MEASUREMENT AND MEASUREMENT-RELATED OPERATIONS HAVE BEEN ESTIMATED TO ACCOUNT FOR BETWEEN 3% AND 6% OF THE GDP OF INDUSTRIAL COUNTRIES. THE RISKS AND COSTS OF ERRONEOUS MEASUREMENT ARE IN MOST CASES MUCH HIGHER THAN THE COST OF CALIBRATION.

CALIBRATION WORLD, 2009
Ensuring accurate measurement performance – over time – is one of the greatest challenges facing fiscal measurement applications. Because meter performance can be affected by many factors, measurement systems must be regularly verified against a traceable reference to prove compliance to accuracy and repeatability requirements.

Emerson’s Flow Technologies, Systems & Services expertly address critical operations and production processes to help

<table>
<thead>
<tr>
<th>What if you could...</th>
<th>Realize in-the-field improvements...</th>
<th>With Emerson Flow Technologies, Systems and Services...</th>
</tr>
</thead>
</table>
| Utilize the best proving solutions to meet your specific needs | • Maximize proving accuracy  
• Optimize total ownership cost with cost-effective solutions  
• Improve repeatability  
• Minimize initial investment cost | ✓ Wide and complete range of solutions to meet all possible applications and solve different challenges such as:  
• Very high accuracy requirements  
• Limited space available  
• Necessity of high mobility and on time availability  
• Various meter sizes and large volumes to be calibrated  
• Short payback time and low initial investment  
• Extreme conditions, such as LNG |
| Consistently comply to proving standards and regulation requirements | • Ensure an effective and efficient validation process  
• Ensure ongoing compliance to local regulations for proving systems  
• Avoid internal/external audits and reduce adjustments for incorrect measurement | ✓ Engineering, design, and optimization of proving systems  
✓ Proving systems, flow labs, and calibration services following global industry standards and regulations  
✓ Worldwide system and network metrology service and support for all oil and gas applications  
✓ Effective solutions to ensure the ongoing accuracy of your metering system |
| Ensure proving system lifecycle sustainability and reliability | • Optimize maintenance and operations procedures and reduce cost  
• Improve operations insight  
• Guarantee remote accessibility to all data | ✓ Lifecycle services and maintenance programs  
✓ Worldwide metrology service and support  
✓ Industry-leading instrumentation for all operating parameters  
✓ Advanced meter diagnostics for early insight into the health of the system  
✓ Flexible and scalable flow computers, RTU platforms with configurable software applications |
Emerson’s Flow Technologies, Systems & Services Guide

**PROVING & CALIBRATION FOR LIQUID HYDROCARBONS**

**TURNKEY SOLUTIONS**

- **DANIEL PIPE PROVERS & COMPACT PROVERS**
  - Bi- and uni-directional ball provers and compact provers provide tailored solutions for every installation need

- **MASTER METERS SYSTEMS**
  - Complete systems for Master Meters solutions

**MASTER METERS**

- **DANIEL TURBINE METER**
  - Master metering solutions to cost-effectively improve proving repeatability and operational uncertainty with varying operating conditions

- **MICRO MOTION CORIOLIS METER**

**VALVES & INSTRUMENTATION**

- **MICRO MOTION DENSITY METERS**
  - High performance measurement for better insight and correction to reference conditions

- **ROSEMOUNT PRESSURE & TEMPERATURE**

- **DANIEL BACKPRESSURE CONTROL VALVES**
  - Effective back pressure control, in compliance with industry standards, and improved throughput for stable and repeatable proving, and for the efficient and accurate measurement of fluid movements

- **FISHER BACK PRESSURE REGULATORS & CONTROL VALVES**

**CONTROL & DATA MANAGEMENT**

- **DANIEL Control Systems**
  - Efficiently and effectively monitor and manage all processes and measurement data across asset geographical locations

- **REMOTE AUTOMATION SOLUTIONS**
  - RTUs, SCADA Systems

**FLOW LIFECYCLE SERVICES**

- **FLOW LABS**
  - Accredited and certified flow labs for national and internationally traceable calibration services

- **ENGINEERING**
  - Fiscally optimized system designs and operational processes

- **LIFECYCLE SERVICES**
  - System consultation, design, installation, start-up, training, maintenance, and audit services
Emerson’s Flow solutions deliver what you need

FLOW TECHNOLOGIES
Using the best fit-for-purpose flow technology, leveraging field-proven best practices, and utilizing device diagnostics and analytics ensures early insight and enhances the performance of critical process units.

FLOW SYSTEMS
Utilizing best-in-class technology, proven system design processes and practices, and global project support enhances measurement system operational effectiveness and capital efficiency.

FLOW SERVICES
Applying consulting, commissioning, and maintenance services assures long-term asset sustainability and fiscal assurance.

CUSTODY TRANSFER IS CRITICAL AT A REFINERY IN INDIA AS FLOW MEASUREMENT ERRORS OF ONLY 0.2% COULD COST THE REFINERY UPWARDS OF $50 MILLION PER YEAR.

A LARGE SOUTH AMERICAN E&P COMPANY UTILIZED EMERSON’S TECHNOLOGY AND SYSTEMS TO PURCHASE A LACT UNIT COMPLETE WITH A COMPACT PROVER, DECREASING INSTALLATION AND MAINTENANCE COSTS.