more than decade in our comprehensive studies, in consultation with a wide spectrum of flowmeter manufacturers, by way of our two quarterly publications (*Market Barometer* and *Energy Monitor*), and through our regular contributions to industry journals such as *Flow Control* and *Processing* magazines. We are entirely focused on the business of industrial process flow, pressure, temperature, and analytical instrumentation.

Our focus on flow has recently been on the emerging development of multiphase flowmeter technologies. Developments here are of particular value in the oil & gas industry, an industry that we routinely report on as part of our world view of measurement applications.

www.flowmultiphase.com

Economic and Flow Management Benefits of Real Time Data

Users are discovering the economic and flow management benefits of technologies that provide real time data on oil and gas flows. Increasingly, the complex demands of managing oil and gas reservoir assets require more sophisticated tools so that producers may improve operating margins in the highly competitive energy market.

Today's exploration and production environment is filled with potential investment, environmental, and personnel risks as new methods are employed to extract valuable energy resources in areas previously not utilized. At the same time, traditional flow measurement ideals such as non-restrictive measurement points, high reliability of accuracy and repeatability, and lengthy life cycles are still in play. Multiphase metering instrumentation offers reservoir managers the confidence to more effectively and more safely operate topside, offshore, and subsea wells.

We believe that this has been an optimal time to quantify the existing size and future growth in this market, and to take an in-depth look at the new technologies, manufacturers, and applications in what promises to be one of the fastest growing markets in the worldwide flowmeter industry.

In conducting this study, we contacted all known manufacturers of multiphase flowmeters worldwide. Flow Research has already identified recent entrants into this growing market and reports detailed information about each company. In so doing, we have assembled a comprehensive picture of the total multiphase flowmeter market.

We asked suppliers to provide detailed information about geographic segmentation, industries sold into, types of multiphase flowmeters sold, and many other product segments. As a result, the study identifies where growth is occurring in the market, as well as the underlying factors for that growth. Our already completed end-user survey provides additional perspectives on this market.

Key issues addressed in Module E

This study addresses the following key issues in the multiphase flowmeter market:

- Factors causing the market to grow
- Growth in the use of multiphase flowmeters
- The future of multiphase in custody transfer applications
- The use of multiphase flowmeters in oil and gas applications
- The increased number of suppliers in the multiphase flowmeter market
- Line sizes for multiphase flowmeter applications
- The importance of electromagnetic radiation technology and its future in this market
- New product and technology developments
- Growth strategies for multiphase flowmeter suppliers

Operating Principle

Multiphase flowmeters are generally found to have highest utility in the oil and gas industry. This value is largely based on their ability to simultaneously measure the proportional content of oil, water, and oil streaming at the wellhead. There are multiple technologies presently employed by manufacturers to satisfy this application, and we plan to explore all of them. This instrumentation is presently very costly on a per unit basis, but much in demand. Manufacturers are concentrating their efforts to develop new phase measurement techniques at lower costs to end-users.

Segmentation for this study includes:

Multiphase Flowmeter Usage by Application Site

- Topside (land-based)
- Offshore
- Subsea

Multiphase Flowmeters by Measurement Configuration

- Before a separation rig or separator
- After a separation rig or separator
- Without the use of a separator rig or separator

Multiphase Flowmeters by Use with Other Instrumentation

- Water cut meters
- Pressure transmitters
- Temperature transmitters
- Other instrumentation

Multiphase Flowmeters by Application

- Fiscal monitoring
- Allocation monitoring
- Reservoir monitoring
- Other applications

Flowmeters by Use of Radiation Type

- Gamma ray
- None
- Other

Flowmeters by Radioactive Material

- Americium
- Barium
- Cesium
- Other

Flowmeters by Sales Channel

- Direct Sales
- Independent Representatives
- Distributors
- E-Business



Market Shares of the Leading Suppliers

This study provides company market share data in multiple categories. Market share data is provided for the following geographic regions:

- Worldwide
- North America (United States and Canada)
- Europe (including Central Europe and Former Soviet Union)
- Mideast/Africa
- Japan
- China
- Asia without Japan/China
- Latin America (Central America and South America)

Flowmeters by Customer Type

This flowmeter market will be segmented according to the following customer types:

- End-Users
- OEMs
- Systems Integrators
- Engineers/Consultants

Strategies for Success

- Discussion of market forces at work
- Technical developments
- Strategic action perspectives
- Forming alliances to enhance product offerings



Also included:

- Average pricing data
- Obstacles to growth
- Reasons behind multiphase metering success
- Quantified growth rates worldwide and by region

Company Profiles

Complete company profiles on the leading multiphase flowmeter suppliers are included. The following is a partial list of the companies profiled in this study:

- | | |
|---|---------------------------|
| • Agar Corporation | • Phase Dynamics |
| • Framo Engineering | • Roxar (Emerson Process) |
| • Jiskoot (Cameron Measurement Systems) | • Solartron ISA |
| • Neftemer | • Weatherford |

Background

Dr. Jesse Yoder is President of Flow Research Inc., a company he founded in 1998. Dr. Yoder has 24 years of experience as a writer and analyst in process control and instrumentation. Since 1990, he has written more than 110 market research studies, most of them about flow and instrumentation.

Other recent and scheduled Flow Research studies include the following:

Volume I	The World Market for Coriolis Flowmeters, 4 th Edition (January 2013)
Volume II	The World Market for Magnetic Flowmeters, 5 th Edition (Q3 2013)
Volume III	The World Market for Ultrasonic Flowmeters, 4 th Edition (March 2013)
Volume IV	The World Market for Vortex Flowmeters, 4 th Edition (July 2010)
Volume V	The World Market for DP Flowmeters and Primary Elements (January 2007)
Volume V-A	The World Market for DP Flow Transmitters (September 2007)
Volume V-B	The World Market for Primary Elements (September 2007)
Volume VI	Worldwide Survey of Flowmeter Users (January 2006)
Volume VII	The World Market for Positive Displacement Flowmeters (March 2012)
Volume VIII	The World Market for Turbine Flowmeters, 2 nd Edition (January 2012)
Volume IX	The World Market for Pressure Transmitters, 3 rd Edition (August 2011)
Volume X	The World Market for Flowmeters, 4 th Edition (December 2012)
Volume XI	The World Market for Natural Gas and Gas Flow Measurement Includes <i>Core Study</i> plus five modules (December 2011)
Volume XII	The World Market for Steam Flow Measurement (March 2008)
Volume XIII	The World Market for Mass Flow Controllers, 2 nd Edition (May 2012)
Volume XIV	The World Market for Thermal Flowmeters (October 2009)
Volume XV	The World Market for Liquid Analytical Instruments (February 2011)
Volume XVI	The World Market for Oil and Oil Flow Measurement + 5 modules (Q1/Q3 2013)

These studies are described at <http://www.flowresearch.com/flow.htm>

Dr. Yoder has also written more than 200 articles on flow and instrumentation for trade journals. Links to many of these can be found at <http://www.flowresearch.com/articles.htm>.

Belinda Burum, Vice President and Editor, has worked in high tech for 16 years as a writer and marketing communications manager. She joined the company in 2002, and has since then worked on many projects. In addition to her work on market studies, Belinda serves as editor of the *Market Barometer* and the *Energy Monitor* (www.worldflow.com).

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Leslie Buchanan, Research Assistant, also works with our publications, clients, and database. Our highly efficient support staff includes **Nicole Riordan** and **Vicki Tuck**, who help keep the steady stream of data coming your way! **Christina Glaser**, who has many years of programming experience, has redesigned and is maintaining our many websites.

The World Market for Oil and Oil Flow Measurement

Overviews of Core Study + Modules A through E



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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 have interviewed oil flow end-users onsite in many countries.
- We have more than ten years of historical data on the oil flow measurement market.
- We follow the flowmeter and energy markets on a quarterly basis through our *Market Barometer* and *Energy Monitor* publications

We create change in flow