UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM ________TO________ .**

Commission file number 1-13179

FLOWSERVE CORPORATION
(Exact name of registrant as specified in its charter)

New York	**31-0267900**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
5215 N. O'Connor Boulevard Suite 700, Irving, Texas	**75039**
(Address of principal executive offices)	(Zip Code)

(972) 443-6500
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, $1.25 Par Value	FLS	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☑	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐						

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☑ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☑

The aggregate market value of the common stock held by non-affiliates of the registrant, computed by reference to the closing price of the registrant's common stock as reported on June 30, 2021 (the last business day of the registrant's most recently completed second fiscal quarter), was approximately $2,545,362,893. For purposes of the foregoing calculation only, all directors, executive officers and known 5% beneficial owners have been deemed affiliates.

Number of the registrant's common shares outstanding as of February 17, 2022 was 130,401,951.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information contained in the definitive proxy statement for the registrant's 2022 Annual Meeting of Shareholders scheduled to be held on May 12, 2022 is incorporated by reference into Part III hereof.

FLOWSERVE CORPORATION
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PART I

ITEM 1. *BUSINESS*

Unless the context otherwise indicates, references to "Flowserve," "the Company" and such words as "we," "our" and "us" include Flowserve Corporation and its subsidiaries.

OVERVIEW

Flowserve Corporation is a world leading manufacturer and aftermarket service provider of comprehensive flow control systems. We develop and manufacture precision-engineered flow control equipment integral to the movement, control and protection of the flow of materials in our customers' critical processes. Our product portfolio of pumps, valves, seals, automation and aftermarket services supports global infrastructure industries, including oil and gas, chemical, power generation (including nuclear, fossil and renewable) and water management, as well as certain general industrial markets where our products and services add value. Through our manufacturing platform and global network of Quick Response Centers ("QRCs"), we offer a broad array of aftermarket equipment services, such as installation, advanced diagnostics, repair and retrofitting.

Strategies

Our overarching strategic objectives are to remain a leader in each of the market segments we serve and become the employer of choice in the flow control industry. Additionally, we seek to be recognized by our customers as the most trusted brand of flow control technology in terms of reliability and quality, which we believe will help maximize shareholder value.

In pursuit of these objectives, we maintain a rolling, five-year strategic plan that takes a balanced approach to integrating both short-term and long-term initiatives in four key areas: People, Process & Technology, Customer and Finance.

People

With the goal of developing and maintaining a people-first culture, we focus on several elements in our strategic efforts to continuously enhance our organizational capability, including: (i) fully committing to providing a safe work environment for our associates, worldwide, (ii) upholding a high-performance workforce, that is empowered, accountable and flexible, (iii) becoming an employer of choice by fostering a people-first culture and (iv) recruiting, developing and retaining a global and diverse workforce.

Process & Technology

With the goal of improving our productivity and delivering a continuous stream of innovative solutions to our customers, we focus on select strategies relating to: (i) developing and maintaining an enterprise-first business approach across all operating units and functional organizations, (ii) simplifying our business processes and optimizing corporate structural costs, (iii) continually reducing our product cost and rationalizing our product portfolio and (iv) remaining a technical leader in the flow control industry.

Customers

With the goal of achieving the highest level of customer satisfaction amongst our peers, we focus on select strategies related to rigorous and disciplined selection of target markets and customers, while maintaining competitive lead times and emphasizing the highest levels of on-time delivery and quality. We seek to provide an outstanding experience for our customers over the entire product lifecycle by providing unique, integrated flow-control solutions that solve real-world application problems in our customers' facilities.

Finance

With the goal of growing the value of our enterprise, we focus on select strategies we believe will increase our revenue above the rate of market growth, while optimizing performance in terms of gross margin, selling, general and administrative ("SG&A") expense, operating margin, cash flow and primary working capital.

History

Flowserve Corporation as it exists today was created in 1997 through the merger of two leading fluid motion and control companies — BW/IP and Durco International. Under the name of a predecessor entity, we were incorporated in the State of New York on May 1, 1912, but some of our heritage product brand names date back to our founding in 1790. Over the years, we have evolved through organic growth and strategic acquisitions, and our over 225-year history of Flowserve heritage brands serves as the foundation for the breadth and depth of our products and services today.

BUSINESS SEGMENTS AND PRODUCTS

Our Primary Industries

We sell our products and services to more than 10,000 companies, including some of the world's leading engineering, procurement and construction firms ("EPC"), original equipment manufacturers, distributors and end users. Our products and services are used in several distinct industries having a broad geographic reach. Our total bookings in 2021, 2020 and 2019 were $3.8 billion, $3.4 billion and $4.2 billion, respectively. Our bookings mix by industry in 2021, 2020 and 2019 consisted of:

	2021	2020	2019
• oil and gas	35 %	34 %	41 %
• general industries(1)	26 %	26 %	22 %
• chemical(2)	24 %	24 %	22 %
• power generation	12 %	13 %	11 %
• water management	3 %	3 %	4 %

(1) General industries include mining and ore processing, pulp and paper, food and beverage and other smaller applications, as well as sales to distributors whose end customers typically operate in the other industries we primarily serve as identified above.

(2) Chemical industry is comprised of chemical-based and pharmaceutical products.

Demand

Demand for most of our products depends on the level of new capital investment as well as planned and unplanned maintenance expenditures by our customers. The level of new capital investment depends, in turn, on capital infrastructure projects driven by the need for products that rely on oil and gas, chemicals, power generation and water resource management, as well as general economic conditions. These drivers are generally related to the phase of the business cycle in their respective industries and the expectations of future market behavior, including changes in demand for certain products and processes as a result of evolving industry trends and needs. The levels of maintenance expenditures are additionally driven by the reliability of equipment, planned and unplanned downtime for maintenance and the required capacity utilization of the process.

Sales Channels

Sales to EPC firms and original equipment manufacturers are typically for large project orders and critical applications, as are certain sales to distributors. Project orders are typically procured for customers either directly from us or indirectly through contractors for new construction projects or facility enhancement projects that are longer-cycle projects and can take up to two years.

In contrast to large project orders, the quick turnaround business, which we also refer to as "short-cycle," is defined as orders that are received from the customer (booked) and shipped generally within six months of receipt. These orders are typically for more standardized, general purpose products, parts or services, and are less cyclical than larger capital expenditures driven by project orders. Each of our two business segments generate certain levels of this type of short-cycle business.

In the sale of aftermarket products and services (collectively referred to as "aftermarket"), we benefit from a large installed base of our original equipment, which requires periodic maintenance, repair and replacement parts. We use our manufacturing platform and global network of QRCs to offer a broad array of aftermarket equipment services, such as installation, advanced diagnostics, repair and retrofitting. In geographic regions where we are positioned to provide quick response, we believe customers have traditionally relied on us, rather than our competitors, for aftermarket products due to our highly engineered and customized products. However, the aftermarket for standard products is competitive, as the existence of common standards allows for easier replacement of the installed products. As proximity of service centers, timeliness of delivery and quality are important considerations for all aftermarket products and services, we continue to selectively expand our global QRC capabilities to improve our ability to capture an increasing portion of this important aftermarket business. Each of our two business segments generate certain levels of aftermarket products and services.

We have pursued a strategy of industry diversity and geographic breadth to mitigate the impact on our business of normal economic downturns in any one of the industries or in any particular part of the world we serve. For events that may occur and adversely impact our business, financial condition, results of operations and cash flows, refer to "Item 1A. Risk Factors" of this Annual Report on Form 10-K for the year ended December 31, 2021 ("Annual Report"). For information on our sales and long-lived assets by geographic areas, see Note 20 to our consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data" ("Item 8") of this Annual Report.

Business Functions

Our segments share a focus on industrial flow control technology and benefit from our global footprint and our economies of scale in reducing administrative and overhead costs to serve customers more cost effectively. All segments share certain resources and functions, including elements of research and development ("R&D"), supply chain, safety, quality assurance and administrative functions that provide efficiencies and an overall lower cost structure.

Our operations leadership reports to our Chief Executive Officer and the segments share leadership for operational support functions such as R&D, marketing and supply chain. We believe this leadership structure positions the Company to leverage operational excellence, cost reduction initiatives and internal synergies across our entire operating platform to drive further growth and increase in shareholder value.

BUSINESS SEGMENTS

We report a two operating segment structure, consisting of our Flowserve Pumps Division and our Flow Control Division. In addition to the business segment information presented below, Note 20 to our consolidated financial statements in Item 8 of this Annual Report contains additional financial information about our business segments and geographic areas in which we have conducted business in 2021, 2020 and 2019.

FLOWSERVE PUMP DIVISION

Our largest business segment is the Flowserve Pump Division ("FPD"), through which we design, manufacture, pre-test, distribute and service specialty and highly-engineered custom and pre-configured pumps and pump systems, mechanical seals, auxiliary systems, replacement parts and upgrades and related aftermarket services. FPD products and services are primarily used by companies that operate in the oil and gas, petrochemical, chemical, power generation, water management and general industries. We market our pump and mechanical seal products through our global sales force and our regional QRCs and service and repair centers or through independent distributors and sales representatives. A portion of our mechanical seal products are sold directly to other original equipment manufacturers for incorporation into their rotating equipment requiring mechanical seals.

Our pump products are manufactured in a wide range of metal alloys and with a variety of configurations to reliably meet the operating requirements of our customers. Mechanical seals are critical to the reliable operation of rotating equipment in that they prevent leakage and emissions of hazardous substances from the rotating equipment and reduce shaft wear on the equipment caused by the use of non-mechanical seals. We also manufacture a gas-lubricated mechanical seal that is used in high-speed compressors for gas pipelines and in the oil and gas production and process markets. Our products are currently manufactured in 35 manufacturing facilities worldwide, 10 of which are located in Europe, 11 in North America, eight in Asia Pacific and six in Latin America, and we have 134 QRCs, including those co-located in manufacturing facilities and/or shared with our Flow Control Division ("FCD").

We also conduct business through strategic foreign joint ventures. We have six unconsolidated joint ventures that are located in Chile, China, India, Saudi Arabia, South Korea and the United Arab Emirates, where a portion of our products are manufactured, assembled or serviced in these territories. These relationships provide numerous strategic opportunities, including increased access to our current and new markets, access to additional manufacturing capacity and expansion of our operational platform to support best-cost sourcing initiatives and balance capacity demands for other markets.

FPD Products

We manufacture more than 40 different active types of pumps, including American Petroleum Institute ("API") process pumps used in many downstream refining and petrochemical processing systems, and single case multistage axially split heavy duty pumps often used for high pressure hydrocarbon pipeline transmission. In addition, we manufacture double case diffuser style barrel pumps for medium duty applications in refining and petrochemical applications and submersible pump for deep well pumping in irrigation and municipal water supply service. We also manufacture approximately 185 different models of mechanical seals and sealing systems. Our pump products are sold under globally recognized brands in some cases dating back as far as 225 years ago, including Worthington, SIHI, Durco and Innomag.

FPD Services

We also provide engineered aftermarket services through our global network of 134 QRCs, some of which are co-located in manufacturing facilities, in 49 countries. Our FPD service personnel provide a comprehensive set of equipment services for flow management control systems, including installation, commissioning services, seal systems spare parts, repairs, advanced diagnostics, re-rate and upgrade solutions and retrofit programs, machining and comprehensive asset management solutions. We provide asset management services and condition monitoring for rotating equipment through special contracts with many of our customers that reduce maintenance costs. A large portion of FPD’s service work is performed on a quick response basis and we offer 24-hour service in all of our major markets.

FPD New Product Development

Our investments in new product R&D continue to focus on increasing the capability of our products as customer applications become more advanced, demanding greater levels of production (i.e., flow and power) and under more extreme conditions (i.e., erosive, corrosive and temperature) beyond the level of traditional technology. We continue to invest in our product platform and develop innovations to improve our competitive position in our key markets, including the global chemical industry and in the engineered equipment industry, specifically upstream, offshore and downstream applications for the oil and gas market. Continued engagement with our end users is exemplified through the completion of advancements that significantly improve energy efficiency, reduce total cost-of-ownership and enhance safety.

As the world continues to undergo energy transition in the coming years, significant investment towards renewable sources of energy and energy efficiency solutions will become increasingly more important. We continue to develop new product designs to support our customers through energy transition in our key end markets. We have launched and will continue to launch new initiatives to support renewable energy, energy efficiency, emissions reduction, decarbonization, and sustainability as the world continues to embrace energy transition into the future.

In addition, we continue to advance our capabilities and technology position in the rapidly developing segment known as the Industrial Internet of Things ("IIoT"). Over the past few years we have continued to both invest and partner in this space to build remote monitoring solutions, as well as advanced equipment diagnostics in order to provide remote asset management and related services capabilities for our end-user customers. Our IIoT solution, RedRaven, includes delivering intelligent “edge” devices, advanced networking infrastructure and secure communication and security protocols, secure data management, and remote monitoring and reporting for our customers. In addition, we have moved beyond exploring new additive manufacturing capabilities, such as 3D printing and fast casting methods, and are looking for ways to economically scale these techniques as another means of manufacturing our products to both reduce lead time and lower our production costs.

None of these newly developed products or services required the investment of a material amount of our assets or was otherwise material to our business.

FPD Customers

Our customer mix is diversified and includes leading EPC firms, major national oil companies, international oil companies, equipment end users in our served markets, other original equipment manufacturers, distributors and end users. Our sales mix of original equipment products and aftermarket products and services diversifies our business and helps mitigate the impact of normal economic cycles on our business. Our sales are diversified among several industries, including oil and gas, petrochemical, chemical, power generation, water management and general industries.

FPD Competition

The pump and mechanical seal industry is highly fragmented, with thousands of competitors globally. We compete, however, primarily with a limited number of large companies operating on a global scale. There are also a number of smaller, newer entrants in some of our emerging markets. Competition among our closest competitors is generally driven by delivery times, application knowledge, experience, expertise, price, breadth of product offerings, contractual terms, previous installation history and reputation for quality. Some of our largest industry competitors include: Sulzer Pumps; Ebara Corp.; SPX FLOW, Inc.; Eagle Burgmann, which is a joint venture of two traditional global seal manufacturers, A. W. Chesterton Co. and AES Corp.; John Crane Inc., a unit of Smiths Group Plc; Weir Group Plc.; ITT Industries; and KSB SE & Co. KGaA.

The pump and mechanical seal industry continues to undergo considerable consolidation, which is primarily driven by (i) the need to lower costs through reduction of excess capacity and (ii) customers' preference to align with global full service suppliers to simplify their supplier base. Despite the consolidation activity, the market remains highly competitive.

We believe that our strongest sources of competitive advantage rest with our extensive range of pumps for the oil and gas, petrochemical, chemical and power generation industries, our large installed base of products, our strong customer relationships, our high quality technology, our more than 225 years of experience in manufacturing and servicing pumping equipment, our reputation for providing quality engineering solutions and our ability to deliver engineered new seal product orders within 72 hours from the customer's request.

FPD Backlog

FPD's backlog of orders as of December 31, 2021 was $1,368.9 million, compared with $1,236.9 million as of December 31, 2020. We expect to recognize revenue on approximately 88% of December 31, 2021 backlog during 2022.

FLOW CONTROL DIVISION

FCD designs, manufactures, distributes and services a broad portfolio of flow control solutions, including engineered and industrial valve and automation systems, isolation and control valves, actuation, controls and related equipment. FCD leverages its experience and application know-how by offering a complete menu of engineering and project management services to complement its expansive product portfolio. FCD products are used to control, direct and manage the flow of liquids, gases and multi-phase fluids, and are a critical part of any flow control system. Our valve and automation products are based on flexible architecture that can be customized or engineered to perform specific functions within each customer's unique flow control environment or objective.

Our flow control products are primarily used by companies operating in the chemical, power generation, oil and gas, water management and general industries. Our products are currently manufactured in 19 principal manufacturing facilities, five of which are located in the U.S., eight located in Europe, five located in Asia Pacific and one located in Latin America. We deliver our services through our global network of 26 QRCs worldwide, including five sites in Europe and Africa, nine in North America, three in the Middle East, seven in Asia Pacific and two in Latin America, including those co-located in manufacturing facilities.

FCD Products

Our valve, automation and controls product and solutions portfolio represent one of the most comprehensive in the flow control industry. Our products are used in a wide variety of applications, from general service to the most severe and demanding services, including those involving high levels of corrosion, extreme temperatures and/or pressures, zero fugitive emissions and emergency shutdown.

Our "smart" valve and diagnostic technologies integrate sensors, microprocessor controls and software into high performance integrated control valves, digital positioners and switch boxes for automated on/off valve assemblies and electric actuators. These technologies permit real-time system analysis, system warnings and remote indication of asset health. These technologies have been developed in response to the growing demand for reduced maintenance, improved process control efficiency and digital communications at the plant level. We are committed to further enhancing the quality of our product portfolio by continuing to upgrade our existing offerings with cutting-edge technologies.

Our valve actuation products encompass a broad range of pneumatic, electric, hydraulic and stored energy actuation designs to take advantage of whatever power source the customer has available, including utilizing the process fluid flowing through the pipeline as a source of power to actuate the valve. Our actuation products also cover one of the widest ranges of output torques in the industry, providing the ability to automate anything from the smallest linear globe valve to the largest multi-turn gate valve. Most importantly, FCD combines best-in-class mechanical designs with the latest in controls and communication technologies in order to provide complete integrated automation solutions that optimize flow control performance and enhance digital end-user experience.

We manufacture approximately 30 different active types of products, including valves, actuators, positioners, and switches. Our products are sold under globally recognized brands in some cases dating back as far as 225 years, including Valtek, Argus, Worcester, Limitorque and Durco.

FCD Services

Our service personnel provide comprehensive equipment maintenance services for flow control systems, including advanced diagnostics, repair, installation, commissioning, retrofit programs and field machining capabilities. A large portion of our service work is performed on a quick response basis, which includes 24-hour service in all of our major markets. We also provide in-house repair and return manufacturing services worldwide through our manufacturing facilities. We believe our ability to offer comprehensive, quick turnaround services provides us with a unique competitive advantage and unparalleled access to our customers' installed base of flow control products.

During the year, we have added the service of condition monitoring for our control valves, which is enabled by our proprietary IIoT solution RedRaven and digital positioners. Within any control valve system, the RedRaven solution acts as a condition monitoring system and provides critical operating information to the end users and therefore, helps to reduce downtime, improve productivity and increase visibility into their flow processes. Additionally, the solution is connected to our QRC network for fast and reliable repair or replacement of valves, actuators and other related valve equipment.

FCD New Product Development

Our R&D investment is focused on areas that will enhance end-user experience and advance our technological leadership by creating compelling value propositions for our customers, and lasting competitive advantage of our products and services in the market. In that respect, our investments have been focusing in four critical areas:

(1) significantly enhancing the digital integration and interoperability of automation products (e.g., positioners, actuators, limit switches and associated accessories) with Distributed Control Systems ("DCS") and Asset Management Systems ("AMS");

(2) developing and deploying next-generation hardware and software solutions that leverage our in-depth domain knowledge, big data and artificial intelligence, to further flow control diagnostics and bring insights that increase performance and efficiency of end-user processes;

(3) advancing material science and processing technologies in order to further increase products' capabilities in severe and critical services – including but not limited to noise and cavitation reduction; and

(4) investing in our talents and processes that adopt modern R&D project management tools (such as lean startup, SCRUM, agile and hybrid portfolio management, etc.) that enable effective risk mitigation and shorter commercialization cycles.

We expect to continue our R&D investments in the above areas.

In addition, like FPD, a number of FCD's product development efforts are tied to assisting our customers with energy transition. These efforts are geared toward (1) supporting our customers in their own decarbonization efforts with new valve offerings, including Flowtop and Mark linear control valves and Valbart ball valves, as well as (2) cost-effective deployment of alternative energy technologies, such as hydrogen and renewable power with innovations in our Valdisk rotary control valve, Edward gate and globe valves, and Valtek and Durco triple-offset butterfly valve product lines.

None of these newly developed valve products or services required the investment of a material amount of our assets or was otherwise material.

FCD Customers

Our customer mix spans several end markets, including the chemical, power generation, oil and gas, water management, pulp and paper, mining and other general industries. We are especially active in providing solutions for emerging applications that supports sustainability (such as concentrated solar power, hydrogen economy, carbon capture, desalination, etc.) or increases energy productivity (such as Liquefied Natural Gas ("LNG"), Ethylene cracking, Hydrocracking, etc.). Lastly, our expertise in flow control management makes us a reliable partner to assist our customers with energy transition – by either making their processes more efficient and sustainable, or by providing products and solutions for new technologies that enable energy transition.

Our product offerings include original equipment, aftermarket parts, and a portfolio of services and solutions. Contracts and transactions are conducted through a variety of channels depending on customer requirements, including direct end-users, EPC firms, distributors and other original equipment manufacturers.

FCD Competition

While in recent years the valve market has undergone a significant amount of consolidation, the market remains highly fragmented. Some of the largest valve industry competitors include Emerson Electric Co., Cameron International Corp. (a Schlumberger company), Baker Hughes, Rotork plc, Neles, Samson and Crane Co.

Our market research and assessments indicate that the top 10 global valve manufacturers collectively comprise less than 15% of the total valve market. Based on independent industry sources, we believe that FCD is the second largest industrial valve supplier in the world. We believe that our strongest sources of competitive advantage rest with our comprehensive portfolio of valve and automation products and services, our ability to provide complementary pump and rotating equipment products and services, our focus on execution, our expertise in severe corrosion and erosion applications, and strategic partnerships purposely built to advance market adoption of new technologies and digital tools.

FCD Backlog

FCD’s backlog of orders as of December 31, 2021 was $639.8 million, compared with $623.1 million as of December 31, 2020. We expect to recognize revenue on approximately 95% of December 31, 2021 backlog during 2022.

ADDITIONAL INFORMATION REGARDING BOTH REPORTING SEGMENTS

Seasonality

Our financial results are traditionally seasonal during the year as we typically experience lower earnings in the first quarter of the year, with lower sales, coupled with fixed operating expenses, impacting our earnings and cash flows. We typically have higher sales, earnings and cash flows in the second half of the year with the fourth quarter being the strongest. Given that certain of our operating expenses are fixed, fluctuations in sales volumes from quarter to quarter may affect operating income for the respective quarters.

Selling and Distribution

We primarily distribute our products through direct sales by employees assigned to specific regions, industries or products. In addition, we use distributors and sales representatives to supplement our direct sales force where it is more economically efficient. We generate a majority of our sales leads through existing relationships with vendors, customers and prospects or through referrals.

Intellectual Property

We own a number of trademarks and patents relating to the names and designs of our products. We consider our trademarks and patents to be valuable assets of our business. In addition, our pool of proprietary information, consisting of know-how and trade secrets related to the design, manufacture and operation of our products, is considered particularly valuable. Accordingly, we take proactive measures to protect such proprietary information. We generally own the rights to the products that we manufacture and sell and are unencumbered by licensing or franchise agreements. In limited circumstances, we have entered into agreements to license intellectual property. The operational and financial terms of these agreements are not material. Our trademarks can typically be renewed indefinitely as long as they remain in use, whereas our existing patents generally expire 10 to 20 years from the dates they were filed, which has occurred at various times in the past. We do not believe that the expiration of any individual patent will have a material adverse impact on our business, financial condition or results of operations.

Raw Materials

The principal raw materials used in manufacturing our products include ferrous and non-ferrous metals in the form of bar stock, machined castings, fasteners, forgings and motors, as well as silicon, carbon faces, gaskets and fluoropolymer components. A substantial volume of our raw materials is purchased from outside sources, and we have been able to develop a robust supply chain. Since the onset of the COVID-19 pandemic, many of our suppliers have experienced varying lengths of production and shipping delays related to the pandemic, some of which continue to exist in highly affected countries. Additionally, the global supply chain and logistics constraints that are currently affecting global markets caused additional headwinds in the second half of 2021. These conditions have had an adverse effect on the speed at which we can manufacture and ship our products to customers, and have also led to an increase in logistics, transportation and freight costs, requiring that we diversify our supply chain and, in some instances, source materials from new suppliers. We continually monitor the business conditions of our suppliers to manage competitive market conditions and to avoid potential supply disruptions wherever possible. We continue to expand global sourcing to capitalize on localization in emerging markets and low-cost sources of purchased goods balanced with efficient consolidated and compliant logistics.

Metal castings used in the manufacture of our pump, valve, and mechanical seals are purchased from qualified and approved foundry sources. We remain vertically integrated with metal castings in certain strategic product families.

Concerning the products we supply to customers in the nuclear power generation industry, suppliers of raw materials for nuclear power generation markets must be qualified to meet the requirements of nuclear industry standards and governmental regulations. Supply channels for these materials are currently adequate, and we do not anticipate difficulty in obtaining such materials in the future.

Human Capital Management

Our associates worldwide are critical to delivering on our purpose to create extraordinary flow control solutions. As a global manufacturer, our values start with our people - we strive to create a collaborative team environment that enables us to develop each other, embrace our differences and respect one another.

As of December 31, 2021, we have approximately 16,000 employees (“associates”) globally and a footprint of manufacturing facilities and QRCs in more than 50 countries. Of our global associates, there are approximately 3,200 in FPD, 3,400 in FCD and 4,400 supporting the aftermarket sales and services business across both divisions. The remaining 5,000 associates support core business functions including legal, human resources, information technology, finance, commercial operations and sales, global engineering operations and marketing and technology operations. Regionally, approximately 4,600 of our associates are in North America, approximately 1,600 of our associates are in Latin America, approximately 6,300 of our associates are in Europe, the Middle East and Africa, and approximately 3,500 of our associates are in Asia Pacific. Our workforce is made up of approximately 9,000 salaried employees and 7,000 hourly employees.

We are committed to achieving business success with integrity at the forefront. All associates and our Board of Directors are governed by our Code of Conduct as we continuously work together to improve our operations by fostering a work environment that supports employee health, safety, training, development, diversity, equity and inclusion. To create that environment, members of management work together to identify areas of opportunity and develop and implement various policies, procedures, and initiatives in these key areas. Members of management also provide quarterly (or more frequent, as needed) updates to our Board of Directors, who provide additional input and guidance to management on these key areas.

Workplace Health and Safety: We strive to create and maintain a safe working environment, empowering our employees to identify and report safety concerns and act to correct hazards. Our focus on safety and environmental protection has led to meaningful reductions in workplace safety incidents, emissions to the environment, and solid waste and hazardous waste generation at our facilities worldwide.

Compensation and Benefits: We maintain a market-based compensation strategy that provides a competitive total target compensation opportunity for our associates. We also value the health and well-being of our associates and offer competitive overall benefits, health and wellness programs tailored to the specific localized needs of our employees. We offer a global employee assistance program to support the mental health and wellness needs our employees, as well as physical health incentives aimed at creating healthy lives for our employees and their families.

Training, Development and Ethics: Developing our people is an essential aspect of the Flowserve's strategy and we believe development is a continuous process. We offer developmental opportunities to help our associates build the skills needed to reach their short-term and long-term career goals, including but not limited to on-the-job training, online learning, rotational programs, professional memberships, language learning and leadership and management training. To help our associates see how their work contributes to overall Company objectives and successes, management uses a robust performance management system and provides regular feedback to develop talent and foster engagement.

In 2020, COVID-19 shifted our focus to equipping leaders to thrive in a virtual environment. In 2021, the focus was expanded to all levels of people leaders, and we will continue to broaden our leadership education for the future. Looking forward, we will engage over 2,000 people leaders in a development program focused on the foundational capabilities of leadership and highlight Flowserve's values and behaviors. Together, these leaders will advance their skills in collaborating across the enterprise, developing their teams and strengthening our culture of inclusion for all associates.

With respect to our Integrity and Compliance program, we provide our associates with training on the Flowserve Code of Conduct annually, through which they gain an understanding of the types of behaviors and decisions that represent our ethics and values. We also provide associates with compliance trainings on relevant topics such as trade, anti-corruption, anti-trust, investigations and data privacy.

Culture and Engagement: To further enhance our culture, we conduct biannual employee engagement surveys to solicit feedback and input directly from our associates. In 2020, more than 80% of our associates participated in our employee engagement survey. Based on the results of our surveys, the Company created action plans to help further improve our culture and has continued to execute such plans in 2021.

Flowserve also seeks to build a diverse and inclusive culture through our Diversity, Equity and Inclusion program. Flowserve participates in regular national and global observances by sharing educational content with employees that raises awareness of cultural celebrations and experiences. Through these observances, we believe we can inspire mutual understanding and greater empathy across our global workforce. As a multi-national organization, recognition and education of cultural observances is an important part of creating a greater understanding and appreciation for our associates' experiences and for the experiences of our global customer base.

In addition, in 2021 management received education and training on unconscious bias and leading with inclusivity. With these programs and educational opportunities, we hope to foster an employee culture that drives inclusion, combats bias and positively impacts our communities in and outside of Flowserve.

Another avenue to foster our culture is through our employee recognition program, the Spirit of Flowserve. This program supports our business strategy, our values and our vision to drive an innovative culture, customer-centric mindset, employee engagement and talent retention. In 2021, over 17,000 awards were given through the Spirit of Flowserve program for exceptional achievement and positive impact to the Company.

Environmental, Social and Governance Activities

We structure our approach to sustainability around environmental, social and governance (“ESG”) principles that incorporate our values and business priorities so that all of our associates can contribute to our ESG priorities. Our ESG program is centered on three key pillars – people, planet and operational excellence. People addresses our culture and how we support our associates and contribute to the communities where our associates live and work. Planet focuses on reducing our environmental footprint and creating and advancing technology and solutions that support energy transition. Operational excellence promotes strong leadership and governance that drives efficient business execution and innovation.

We publish an annual ESG Report that discusses our ESG-related goals, activities and accomplishments, which can be accessed through the “Investor Relations” section of our Internet web site, and which is not incorporated by reference into this Annual Report on Form 10-K.

Environmental Regulations and Proceedings

We are subject to environmental laws and regulations in all jurisdictions in which we have operating facilities. These requirements primarily relate to the generation and disposal of waste, air emissions and wastewater discharges. We periodically make capital expenditures to enhance our compliance with environmental requirements, as well as to abate and control pollution. At present, we have no plans for any material capital expenditures for environmental control equipment at any of our facilities. However, we have incurred and continue to incur operating costs relating to ongoing environmental compliance matters. Based on existing and proposed environmental requirements and our anticipated production schedule, we believe that future environmental compliance expenditures will not have a material adverse effect on our financial condition, results of operations or cash flows.

We use hazardous substances and generate hazardous wastes in many of our manufacturing and foundry operations. Most of our current and former properties are or have been used for industrial purposes and some may require clean-up of historical contamination. During the due diligence phase of our acquisitions, we conduct environmental site assessments to identify potential environmental liabilities and required clean-up measures. We are currently conducting follow-up investigation and/or remediation activities at those locations where we have known environmental concerns. We have cleaned up a majority of the sites with known historical contamination and are addressing the remaining identified issues.

Over the years, we have been involved as one of many potentially responsible parties ("PRP") at former public waste disposal sites that are or were subject to investigation and remediation. We are currently involved as a PRP at four Superfund sites. The sites are in various stages of evaluation by government authorities. Our total projected "fair share" cost allocation at these four sites is expected to be immaterial. See "Item 3. Legal Proceedings" included in this Annual Report for more information.

We have established reserves that we currently believe to be adequate to cover our currently identified on-site and off-site environmental liabilities.

Exports

Our export sales from the U.S. to foreign unaffiliated customers were $263.1 million in 2021, $264.6 million in 2020 and $300.9 million in 2019.

Licenses are required from U.S. and other government agencies to export certain products. In particular, products with nuclear power generation and/or military applications are restricted, as are certain other pump, valve and seal products.

AVAILABLE INFORMATION

We maintain an Internet web site at www.flowserve.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934 are made available free of charge through the “Investor Relations” section of our Internet web site as soon as reasonably practicable after we electronically file the reports with, or furnish the reports to, the U.S. Securities and Exchange Commission ("SEC"). Reports, proxy statements and other information filed or furnished with the SEC are also available at www.sec.gov.

Also available on our Internet web site are our Corporate Governance Guidelines for our Board of Directors and Code of Ethics and Business Conduct, the charters of the Audit, Finance and Risk, Organization and Compensation and Corporate Governance and Nominating Committees of our Board of Directors, our annual ESG Report, and other important governance documents. All of the foregoing documents may be obtained through our Internet web site as noted above and are available in print without charge to shareholders who request them. Information contained on or available through our Internet web site is not incorporated into this Annual Report or any other document we file with, or furnish to, the SEC.

ITEM 1A. *RISK FACTORS*

Please carefully consider the following discussion of material factors, events, and uncertainties that make an investment in our securities risky. When the factors, events and contingencies discussed below or elsewhere in this Annual Report materialize, our business, financial condition, results of operations, cash flows, reputation or prospects could be materially adversely affected. While we believe all known material risks are disclosed, additional risks and uncertainties not presently known to us, or that we currently deem immaterial, may also materially adversely affect our business, financial condition, results of operations, cash flows, reputation, prospects or stock price. Because of the risk factors discussed below and elsewhere in this Annual Report and in other filings we make with the SEC, as well as other variables affecting our operating results, past financial performance may not be a reliable indicator of future performance, historical trends should not be used to anticipate results or trends in future periods and actual results could differ materially from those projected in the forward-looking statements contained in this Annual Report.

Business and Operating Risks

Our business depends on our customers' levels of capital investment and maintenance expenditures, which in turn are affected by numerous factors, including changes in the state of domestic and global economies, global energy demand and the liquidity cyclicality and condition of global credit and capital markets, which have impacted and which could continue to impact the ability or willingness of our customers to invest in our products and services and adversely affect our financial condition, results of operations and cash flow.

Demand for most of our products and services depends on the level of new capital investment and planned maintenance expenditures by our customers. The level of capital expenditures by our customers depends, in turn, on general economic conditions, availability of credit, economic conditions within their respective industries and expectations of future market behavior. Additionally, volatility in commodity prices can negatively affect the level of these activities and can result in postponement of capital spending decisions or the delay or cancellation of existing orders. The ability of our customers to finance capital investment and maintenance is also affected by factors independent of the conditions in their industry, such as the condition of global credit and capital markets.

The businesses of many of our customers, particularly oil and gas companies, chemical companies and general industrial companies, are to varying degrees cyclical and have experienced periodic downturns. Our customers in these industries, particularly those whose demand for our products and services is primarily profit-driven, tend to delay large capital projects, including expensive maintenance and upgrades, during economic downturns. For example, our chemical customers generally tend to reduce their spending on capital investments and operate their facilities at lower levels in a soft economic environment, which reduces demand for our products and services. Additionally, fluctuating energy demand forecasts and lingering uncertainty concerning commodity pricing, specifically the price of oil, have caused, and may in the future cause, our customers to be more conservative in their capital planning, reducing demand for our products and services. Reduced demand for our products and services from time to time results in the delay or cancellation of existing orders or lead to excess manufacturing capacity, which unfavorably impacts our absorption of fixed manufacturing costs. This reduced demand has in the past and may continue in the future to also erode average selling prices in our industry. Any of these results could continue to adversely affect our business, financial condition, results of operations and cash flows.

The ongoing novel coronavirus ("COVID-19", "pandemic") pandemic, and the volatile regional and global economic conditions stemming from the pandemic, have precipitated or aggravated many of the factors described above, and we expect that these factors will continue to adversely impact our operations and financial performance as well as those of many of our customers and suppliers. For further discussion of the risks presented by the ongoing pandemic, see the discussion below under the heading "The outbreak and global spread of the novel coronavirus (COVID-19) are having an adverse impact on our operations and financial performance, as well as on the operations and financial performance of many of our customers and suppliers. We are unable to predict the full extent to which the COVID-19 pandemic will continue to adversely impact our operations, financial performance, results of operations, financial condition, cash flows and/or stock price."

Additionally, our customers sometimes delay capital investment and maintenance even during favorable conditions in their industries or markets. Despite these favorable conditions, the general health of global credit and capital markets and our customers' ability to access such markets impacts investments in large capital projects, including necessary maintenance and upgrades. In addition, the liquidity and financial position of our customers impacts capital investment decisions and their ability to pay in full and/or on a timely basis. Any of these factors, whether individually or in the aggregate, could have a material adverse effect on our customers and, in turn, our business, financial condition, results of operations and cash flows.

Volatility in commodity prices, effects from credit and capital market conditions and global economic growth forecasts have in the past prompted and may in the future prompt customers to delay or cancel existing orders, which could adversely affect the viability of our backlog and could impede our ability to realize revenues on our backlog.

Our backlog represents the value of uncompleted customer orders. While we cannot be certain that reported backlog will be indicative of future results, our ability to accurately value our backlog can be adversely affected by numerous factors, including the health of our customers' businesses and their access to capital, volatility in commodity prices (e.g., copper, nickel, stainless steel) and economic uncertainty. While we attempt to mitigate the financial consequences of order delays and cancellations through contractual provisions and other means, if we were to experience a significant increase in order delays or cancellations that can result from the aforementioned economic conditions or other factors beyond our control, it could impede or delay our ability to realize anticipated revenues on our backlog. Such a loss of anticipated revenues could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our inability to deliver our backlog on time could affect our revenues, future sales and profitability and our relationships with customers.

At December 31, 2021, our backlog was $2.0 billion. In 2022, our ability to meet customer delivery schedules for backlog is dependent on a number of factors including, but not limited to, sufficient manufacturing plant capacity, adequate supply channel access to the raw materials and other inventory required for production, an adequately trained and capable workforce, project engineering expertise for certain large projects and appropriate planning and scheduling of manufacturing resources. Our manufacturing plant operations, capacity and supply chain are subject to disruption as a result of equipment failure, severe weather conditions and other natural or manmade disasters, including power outages, fires, explosions, terrorism, cyber-based attacks, conflicts or unrest, epidemics or pandemics (including the ongoing global COVID-19 pandemic), labor disputes, acts of God, or other reasons. We may also encounter capacity limitations due to changes in demand despite our forecasting efforts. Many of the contracts we enter into with our customers require long manufacturing lead times and contain penalty clauses related to late delivery. Failure to deliver in accordance with contract terms and customer expectations could subject us to financial penalties, damage existing customer relationships, increase our costs, reduce our sales and have a material adverse effect on our business, financial condition, results of operations and cash flows.

Failure to successfully execute and realize the expected financial benefits from our transformation and strategic realignment and other cost-saving initiatives could adversely affect our business.

In the second quarter of 2018, we launched and committed resources to our Flowserve 2.0 Transformation, a program designed to transform our business model to drive operational excellence, reduce complexity, accelerate growth, improve organizational health and better leverage our existing global platform. Additionally, in the second quarter of 2020, we accelerated the integration of our transformation initiatives from our global transformation office into our business and identified and initiated certain realignment activities resulting from our Flowserve 2.0 Transformation to right-size our organizational operations based on the current business environment, with the overall objective to reduce our workforce costs.

As of December 31, 2020, the Flowserve 2.0 Transformation efforts were substantially completed. While we experienced significant financial benefits from our Flowserve 2.0 Transformation in the past, we may not realize the same benefits as we move forward, or at all. Adverse effects from our execution of transformation and realignment activities could interfere with our realization of anticipated synergies, customer service improvements and cost savings from these strategic initiatives. Moreover, because such expenses are difficult to predict and are necessarily inexact, we may incur substantial expenses in connection with the execution of our transformation and realignment plans in excess of what is currently anticipated. Further, transformation and realignment activities are a complex and time-consuming process that can place substantial demands on management, which could divert attention from other business priorities or disrupt our daily operations. Any of these failures could, in turn, materially adversely affect our business, financial condition, results of operations and cash flows, which could constrain our liquidity.

If these measures are not successful or sustainable, we may undertake additional realignment and cost reduction efforts, which could result in future charges. Moreover, our ability to achieve our other strategic goals and business plans may be adversely affected, and we could experience business disruptions with customers and elsewhere if our transformation and realignment efforts prove ineffective.

We sell our products in highly competitive markets, which results in pressure on our profit margins and limits our ability to maintain or increase the market share of our products.

The markets for our products and services are geographically diverse and highly competitive. We compete against large and well-established national and global companies, as well as regional and local companies, low-cost replicators of spare parts and in-house maintenance departments of our end-user customers. We compete based on price, technical expertise, timeliness of delivery, contractual terms, project management, proximity to service centers, previous installation history and reputation for quality and reliability. Competitive environments in slow-growth industries and for original equipment orders have been inherently more influenced by pricing and domestic and global economic conditions and current economic forecasts suggest that the competitive influence of pricing has broadened. Additionally, some of our customers have been attempting to reduce the number of vendors from which they purchase in order to reduce the size and diversity of their supply chain. To remain competitive, we must invest in manufacturing, technology, marketing, customer service and support and our distribution networks. No assurances can be made that we will have sufficient resources to continue to make the investment required to maintain or increase our market share or that our investments will be successful. In addition, negative publicity or other organized campaigns critical of us, through social media or otherwise, could negatively affect our reputation and competitive position. If we do not compete successfully, our business, financial condition, results of operations and cash flows could be materially adversely affected.

Failure to successfully develop and introduce new products could limit our ability to grow and maintain our competitive position and adversely affect our financial condition, results of operations and cash flow.

The success of new and improved products and services depends on their initial and continued acceptance by our customers. Our businesses are affected by varying degrees of technological change and corresponding shifts in customer demand, which result in unpredictable product transitions, shortened life cycles and increased importance of being first to market with new products and services. Difficulties or delays in the research, development, production and/or marketing of new products and services negatively impact our operating results and prevent us from recouping or realizing a return on the investments required to continue to bring these products and services to market.

Our inability to obtain raw materials at favorable prices may adversely affect our operating margins and results of operations.

We purchase substantially all electric power and other raw materials we use in the manufacturing of our products from outside sources. The costs of these raw materials have been volatile historically and are influenced by factors that are outside our control, including more recently due to the pandemic. In recent years, the prices for energy, metal alloys, nickel and certain other of our raw materials have been volatile. While we strive to offset our increased costs through supply chain management, contractual provisions and our Continuous Improvement Process initiative, where gains are achieved in operational efficiencies, our operating margins and results of operations and cash flows may be adversely affected if we are unable to pass increases in the costs of our raw materials on to our customers or operational efficiencies are not achieved.

The outbreak and global spread of the novel coronavirus (COVID-19), or variants thereof, are continuing to have an adverse impact on our operations and financial performance, as well as on the operations and financial performance of many of our customers and suppliers. We are unable to predict the full extent to which the COVID-19 pandemic will continue to adversely impact our operations, financial performance, results of operations, financial condition, cash flows and/or stock price.

The COVID-19 pandemic has curtailed the movement of people, goods and services worldwide, including in most of the regions in which we conduct our operations. As part of intensifying efforts to contain the spread of COVID-19, a number of local, state and national governments have imposed various restrictions on the conduct of business and travel, such as stay-at-home orders and quarantines, that have led to a significant number of business slowdowns and closures. The COVID-19 pandemic has resulted in, and is expected to continue to result in, a substantial curtailment of business activities (including the decrease in demand for a broad variety of goods and services), weakened economic conditions, supply chain disruptions, significant economic uncertainty and volatility in the financial and commodity markets, including global volatility in supply and demand for oil and gas.

The ongoing COVID-19 pandemic is continuing to adversely impact and is expected to continue to adversely impact, our operations and financial performance, and has had an adverse impact on the operations and financial performance of many of our customers and suppliers. These impacts have included, and may continue to include: adverse revenue and income effects; disruptions to our global operations; customer shutdowns; customer reductions in capital expenditures, particularly for large projects; disruptions and delays in our supply chain; raw materials and labor shortages; employee impacts from illness, shelter-in-place orders and other community response measures; modifications to business practices, such as mandatory work-from-home policies and restrictions on travel (including, in some cases, restrictions on travel to customer facilities); increased operational expenses and underutilized manufacturing capacity; and increased sanitation and hygiene practices in our facilities; and temporary closures of our facilities or the facilities of our customers and suppliers. For example, the global supply chain and logistics constraints that are currently affecting global markets adversely affected the speed at which we can manufacture and ship our products to customers, and have also led to an increase in logistics, transportation and freight costs, requiring that we diversify our supply chain and, in some instances, source materials from new suppliers. These effects in some cases impacted our ability to deliver products to customers on time, which has in turn led to an increase in backlog at some of our manufacturing sites. These disruptions in our supply chain and their effects have continued into 2022 and we expect they will continue as the COVID-19 pandemic and ongoing global supply chain and logistics headwinds continue to affect global markets.

Because the impact of the COVID-19 pandemic and its consequences remain uncertain, changing and difficult to predict, the pandemic's impact on our operations and financial performance remains uncertain and difficult to predict. Further, the ultimate impact of the COVID-19 pandemic on our operations and financial performance will continue to depend on many factors that are not within our control, including, but not limited, to: governmental, business and individuals' actions that have been and continue to be taken in response to the pandemic (including restrictions on travel and transport, workforce pressures and social distancing and shelter-in-place orders); the impact of the pandemic and actions taken in response on global and regional economies, travel and economic activity; general economic uncertainty in key global markets and financial market volatility; the effect of the pandemic on the credit-worthiness of our customers; further or sustained national or global supply chain challenges or disruption; facility closures; commodity cost volatility (including the time it takes for oil prices and demand to stabilize after the pandemic subsides); global economic conditions and levels of economic growth; and the pace of recovery when the COVID-19 pandemic subsides, as well as response to a potential reoccurrence.

Further, the COVID-19 pandemic, and the volatile regional and global economic conditions stemming from the pandemic, could also continue to precipitate or aggravate the other risk factors that we identify herein, which could adversely affect our operations, financial condition, results of operations and/or stock price. Further, COVID-19 may also affect our operating and financial results in a manner that is not presently known to us or that we currently do not consider to present material risks to our operations.

Terrorist acts, conflicts, wars, natural or manmade disasters, epidemics or pandemics, acts of God and other such events around the world at times materially adversely affect our business, financial condition and results of operations and the market for our common stock.

As a global company with a large international footprint, we are subject to increased risk of damage or disruption to us, our employees, facilities, partners, suppliers, distributors, resellers or customers due to, among other things, terrorist acts, conflicts (including as a result of geopolitical uncertainty and/or conflicts in the countries and/or regions where we operate, including the United Kingdom, the European Union, the Ukraine, the Russian Federation, and the Trans-Pacific region), wars, severe weather conditions and other natural or manmade disasters, including power outages, fires, explosions, cyber-based attacks, epidemics or pandemics (including the ongoing COVID-19 pandemic), labor disputes, and acts of God wherever located around the world. The potential for future such events, the national and international responses to such events or perceived threats to national security, and other actual or potential conflicts or wars, such as the Israeli-Hamas conflict and ongoing instability in Syria and Egypt, have created many economic and political uncertainties. In addition, as a global company with headquarters and significant operations located in the U.S., actions against or by the U.S. may impact our business or employees. Changes in general economic conditions or any of the foregoing events, or our inability to accurately forecast these changes or events or mitigate the impact of these conditions on our business, could materially adversely affect us.

Global climate change and our commitments to reduce our carbon emissions presents challenges to our business which could materially adversely affect us.

The effects of climate change create financial and operational risks to our business, both directly and indirectly. There is a general consensus that greenhouse gas ("GHG") emissions are linked to global climate change, and that these emissions must be reduced dramatically to avert the worst effects of climate change. Increased public awareness and concern regarding global climate change will result in more regulations designed to reduce GHG emissions. As a result, and as discussed hereafter in our risk factor entitled "***We are exposed to certain regulatory and financial risks related to climate change, which could adversely affect our financial condition, results of operations and cash flows***," we may be required to make increased capital expenditures to adapt our business and operations to meet new regulations and standards.

Over the years, we have made several public commitments regarding our intended reduction of carbon emissions including other short- and mid-term environmental sustainability goals. Although we intend to meet these goals and are committed to advancing more sustainable innovations in our industry, including through more sustainable and innovative flow control solutions and services, we may be required to expend significant resources to do so, which could significantly increase our operational costs. Further, there can be no assurance of the extent to which any of our ambitions will be achieved, or that any future investments we make in furtherance of achieving our sustainability goals will meet customer expectations and needs, investor expectations or any binding or non-binding legal standards regarding sustainability performance. In particular, our ability to meet those commitments depends in part on innovations and significant technological advancements with respect to the development and availability of reliable, affordable and sustainable alternative solutions. Moreover, we may determine that it is in the best interest of our company and our shareholders to prioritize other business, social, governance or sustainable investments over the achievement of our current commitments based on economic, regulatory and social factors, business strategy or pressure from investors, activist groups or other stakeholders.

If we are unable to meet these commitments, then, in addition to regulatory and legal risks related to compliance, we could incur adverse publicity and reaction from investors, customers or other stakeholders, which could adversely impact our reputation, which could in turn adversely impact our results of operations. While we have been and remain committed to being responsive to climate change and to reducing our carbon footprint, there can be no assurance that our commitments and current and future strategic plans to achieve those commitments will be successful, that the costs related to the foregoing energy transition may not be higher than expected, that the technological advancements and innovations we are relying upon will come to fruition in the timeframe we expect, or at all, or that proposed regulation or deregulation related to climate change will not have a negative competitive impact, any one of which could have a material adverse effect on our capital expenditures, operating margins and results of operations.

Our business may be adversely impacted by work stoppages and other labor matters.

As of December 31, 2021, we had approximately 16,000 employees, of which approximately 4,000 were located in the U.S. Approximately 5% of our U.S. employees are represented by unions. We also have unionized employees or employee work councils in Argentina, Australia, Austria, Brazil, European Union, Finland, France, Germany, India, Italy, Japan, Mexico, The Netherlands, South Africa, Spain, and Sweden. No individual unionized facility produces more than 10% of our revenues. Although we believe that our relations with our employees are generally satisfactory and we have not experienced any material strikes or work stoppages recently, no assurances can be made that we will not in the future experience these and other types of conflicts with labor unions, works councils, other groups representing employees or our employees generally, or that any future negotiations with our labor unions will not result in significant increases in our cost of labor. Our ability to successfully negotiate new and acceptable agreements when the existing agreements with employees covered by collective bargaining expire could result in business disruptions or increased costs.

Our ability to implement our business strategy and serve our customers is dependent upon the continuing ability to employ talented professionals and attract, train, develop and retain a skilled workforce. We are subject to the risk that we will not be able to effectively replace the knowledge and expertise of an aging workforce as workers retire. Without a properly skilled and experienced workforce, our costs, including productivity costs and costs to replace employees may increase, and this could negatively impact our earnings.

In addition, our policies prohibit harassment or discrimination in the workplace. Notwithstanding our conducting training and taking disciplinary action or other actions against or in response to alleged violations, we may encounter additional costs from claims made and/or legal proceedings brought against us, and we could suffer reputational harm.

Our growth strategy depends on our ability to continue to expand our market presence through acquisitions, and any future acquisitions may present unforeseen integration difficulties or costs which could materially affect our business.

Since 1997, we have expanded through a number of acquisitions, and we may pursue strategic acquisitions of businesses in the future. Our ability to implement this growth strategy will be limited by our ability to identify appropriate acquisition candidates, covenants in our credit agreement and other debt agreements and our financial resources, including available cash and borrowing capacity. Acquisitions may require additional debt financing, resulting in higher leverage and an increase in interest expense or may require equity financing, resulting in ownership dilution to existing shareholders. In addition, acquisitions sometimes require large one-time charges and can result in the incurrence of contingent liabilities, adverse tax consequences, substantial depreciation or deferred compensation charges, the amortization of identifiable purchased intangible assets or impairment of goodwill, any of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

When we acquire another business, the process of integrating acquired operations into our existing operations creates operating challenges and requires significant financial and managerial resources that would otherwise be available for the ongoing development or expansion of existing operations. Some of the more common challenges associated with acquisitions that we may experience, and have experienced in the past, include:

- loss of key employees or customers of the acquired company;
- conforming the acquired company's standards, processes, procedures and controls, including accounting systems and controls, with our operations, which could cause deficiencies related to our internal control over financial reporting;
- coordinating operations that are increased in scope, geographic diversity and complexity;
- retooling and reprogramming of equipment;
- hiring additional management and other critical personnel; and
- the diversion of management's attention from our day-to-day operations.

Further, no guarantees can be made that we would realize the cost savings, synergies or revenue enhancements that we may anticipate from any acquisition, or that we will realize such benefits within the time frame that we expect. If we are not able to timely address the challenges associated with acquisitions and successfully integrate acquired businesses, or if our integrated product and service offerings fail to achieve market acceptance, our business could be adversely affected.

A significant data breach or disruption to our information technology infrastructure could materially adversely affect our business operations.

Our information technology networks and related systems and devices and those technology systems under control of third parties with whom we do business are critical to the operation of our business and essential to our ability to successfully perform day-to-day operations. These information technology networks and related systems and devices are susceptible to damage, disruptions or shutdowns due to programming errors, defects or other vulnerabilities, power outages, hardware failures, computer viruses, cyber-attacks, malware attacks, ransomware attacks, theft, misconduct by employees or other insiders, misuse, human errors or other events. If any of the aforementioned breaches or disruptions occur and our business continuity plans do not effectively resolve the issues in a timely manner, our business, financial condition, results of operations, and liquidity could be materially adversely affected.

In addition, any of the aforementioned breaches or disruptions could expose us to a risk of loss, disclosure, misuse, corruption, or interruption of sensitive and critical data, information and functions, including our proprietary and confidential information and information related to our customers, suppliers and employees. It is also possible a security breach could result in theft of material trade secrets or other material intellectual property. While we devote substantial resources to maintaining adequate levels of cybersecurity, there can be no assurance that we will be able to prevent all of the rapidly evolving forms of increasingly sophisticated and frequent cyberattacks, or avoid or limit a material adverse impact on our systems after such incidents or attacks occur. The potential consequences of a material cybersecurity incident include reputational damage, loss of customers, litigation with third parties, regulatory actions and fines, theft of intellectual property, disruption of manufacturing plant operations and increased cybersecurity protection and remediation costs. If we are unable to prevent, anticipate, detect or adequately respond to security breaches, our operations could be disrupted and our business could be materially and adversely affected.

Developments in the applicable legal standards for the handling of personal data from time to time require changes to our business practices, penalties, increased cost of operations, or otherwise harm our business. To conduct our operations, we regularly move data across national borders and must comply with increasingly complex and rigorous regulatory standards enacted to protect business and personal data in the U.S. and elsewhere. For example, the E.U. recently adopted the General Data Protection Regulation (the “GDPR”). The GDPR imposes additional obligations on companies regarding the handling of personal data and provides certain individual privacy rights to persons whose data is stored. Compliance with existing, proposed and recently enacted laws and regulations can be costly; any failure to comply with these regulatory standards could subject us to legal and reputational risks, including proceedings against the Company by governmental entities or others, fines and penalties, damage to our reputation and credibility and could have a negative impact on our business and results of operations.

Risks Related to International Operations

Economic, political and other risks associated with international operations could adversely affect our business.

A substantial portion of our operations is conducted and located outside the U.S. We have manufacturing, sales or service facilities in more than 50 countries and sell to customers in over 90 countries, in addition to the U.S. Moreover, we primarily source certain of our manufacturing and engineering functions, raw materials and components from China, Eastern Europe, India and Latin America. Accordingly, our business and results of operations are subject to risks associated with doing business internationally, including:

- instability in a specific country's or region's political or economic conditions, particularly economic conditions in Europe and Latin America, and political conditions in the Russian Federation, the Middle East, Asia, North Africa, Latin America, the Trans-Pacific region and other emerging markets;
- trade protection measures, such as tariff increases, and import and export licensing and control requirements;
- political, financial market or economic instability relating to Brexit;
- political, financial market or economic instability relating to epidemics or pandemics (including the ongoing COVID-19 pandemic);
- uncertainties related to any geopolitical, economic and regulatory effects or changes due to recent or upcoming domestic and international elections;
- the imposition of governmental economic sanctions on countries in which we do business, including the Russian Federation and Venezuela;
- potentially negative consequences from changes in tax laws or tax examinations;
- difficulty in staffing and managing widespread operations;
- increased aging and slower collection of receivables, particularly in Latin America and other emerging markets;
- difficulty of enforcing agreements and collecting receivables through some foreign legal systems;
- differing and, in some cases, more stringent labor regulations;
- potentially negative consequences from fluctuations in foreign currency exchange rates;
- partial or total expropriation;
- differing protection of intellectual property;
- inability to repatriate income or capital; and
- difficulty in administering and enforcing corporate policies, which may be different than the customary business practices of local cultures.

For example, political unrest or work stoppages negatively impact the demand for our products from customers in affected countries and other customers, such as U.S. oil refineries, that are affected by the resulting disruption in the supply of crude oil. Similarly, military conflicts in the Russian Federation and Ukraine, the Middle East, Asia and North Africa could soften the level of capital investment and demand for our products and services. The COVID-19 pandemic, and the volatile regional and global economic conditions stemming from the pandemic, have precipitated or aggravated many of the factors described above, and we expect that these factors will continue to adversely impact our operations and financial performance as well as those of many of our customers and suppliers. For further discussion of the risks presented by the ongoing COVID-19 pandemic, see the discussion above under the heading "The outbreak and global spread of the novel coronavirus (COVID-19) are having an adverse impact on our operations and financial performance, as well as on the operations and financial performance of many of our customers and suppliers. We are unable to predict the full extent to which the COVID-19 pandemic will continue to adversely impact our operations, financial performance, results of operations, financial condition, cash flows and/or stock price."

In order to manage our day-to-day operations, we must overcome cultural and language barriers and assimilate different business practices. In addition, we are required to create compensation programs, employment policies and other administrative programs that comply with laws of multiple countries. We also must communicate and monitor standards and directives across our global network. In addition, emerging markets pose other uncertainties, including challenges to our ability to protect our intellectual property, pressure on the pricing of our products and increased risk of political instability, and may prefer local suppliers because of existing relationships, local restrictions or incentives. Our failure to successfully manage our geographically diverse operations could impair our ability to react quickly to changing business and market conditions and to enforce compliance with standards and procedures.

Our future success will depend, in large part, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these factors could, however, materially adversely affect our international operations and, consequently, our financial condition, results of operations and cash flows.

We might be adversely impacted by the Brexit withdrawal of the United Kingdom's exit from the European Union.

We have operations in the United Kingdom ("U.K.") and the European Union and face risks associated with changes in laws and regulations within the European Union, including in connection with the U.K. withdrawing from the European Union ("Brexit"). Following Brexit in 2020, a new trade arrangement was reached between the U.K. and the European Union that began on January 1, 2021. There remain unavoidable uncertainties related to the new relationship between the U. K and the European Union. For example, the U.K.'s withdrawal from the European Union may result in adverse effects on the tax, tax treaty currency, operational, legal and regulatory regimes to which our businesses in the region our subject.

Brexit could also, among other potential outcomes, disrupt the free movement of goods, services and people between the United Kingdom and the European Union, significantly disrupt trade between the United Kingdom and the European Union and other parties, and result in greater restrictions on imports and exports between the United Kingdom and other European Union countries, among other regulatory complexities. For example, we have experienced disruptions to our local supply chain and distribution, including those related to the recent transportation labor shortage in the U.K. In addition, inflationary cost pressures increased in our U.K. business in 2021, as we also experienced in other markets. These potential and unknown outcomes and uncertainties related to the U.K.'s separation from, and new trade agreements with, the European Union and resulting impact on the global economic climate could have a material adverse effect on our operations, financial condition, results of operations and cash flows.

Implementation of new tariffs and changes to or uncertainties related to tariffs and trade agreements could adversely affect our business.

The U.S. has implemented certain tariffs on steel and aluminum imported into the country. In response, certain foreign governments have implemented or reportedly considered implementing additional tariffs on U.S. goods. In addition, there have been recent changes to trade agreements, like the U.S. withdrawal from the Trans-Pacific Partnership and the replacement of the North American Free Trade Agreement with the United States-Mexico-Canada Agreement. Under the Biden administration, U.S. policy with respect to tariffs and international trade agreements may be rolled back or modified in other ways. Uncertainties with respect to tariffs, trade agreements, or any potential trade wars negatively impact the global economic markets and could affect our customers' ability to invest in capital expenditures, which may in turn result in reduced demand for our products and services, and could have a material adverse effect on our financial condition, results of operations and cash flows. Changes in tariffs could also result in changes in supply and demand of our raw material needs, affect our manufacturing capabilities and lead to increased prices that we may not be able to effectively pass on to customers, each of which could materially adversely affect our operating margins, results of operations and cash flows.

Our international operations expose us to fluctuations in foreign currency exchange rates which could adversely affect our business.

A significant portion of our revenue and certain of our costs, assets and liabilities, are denominated in currencies other than the U.S. dollar. The primary currencies to which we have exposure are the Euro, British pound, Mexican peso, Brazilian real, Indian rupee, Japanese yen, Singapore dollar, Argentine peso, Canadian dollar, Australian dollar, Chinese yuan, Colombian peso, Chilean peso and South African rand. Certain of the foreign currencies to which we have exposure, such as the Venezuelan bolivar and Argentine peso, have undergone significant devaluation in the past, which reduce the value of our local monetary assets, reduce the U.S. dollar value of our local cash flow, generate local currency losses that may impact our ability to pay future dividends from our subsidiary to the parent company and potentially reduce the U.S. dollar value of future local net income. Although we enter into forward exchange contracts to economically hedge some of our risks associated with transactions denominated in certain foreign currencies, no assurances can be made that exchange rate fluctuations will not adversely affect our financial condition, results of operations and cash flows.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery laws and regulations.

The U.S. Foreign Corrupt Practices Act ("FCPA") and similar anti-bribery laws and regulations in other jurisdictions, such as the UK Bribery Act, generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business or securing an improper advantage. Because we operate in many parts of the world and sell to industries that have experienced corruption to some degree, our policies mandate compliance with applicable anti-bribery laws worldwide. Violation of the FCPA or other similar anti-bribery laws or regulations, whether due to our or others' actions or inadvertence, could subject us to civil and criminal penalties or other sanctions that could have a material adverse impact on our business, financial condition, results of operations and cash flows. In addition, actual or alleged violations could damage our reputation or ability to do business.

Regulatory and Legal Risks

Our operations are subject to a variety of complex and continually changing laws, regulations and policies, both internationally and domestically, which could adversely affect our business.

Due to the international scope of our operations, the system of laws, regulations and policies to which we are subject is complex and includes, without limitation, regulations issued by the U.S. Customs and Border Protection, the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Treasury Department's Office of Foreign Assets Control and various foreign governmental agencies, including applicable export controls, customs, currency exchange control and transfer pricing regulations, as applicable. No assurances can be made that we will continue to be found to be operating in compliance with, or be able to detect violations of, any such laws, regulations or policies. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted. Compliance with laws and any new laws or regulations may increase our operations costs or require significant capital expenditures. Any failure to comply with applicable laws, regulations or policies in the U.S. or in any other country in which we operate could result in substantial fines and penalties, which could adversely affect our business.

In particular, there is uncertainty related to the Biden administration’s plans for new or existing treaty and trade relationships with other countries, including with respect to the January 2017 U.S. withdrawal from the Trans-Pacific Partnership, which may affect restrictions or tariffs imposed on products we buy or sell. These factors, together with other key global events during 2021 (such as the ongoing global economic impact of the COVID-19 pandemic, as well as ongoing terrorist activity), may adversely impact the ability or willingness of non-U.S. companies to transact business in the U.S. This uncertainty may also affect regulations and trade agreements affecting U.S. companies, global stock markets (including the NYSE, on which our common shares are traded), currency exchange rates, and general global economic conditions. All of these factors are outside of our control, but may nonetheless cause us to adjust our strategy in order to compete effectively in global markets. For further discussion of the impact of tariffs and trade agreements on our business, please see the discussion above under the heading "Implementation of new tariffs and changes to or uncertainties related to tariffs and trade agreements could adversely affect our business."

Environmental compliance costs and liabilities could adversely affect our financial condition, results of operations and cash flows.

Our operations and properties are subject to regulation under environmental laws, which can impose substantial sanctions for violations. We must conform our operations to applicable regulatory requirements and adapt to changes in such requirements in all countries in which we operate.

We use hazardous substances and generate hazardous wastes in many of our manufacturing and foundry operations. Most of our current and former properties are or have been used for industrial purposes, and some may require clean-up of historical contamination. We are currently conducting investigation and/or remediation activities at a number of locations where we have known environmental concerns. In addition, we have been identified as one of many PRPs at four Superfund sites. The projected cost of remediation at these sites, as well as our alleged "fair share" allocation, while not anticipated to be material, has been reserved. However, until all studies have been completed and the parties have either negotiated an amicable resolution or the matter has been judicially resolved, some degree of uncertainty remains.

We have incurred, and expect to continue to incur, operating and capital costs to comply with environmental requirements. In addition, new laws and regulations, stricter enforcement of existing requirements, the discovery of previously unknown contamination or the imposition of new clean-up requirements could require us to incur costs or become the basis for new or increased liabilities. Moreover, environmental and sustainability initiatives, practices, rules and regulations are under increasing scrutiny of both governmental and non-governmental bodies, which can cause rapid change in operational practices, standards and expectations and, in turn, increase our compliance costs. Any of these factors could have a material adverse effect on our financial condition, results of operations and cash flows.

We are exposed to certain regulatory and financial risks related to climate change, which could adversely affect our financial condition, results of operations and cash flows.

Emissions of carbon dioxide and other greenhouse gases and their role in climate change are receiving ever increasing attention worldwide, which has led to significant legislative and regulatory efforts to limit GHG emissions. Existing or future legislation and regulations related to GHG emissions and climate change by the U.S. Congress, state and foreign legislatures and federal, state, local and foreign governmental agencies could adversely affect our business. Additionally, it is uncertain whether, when and in what form mandatory carbon dioxide emissions reduction programs may be adopted. Similarly, certain countries, including the U.S., have adopted the Paris Climate Agreement and these and other existing international initiatives or those under consideration affect our operations.

When our customers, particularly those involved in the oil and gas, power generation, petrochemical processing or petroleum refining industries, are subject to any of these or other similar proposed or newly enacted laws and regulations, we are exposed to risks that the additional costs by customers to comply with such laws and regulations could impact their ability or desire to continue to operate at similar levels in certain jurisdictions as historically seen or as currently anticipated, which could negatively impact their demand for our products and services. In addition, new laws and regulations that might favor the increased use of non-fossil fuels, including nuclear, wind, solar and bio-fuels or that are designed to increase energy efficiency, could dampen demand for oil and gas production or power generation resulting in lower spending by customers for our products and services. These actions could also increase costs associated with our operations, including costs for raw materials and transportation. There is also increased focus, including by governmental and non-governmental organizations, environmental advocacy groups, investors and other stakeholders on these and other sustainability matters, and adverse publicity in the global marketplace about the levels of GHG emissions by companies in the manufacturing and energy industry could reduce customer demand for our products and services or harm our reputation. Because it is uncertain what laws will be enacted, we cannot predict the potential impact of such laws on our future financial condition, results of operations and cash flows, but such new or additional laws could adversely affect our business.

We are party to asbestos-containing product litigation that could adversely affect our financial condition, results of operations and cash flows.

We are a defendant in a substantial number of lawsuits that seek to recover damages for personal injury allegedly resulting from exposure to asbestos-containing products formerly manufactured and/or distributed by us. Such products were used as internal components of process equipment, and we do not believe that there was any significant emission of asbestos-containing fibers during the use of this equipment. Although we are defending these allegations vigorously and believe that a high percentage of these lawsuits are covered by insurance or indemnities from other companies, there can be no assurance that we will prevail or that coverage or payments made by insurance or such other companies would be adequate. Unfavorable rulings, judgments or settlement terms could have a material adverse impact on our business, financial condition, results of operations and cash flows.

Inability to protect our intellectual property could negatively affect our competitive position.

We rely on a combination of patents, copyrights, trademarks, trade secrets, confidentiality provisions and licensing arrangements to establish and protect our proprietary rights. We cannot guarantee, however, that the steps we have taken to protect our intellectual property will be adequate to prevent infringement of our rights or misappropriation of our technology. For example, effective patent, trademark, copyright and trade secret protection are unavailable or limited in some of the foreign countries in which we operate. In addition, while we generally enter into confidentiality agreements with our employees and third parties to protect our intellectual property, such confidentiality agreements could be breached or otherwise may not provide meaningful protection for our trade secrets and know-how related to the design, manufacture or operation of our products. Resorting to litigation to protect our intellectual property rights is burdensome and costly, and we may not always prevail. Further, adequate remedies are not always available in the event of an unauthorized use or disclosure of our trade secrets and manufacturing expertise. Failure to successfully enforce our intellectual property rights could harm our competitive position, business, financial condition, results of operations and cash flows.

Increased costs as a result of product liability and warranty claims could adversely affect our financial condition, results of operations and cash flows.

From time to time, we are exposed to product liability and warranty claims when the use of one of our products results in, or is alleged to result in, bodily injury and/or property damage or our products actually or allegedly fail to perform as expected. Some of our products are designed to support the most critical, severe service applications in the markets that we serve and any failure of such products could result in significant product liability and warranty claims, as well as damage to our reputation in the marketplace. While we maintain insurance coverage with respect to certain product liability claims, we may not be able to obtain such insurance on acceptable terms in the future, and any such insurance may not provide adequate coverage against product liability claims. In addition, product liability claims can be expensive to defend and can divert the attention of management and other personnel for significant periods of time, regardless of the ultimate outcome. An unsuccessful defense of a product liability claim could have an adverse effect on our business, financial condition, results of operations and cash flows. Even if we are successful in defending against a claim relating to our products, claims of this nature could cause our customers to lose confidence in our products and our company. Warranty claims are not generally covered by insurance, and we may incur significant warranty costs that are not reimbursable, which could adversely affect our financial condition, results of operations and cash flows.

Financial and Accounting Risks

Significant changes in pension fund investment performance or assumptions changes may have a material effect on the valuation of our obligations under our defined benefit pension plans, the funded status of these plans and our pension expense.

We maintain funded defined benefit pension plans that are either currently funded in accordance with local requirements in the U.S., Belgium, Canada, The Netherlands, Switzerland and the U.K., or above funded requirements in India and Mexico, and defined benefit plans that are not required to be funded and are not funded in Austria, France, Germany, Italy, Japan and Sweden. Our pension liability is materially affected by the discount rate used to measure our pension obligations and, in the case of the plans that are required to be funded, the level of plan assets available to fund those obligations and the expected long-term rate of return on plan assets. A change in the discount rate can result in a significant increase or decrease in the valuation of pension obligations, affecting the reported status of our pension plans and our pension expense. Significant changes in investment performance or a change in the portfolio mix of invested assets can result in increases and decreases in the valuation of plan assets or in a change of the expected rate of return on plan assets. This impact may be particularly prevalent where we maintain significant concentrations of specified investments, such as the U.K. equity and fixed income securities in our non-U.S. defined benefit plans. Changes in the expected return on plan assets assumption can result in significant changes in our pension expense and future funding requirements.

We continually review our funding policy related to our U.S. pension plan in accordance with applicable laws and regulations. U.S. regulations have increased the minimum level of funding for U.S. pension plans in prior years, which has at times required significant contributions to our pension plans. Contributions to our pension plans reduce the availability of our cash flows to fund working capital, capital expenditures, R&D efforts and other general corporate purposes.

The recording of increased deferred tax asset valuation allowances in the future or the impact of tax law changes on such deferred tax assets could adversely affect our operating results.

We currently have significant net deferred tax assets resulting from tax credit carryforwards, net operating losses and other deductible temporary differences that are available to reduce taxable income in future periods. Based on our assessment of our deferred tax assets, we determined, based on projected future income and certain available tax planning strategies, that approximately $201 million of our deferred tax assets will more likely than not be realized in the future, and no valuation allowance is currently required for this portion of our deferred tax assets. Should we determine in the future that these assets will more likely than not be realized we will be required to record an additional valuation allowance in connection with these deferred tax assets and our operating results would be adversely affected in the period such determination is made. In addition, tax law changes could negatively impact our deferred tax assets.

Our outstanding indebtedness and the restrictive covenants in the agreements governing our indebtedness limit our operating and financial flexibility.

Under certain events of default, mandatory repayments on our outstanding indebtedness, which requires us to dedicate a substantial portion of our cash flows from operations to payments on our indebtedness, thereby reducing the availability of our cash flows to fund working capital, capital expenditures, R&D efforts and other general corporate purposes, such as dividend payments and share repurchases, and could generally limit our flexibility in planning for, or reacting to, changes in our business and industry. In addition, we may need new or additional financing in the future to expand our business or refinance our existing indebtedness. Our current senior credit facility matures on September 13, 2026 and our senior notes are due in 2030 and 2032. Additionally, we have drawn amounts under a term loan fund. For additional information regarding our current indebtedness refer to Note 13 to our consolidated financial statements included in Item 8 of this Annual Report. Our inability to timely access capital on satisfactory terms, including as a result of market disruptions, could limit our ability to expand our business as desired and refinance our indebtedness.

In addition, the agreements governing our indebtedness impose certain operating and financial restrictions on us and somewhat limit management's discretion in operating our businesses. These agreements limit or restrict our ability, among other things, to: incur additional debt; fully utilize the capacity under the senior credit facility; pay dividends and make other distributions; repurchase shares of our common stock in certain circumstances; prepay subordinated debt; make investments and other restricted payments; create liens; sell assets; and enter into transactions with affiliates.

We are also required to maintain debt ratings, comply with leverage and interest coverage financial covenants and deliver to our lenders audited annual and unaudited quarterly financial statements. Our ability to comply with these covenants may be affected by events beyond our control. Failure to comply with these covenants could result in an event of default which, if not cured or waived, may have a material adverse effect on our business, financial condition, results of operations and cash flows.

Goodwill impairment could negatively impact our net income and shareholders' equity.

Goodwill is not amortized, but is tested for impairment at the reporting unit level, which is an operating segment or one level below an operating segment. Goodwill is required to be tested for impairment annually and between annual tests if events or circumstances indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying value. Reductions in or impairment of the value of our goodwill or other intangible assets will result in charges against our earnings, which could have a material adverse effect on our reported results of operations and financial position in future periods.

There are numerous risks that may cause the fair value of a reporting unit to fall below its carrying amount, which could lead to the measurement and recognition of goodwill impairment. These risks include, but are not limited to, lowered expectations of future financial results, adverse changes in the business climate, increase in the discount rate, an adverse action or assessment by a regulator, the loss of key personnel, a more-likely-than-not expectation that all or a significant portion of a reporting unit may be disposed of, failure to realize anticipated synergies from acquisitions, a sustained decline in the Company’s market capitalization, and significant, prolonged negative variances between actual and expected financial results. In recent years, the estimated fair value of our pump reporting unit has fluctuated, partially due to broad-based capital spending declines and heightened pricing pressures experienced in the oil and gas markets. Although we have concluded that there is no impairment on the goodwill associated with our pump reporting unit as of December 31, 2021, we will continue to monitor its performance and related market conditions for future indicators of potential impairment. For additional information, see the discussion in Item 7 of this Annual Report and under Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

The failure to maintain effective internal controls could impact the accuracy and timely reporting of our business and financial results.

Our internal control over financial reporting has not always prevented or detected misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls or fraud. We have in the past discovered, and may in the future discover, areas of our internal controls that need improvement, including material weaknesses in internal controls. We have devoted significant resources to remediate and improve our internal controls and to monitor the effectiveness of these remediated measures. There can be no assurance that these measures will ensure that we maintain at all times effective internal controls over our financial processes and reporting in the future. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. Any future failures to maintain the adequacy of our internal controls, including any failure to implement required new or improved controls, or difficulties in their implementation, could harm our business and financial results and we could fail to meet our financial reporting obligations.

General Risks

We depend on key personnel, the loss of whom would harm our business.

Our future success will depend in part on the continued service of key executive officers and personnel. The loss of the services of any key individual could harm our business. Our future success also depends on our ability to recruit, retain and engage our personnel sufficiently, both to maintain our current business and to execute our strategic initiatives. Competition for officers and employees in our industry is intense and we may not be successful in attracting and retaining such personnel.

Changes in accounting principles and guidance could result in unfavorable accounting charges or effects.

We prepare our consolidated financial statements in conformity with accounting principles generally accepted in the U.S. A change in these principles can have a significant effect on our reported financial position and financial results. The adoption of new or revised accounting principles may require us to make changes to our systems, processes and internal controls, which could have a significant effect on our reported financial results and internal controls, cause unexpected financial reporting fluctuations, retroactively affect previously reported results or require us to make costly changes to our operational processes and accounting systems upon our following the adoption of these standards.

Forward-Looking Information is Subject to Risk and Uncertainty

This Annual Report and other written reports and oral statements we make from time-to-time include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts included in this Annual Report regarding our financial position, business strategy and expectations, plans and objectives of management for future operations, industry conditions, market conditions and indebtedness covenant compliance are forward-looking statements. Forward-looking statements may include, among others, statements about our goals and strategies, new product introductions, plans to cultivate new businesses, future economic conditions, revenue, pricing, gross profit margin and costs, capital spending, expected cost savings from our realignment programs, depreciation and amortization, research and development expenses, potential impairment of assets, tax rate and pending tax and legal proceedings. In some cases forward-looking statements can be identified by terms such as "may," "should," "expects," "could," "intends," "projects," "predicts," "plans," "anticipates," "estimates," "believes," "forecasts," "seeks" or other comparable terminology. These statements are not historical facts or guarantees of future performance, but instead are based on current expectations and are subject to material risks, uncertainties and other factors, many of which are outside of our control.

We have identified factors that could cause actual plans or results to differ materially from those included in any forward-looking statements. These factors include those described above under this "Risk Factors" heading, or as may be identified in our other SEC filings from time to time. These uncertainties are beyond our ability to control, and in many cases, it is not possible to foresee or identify all the factors that may affect our future performance or any forward-looking information, and new risk factors can emerge from time to time. Given these risks and uncertainties, undue reliance should not be placed on forward-looking statements as a prediction of actual results.

All forward-looking statements included in this Annual Report are based on information available to us on the date of this Annual Report and the risk that actual results will differ materially from expectations expressed in this report will increase with the passage of time. We undertake no obligation, and disclaim any duty, to publicly update or revise any forward-looking statement or disclose any facts, events or circumstances that occur after the date hereof that may affect the accuracy of any forward-looking statement, whether as a result of new information, future events, changes in our expectations or otherwise. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995 and all of our forward-looking statements are expressly qualified in their entirety by the cautionary statements contained or referenced in this section.

ITEM 1B. *UNRESOLVED STAFF COMMENTS*

None.

ITEM 2. *PROPERTIES*

Our principal executive offices, including our global headquarters, are located at 5215 N. O'Connor Boulevard, Suite 700, Irving, Texas 75039. Our global headquarters is a leased facility, which we began to occupy on January 1, 2004. In December 2018, we extended our original lease term an additional 10 years to December 2030. We have the option to renew the current lease for two additional five-year periods. We currently occupy approximately 130,000 square feet at this facility.

Our major manufacturing facilities (those with 50,000 or more square feet of manufacturing capacity) operating at December 31, 2021 are presented in the table below. See "Item 1. Business" in this Annual Report for further information with respect to all of our manufacturing and operational facilities, including QRCs.

	Number of Facilities	Approximate Aggregate Square Footage
FPD		
U.S.	7	1,198,000
Non-U.S.	18	3,598,000
FCD		
U.S.	5	1,109,000
Non-U.S.	13	2,046,000

We own the majority of our manufacturing facilities, and those manufacturing facilities we do not own are leased. We also maintain a substantial network of U.S. and foreign service centers and sales offices, most of which are leased. The majority of our manufacturing leased facilities are covered by lease agreements with terms ranging from two to seven years, with individual lease terms generally varying based on the facilities' primary usage. We believe we will be able to extend leases on our various facilities as necessary, as they expire.

We believe that our current facilities are adequate to meet the requirements of our present and foreseeable future operations. We continue to review our capacity requirements as part of our strategy to optimize our global manufacturing efficiency. See Note 5 to our consolidated financial statements included in Item 8 of this Annual Report for additional information regarding our lease obligations.

ITEM 3. *LEGAL PROCEEDINGS*

We are party to the legal proceedings that are described in Note 16 to our consolidated financial statements included in Item 8 of this Annual Report, and such disclosure is incorporated by reference into this Item 3. In addition to the foregoing, we and our subsidiaries are named defendants in certain other routine lawsuits incidental to our business and are involved from time to time as parties to governmental proceedings, all arising in the ordinary course of business. Although the outcome of lawsuits or other proceedings involving us, and our subsidiaries cannot be predicted with certainty, and the amount of any liability that could arise with respect to such lawsuits or other proceedings cannot be predicted accurately, management does not currently expect these matters, either individually or in the aggregate, to have a material effect on our financial position, results of operations or cash flows. We have established reserves covering exposures relating to contingencies to the extent believed to be reasonably estimable and probable based on past experience and available facts.

ITEM 4. *MINE SAFETY DISCLOSURES*

Not applicable.

PART II

ITEM 5. *MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES*

Market Information

Our common stock is traded on the New York Stock Exchange ("NYSE") under the symbol "FLS" and our CUSIP number is number is 34354P105. On February 17, 2022, our records showed 920 shareholders of record. We have historically paid quarterly dividends based on a dividend date-of-record in the last month of each quarter with the dividend paid the following month. Any subsequent dividends will be reviewed by our Board of Directors and declared in its discretion.

Issuer Purchases of Equity Securities

During the quarter ended December 31, 2021, we had no repurchases of our common stock shares as part of publicly announced plans. As of December 31, 2021, we have $96.1 million of remaining capacity under our current share repurchase program. The following table sets forth the repurchase data for each of the three months during the quarter ended December 31, 2021:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan (3)(4)	Approximate Dollar Value That May Yet Be Purchased Under the Plan
				(In millions)
October 1 - 31	652 (1)	$ 36.54	—	$ 96.1
November 1 - 30	2,029 (2)	33.84	—	96.1
December 1 - 31	2,165 (1)	30.17	—	96.1
Total	4,846	$ 32.57	—	

(1) Shares tendered by employees to satisfy minimum tax withholding amounts for Restricted Shares.

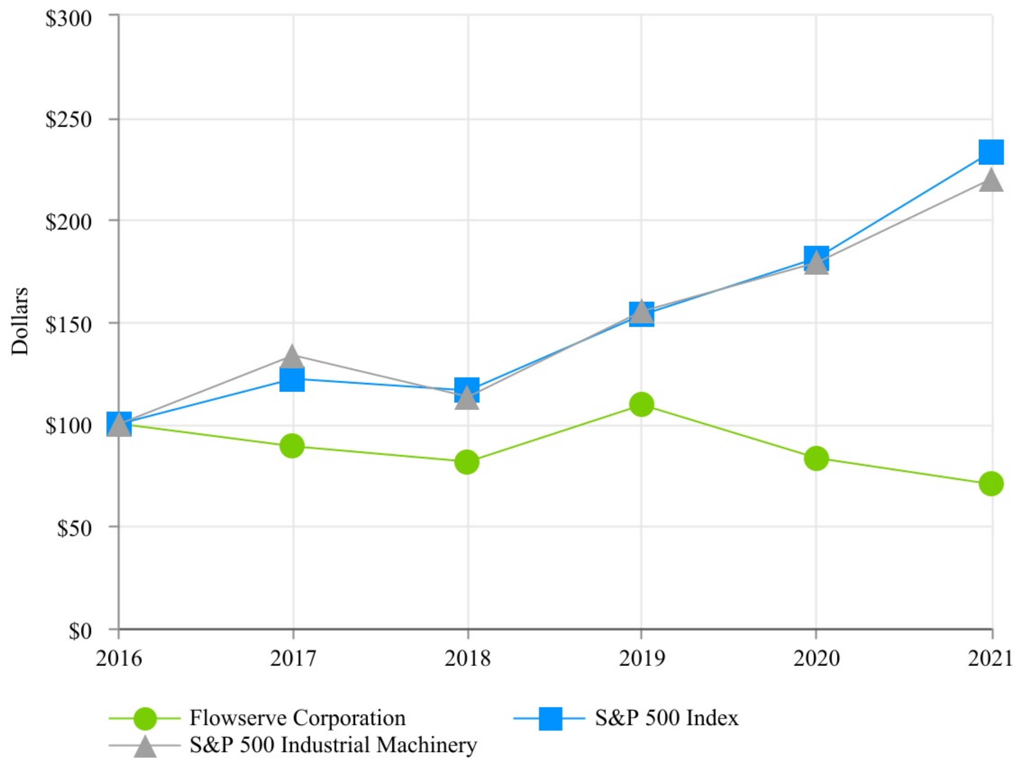
(2) Includes 15 shares that were tendered by employees to satisfy minimum tax withholding amounts for Restricted Shares at an average price per share of $33.25 and 2,014 shares purchased at a price of $33.85 per share by a rabbi trust that we established in connection with our director deferral plans, pursuant to which non-employee directors may elect to defer directors' quarterly cash compensation to be paid at a later date in the form of common stock.

(3) On November 13, 2014, our Board of Directors approved a $500.0 million share repurchase authorization. Our share repurchase program does not have an expiration date, and we reserve the right to limit or terminate the repurchase program at any time without notice.

(4) Note 18 to our consolidated financial statements included in Item 8 of this Annual Report provides additional information regarding our share repurchase activity.

Stock Performance Graph

The following graph depicts the most recent five-year performance of our common stock with the S&P 500 Index and S&P 500 Industrial Machinery. The graph assumes an investment of $100 on December 31, 2016, and assumes the reinvestment of any dividends over the following five years. The stock price performance shown in the graph is not necessarily indicative of future price performance.



	Base Period	December 31,				
Company/Index	2016	2017	2018	2019	2020	2021
Flowserve Corporation	$100.00	$88.82	$81.53	$108.99	$82.97	$70.44
S&P 500 Index	100.00	121.82	116.47	153.15	181.31	233.30
S&P 500 Industrial Machinery	100.00	133.47	113.27	155.03	178.87	219.93

ITEM 6. [Reserved]

ITEM 7. *MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS*

The following discussion and analysis is provided to increase the understanding of, and should be read in conjunction with, the accompanying consolidated financial statements and notes. See “Item 1A. Risk Factors” and the section titled “Forward-Looking Information is Subject to Risk and Uncertainty” included in this Annual Report on Form 10-K for the year ended December 31, 2021 ("Annual Report") for a discussion of the risks, uncertainties and assumptions associated with these statements. Unless otherwise noted, all amounts discussed herein are consolidated.

EXECUTIVE OVERVIEW

Our Company

We are a world-leading manufacturer and aftermarket service provider of comprehensive flow control systems. We develop and manufacture precision-engineered flow control equipment integral to the movement, control and protection of the flow of materials in our customers’ critical processes. Our product portfolio of pumps, valves, seals, automation and aftermarket services supports global infrastructure industries, including oil and gas, chemical, power generation and water management, as well as general industrial markets where our products and services add value. Through our manufacturing platform and global network of QRCs, we offer a broad array of aftermarket equipment services, such as installation, advanced diagnostics, repair and retrofitting. As of December 31, 2021, we have approximately 16,000 employees (“associates”) globally and a footprint of manufacturing facilities and QRCs in more than 50 countries.

Our business model is significantly influenced by the capital spending of global infrastructure industries for the placement of new products into service and maintenance spending for aftermarket services for existing operations. The worldwide installed base of our products is an important source of aftermarket revenue, where products are intended to maximize operating time of many key industrial processes. We continue to invest in our aftermarket strategy to provide local support to drive customer investments in our offerings and use of our services to replace or repair installed products. The aftermarket portion of our business also helps provide business stability during various economic periods. The aftermarket business, which is primarily served by our network of 155 QRCs located around the globe, some of which are shared by our two business segments, provides a variety of service offerings for our customers including spare parts, service solutions, product life cycle solutions and other value-added services. It is generally a higher margin business compared to our original equipment business and a key component of our profitable growth strategy.

Our operations are conducted through two business segments that are referenced throughout this Management’s Discussion and Analysis of Financial Condition and Results of Operations ("MD&A"):

- Flowserve Pump Division ("FPD") for custom, highly-engineered pumps, pre-configured industrial pumps, pump systems, mechanical seals, auxiliary systems and replacement parts and related services; and
- Flow Control Division ("FCD") for engineered and industrial valves, control valves, actuators and controls and related services.

Our business segments share a focus on industrial flow control technology and have a high number of common customers. These segments also have complementary product offerings and technologies that are often combined in applications that provide us a net competitive advantage. Our segments also benefit from our global footprint, our economies of scale in reducing administrative and overhead costs to serve customers more cost effectively and shared leadership for operational support functions, such as research and development, marketing and supply chain.

The reputation of our product portfolio is built on more than 50 well-respected brand names such as Worthington, IDP, Valtek, Limitorque, Durco, Argus, Edward, Valbart and Durametallic, which we believe to be one of the most comprehensive in the industry. Our products and services are sold either directly or through designated channels to more than 10,000 companies, including some of the world’s leading engineering, procurement and construction ("EPC") firms, original equipment manufacturers, distributors and end users.

We continue to leverage our QRC network to be positioned as near to customers as possible for service and support in order to capture valuable aftermarket business. Along with ensuring that we have the local capability to sell, install and service our equipment in remote regions, we continuously improve our global operations. Despite recent headwinds caused by the COVID-19 pandemic as well as recent supply chain disruption and labor constraints, we continue to enhance our global supply chain capability to increase our ability to meet global customer demands and improve the quality and timely delivery of our products over the long-term. Additionally, we continue to devote resources to improving the supply chain processes across our business segments to find areas of synergy and cost reduction and to improve our supply chain management capability to meet global customer demands. We also remain focused on improving on-time delivery and quality, while managing warranty costs as a percentage of sales across our global operations, through the assistance of a focused Continuous Improvement Process ("CIP") initiative. The goal of the CIP initiative, which includes lean manufacturing, six sigma business management strategy and value engineering, is to maximize service fulfillment to customers through on-time delivery, reduced cycle time and quality at the highest internal productivity.

COVID-19 Update

Our cross-functional crisis management team established during the first quarter of 2020 has continued monitoring and making recommendations to management to help us continue operating as an essential business, while also protecting the health and safety of our associates. We expect that widespread implications of the pandemic worldwide will continue to cause substantial economic uncertainty and challenging operational conditions through 2022. We continue to actively monitor the impacts of the COVID-19 pandemic on all aspects of our business and geographies.

While we cannot reasonably estimate with certainty the duration and severity of the COVID-19 pandemic or its ultimate impact on the global economy, our business or our financial condition and results, we nonetheless remain committed to providing the critical support, products and services that our customers rely on, and currently believe that we will emerge from these events well positioned for long-term growth.

Health and Safety of Our Associates

The health and safety of our associates, suppliers and customers around the world continues to be a priority as we navigate the COVID-19 pandemic, including recent spikes in cases of the virus and its variants in various geographies in which we operate. These recent spikes caused significant labor availability issues among our associates in the second half of 2021, which contributed to the COVID-19 operational challenges faced during the second half of 2021. We are incredibly proud of the great teamwork exhibited by our global workforce who have demonstrated strong resilience in adapting to continually evolving health and safety guidelines while addressing these challenging times and providing products and services to our customers.

At the beginning of the pandemic we implemented policies and practices to help protect our workforce so they can safely and effectively carry out their vital work, and we have continued to revise those policies and practices in light of guidance received from local and regional health authorities where appropriate. For employees working in our facilities, including our global headquarters in Irving, Texas, which began a phased reopening during the second quarter of 2021, we continue taking steps, consistent with guidelines from local and global health experts to protect our employees so that we can continue operations and manufacture critical technologies and equipment, including providing face coverings and other personal protective equipment, enhanced cleaning of sites and the implementation of social distancing protocols.

Our employees and facilities have a key role in keeping essential infrastructure and industries operating, including oil and gas, water, chemical, power generation and other essential industries, such as food and beverage and healthcare. All of our facilities are open and operational as we continue to make essential products and provide services for our customers. The measures described above, combined with continued employee costs and under-absorption of manufacturing costs as a result of temporary closures and work-from-home policies, have had and are expected to continue having an adverse impact on our financial performance throughout the remainder of the pandemic. Despite the increased challenges of labor availability in the second half of 2021, we continue to expect a decline of these adverse impacts as we navigate further through the pandemic in 2022.

Customer Demand

During the year the ongoing effects of the COVID-19 pandemic in global markets have continued to adversely impact our customers, particularly in the oil and gas markets. As a result of the pandemic’s effect (among certain other effects) on oil prices during 2020, many of our large customers reduced capital expenditures and budgets last year. To date, while spending for maintenance and repair projects and aftermarket services have returned close to pre-pandemic levels, project-based customer spending has yet to return to pre-pandemic levels despite some modest improvement during the year. In this regard, we saw an overall increase in bookings of 10.6% during 2021 as compared to the same period in 2020. Despite the modest improvement in customer spending, during the fourth quarter of the year we continued to experience customer-driven delays in the witnessing and inspection necessary to take delivery of equipment, which we expect will continue as long as we and our customers continue to experience the supply chain and logistics headwinds described below under the heading "Supply Chain Impact."

While many of the repair and maintenance projects that were paused by our customers last year as a result of the pandemic have gone forward in 2021 and others will ultimately need to be completed, the timing will largely depend on the duration of the COVID-19 pandemic and how the virus continues to spread in our customers’ various geographies, given the impact of the pandemic on demand, utilization and required maintenance. While we saw some recovery in capital expenditure budgets in 2021 and, therefore, our bookings during the year, capital spending did not approach pre-pandemic levels in 2021. We expect planned capital spending to increase in 2022 but remain below pre-pandemic levels.

Supply Chain Impact

Since the onset of the pandemic, many of our suppliers have also experienced varying lengths of production and shipping delays related to the COVID-19 pandemic, some of which continue to exist in highly affected countries. Additionally, the global supply chain and logistics constraints that are currently affecting global markets caused additional headwinds in the second half of the year. These conditions have had an adverse effect on the speed at which we can manufacture and ship our products to customers, and have also led to an increase in logistics, transportation and freight costs, requiring that we diversify our supply chain and, in some instances, source materials from new suppliers. Additionally, these conditions have in some cases impacted our ability to deliver products to customers on time, which has in turn led to an increase in backlog at some of our manufacturing sites. These disruptions in our supply chain and their effects have continued and we expect they will continue as the COVID-19 pandemic and ongoing global supply chain and logistics headwinds continue.

Operational Impacts

We have also engaged in a number of cost savings measures in order to help mitigate certain of the adverse effects of the COVID-19 pandemic on our financial results, including certain realignment activities (further described below under “OUR RESULTS OF OPERATIONS") for the period ended December 31, 2021, reductions in capital expenditures and continued cuts in other discretionary spending due to our response to the effects of COVID-19, which partially offsets the continued costs and operational impacts of the safety protocols and procedures that we have implemented and sustained as described above under the heading "Health and Safety of Our Associates." We continue to evaluate additional cost savings measures in order to reduce the impact of the COVID-19 pandemic on our financial results.

We continually monitor and assess the spread of COVID-19 and known variants, including in areas that have seen recent increases in cases, and we will continue to adapt our operations to respond the changing conditions as needed. During the fourth quarter, we experienced increased difficulty in maintaining staffing and productivity levels due to both a higher infection rate among associates requiring quarantine and a tighter labor market for new hiring. As we continue to manage our business through this time of uncertainty and market volatility, we will remain focused on the health and safety of our associates, suppliers, customers, and will continue to provide essential products and services to our customers.

Our Markets

Our products and services are used in several distinct industries: oil and gas, chemical, power generation, water management, and several other industries, such as mining, steel and paper, that are collectively referred to as "general industries."

Oil and Gas

The oil and gas industry, which represented approximately 35% and 34% of our bookings in 2021 and 2020, respectively, experienced a material decrease in capital spending in 2020 compared to the previous year. The decrease was primarily due to decreased project activity and short cycle investment resulting from the pandemic's negative impact on demand for refined products. Customers' repair and maintenance budgets improved in 2021 where bookings levels returned to roughly pre-pandemic levels, partially offsetting the decreased project activity and short cycle investment.

The outlook for the oil and gas industry is heavily dependent on the duration of the pandemic and its impact on fuel demand, demand growth from both mature markets and developing geographies as well as changes in the regulatory environment. While we believe that the pandemic will continue to negatively impact our customers' capital investment budgets, we expect 2022 capital investment to increase, but not to pre-pandemic levels. We further believe improved and stable oil prices provide support for increased demand for our aftermarket products and services. We believe the medium and long-term fundamentals for this industry remain attractive and see a stabilized environment with expected increased fuel demand on improved pandemic management, and as the industry works through current excess supply. In addition, we believe projected depletion rates of existing fields and forecasted long-term demand growth will require additional investments. With our long-standing reputation in providing successful solutions for upstream, mid-stream and downstream applications, along with the advancements in our portfolio of offerings, we believe that we continue to be well-positioned to assist our customers in this improving environment.

Chemical

The chemical industry represented approximately 24% and 24% of our bookings in 2021 and 2020, respectively. The chemical industry is comprised of petrochemical, specialty chemical and pharmaceutical products. Capital spending in 2021 decreased primarily due to the pandemic's negative impact on demand for chemical products. Customers' repair and maintenance budgets improved in 2021 where bookings levels returned to roughly pre-pandemic levels.

The outlook for the chemical industry remains heavily dependent on global economic conditions. As global economies and unemployment conditions improve, a rise in consumer spending should follow. An increase in spending would drive greater demand for petrochemical, specialty chemical and pharmaceutical products supporting improved levels of capital investment. We believe the chemical industry will continue to invest in North America and Middle East capacity additions, maintenance and upgrades for optimization of existing assets and that developing regions will selectively invest in capital infrastructure to meet current and future indigenous demand. We believe our global presence and our localized aftermarket capabilities are well-positioned to serve the potential growth opportunities in this industry.

Power Generation

The power generation industry represented approximately 12% and 13% of our bookings in 2021 and 2020, respectively. In 2021, the power generation industry continued to experience softness in thermal power generation capital spending in the mature and key developing markets.

Natural gas-fired combined cycle (“NGCC”) plants increased their share of the energy mix, driven by market prices for gas remaining low and stable (partially due to the increasing global availability of liquefied natural gas (“LNG”)), low capital expenditures, and the ability of NGCC to stabilize unpredictable renewable sources. With the potential of unconventional sources of gas, the global power generation industry is forecasting an increased use of this form of fuel for power generation plants.

Despite fewer new nuclear plants being constructed in recent years, nuclear power remains an important contributor to the global energy mix. We continue to support our significant installed base in the global nuclear fleet by providing aftermarket and life extension products and services. Due to our extensive history, we believe we are well positioned to take advantage of this ongoing source of aftermarket and new construction opportunities.

Global efforts to limit the emissions of carbon dioxide may have some adverse effect on thermal power investment plans depending on the potential requirements imposed and the timing of compliance by country. However, many proposed methods of capturing and limiting carbon dioxide emissions offer business opportunities for our products and services. At the same time, we continue to take advantage of new investments in concentrated solar power generating capacity, where our pumps, valves, and seals are uniquely positioned for both molten salt applications as well as the traditional steam cycle.

We believe the long-term fundamentals for the power generation industry remain solid based on projected increases in demand for electricity driven by global population growth, growth of urbanization in developing markets and the increased use of electricity driven transportation. We also believe that our long-standing reputation in the power generation industry, our portfolio of offerings for the various generating methods, our advancements in serving the renewable energy market and carbon capture methodologies, as well as our global service and support structure, position us well for the future opportunities in this important industry.

Water Management

The water management industry represented approximately 3% and 3% of our bookings in 2021 and 2020, respectively. Water management industry activity levels increased in 2021 following the decrease in 2020 primarily due to the pandemic's negative impact on government budgets across the globe. Worldwide demand for fresh water, water treatment and re-use, desalination and flood control are expected to create requirements for new facilities or for upgrades of existing systems, many of which require products that we offer, particularly pumps. With improved management of the pandemic, we expect capital and aftermarket spending to rise in developed and emerging markets with governments and private industry providing funding for critical projects when their priorities shift away from pandemic-management.

The proportion of people living in regions that find it difficult to meet water requirements is expected to double by 2025. We believe that the persistent demand for fresh water during all economic cycles supports continued investments, especially in North America and developing regions.

General Industries

General industries represented, in the aggregate, approximately 26% and 26% of our bookings in 2021 and 2020, respectively. General industries comprise a variety of different businesses, including mining and ore processing, pulp and paper, food and beverage and other smaller applications, none of which individually represented more than 5% of total bookings in 2021 and 2020. General industries also include sales to distributors, whose end customers operate in the industries we primarily serve. General industry activity levels increased in 2021 primarily due to customers' improved repair and maintenance budgets.

The outlook for this group of industries is heavily dependent upon the condition of global economies and consumer confidence levels. The long-term fundamentals of many of these industries remain sound, as many of the products produced by these industries are common staples of industrialized and urbanized economies. We believe that our specialty product offerings designed for these industries and our aftermarket service capabilities will provide continued business opportunities.

Outlook for 2022

As the world continues to make progress against COVID-19 largely through increased vaccinations, we have seen an inflection in our served end-markets as commodity prices and mobility levels increase. With our increased backlog and improved market environment we expect to return to growth in 2022, however the combined effects of the supply chain, logistics and labor availability headwinds are expected to continue into the first half of 2022. Further, we have not seen and do not expect to see an increase in cancellations from our backlog. We therefore expect to continue to deliver on our backlog during 2022, though with a slightly longer cycle time than originally expected.

Our bookings were $3.8 billion during 2021. Because a booking represents a contract that can be, in certain circumstances, modified or canceled, and can include varying lengths between the time of booking and the time of revenue recognition, there is no guarantee that bookings will result in comparable revenues or otherwise be indicative of future results. Assuming continued progress with the pandemic and other supply chain, logistics and labor availability headwinds, we further expect full-year bookings in 2022 to increase versus 2021 levels.

On December 31, 2021, we had $988.1 million of fixed-rate Senior Notes outstanding. We expect our interest expense in 2022 will be lower compared with amounts incurred in 2021. Our results of operations may also be impacted by unfavorable foreign currency exchange rate movements. See “Item 7A. Quantitative and Qualitative Disclosures about Market Risk” of this Annual Report.

We expect to generate sufficient cash from operations and have sufficient capacity under our Senior Credit Facility to fund our working capital, capital expenditures, dividend payments, share repurchases, debt payments and pension plan contributions in 2022. The amount of cash generated or consumed by working capital is dependent on our level of revenues, customer cash advances, backlog, customer-driven delays and other factors. We will seek to improve our working capital utilization, with a particular focus on improving the management of accounts receivable and inventory. In 2022, our cash flows for investing activities will be focused on strategic initiatives, information technology infrastructure, general upgrades and cost reduction opportunities and we currently estimate capital expenditures to be between $70 million and $80 million, before consideration of any acquisition activity.

We currently anticipate that our minimum contribution to our qualified U.S. pension plan will be approximately $20 million, excluding direct benefits paid, in 2022 in order to maintain fully-funded status as defined by applicable law. We currently anticipate that our contributions to our non-U.S. pension plans will be approximately $2 million in 2022, excluding direct benefits paid.

OUR RESULTS OF OPERATIONS

The following is the discussion and analysis of changes in the financial condition and results of operations for fiscal year December 31, 2021 compared to fiscal year 2020. The discussion and analysis of changes in the financial condition and results of operations for fiscal year 2020 compared to fiscal year 2019 that are not included in this Form 10-K may be found in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on February 23, 2021. During the first quarter of 2021, as previously disclosed, we identified an accounting error involving foreign currency transactions beginning with the first quarter of 2020 through the year ended December 31, 2020. These adjustments increased retirement obligations and other liabilities by $1.5 million, retained earnings by $14.1 million and accumulated other comprehensive loss by $15.6 million as of December 31, 2020. We have assessed the above described error and concluded the effects were not material to the period ended December 31, 2020. The December 31, 2020 balances, as presented herein, have been revised. Refer to Note 2 for a detailed discussion related to the impact of the revision to the December 31, 2020 balances.

Throughout this discussion of our results of operations, we discuss the impact of fluctuations in foreign currency exchange rates. We have calculated currency effects on operations by translating current year results on a monthly basis at prior year exchange rates for the same periods.

Realignment Activity

In the second quarter of 2018, we launched and committed resources to our Flowserve 2.0 Transformation, a program designed to transform our business model to drive operational excellence, reduce complexity, accelerate growth, improve organizational health and better leverage our existing global platform, which is further discussed in Note 17 to our consolidated financial statements included in this Quarterly Report. The Flowserve 2.0 Transformation expenses incurred primarily consists of professional services, project management and related travel costs recorded in SG&A expenses. As of December 31, 2020, the Flowserve 2.0 Transformation efforts were substantially complete and resulted in total program expense incurred of approximately $92 million of which approximately $23 million was incurred in 2020.

In the second quarter of 2020, we identified and initiated certain realignment activities resulting from our Flowserve 2.0 Transformation Program to right-size our organizational operations based on the current business environment, with the overall objective to reduce our workforce costs. We anticipate a total investment in 2020 Realignment Program activities of approximately $95 million and the majority of the charges were incurred in 2020 and 2021. There are certain other realignment activities that are being evaluated, but have not yet been finalized and therefore not included in the total anticipated realignment investment above. Based on the actions initiated with the 2020 Realignment Program, we estimate that we have achieved run-rate cost savings of approximately $106 million as of December 31, 2021, with approximately $56 million of those savings in COS and approximately $50 million SG&A. Upon completion of the 2020 Realignment Program activities, we expect full year run-rate cost savings of approximately $125 million. Actual savings could vary from expected savings, which represent management’s best estimate to date.

The total charges incurred in 2021 and 2020 related to our 2020 Realignment Program and Flowserve 2.0 Transformation activities by segment are presented in the following tables:

	December 31, 2021				
(Amounts in thousands)	**FPD**	**FCD**	**Subtotal–Reportable Segments**	**All Other**	**Consolidated Total**
Total Realignment Program Charges					
COS	$ 14,249	$ 2,007	$ 16,256	$ 590	$ 16,846
SG&A	1,033	699	1,732	3,913	5,645
Total	$ 15,282	$ 2,706	$ 17,988	$ 4,503	$ 22,491

(Amounts in thousands)	December 31, 2020 FPD	FCD	Subtotal– Reportable Segments	All Other	Consolidated Total
Total Realignment and Transformation Program Charges					
COS	$ 38,838	$ 8,407	$ 47,245	$ 52	$ 47,297
SG&A(1)	11,322	4,940	16,262	41,230	57,492
Total	$ 50,160	$ 13,347	$ 63,507	$ 41,282	$ 104,789

(1) Includes gains from the sales of non-strategic manufacturing facilities that are included in our Realignment Programs.

Bookings and Backlog

	2021	2020	2019
		(Amounts in millions)	
Bookings	$ 3,774.4	$ 3,411.6	$ 4,238.3
Backlog (at period end)	2,003.6	1,854.9	2,157.0

We define a booking as the receipt of a customer order that contractually engages us to perform activities on behalf of our customer in regard to the manufacture, delivery, and/or support of products or the delivery of service. Bookings recorded and subsequently canceled within the same fiscal period are excluded from reported bookings. Bookings cancelled from the prior fiscal periods are excluded from the reported bookings and represent less than 1% for all periods presented. Bookings of $3.8 billion in 2021 increased by $362.8 million, or 10.6%, as compared with 2020. The increase included currency benefits of approximately $64 million. The increase was driven by increased customer bookings in the oil and gas, chemical, general and water industries, partially offset by decreased bookings in the power generation industry. The increase in customer bookings was driven by both original equipment and aftermarket bookings.

Backlog represents the aggregate value of booked but uncompleted customer orders and is influenced primarily by bookings, sales, cancellations and currency effects. Backlog of $2.0 billion at December 31, 2021 increased by $148.7 million, or 8.0%, as compared with December 31, 2020. Currency effects provided a decrease of approximately $42 million (currency effects on backlog are calculated using the change in period end exchange rates). Backlog related to aftermarket orders was approximately 38% and 36% of the backlog at December 31, 2021 and 2020, respectively. We expect to recognize revenue on approximately 90% of December 31, 2021 backlog during 2022. Backlog includes our unsatisfied (or partially unsatisfied) performance obligations related to contracts having an original expected duration in excess of one year of approximately $430 million as discussed in Note 3 to our consolidated financial statements included in Item 8 of this Annual Report.

Sales

	2021	2020	2019
		(Amounts in millions)	
Sales	$ 3,541.1	$ 3,728.1	$ 3,939.7

Sales in 2021 decreased by $187.0 million, or 5.0%, as compared with 2020. The decrease included currency benefits of approximately $66 million. The decrease in sales was driven by original equipment, with decreased sales into North America, the Middle East, Africa and Europe, partially offset by increased sales into Asia Pacific and Latin America. Aftermarket sales represented approximately 52% of total sales, as compared with approximately 49% of total sales for the same period in 2020.

Sales to international customers, including export sales from the U.S., were approximately 67% of total sales in 2021 and 65% in 2020. Sales into Europe, the Middle East and Africa ("EMA") were approximately 32% of total sales in 2021 and 33% in 2020. Sales into Asia Pacific were approximately 23% of total sales for 2021 and 22% in 2020. Sales into Latin America were approximately 7% of total sales in 2021 and 6% in 2020.

Gross Profit and Gross Profit Margin

	2021	2020	2019
	(Amounts in millions, except percentages)		
Gross profit	$ 1,049.7	$ 1,116.8	$ 1,289.3
Gross profit margin	29.6 %	30.0 %	32.7 %

Gross profit in 2021 decreased by $67.1 million, or 6.0%, as compared with 2020. Gross profit margin in 2021 of 29.6% decreased from 30.0% in 2020. The decrease was primarily due to revenue recognized on lower margin original equipment orders and lower customer sales volumes due to supply chain and logistical impacts related to COVID-19, partially offset by a $15.0 million charge of underutilized capacity manufacturing costs expensed related to the COVID-19 pandemic in 2020 that did not recur, a mix shift to higher margin aftermarket sales and decreased charges and increased savings related to our realignment actions as compared to the same period in 2020.

SG&A

	2021	2020	2019
	(Amounts in millions, except percentages)		
SG&A	$ 797.1	$ 878.2	$ 913.2
SG&A as a percentage of sales	22.5 %	23.6 %	23.2 %

SG&A in 2021 decreased by $81.1 million, or 9.2%, as compared with 2020. Currency effects yielded an increase of approximately $10 million. In 2021, SG&A as a percentage of sales decreased 110 basis points as compared with the same period in 2020. The decrease in SG&A, including currency, was due to decreased charges and increased savings related to our realignment actions, decreased travel-related expenses and lower bad debt expense, partially offset by increased broad-based annual incentive compensation as compared with the same period in 2020.

Net Earnings from Affiliates

	2021	2020	2019
	(Amounts in millions)		
Net earnings from affiliates	$ 16.3	$ 11.8	$ 10.5

Net earnings from affiliates represents our net income from investments in six joint ventures (one located in each of Chile, China, India, Saudi Arabia, South Korea and the United Arab Emirates) that are accounted for using the equity method of accounting. Net earnings from affiliates in 2021 increased by $4.5 million, or 38.1%, as compared to the prior year, primarily as a result of increased earnings of our FPD joint venture in South Korea.

Operating Income

	2021	2020	2019
	(Amounts in millions, except percentages)		
Operating income	$ 270.8	$ 250.3	$ 386.6
Operating income as a percentage of sales	7.6 %	6.7 %	9.8 %

Operating income in 2021 increased by $20.5 million, or 8.2%, as compared with 2020. The increase included currency benefits of approximately $8 million. The increase was primarily a result of the $81.1 million decrease in SG&A, partially offset by the $67.1 million decrease in gross profit.

__Interest Expense and Interest Income__

	2021	2020	2019
	(Amounts in millions)		
Interest expense	$ (57.6)	$ (56.2)	$ (55.0)
Interest income	2.8	4.2	8.4

Interest expense in 2021 increased by $1.4 million as compared with 2020. The increase was primarily attributable to interest expense associated with the senior notes issued in the third quarter of 2020. Interest income in 2021 decreased by $1.4 million as compared to 2020. The decrease in interest income was partially due to lower interest rates on our average cash balances compared with same period in 2020.

__Loss on Extinguishment of Debt__

	2021	2020	2019
	(Amounts in millions)		
Loss on extinguishment of debt	$ (46.2)	$ (1.2)	$ —

Loss on extinguishment of debt in 2021 of $46.2 million resulted from the redemption of our 2023 Senior Notes, 2022 Senior Notes and 2022 Euro Senior Notes and the write-off of deferred financing fees due to the amendment and restatement of the previous Senior Credit facility. See Note 13 to our consolidated financial statements included in Item 8 of this Annual Report for additional information on these transactions.

__Other Income (Expense), net__

	2021	2020	2019
	(Amounts in millions)		
Other income (expense), net	$ (36.1)	$ 5.2	$ (17.6)

Other income (expense), net decreased $41.3 million as compared to 2020, due to a $50.7 million increase in losses from transactions in currencies other than our sites' functional currencies, partially offset by a $13.6 million increase in gains from foreign exchange contracts. The net change was primarily due to the foreign currency exchange rate movements in the Canadian dollar, Emirati dirham, Euro and Japanese yen during the year ended December 31, 2021, as compared with the same period in 2020.

__Income Tax and Tax Rate__

	2021	2020	2019
	(Amounts in millions, except percentages)		
Provision for (benefit from) income taxes	$ (2.6)	$ 61.4	$ 75.5
Effective tax rate	(1.9)%	30.4 %	23.4 %

Our effective tax rate of (1.9)% for the year ended December 31, 2021 decreased from 30.4% in 2020 primarily due to the net impact of foreign operations, the reversal of certain deferred tax liabilities as a result of legal entity restructurings, favorable resolution of audits in foreign jurisdictions in 2021 and the establishment of a valuation allowance against certain deferred tax assets in 2020. The 2021 effective tax rate differed from the federal statutory rate of 21% primarily due to the net impact of foreign operations and the reversal of certain deferred tax liabilities as a result of legal entity restructurings.

The 2020 effective tax rate differed from the federal statutory rate of 21% primarily due to the establishment of a valuation allowance against certain deferred tax assets given the current and anticipated impact to the Company's operations resulting from the COVID-19 pandemic and the distressed oil prices.

Our effective tax rate is based upon current earnings and estimates of future taxable earnings for each domestic and international location. Changes in any of these and other factors, including our ability to utilize foreign tax credits and net operating losses or results from tax audits, could impact the tax rate in future periods. As of December 31, 2021, we have foreign tax credits of $86.4 million, expiring in 2026 and 2028-2031 tax years, against which we recorded a valuation allowance of $86.4 million. Additionally, we have recorded other net deferred tax assets of $44.0 million, which relate to net operating losses, tax credits and other deductible temporary differences that are available to reduce taxable income in future periods, most of which do not have a definite expiration. Should we not be able to utilize all or a portion of these credits and losses, our effective tax rate would increase.

Net Earnings and Earnings Per Share

	2021	2020	2019
	(Amounts in millions, except per share amounts)		
Net earnings attributable to Flowserve Corporation	$ 125.9	$ 130.4	$ 238.8
Net earnings per share — diluted	$ 0.96	$ 1.00	$ 1.81
Average diluted shares	130.9	131.1	131.7

Net earnings in 2021 decreased by $4.5 million to $125.9 million, or to $0.96 per diluted share, as compared with 2020. The decrease was primarily attributable to an increase in loss on extinguishment of debt of $45.0 million, a $41.3 million decrease in other income (expense), net and a $2.8 million decrease in interest income (expense), net, partially offset by an increase in operating income of $20.5 million and a $64.0 million decrease in tax expense.

Other Comprehensive Income (Loss)

	2021	2020	2019
	(Amounts in millions)		
Other comprehensive income (loss)	$ 44.7	$ (24.6)	$ (9.8)

Other comprehensive income (loss) in 2021 increased by $69.3 million from a loss of $24.6 million in 2020. The income was primarily due to foreign currency translation adjustments resulting primarily from exchange rate movements of the Euro, Colombian peso and Mexican peso versus the U.S. dollar at December 31, 2021 as compared with 2020.

Business Segments

We conduct our operations through two business segments based on type of product and how we manage the business. We evaluate segment performance and allocate resources based on each segment’s operating income. See Note 20 to our consolidated financial statements included in Item 8 of this Annual Report for further discussion of our segments. The key operating results for our two business segments, FPD and FCD, are discussed below.

Flowserve Pump Division Segment Results

Our largest business segment is FPD, through which we design, manufacture, pre-test, distribute and service specialty and highly-engineered custom and pre-configured pumps and pump systems, mechanical seals and auxiliary systems (collectively referred to as "original equipment"). FPD includes longer lead time, highly-engineered pump products and mechanical seals that are generally manufactured within shorter lead times. FPD also manufactures replacement parts and related equipment and provides aftermarket services. FPD primarily operates in the oil and gas, petrochemical, chemical, power generation, water management and general industries. FPD operates in 49 countries with

35 manufacturing facilities worldwide, 10 of which are located in Europe, 11 in North America, eight in Asia Pacific and six in Latin America, and we have 134 QRCs, including those co-located in manufacturing facilities and/or shared with FCD.

	FPD		
	2021	**2020**	**2019**
	(Amounts in millions, except percentages)		
Bookings	$ 2,675.7	$ 2,358.4	$ 3,007.9
Sales	2,470.8	2,675.7	2,706.3
Gross profit	760.4	811.4	899.3
Gross profit margin	30.8 %	30.3 %	33.2 %
SG&A	535.6	552.2	566.3
Gain on sale of business	1.8	—	—
Segment operating income	243.2	271.0	343.5
Segment operating income as a percentage of sales	9.8 %	10.1 %	12.7 %
Backlog (at period end)	1,368.9	1,236.9	1,560.9

Bookings in 2021 increased by $317.3 million, or 13.5%, as compared with 2020. The increase included currency benefits of approximately $44 million. The increase in customer bookings was driven by increased orders in the oil and gas, chemical, general and water industries, partially offset by decreased bookings in the power generation industry. Increased customer bookings of $172.8 million into North America, $91.5 million into the Middle East, $43.9 million into Europe, $26.5 million into Africa and $44.2 million into Latin America, were partially offset by decreased customer bookings of $64.9 million into Asia Pacific. The increase in customer bookings was more heavily weighted towards aftermarket bookings. Of the $2.7 billion of bookings in 2021, approximately 39% were from oil and gas, 25% from general industries, 21% from chemical, 10% from power generation and 5% from water management.

Sales in 2021 decreased $204.9 million, or 7.7%, as compared with 2020. The decrease included currency benefits of approximately $44 million. The decrease was driven primarily by customer original equipment, resulting from decreased customer sales of $86.3 million into North America, $29.0 million into the Middle East, $56.4 million into Asia Pacific, $20.1 million into Africa and $39.0 million into Europe, partially offset by increased sales of $19.3 million into Latin America.

Gross profit in 2021 decreased by $51.0 million, or 6.3%, as compared with 2020. Gross profit margin in 2021 of 30.8% increased from 30.3% in 2020. The increase in gross profit margin was primarily attributable to decreased charges and increased savings under our realignment actions as compared to the same period in 2020, a $9.2 million charge of underutilized capacity manufacturing costs expensed related to the COVID-19 pandemic in 2020 that did not recur and a mix shift to higher margin aftermarket sales, partially offset by revenue recognized on lower margin original equipment orders and lower customer sales volumes due to supply chain and logistical impacts related to COVID-19.

SG&A in 2021 decreased by $16.6 million, or 3.0%, as compared with 2020. Currency effects provided an increase of approximately $8 million. The decrease in SG&A, including currency, was due to favorable impacts on SG&A due to a decrease in travel, administrative and selling-related expenses, lower bad debt expense and decreased charges and increased savings under our realignment actions, partially offset by increased broad-based annual incentive compensation as compared to the same period in 2020.

Operating income in 2021 decreased by $27.8 million, or 10.3%, as compared with 2020. The decrease included currency benefits of approximately $6 million. The decrease was due to the $51.0 million decrease in gross profit, partially offset by the $16.6 million decrease in SG&A.

Backlog of $1.4 billion at December 31, 2021 increased by $132.0 million, or 10.7%, as compared with December 31, 2020. Currency effects provided a decrease of approximately $29 million.

Flow Control Division Segment Results

FCD designs, manufactures, distributes and services a broad portfolio of engineered and industrial valve and automation solutions, including isolation and control valves, actuation, controls and related equipment. FCD leverages its experience and application know-how by offering a complete menu of engineering and project management services to complement its expansive product portfolio. FCD has a total of 45 manufacturing facilities and QRCs in 22 countries around the world, with five of its 19 manufacturing operations located in the U.S., eight located in Europe, five located in Asia Pacific and one located in Latin America. We believe that FCD is the second largest industrial valve supplier in the world.

	FCD		
	2021	**2020**	**2019**
	(Amounts in millions, except percentages)		
Bookings	$ 1,112.8	$ 1,065.8	$ 1,240.9
Sales	1,075.9	1,057.5	1,238.9
Gross profit	316.7	321.9	405.5
Gross profit margin	29.4 %	30.4 %	32.7 %
SG&A	197.4	196.3	213.6
Segment operating income	119.7	125.6	191.9
Segment operating income as a percentage of sales	11.1 %	11.9 %	15.5 %
Backlog (at period end)	639.8	623.1	600.0

Bookings in 2021 increased $47.0 million, or 4.4%, as compared with 2020. The increase included currency benefits of approximately $20 million. The increase in customer bookings was driven by higher bookings in general, chemical and power generation industries, partially offset by lower bookings in the oil and gas industry. Increased customer bookings of $82.1 million into North America and $8.0 million into Europe, were partially offset by decreased bookings of $28.5 million into Asia Pacific, $6.7 million into the Middle East, $6.6 million into Latin America and $0.3 million into Africa. The increase was driven by original equipment bookings. Of the $1.1 billion of bookings in 2021, approximately 33% were from chemical, 26% were from oil and gas, 26% from general industries and 15% from power generation.

Sales in 2021 increased by $18.4 million, or 1.7%, as compared with 2020. The increase included currency benefits of approximately $22 million and was driven by increased customer aftermarket sales. Sales increased $65.8 million into Asia Pacific, $2.3 million into the Middle East and $4.2 million into Latin America, partially offset by decreased customer sales of $37.1 million into North America, $5.9 million into Europe and $5.3 million into Africa.

Gross profit in 2021 decreased by $5.2 million, or 1.6%, as compared with 2020. Gross profit margin in 2021 of 29.4% decreased from 30.4% in 2020. The decrease in gross profit margin was primarily attributable to revenue recognized on lower margin original equipment orders, inflationary cost pressure and lower sales volume due to supply chain and logistical impacts related to COVID-19, partially offset by a mix shift to higher margin aftermarket sales, a $5.8 million charge of underutilized capacity manufacturing costs expensed related to the COVID-19 pandemic in 2020 that did not recur and decreased charges and increased savings under our realignment actions as compared to the same period in 2020.

SG&A in 2021 increased by $1.1 million, or 0.6% as compared with 2020. Currency effects provided an increase of approximately $3 million. The increase in SG&A was primarily due to increased selling-related costs, partially offset by decreased charges and increased savings related to our realignment actions as compared to the same period in 2020.

Operating income in 2021 decreased by $5.9 million, or 4.7%, as compared with 2020. The decrease included currency benefits of approximately $3 million. The decrease was primarily due to the $5.2 million decrease in gross profit and the increase in SG&A of $1.1 million.

Backlog of $639.8 million at December 31, 2021 increased by $16.7 million, or 2.7%, as compared with December 31, 2020. Currency effects provided a decrease of approximately $13 million.

LIQUIDITY AND CAPITAL RESOURCES

Cash Flow Analysis

	2021	2020	2019
		(Amounts in millions)	
Net cash flows provided (used) by operating activities	$ 250.1	$ 310.5	$ 324.1
Net cash flows provided (used) by investing activities	(59.5)	(41.7)	(33.4)
Net cash flows provided (used) by financing activities	(599.7)	147.6	(231.5)

The following is a discussion and analysis of the Company's liquidity and capital resources for the years ended December 31, 2021 and 2020. A discussion of changes in the Company's liquidity and capital resources for the year ended December 31, 2020 and 2019 can be found in Part II, "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on February 23, 2021.

Existing cash, cash generated by operations and borrowings available under our senior credit facility are our primary sources of short-term liquidity. We monitor the depository institutions that hold our cash and cash equivalents on a regular basis, and we believe that we have placed our deposits with creditworthy financial institutions. Our sources of operating cash generally include the sale of our products and services and the conversion of our working capital, particularly accounts receivable and inventories. Our total cash balance at December 31, 2021 was $658.5 million, compared with $1,095.3 million at December 31, 2020.

At December 31, 2021 our cash provided by operating activities was $250.1 million compared to $310.5 million in 2020, which provided cash to support short-term working capital needs. Cash flow provided by working capital increased in 2021 due primarily to cash provided by lower contract assets, net of $74.3 million and higher contract liabilities of $14.2 million, partially offset by cash used by higher inventory, net of $32.1 million, lower accounts payable of $19.5 million and higher accounts receivable, net of $8.7 million.

Increases in accounts receivable used $8.7 million of cash flow in 2021, compared to cash flow provided of $45.6 million in 2020. For the fourth quarter of 2021 our days' sales outstanding ("DSO") was 72 days as compared to 69 days in 2020. We have not experienced a significant increase in customer payment defaults in 2021.

Increases in inventory used $32.1 million of cash flow in 2021 as compared with cash used of $15.3 million in 2020. The cash used from inventory in 2021 was due to an increase in work in process. Inventory turns were 3.8 times at December 31, 2021, as compared with 4.1 times for 2020. Our calculation of inventory turns does not reflect the impact of advanced cash received from our customers.

Decreases in contract assets provided $74.3 million of cash flow and increases in contact liabilities provided $14.2 million of cash flow in 2021.

Decreases in accounts payable used $19.5 million of cash flow in 2021 compared with cash used of $22.6 million in 2020. Decreases in accrued liabilities and income taxes payable used $13.9 million of cash flow in 2021 compared to cash flow provided of $50.2 million in 2020.

Cash used by investing activities were $59.5 million in 2021, as compared to $41.7 million in 2020. The increase of cash used in 2021 was primarily due to lower cash proceeds provided from the disposal of assets during the year of $13.0 million and net affiliate investment activity of $7.2 million. Capital expenditures were $54.9 million in 2021, as compared to $57.4 million in 2020. In 2022, we currently estimate capital expenditures to be between $70 million and $80 million, before consideration of any acquisition activity.

Cash used by financing activities were $599.7 million in 2021 compared to cash flow used of $147.6 million in 2020. Cash outflows during 2021 resulted primarily from the $1,243.5 million in payments on senior notes resulting from the redemption of our 2022 Euro Senior Notes, 2023 Senior Notes and 2022 Senior Notes in 2021, $104.6 million of dividend payments and the repurchase of $17.5 million of our common stock, partially offset by $498.3 million in net proceeds from the issuance of the senior notes due January 15, 2032 ("2032 Senior Notes") and $300.0 million of proceeds related to the unsecured term loan facility draw.

In 2021 we repurchased 440,000 shares of our outstanding common stock for $17.5 million. As of December 31, 2021, we had $96.1 million of remaining capacity under our share repurchase plan previously approved by the Board of Directors.

Our material cash requirements for the next 12 months, include our estimated 2022 capital expenditures described above, our contractual obligations summarized below under the subheading "--Contractual Obligations", and a one-time tax payment of approximately $29 million associated with accrued withholding taxes related to foreign undistributed earnings. In the aggregate, our cash needs in 2022 are expected to be lower than those of 2021 due to anticipated benefits from working capital reductions and lower long-term debt repayments from financing activities. We believe cash flows from operating activities, combined with availability under our senior credit facility and our existing cash balances, will be sufficient to enable us to meet our cash flow needs for the next 12 months. However, cash flows from operations could be adversely affected by a continued decrease in the rate of general global economic growth and an extended decrease in capital spending of our customers, as well as economic, political and other risks associated with sales of our products, operational factors, competition, regulatory actions, fluctuations in foreign currency exchange rates and fluctuations in interest rates, among other factors. We believe that cash flows from operating activities and our expectation of continuing availability to draw upon our credit agreements are also sufficient to meet our cash flow needs for periods beyond the next 12 months.

Financing

On September 13, 2021 ("Closing Date"), we amended and restated our credit agreement ("Amended and Restated Credit Agreement") under our Senior Credit Facility ("Credit Facility") with Bank of America, N.A. ("Administrative Agent") and the other lenders to provide greater flexibility in maintaining adequate liquidity and access to available borrowings. The Amended and Restated Credit Agreement, (i) retained, from the previous credit agreement, the $800.0 million unsecured Revolving Credit Facility, which includes a $750.0 million sublimit for the issuance of letters of credit and a $30.0 million sublimit for swing line loans ii) provides for an up to $300 million unsecured Term Loan Facility (the "Term Loan"), (iii) extends the maturity date of the agreement to September 13, 2026, (iv) reduces commitment fees, (v) extends net leverage ratio covenant definition through the maturity of the agreement, and (vi) provides the ability to make certain adjustments to the otherwise applicable commitment fee, interest rate and letter of credit fees based on the Company’s performance against to-be-established key performance indicators with respect to certain of the Company’s environmental, social and governance targets. Most other terms and conditions under the previous Credit Facility remained unchanged.

On the Closing Date, approximately $300.0 million was drawn under the unsecured Term Loan to fund, in part, the previously announced redemption of the Company’s 2022 Senior Notes and 2023 Senior Notes.

The interest rates per annum applicable to the Revolving Credit Facility are unchanged under the Amended and Restated Credit Agreement. The interest rates per annum applicable to the Credit Facility, other than with respect to swing line loans, are LIBOR plus between 1.000% to 1.750%, depending on our debt rating by either Moody’s Investors Service, Inc. ("Moody's") or Standard & Poor’s Financial Services LLC ("S&P"), or, at our option, the Base Rate (as defined in the Amended and Restated Credit Agreement) plus between 0.000% to 0.750% depending on our debt rating by either Moody’s or S&P. At December 31, 2021, the interest rate on the Revolving Credit Facility was LIBOR plus 1.375% in the case of LIBOR loans and the Base Rate plus 0.375% in the case of Base Rate loans. In addition, a commitment fee is payable quarterly in arrears on the daily unused portions of the Credit Facility. The commitment fee will be between 0.080% and 0.250% of unused amounts under the Credit Facility depending on our debt rating by either Moody’s or S&P. The commitment fee was 0.175% (per annum) during the period ended December 31, 2021.

Under the terms and conditions of the Amended and Restated Credit Agreement, interest rates per annum applicable to the Term Loan are stated as LIBOR plus between 0.875% to 1.625%, depending on the Company’s debt rating by either Moody’s or S&P, or, at the option of the Company, the Base Rate plus between 0.000% to 0.625% depending on the Company’s debt rating by either Moody’s or S&P.

A discussion of our debt and related covenants is included in Note 13 to our consolidated financial statements included in Item 8 of this Annual Report. We were in compliance with the covenants as of December 31, 2021.

Liquidity Analysis

Our cash balance decreased by $436.8 million to $658.5 million as of December 31, 2021 as compared with December 31, 2020. The cash decrease included $1,243.5 million in payments on senior notes, $104.6 million in dividend payments, $54.9 million in capital expenditures and the repurchase of $17.5 million of our common stock, partially offset by $250.1 million in operating cash inflows and $498.3 million in net proceeds from the issuance of the 2032 Senior Notes.

During 2021 we contributed $20.0 million to our U.S. pension plan, compared to no contributions in 2020. At December 31, 2021 and 2020, as a result of the values of the plan's assets and our contributions to the plan, our U.S. pension plan was fully-funded as defined by applicable law. As of December 31, 2021 direct benefits paid by the U.S. pension plan were $3.9 million. We continue to maintain an asset allocation consistent with our strategy to maximize total return, while reducing portfolio risks through asset class diversification.

As of December 31, 2021, we had approximately $1,273 million of liquidity, consisting of cash and cash equivalents of $658 million and $614 million of borrowings available under our Senior Credit Facility. In light of the liquidity currently available to us, and the costs savings measures planned and already in place, we expect to be able to maintain adequate liquidity over the next 12 months as we manage through the current market environment. We do not currently anticipate, nor are we aware of, any significant market conditions or commitments that would change any of our conclusions of the liquidity currently available to us. Additionally, we expect that the costs savings measures planned and already in place will enable us to maintain adequate liquidity over the next 12 months as we manage through the current market environment. We will continue to actively monitor the potential impacts of COVID-19 variants and related events on the credit markets in order to maintain sufficient liquidity and access to capital throughout 2022.

Contractual Obligations

The following table presents a summary of our contractual obligations at December 31, 2021:

	Payments Due By Period				
(Amounts in millions)	Within 1 Year	1-3 Years	3-5 Years	Beyond 5 Years	Total
Senior Notes and Term Loan Facility	$ 32.5	$ 99.5	$ 159.9	$ 988.1	$ 1,280.0
Fixed interest payments(1)	36.7	76.1	69.4	136.3	318.5
Other debt	8.6	14.3	—	—	22.9
Leases:					
Operating	39.6	88.2	19.7	87.4	234.9
Finance	5.3	7.9	0.7	4.6	18.5
Purchase obligations:(2)					
Inventory	543.1	11.7	0.4	1.8	557.0
Non-inventory	60.4	0.4	0.3	0.2	61.3
Pension and postretirement benefits(3)	58.7	118.1	120.1	294.8	591.7
Total	$ 784.9	$ 416.2	$ 370.5	$ 1,513.2	$ 3,084.8

(1) Fixed interest payments represent interest payments on the Senior Notes and Term Loan Facility as defined in Note 13 to our consolidated financial statements included in Item 8 of this Annual Report.
(2) Purchase obligations are presented at the face value of the purchase order, excluding the effects of early termination provisions. Actual payments could be less than amounts presented herein.
(3) Retirement and postretirement benefits represent estimated benefit payments for our U.S. and non-U.S. defined benefit plans and our postretirement medical plans, as more fully described below and in Note 14 to our consolidated financial statements included in Item 8 of this Annual Report.

As of December 31, 2021, the gross liability for uncertain tax positions was $49.9 million. We do not expect a material payment related to these obligations to be made within the next twelve months. We are unable to provide a reasonably reliable estimate of the timing of future payments relating to the uncertain tax positions.

The following table presents a summary of our commercial commitments at December 31, 2021:

	Commitment Expiration By Period				
	Within 1 Year	1-3 Years	3-5 Years	Beyond 5 Years	Total
	(Amounts in millions)				
Letters of credit	$ 287.8	$ 155.2	$ 23.9	$ 26.9	$ 493.8
Surety bonds	53.2	10.7	—	—	63.9
Total	$ 341.0	$ 165.9	$ 23.9	$ 26.9	$ 557.7

We expect to satisfy these commitments through performance under our contracts.

PENSION AND POSTRETIREMENT BENEFITS OBLIGATIONS

Plan Descriptions

We and certain of our subsidiaries have defined benefit pension plans and defined contribution plans for full-time and part-time employees. Approximately 64% of total defined benefit pension plan assets and approximately 52% of defined benefit pension obligations are related to the U.S. qualified plan as of December 31, 2021. Unless specified otherwise, the references in this section are to all of our U.S. and non-U.S. plans. None of our common stock is directly held by these plans.

Our U.S. defined benefit plan assets consist of a balanced portfolio of equity and fixed income securities. Our non-U.S. defined benefit plan assets include a significant concentration of United Kingdom ("U.K.") fixed income securities, as discussed in Note 14 to our consolidated financial statements included in Item 8 of this Annual Report. We monitor investment allocations and manage plan assets to maintain an acceptable level of risk. At December 31, 2021, the estimated fair market value of U.S. and non-U.S. plan assets for our defined benefit pension plans decreased to $764.2 million from $765.0 million at December 31, 2020. Assets were allocated as follows:

	U.S. Plan	
Asset category	2021	2020
Cash and Cash Equivalents	1 %	1 %
Global Equity	26 %	30 %
Global Real Assets	16 %	13 %
Equity securities	42 %	43 %
Diversified Credit	15 %	14 %
Liability-Driven Investment	42 %	42 %
Fixed income	57 %	56 %

Asset category	Non-U.S. Plans	
	2021	2020
Cash and Cash Equivalents	— %	1 %
North American Companies	1 %	1 %
Global Equity	1 %	1 %
Equity securities	2 %	2 %
U.K. Government Gilt Index	42 %	39 %
Liability-Driven Investment	9 %	12 %
Fixed income	51 %	51 %
Multi-asset	20 %	20 %
Buy-in Contract	20 %	20 %
Other	7 %	6 %
Other types	47 %	46 %

The projected benefit obligation ("Benefit Obligation") for our defined benefit pension plans was $892.6 million and $957.4 million as of December 31, 2021 and 2020, respectively. Benefits under our defined benefit pension plans are based primarily on participants' compensation and years of credited service.

We sponsor defined benefit postretirement medical plans covering certain current retirees and a limited number of future retirees in the U.S. These plans provide for medical and dental benefits and are administered through insurance companies. We fund the plans as benefits are paid, such that the plans hold no assets in any period presented. Accordingly, we have no investment strategy or targeted allocations for plan assets. The benefits under the plans are not available to new employees or most existing employees.

The Benefit Obligation for our defined benefit postretirement medical plans was $17.0 million and $18.6 million as of December 31, 2021 and 2020, respectively.

Accrual Accounting and Significant Assumptions

We account for pension benefits using the accrual method, recognizing pension expense before the payment of benefits to retirees. The accrual method of accounting for pension benefits requires actuarial assumptions concerning future events that will determine the amount and timing of the benefit payments.

Our key assumptions used in calculating our cost of pension benefits are the discount rate, the rate of compensation increase and the expected long-term rate of return on plan assets. We, in consultation with our actuaries, evaluate the key actuarial assumptions and other assumptions used in calculating the cost of pension and postretirement benefits, such as discount rates, expected return on plan assets for funded plans, mortality rates, retirement rates and assumed rate of compensation increases, and determine such assumptions as of December 31 of each year to calculate liability information as of that date and pension and postretirement expense for the following year. See discussion of our accounting for and assumptions related to pension and postretirement benefits in the “Our Critical Accounting Estimates” section of this MD&A.

In 2021, the service cost component of the pension expense for our defined benefit pension plans included in operating income was $32.5 million compared to $32.9 million in 2020. The non-service cost portion of net pension expense (e.g., interest cost, actuarial gains and losses and expected return on plan assets) for our defined benefit pension plans included in other income (expense), net was $(0.2) million in 2021, compared to $4.0 million in 2020.

The following are assumptions related to our defined benefit pension plans as of December 31, 2021:

	U.S. Plan	Non-U.S. Plans
Weighted average assumptions used to determine Benefit Obligation:		
Discount rate	3.00 %	1.71 %
Rate of increase in compensation levels	3.50	3.18
Weighted average assumptions used to determine 2021 net pension expense:		
Long-term rate of return on assets	6.00 %	2.37 %
Discount rate	2.62	1.23
Rate of increase in compensation levels	3.50	3.11
Weighted-average interest crediting rates	3.79 %	1.41 %

The following provides a sensitivity analysis of alternative assumptions on the U.S. qualified and aggregate non-U.S. pension plans and U.S. postretirement plans.

Effect of Discount Rate Changes and Constancy of Other Assumptions:

	0.5% Increase	0.5% Decrease
	(Amounts in millions)	
U.S. defined benefit pension plan:		
Effect on net pension expense	$ (1.9)	$ 2.0
Effect on Benefit Obligation	(18.8)	20.4
Non-U.S. defined benefit pension plans:		
Effect on net pension expense	(0.8)	1.1
Effect on Benefit Obligation	(31.0)	34.9
U.S. Postretirement medical plans:		
Effect on Benefit Obligation	(0.5)	0.5

Effect of Changes in the Expected Return on Assets and Constancy of Other Assumptions:

	0.5% Increase	0.5% Decrease
	(Amounts in millions)	
U.S. defined benefit pension plan:		
Effect on net pension expense	$ (2.1)	$ 2.1
Non-U.S. defined benefit pension plans:		
Effect on net pension expense	(1.3)	1.3

As discussed below, accounting principles generally accepted in the U.S. (“U.S. GAAP”) provide that differences between expected and actual returns are recognized over the average future service of employees or over the remaining expected lifetime for plans with only inactive participants.

At December 31, 2021, as compared with December 31, 2020, we increased our discount rate for the U.S. plan from 2.62% to 3.00% based on an analysis of publicly-traded investment grade U.S. corporate bonds, which had higher yields due to current market conditions. The average discount rate for the non-U.S. plans increased from 1.23% to 1.71% based on analysis of bonds and other publicly-traded instruments, by country, which had higher yields due to market conditions. The average assumed rate of compensation decreased to 3.50% for the U.S. plan and increased to 3.18% from 3.11% for our non-U.S. plans. To determine the 2021 pension expense, the expected rate of return on U.S. plan and non-US plan assets remained constant at 6.00% and 2.37%, respectively, based on our target allocations and expected long-term asset returns. As the expected rate of return on plan assets is long-term in nature, short-term market fluctuations do not significantly impact the rate. For all U.S. plans, we adopted the Pri-2012 mortality tables and the MP-2021 improvement scale published in October 2021. We applied the Pri-2012 tables based on the constituency of our plan population for union and non-union participants. We adjusted the improvement scale to utilize the Proxy SSA Long Term Improvement Rates, consistent with assumptions adopted by the Social Security Administration trustees, based on long-term historical experience. Currently, we believe this approach provides the best estimate of our future obligation. Most plan participants elect to receive plan benefits as a lump sum at the end of service, rather than an annuity. As such, the updated mortality tables had an immaterial effect on our pension obligation.

We expect that the net pension expense for our defined benefit pension plans included in earnings before income taxes will be approximately $4.1 million lower in 2022 than the $32.3 million in 2021, primarily due to a decrease in the amortization of net loss with no anticipated special events. We have used discount rates of 3.00%, 1.71% and 2.83% at December 31, 2021, in calculating our estimated 2022 net pension expense for the U.S. pension plans, non-U.S. pension plans and postretirement medical plans, respectively.

The assumed ranges for the annual rates of increase in health care costs were 7.0% for 2021 and 7.0% for 2020 with a gradual decrease to 5.0% for 2029 and future years. If actual costs are higher than those assumed, this will likely put modest upward pressure on our expense for retiree health care.

Plan Funding

Our funding policy for defined benefit plans is to contribute at least the amounts required under applicable laws and local customs. In 2021, we contributed $35.8 million, to our defined benefit plans, compared to $15.9 million in 2020. After consideration of our intent to remain fully-funded based on standards set by law, we currently anticipate that our contribution to our U.S. pension plan in 2022 will be approximately $20 million, excluding direct benefits paid. We expect to contribute approximately $2 million to our non-U.S. pension plans in 2022, excluding direct benefits paid.

For further discussion of our pension and postretirement benefits, see Note 14 to our consolidated financial statements included in Item 8 of this Annual Report.

OUR CRITICAL ACCOUNTING ESTIMATES

The process of preparing financial statements in conformity with U.S. GAAP requires the use of estimates and assumptions to determine reported amounts of certain assets, liabilities, revenues and expenses and the disclosure of related contingent assets and liabilities. These estimates and assumptions are based upon information available at the time of the estimates or assumptions, including our historical experience, where relevant. The most significant estimates made by management include: timing and amount of revenue recognition; deferred taxes, tax valuation allowances and tax reserves; reserves for contingent loss; pension and postretirement benefits; and valuation of goodwill, indefinite-lived intangible assets and other long-lived assets. The significant estimates are reviewed at least annually if not quarterly by management. Because of the uncertainty of factors surrounding the estimates, assumptions and judgments used in the preparation of our financial statements, actual results may differ from the estimates, and the difference may be material.

Our critical accounting policies are those policies that are both most important to our financial condition and results of operations and require the most difficult, subjective or complex judgments on the part of management in their application, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. We believe that the following represent our critical accounting policies. For a summary of all of our significant accounting policies, see Note 1 to our consolidated financial statements included in Item 8 of this Annual Report. Management and our external auditors have discussed our critical accounting estimates and policies with the Audit Committee of our Board of Directors.

Revenue Recognition

We recognize revenue when (or as) we satisfy a performance obligation by transferring control to a customer. Transfer of control is evaluated based on the customer’s ability to direct the use of and obtain substantially all of the benefits of a performance obligation. Revenue is recognized either over time or at a point in time, depending on the specific facts and circumstances for each contract, including the terms and conditions of the contract as agreed with the customer and the nature of the products or services to be provided.

Our primary method for recognizing revenue over time is the percentage of completion (“POC”) method, whereby progress towards completion is measured by applying an input measure based on costs incurred to date relative to total estimated costs at completion. If control of the products and/or services does not transfer over time, then control transfers at a point in time. We determine the point in time that control transfers to a customer based on the evaluation of specific indicators, such as title transfer, risk of loss transfer, customer acceptance and physical possession. For a discussion related to revenue recognition refer to Note 3 included in Item 8 of this Annual Report.

Deferred Taxes, Tax Valuation Allowances and Tax Reserves

We recognize valuation allowances to reduce the carrying value of deferred tax assets to amounts that we expect are more likely than not to be realized. Our valuation allowances primarily relate to the deferred tax assets established for certain tax credit carryforwards and net operating loss carryforwards for non-U.S. subsidiaries, and we evaluate the realizability of our deferred tax assets and adjust the amount of the valuation allowances, if necessary. We assess such factors as our forecast of future taxable income and available tax planning strategies that could be implemented to realize the net deferred tax assets in determining the sufficiency of our valuation allowances. Failure to achieve forecasted taxable income in the applicable tax jurisdictions could affect the ultimate realization of deferred tax assets and could result in an increase in our effective tax rate on future earnings. Implementation of different tax structures in certain jurisdictions could, if successful, result in future reductions of certain valuation allowances.

The amount of income taxes we pay is subject to ongoing audits by federal, state and foreign tax authorities, which often result in proposed assessments. Significant judgment is required in determining income tax provisions and evaluating tax positions. We establish reserves for open tax years for uncertain tax positions that may be subject to challenge by various tax authorities. The consolidated tax provision and related accruals include the impact of such reasonably estimable losses and related interest and penalties as deemed appropriate. Tax benefits recognized in the financial statements from uncertain tax positions are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.

While we believe we have adequately provided for any reasonably foreseeable outcomes related to these matters, our future results may include favorable or unfavorable adjustments to our estimated tax liabilities. To the extent that the expected tax outcome of these matters changes, such changes in estimate will impact the income tax provision in the period in which such determination is made. For a discussion related to deferred taxes, tax valuation allowances and tax reserves refer to Note 19 included in Item 8 of this Annual Report.

Reserves for Contingent Loss

We are a defendant in a number of lawsuits that seek to recover damages for personal injury allegedly resulting from exposure to asbestos-containing products formerly manufactured and/or distributed by heritage companies of the Company. We have estimated that the liability for pending and future claims not yet asserted, and which are probable and estimable, could be experienced through 2049, which represents the expected end of our asbestos liability exposure with no further ongoing claims expected beyond that date. In light of the uncertainties and variables inherent in the long-term projection of the total asbestos liability, as part of our ongoing review of asbestos claims, each year we will reassess the projected liability of unasserted asbestos claims to be filed through 2049, and we will continually reassess the time horizon over which a reasonable estimate of unasserted claims can be projected.

In connection with our ongoing review of asbestos-related claims, we have also reviewed the amount of potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company’s insurers, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements and coverage available from solvent insurers not party to the coverage litigation. Continuously, we review ongoing insurance coverage available for a significant amount of the potential future asbestos-related claims and in the future could secure additional insurance coverage as deemed necessary. For a discussion pertaining to asbestos claims refer to Note 16 included in Item 8 of this Annual Report.

Liabilities are recorded for various non-asbestos contingencies arising in the normal course of business when it is both probable that a loss has been incurred and such loss is reasonably estimable. Assessments of reserves are based on information obtained from our independent and in-house experts, including recent legal decisions and loss experience in similar situations. The recorded legal reserves are susceptible to changes due to new developments regarding the facts and circumstances of each matter, changes in political environments, legal venue and other factors. Recorded environmental reserves could change based on further analysis of our properties, technological innovation and regulatory environment changes.

Pension and Postretirement Benefits

We provide pension and postretirement benefits to certain of our employees, including former employees, and their beneficiaries. The assets, liabilities and expenses we recognize and disclosures we make about plan actuarial and financial information are dependent on the assumptions and estimates used in calculating such amounts. The assumptions include factors such as discount rates, health care cost trend rates, inflation, expected rates of return on plan assets, retirement rates, mortality rates, turnover, rates of compensation increases and other factors.

The assumptions utilized to compute expense and benefit obligations are shown in Note 14 to our consolidated financial statements included in Item 8 of this Annual Report. These assumptions are assessed annually in consultation with independent actuaries and investment advisors as of December 31 and adjustments are made as needed. We evaluate prevailing market conditions and local laws and requirements in countries where plans are maintained, including appropriate rates of return, interest rates and medical inflation (health care cost trend) rates. We ensure that our significant assumptions are within the reasonable range relative to market data. The methodology to set our significant assumptions includes:

- Discount rates are estimated using high quality debt securities based on corporate or government bond yields with a duration matching the expected benefit payments. For the U.S. the discount rate is obtained from an analysis of publicly-traded investment-grade corporate bonds to establish a weighted average discount rate. For plans in the U.K. and the Eurozone we use the discount rate obtained from an analysis of AA-graded corporate bonds used to generate a yield curve. For other countries or regions without a corporate AA bond market, government bond rates are used. Our discount rate assumptions are impacted by changes in general economic and market conditions that affect interest rates on long-term high-quality debt securities, as well as the duration of our plans' liabilities.

- The expected rates of return on plan assets are derived from reviews of asset allocation strategies, expected long-term performance of asset classes, risks and other factors adjusted for our specific investment strategy. These rates are impacted by changes in general market conditions, but because they are long-term in nature, short-term market changes do not significantly impact the rates. Changes to our target asset allocation also impact these rates.

- The expected rates of compensation increase reflect estimates of the change in future compensation levels due to general price levels, seniority, age and other factors.

Depending on the assumptions used, the pension and postretirement expense could vary within a range of outcomes and have a material effect on reported earnings. In addition, the assumptions can materially affect benefit obligations and future cash funding. Actual results in any given year may differ from those estimated because of economic and other factors.

We evaluate the funded status of each retirement plan using current assumptions and determine the appropriate funding level considering applicable regulatory requirements, tax deductibility, reporting considerations, cash flow requirements and other factors. We discuss our funding assumptions with the Finance Committee of our Board of Directors.

Valuation of Goodwill, Indefinite-Lived Intangible Assets and Other Long-Lived Assets

The initial recording of goodwill and intangible assets requires subjective judgments concerning estimates of the fair value of the acquired assets. We test the value of goodwill, indefinite-lived intangible assets and long-lived assets for impairment as of December 31 each year or whenever events or circumstances indicate such assets may be impaired. The test for goodwill impairment involves significant judgment in estimating projections of fair value generated through future performance of each of the reporting units. We did not record a material impairment for goodwill, indefinite-lived intangible assets or long-lived assets in 2021 or 2020.

Due to uncertain market conditions and potential changes in strategy and product portfolio, it is possible that forecasts used to support asset carrying values may change in the future, which could result in non-cash charges that would adversely affect our financial condition and results of operations. For a discussion pertaining to goodwill, indefinite-lived intangible assets and long-lived assets refer to Note 1 included in Item 8 of this Annual Report.

ACCOUNTING DEVELOPMENTS

We have presented the information about accounting pronouncements not yet implemented in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

ITEM 7A. *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK*

We have market risk exposure arising from changes in foreign currency exchange rate movements. We are exposed to credit-related losses in the event of non-performance by counterparties to financial instruments, but we currently expect the counterparties will continue to meet their obligations given their current creditworthiness.

Foreign Currency Exchange Rate Risk

A substantial portion of our operations are conducted by our subsidiaries outside of the U.S. in currencies other than the U.S. dollar. The primary currencies in which we operate, in addition to the U.S. dollar, are the Argentine peso, Australian dollar, Brazilian real, British pound, Canadian dollar, Chinese yuan, Colombian peso, Euro, Hungarian forint, Indian rupee, Japanese yen, Mexican peso, Singapore dollar, Swedish krona, Russian ruble, Malaysian ringgit and Venezuelan bolivar. Almost all of our non-U.S. subsidiaries conduct their business primarily in their local currencies, which are also their functional currencies. Foreign currency exposures arise from translation of foreign-denominated assets and liabilities into U.S. dollars and from transactions, including firm commitments and anticipated transactions, denominated in a currency other than a non-U.S. subsidiary's functional currency. On September 22, 2020, as a means of managing the volatility of foreign currency exposure with the Euro/U.S. dollar exchange rate, we entered into a swap associated with our Euro investment in certain of our international subsidiaries and was designated as a net investment hedge. As of December 31, 2021, the notional value of the swap was €423.2 million. Routinely, we review our investments in foreign subsidiaries from a long-term perspective and use capital structuring techniques to manage our investment in foreign subsidiaries as deemed necessary. We realized net gains (losses) associated with foreign currency translation of $0.5 million, $(15.2) million and $6.6 million for the years ended December 31, 2021, 2020 and 2019, respectively, which are included in other comprehensive income (loss). The net gain in 2021 was primarily driven by the weakening of the Euro, Colombian peso and Mexican peso versus the U.S. dollar at December 31, 2021 as compared with December 31, 2020.

We employ a foreign currency risk management strategy to minimize potential changes in cash flows from unfavorable foreign currency exchange rate movements. Where available, the use of forward exchange contracts allows us to mitigate transactional exposure to exchange rate fluctuations as the gains or losses incurred on the forward exchange contracts will offset, in whole or in part, losses or gains on the underlying foreign currency exposure. Our policy allows foreign currency coverage only for identifiable foreign currency exposures. As of December 31, 2021, we had a U.S. dollar equivalent of $425.2 million in aggregate notional amount outstanding in foreign exchange contracts with third parties, compared with $388.1 million at December 31, 2020. Transactional currency gains and losses arising from transactions outside of our sites' functional currencies and changes in fair value of foreign exchange contracts are included in our consolidated results of operations. We recognized foreign currency net gains (losses) of $(27.4) million, $9.6 million and $(14.5) million for the years ended December 31, 2021, 2020 and 2019, respectively, which are included in other income (expense), net in the accompanying consolidated statements of income.

Based on a sensitivity analysis at December 31, 2021, a 10% change in the foreign currency exchange rates for the year ended December 31, 2021 would have impacted our net earnings by approximately $10 million. At December 31, 2020, a 10% change in the foreign currency exchange rates for the year ended December 31, 2020 would have impacted our net earnings by approximately $16 million. This calculation assumes that all currencies change in the same direction and proportion relative to the U.S. dollar and that there are no indirect effects, such as changes in non-U.S. dollar sales volumes or prices. This calculation does not take into account the impact of the foreign currency forward exchange contracts discussed above.

ITEM 8. ***FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA***

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Flowserve Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Flowserve Corporation and its subsidiaries (the “Company”) as of December 31, 2021 and 2020, and the related consolidated statements of income, of comprehensive income, of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill Impairment Test – Pump Reporting Unit

As described in Notes 1 and 6 to the consolidated financial statements, the Company's consolidated goodwill balance was $1,196.5 million as of December 31, 2021, and the goodwill associated with the pump reporting unit was approximately $467 million. The value of goodwill is tested for impairment as of December 31 each year or whenever events or circumstances indicate goodwill may be impaired. If the carrying value of a reporting unit exceeds its fair value, the goodwill of that reporting unit is impaired and an impairment loss is recorded equal to the excess of the carrying value over its fair value. Fair value is estimated using a discounted cash flow analysis, which requires management to make various judgmental assumptions about future sales, operating margins, growth rates and discount rates.

The principal considerations for our determination that performing procedures relating to the goodwill impairment test of the pump reporting unit is a critical audit matter are (i) the significant judgment by management when estimating the fair value of the reporting unit; (ii) a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating management's significant assumption related to the discount rate; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment test, including controls over the valuation of the pump reporting unit. These procedures also included, among others (i) testing management's process for estimating the fair value of the pump reporting unit, (ii) evaluating the appropriateness of the discounted cash flow analysis, (iii) testing the completeness and accuracy of underlying data used in the analysis, and (iv) evaluating the significant assumption used by management related to the discount rate. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's discounted cash flow analysis and assumption related to the discount rate.

/s/ PricewaterhouseCoopers LLP
Dallas, Texas

February 23, 2022

We have served as the Company's auditor since 2000.

FLOWSERVE CORPORATION

CONSOLIDATED BALANCE SHEETS

	December 31, 2021	December 31, 2020
	(Amounts in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 658,452	$ 1,095,274
Accounts receivable, net	739,210	753,462
Contract assets, net	195,598	277,734
Inventories, net	678,287	667,228
Prepaid expenses and other	117,130	110,635
Total current assets	2,388,677	2,904,333
Property, plant and equipment, net	515,927	556,873
Operating lease right-of-use assets, net	193,863	208,125
Goodwill	1,196,479	1,224,886
Deferred taxes	44,049	30,538
Other intangible assets, net	152,463	168,496
Other assets, net	258,310	221,426
Total assets	$ 4,749,768	$ 5,314,677
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 410,062	$ 440,199
Accrued liabilities	445,092	463,222
Contract liabilities	202,965	194,227
Debt due within one year	41,058	8,995
Operating lease liabilities	32,628	34,990
Total current liabilities	1,131,805	1,141,633
Long-term debt due after one year	1,261,770	1,717,911
Operating lease liabilities	166,786	176,246
Retirement obligations and other liabilities	352,062	517,566
Commitments and contingencies (See Note 16)		
Shareholders’ equity:		
Common shares, $1.25 par value	220,991	220,991
Shares authorized — 305,000		
Shares issued — 176,793 and 176,793, respectively		
Capital in excess of par value	506,386	502,227
Retained earnings	3,691,023	3,670,543
Treasury shares, at cost — 46,794 and 46,768 shares, respectively	(2,057,706)	(2,059,309)
Deferred compensation obligation	7,214	6,164
Accumulated other comprehensive loss	(563,589)	(609,625)
Total Flowserve Corporation shareholders’ equity	1,804,319	1,730,991
Noncontrolling interests	33,026	30,330
Total equity	1,837,345	1,761,321
Total liabilities and equity	$ 4,749,768	$ 5,314,677

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION

CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands, except per share data)		
Sales	$ 3,541,060	$ 3,728,134	$ 3,939,697
Cost of sales	(2,491,335)	(2,611,365)	(2,650,354)
Gross profit	1,049,725	1,116,769	1,289,343
Selling, general and administrative expense	(797,076)	(878,245)	(913,203)
Gain on sale of business	1,806	—	—
Net earnings from affiliates	16,304	11,753	10,483
Operating income	270,759	250,277	386,623
Interest expense	(57,617)	(56,185)	(54,980)
Loss on extinguishment of debt	(46,176)	(1,201)	—
Interest income	2,764	4,175	8,409
Other income (expense), net	(36,142)	5,226	(17,619)
Earnings before income taxes	133,588	202,292	322,433
(Provision for) benefit from income taxes	2,594	(61,417)	(75,493)
Net earnings, including noncontrolling interests	136,182	140,875	246,940
Less: Net earnings attributable to noncontrolling interests	(10,233)	(10,455)	(8,112)
Net earnings attributable to Flowserve Corporation	$ 125,949	$ 130,420	$ 238,828
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$ 0.97	$ 1.00	$ 1.82
Diluted	0.96	1.00	1.81
Weighted average shares – basic	130,305	130,395	131,034
Weighted average shares – diluted	130,857	131,050	131,719

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Net earnings, including noncontrolling interests	$ 136,182	$ 140,875	$ 246,940
Other comprehensive income (loss):			
Foreign currency translation adjustments, net of deferred taxes of $(875), $11,104 and $(740) in 2021, 2020 and 2019, respectively	524	(15,185)	6,561
Pension and other postretirement effects, net of deferred taxes of $(7,474), $(311)and $(598) in 2021, 2020 and 2019, respectively	45,058	(9,562)	(16,514)
Cash flow hedging activity, net	(848)	183	187
Other comprehensive income (loss)	44,734	(24,564)	(9,766)
Comprehensive income (loss), including noncontrolling interests	180,916	116,311	237,174
Comprehensive (income) loss attributable to noncontrolling interests	(8,930)	(11,225)	(8,691)
Comprehensive income attributable to Flowserve Corporation	$ 171,986	$ 105,086	$ 228,483

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Total Flowserve Corporation Shareholders' Equity									
	Common Stock		Capital in Excess of Par Value	Retained Earnings	Treasury Stock		Deferred Compensation Obligation	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Equity
	Shares	Amount			Shares	Amount				
	(Amounts in thousands)									
Balance — January 1, 2019	176,793	$ 220,991	$ 494,551	$ 3,514,229	(46,237)	$ (2,049,404)	$ 7,117	$ (573,947)	$ 18,466	$ 1,632,003
Stock activity under stock plans	—	—	(17,388)	—	300	12,821	1,217	—	—	(3,350)
Stock-based compensation	—	—	23,882	—	—	—	—	—	—	23,882
Net earnings	—	—	—	238,828	—	—	—	—	8,112	246,940
Cash dividends declared	—	—	—	(100,813)	—	—	—	—	—	(100,813)
Repurchases of common shares	—	—	—	—	(325)	(15,000)	—	—	—	(15,000)
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	(10,345)	579	(9,766)
Other, net	—	—	—	—	—	—	—	—	(1,555)	(1,555)
Balance — December 31, 2019	176,793	$ 220,991	$ 501,045	$ 3,652,244	(46,262)	$ (2,051,583)	$ 8,334	$ (584,292)	$ 25,602	$ 1,772,341
ASU No. 2016-13 - Measurement of Credit Losses on Financial Instruments (Topic 326)	—	—	—	(7,291)	—	—	—	—	—	(7,291)
Stock activity under stock plans	—	—	(26,070)	—	551	24,386	(2,170)	—	—	(3,854)
Stock-based compensation	—	—	27,252	—	—	—	—	—	—	27,252
Net earnings	—	—	—	130,420	—	—	—	—	10,455	140,875
Cash dividends declared	—	—	—	(104,830)	—	—	—	—	—	(104,830)
Repurchases of common shares	—	—	—	—	(1,057)	(32,112)	—	—	—	(32,112)
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	(25,333)	769	(24,564)
Other, net	—	—	—	—	—	—	—	—	(6,496)	(6,496)
Balance — December 31, 2020	176,793	$ 220,991	$ 502,227	$ 3,670,543	(46,768)	$ (2,059,309)	$ 6,164	$ (609,625)	$ 30,330	$ 1,761,321
Stock activity under stock plans	—	—	(25,320)	—	414	19,134	1,050	—	—	(5,136)
Stock-based compensation	—	—	29,479	—				—	—	29,479
Net earnings	—	—	—	125,949	—	—	—	—	10,233	136,182
Cash dividends declared	—	—	—	(105,469)	—	—	—	—	—	(105,469)
Repurchases of common shares	—	—	—	—	(440)	(17,531)	—	—	—	(17,531)
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	46,036	(1,302)	44,734
Other, net	—	—	—	—	—	—	—	—	(6,235)	(6,235)
Balance — December 31, 2021	176,793	$ 220,991	$ 506,386	$ 3,691,023	(46,794)	$ (2,057,706)	$ 7,214	$ (563,589)	$ 33,026	$ 1,837,345

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Cash flows — Operating activities:			
Net earnings, including noncontrolling interests	$ 136,182	$ 140,875	$ 246,940
Adjustments to reconcile net earnings to net cash provided (used) by operating activities:			
Depreciation	85,175	86,175	92,042
Amortization of intangible and other assets	14,647	14,578	13,862
Loss on extinguishment of debt	46,176	1,201	—
Stock-based compensation	29,478	27,252	23,882
Foreign currency, asset write downs and other non-cash adjustments	29,772	4,277	(11,724)
Change in assets and liabilities:			
Accounts receivable, net	(8,675)	45,648	2,883
Inventories, net	(32,124)	15,306	(31,058)
Contract assets, net	74,333	4,258	(45,220)
Prepaid expenses and other assets, net	1,302	34,262	(9,455)
Accounts payable	(19,505)	(22,571)	24,678
Contract liabilities	14,196	(34,066)	19,699
Accrued liabilities and income taxes payable	(13,948)	50,203	12,418
Retirement obligations and other	(15,690)	3,636	(3,357)
Net deferred taxes	(91,200)	(60,497)	(11,493)
Net cash flows provided (used) by operating activities	250,119	310,537	324,097
Cash flows — Investing activities:			
Capital expenditures	(54,936)	(57,405)	(75,716)
Proceeds from disposal of assets	2,663	15,705	42,333
Affiliate investment activity	(7,204)	—	—
Net cash flows provided (used) by investing activities	(59,477)	(41,700)	(33,383)
Cash flows — Financing activities:			
Payments on senior notes	(1,243,548)	(191,258)	—
Proceeds from issuance of senior notes	498,280	498,280	—
Payments on long-term debt	(7,500)	—	(105,000)
Proceeds from issuance of long-term debt	300,000	—	—
Payments of deferred loan costs	(6,739)	(4,572)	—
Proceeds from short-term financing	—	—	75,000
Payments on short-term financing	—	—	(75,000)
Proceeds under other financing arrangements	1,408	2,285	3,404
Payments under other financing arrangements	(7,213)	(9,792)	(9,856)
Payments related to tax withholding for stock-based compensation	(5,984)	(4,607)	(3,900)
Repurchases of common shares	(17,531)	(32,112)	(15,000)
Payments of dividends	(104,604)	(104,159)	(99,557)
Other	(6,276)	(6,478)	(1,555)
Net cash flows provided (used) by financing activities	(599,707)	147,587	(231,464)
Effect of exchange rate changes on cash	(27,757)	7,870	(7,953)
Net change in cash and cash equivalents	(436,822)	424,294	51,297
Cash and cash equivalents at beginning of year	1,095,274	670,980	619,683
Cash and cash equivalents at end of year	$ 658,452	$ 1,095,274	$ 670,980
Income taxes paid (net of refunds)	$ 65,621	$ 75,342	$ 66,372
Interest paid	72,247	57,041	53,607

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2021 AND 2020 AND FOR THE
THREE YEARS ENDED DECEMBER 31, 2021

1. SIGNIFICANT ACCOUNTING POLICIES AND ACCOUNTING DEVELOPMENTS

We are principally engaged in the worldwide design, manufacture, distribution and service of industrial flow management equipment. We provide long lead time, custom and other highly-engineered pumps; standardized, general-purpose pumps; mechanical seals; engineered and industrial valves; related automation products; and services and solutions primarily for oil and gas, chemical, power generation, water management and other general industries requiring flow management products and services. Equipment manufactured and serviced by us is predominantly used in industries that deal with difficult-to-handle and corrosive fluids, as well as environments with extreme temperatures, pressure, horsepower and speed. Our business is affected by economic conditions in the United States ("U.S.") and other countries where our products are sold and serviced, by the cyclical nature and competitive environment of our industries served, by the relationship of the U.S. dollar to other currencies and by the demand for and pricing of our customers' end products.

Revision to Previously Reported Financial Information — During the first quarter of 2021, as previously disclosed, we identified an accounting error involving foreign currency transactions beginning with the first quarter of 2020 through the year ended December 31, 2020. These adjustments increased retirement obligations and other liabilities by $1.5 million, retained earnings by $14.1 million and accumulated other comprehensive loss by $15.6 million as of December 31, 2020. The consolidated statements of cash flows and shareholders' equity for the year ended December 31, 2020 have been revised to reflect the impacts of the above described error.

We have assessed the above described errors and concluded the effects were not material to the period ended December 31, 2020 or any previous period. The December 31, 2020 balances, as presented herein, have been revised. Refer to Note 2 for a detailed discussion related to the impact of the revision as of and for the period ended December 31, 2020.

Coronavirus Pandemic ("COVID-19") and Oil and Gas Market — Over the past year, we continue to be challenged by macroeconomics and global economic impacts based on the disruption and uncertainties caused by COVID-19. As a result of the COVID-19 pandemic's effect on oil prices, many of our large customers reduced capital expenditures and budgets in 2020. To date, while we have seen customer maintenance, repair and overhaul ("MRO") and aftermarket spending return close to pre-pandemic levels, and although we are seeing momentum in project-based capital expenditures, such business has yet to return to pre-pandemic levels.

Principles of Consolidation — The consolidated financial statements include the accounts of our company and our wholly and majority-owned subsidiaries. In addition, we would consolidate any variable interest entities for which we are deemed to be the primary beneficiary. Noncontrolling interests of non-affiliated parties have been recognized for all majority-owned consolidated subsidiaries. Intercompany profits/losses, transactions and balances among consolidated entities have been eliminated from our consolidated financial statements.

In the ordinary course of our operations worldwide, we have entered into joint ventures and interests (collectively referred to as "affiliates") to provide greater flexibility in delivering our products and services, gain access to markets and geographical locations and reduce exposure and diversify risk. Investments in affiliate companies with a noncontrolling ownership interests between 20% and 50%, are unconsolidated and are accounted for using the equity method, which approximates our equity interest in their underlying equivalent net book value under accounting principles generally accepted in the U.S. ("U.S. GAAP"). All equity method investments are reviewed for impairment whenever events and conditions indicate that a decrease in the value of an investment has occurred that is other than temporary. If impaired, an impairment loss representing the difference between our carrying value and fair value is recorded and the investment is written down to a new carrying value. Investment in affiliate companies where we own less than 20% are accounted for by the cost method, whereby income is only recognized in the event of dividend receipt. Investments accounted for by the cost method are tested for impairment if an impairment indicator is present.

Reclassifications — Certain reclassifications have been made to prior year financial information to conform to the current year presentation.

Use of Estimates — The process of preparing financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect reported amounts of certain assets, liabilities, revenues and expenses. We believe our estimates and assumptions are reasonable; however, actual results may differ materially from such estimates. The full extent to which the COVID-19 pandemic directly or indirectly impacts our business, results of operations and financial condition, including sales, expenses, our allowance for expected credit losses, stock based compensation, the carrying value of our goodwill and other long-lived assets, financial assets, and valuation allowances for tax assets, will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning COVID-19 and the actions taken to contain it or treat it, as well as the economic impact on local, regional, national and international customers, suppliers and markets. We have made estimates of the impact of COVID-19 within our financial statements and there may be changes to those estimates in the near to mid-term as new information becomes available. Actual results may differ from these estimates. The most significant estimates and assumptions are used in determining:

- Timing and amount of revenue recognition;
- Deferred taxes, tax valuation allowances and tax reserves;
- Reserves for contingent loss;
- Pension and postretirement benefits; and
- Valuation of goodwill, indefinite-lived intangible assets and other long-lived assets.

Revenue Recognition — The majority of our revenues relate to customer orders that typically contain a single commitment of goods or services which have lead times under a year. Longer lead time, more complex contracts with our customers typically have multiple commitments of goods and services, including any combination of designing, developing, manufacturing, modifying, installing and commissioning of flow management equipment and providing services and parts related to the performance of such products. We recognize revenue when (or as) we satisfy a performance obligation by transferring control to a customer. Transfer of control is evaluated based on the customer's ability to direct the use of and obtain substantially all of the benefits of a performance obligation. Revenue is recognized either over time or at a point in time, depending on the specific facts and circumstances for each contract, including the terms and conditions of the contract as agreed with the customer and the nature of the products or services to be provided.

Our primary method for recognizing revenue over time is the percentage of completion ("POC") method, whereby progress towards completion is measured by applying an input measure based on costs incurred to date relative to total estimated costs at completion. If control of the products and/or services does not transfer over time, then control transfers at a point in time. We determine the point in time that control transfers to a customer based on the evaluation of specific indicators, such as title transfer, risk of loss transfer, customer acceptance and physical possession. For a detailed discussion related to revenue recognition refer to Note 3.

Cash and Cash Equivalents — We place temporary cash investments with financial institutions and, by policy, invest in those institutions and instruments that have minimal credit risk and market risk. These investments, with an original maturity of three months or less when purchased, are classified as cash equivalents. They are highly liquid and principal values are not subject to significant risk of change due to interest rate fluctuations.

Accounts Receivable, Allowance for Expected Credit Losses and Credit Risk — Trade accounts receivables are recorded at the invoiced amount and do not bear interest. We establish an allowance for expected credit losses on an aging schedule and according to historical losses as determined from our billings and collections history. Additionally, we consider factors that are specific to our customers' credit risk such as financial difficulties, liquidity issues, insolvency, and country and political risk. We also consider both the current and forecasted direction of macroeconomic conditions at the reporting date in estimating expected credit losses. Receivables are written off against the allowance in the period when the receivable is deemed to be uncollectible and further collection efforts have ceased. Subsequent recoveries of amounts previously written off are reflected as a reduction to credit impairment losses in the income statement.

Credit risks are mitigated by the diversity of our customer base across many different geographic regions and industries and by performing creditworthiness analyses on our customers. Additionally, we mitigate credit risk through letters of credit and advance payments received from our customers. We do not believe that we have any other significant concentrations of credit risk.

Inventories and Related Reserves — Inventories are stated at the lower of cost and net realizable value. Cost is determined by the first-in, first-out method. Reserves for excess and obsolete inventories are based upon our assessment of market conditions for our products determined by historical usage and estimated future demand. Due to the long life cycles of our products, we carry spare parts inventories that have historically low usage rates and provide reserves for such inventory based on demonstrated usage and aging criteria.

Income Taxes, Deferred Taxes, Tax Valuation Allowances and Tax Reserves — We account for income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are calculated using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment date. We record valuation allowances to reduce the carrying value of deferred tax assets to amounts that we expect are more likely than not to be realized. We assess existing deferred tax assets, net operating losses and tax credits by jurisdiction and expectations of our ability to utilize these tax attributes through a review of past, current and estimated future taxable income and establishment of tax planning strategies.

We provide deferred taxes for the temporary differences associated with our investment in foreign subsidiaries that have a financial reporting basis that exceeds tax basis, unless we can assert permanent reinvestment in foreign jurisdictions. Financial reporting basis and tax basis differences in investments in foreign subsidiaries consist of both unremitted earnings and losses, as well as foreign currency translation adjustments.

The amount of income taxes we pay is subject to ongoing audits by federal, state, and foreign tax authorities, which often result in proposed assessments. We establish reserves for open tax years for uncertain tax positions that may be subject to challenge by various tax authorities. The consolidated tax provision and related accruals include the impact of such reasonably estimable losses and related interest and penalties as deemed appropriate.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities. The determination is based on the technical merits of the position and presumes that each uncertain tax position will be examined by the relevant taxing authority that has full knowledge of all relevant information. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.

Legal and Environmental Contingencies — Legal and environmental reserves are recorded based upon a case-by-case analysis of the relevant facts and circumstances and an assessment of potential legal obligations and costs. Amounts relating to legal and environmental liabilities are recorded when it is probable that a loss has been incurred and such loss is reasonably estimable. Assessments of legal and environmental costs are based on information obtained from our independent and in-house experts and our loss experience in similar situations. Estimates are updated as applicable when new information regarding the facts and circumstances of each matter becomes available. Legal fees associated with legal and environmental liabilities are expensed as incurred.

We are a defendant in a number of lawsuits that seek to recover damages for personal injury allegedly resulting from exposure to asbestos-containing products formerly manufactured and/or distributed by heritage companies of the Company. We have estimated that the liability for pending and future claims not yet asserted, and which are probable and estimable, could be experienced through 2049, which represents the expected end of our asbestos liability exposure with no further ongoing claims expected beyond that date. This estimate is based on the Company's historical claim experience and estimates of the number and resolution cost of potential future claims that may be filed based on anticipated levels of unique plaintiff asbestos-related claims in the U.S. tort system against all defendants, the diminished volatility and consistency of observable claims data, the period of time that has elapsed since we stopped manufacturing products that contained encapsulated asbestos and an expected downward trend in claims due to the average age of our claimants. This estimate is not discounted to present value. In light of the uncertainties and variables inherent in the long-term projection of the total asbestos liability, as part of our ongoing review of asbestos claims, each year we will reassess the projected liability of unasserted asbestos claims to be filed through 2049, and we will continually reassess the time horizon over which a reasonable estimate of unasserted claims can be projected.

We assess the sufficiency of the estimated liability for pending and future claims on an ongoing basis by evaluating actual experience regarding claims filed, settled and dismissed, and amounts paid in settlements. In addition to claims and settlement experience, we consider additional quantitative and qualitative factors such as changes in legislation, the legal environment and the Company's defense strategy. In connection with our ongoing review of asbestos-related claims, we have also reviewed the amount of potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company’s insurers, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements and coverage available from solvent insurers not party to the coverage litigation. Continuously, we review ongoing insurance coverage available for a significant amount of the potential future asbestos-related claims and in the future could secure additional insurance coverage as deemed necessary.

The study from the Company's actuary, based on data as of August 31, 2021, provided for a range of possible future liability from approximately $75.9 million to $124.6 million. The Company does not believe any amount within the range of potential outcomes represents a better estimate than another given the many factors and assumptions inherent in the projections and therefore the Company has recorded the liability at the actuarial central estimate of approximately $94.4 million as of December 31, 2021. In addition, the Company has recorded estimated insurance receivables of approximately $57.4 million as of December 31, 2021. The amounts recorded for the asbestos-related liability and the related insurance receivables are based on facts known at the time and a number of assumptions. However, projecting future events, such as the number of new claims to be filed each year, the length of time it takes to defend, resolve, or otherwise dispose of such claims, coverage issues among insurers and the continuing solvency of various insurance companies, as well as the numerous uncertainties surrounding asbestos litigation in the United States, could cause the actual liability and insurance recoveries for us to be higher or lower than those projected or recorded. Additionally, we have claims pending against certain insurers that, if resolved more favorably than reflected in the recorded receivables, would result in discrete gains in the applicable year. Changes recorded in the estimated liability and estimated insurance recovery based on projections of asbestos litigation and corresponding insurance coverage, result in the recognition of additional expense or income. For a discussion pertaining to the activity related to asbestos claims refer to Note 16.

Warranty Accruals — Warranty obligations are based upon product failure rates, materials usage, service delivery costs, an analysis of all identified or expected claims and an estimate of the cost to resolve such claims. The estimates of expected claims are generally a factor of historical claims and known product issues. Warranty obligations based on these factors are adjusted based on historical sales trends for the preceding 24 months.

Insurance Accruals — Insurance accruals are recorded for wholly or partially self-insured risks such as medical benefits and workers’ compensation and are based upon an analysis of our claim loss history, insurance deductibles, policy limits and other relevant factors that are updated annually and are included in accrued liabilities in our consolidated balance sheets. The estimates are based upon information received from actuaries, insurance company adjusters, independent claims administrators or other independent sources. Receivables from insurance carriers are estimated using our historical experience with insurance recovery rates and estimates of future recoveries, which include estimates of coverage and financial viability of our insurance carriers. Estimated receivables are included in accounts receivable, net and other assets, net, as applicable, in our consolidated balance sheets.

Pension and Postretirement Obligations — Determination of pension and postretirement benefits obligations is based on estimates made by management in consultation with independent actuaries and investment advisors. Inherent in these valuations are assumptions including discount rates, expected rates of return on plan assets, retirement rates, mortality rates and rates of compensation increase and other factors all of which are reviewed annually and updated if necessary. Current market conditions, including changes in rates of return, interest rates and medical inflation rates, are considered in selecting these assumptions.

Actuarial gains and losses and prior service costs are recognized in accumulated other comprehensive loss as they arise and we amortize these costs into net pension expense over the remaining expected service period.

Property, Plant and Equipment and Depreciation — Property, plant and equipment are stated at historical cost, less accumulated depreciation. If asset retirement obligations exist, they are capitalized as part of the carrying amount of the asset and depreciated over the remaining useful life of the asset. The useful lives of leasehold improvements are the lesser of the remaining lease term or the useful life of the improvement. When assets are retired or otherwise disposed of, their costs and related accumulated depreciation are removed from the accounts and any resulting gains or losses are included in income from operations for the period. Depreciation is computed by the straight-line method based on the estimated useful lives of the depreciable assets, or in the case of assets under finance leases, over the related lease term. Generally, the estimated useful lives of the assets are:

Buildings and improvements	10 to 40 years
Machinery, equipment and tooling	3 to 14 years
Software, furniture and fixtures and other	3 to 7 years

Costs related to routine repairs and maintenance are expensed as incurred.

Leases — We have operating and finance leases for certain manufacturing facilities, offices, service and quick response centers, machinery, equipment and automobiles. Our leases have remaining lease terms of up to 31 years. The terms and conditions of our leases may include options to extend or terminate the lease which are considered and included in the lease term when these options are reasonably certain of exercise.

We determine if a contract is (or contains) a lease at inception by evaluating whether the contract conveys the right to control the use of an identified asset. For all classes of leased assets, we account for any non-lease components in the contract together with the related lease component in the same unit of account. For lease contracts containing more than one lease component, we allocate the contract consideration to each of the lease components on the basis of relative standalone prices in order to identify the lease payments for each lease component.

Right-of-use ("ROU") assets and lease liabilities are recognized in our consolidated balance sheets at the commencement date based on the present value of remaining lease payments over the lease term. Additionally, ROU assets include any lease payments made at or before the commencement date, as well as any initial direct costs incurred, and are reduced by any lease incentives received. In determining the discount rate used to measure the right-of-use asset and lease liability, we utilize the Company’s incremental borrowing rate and consider the term of the lease, as well as the geographic location of the leased asset. For a detailed discussion related to leases refer to Note 5.

Internally Developed Software — We capitalize certain costs associated with the development of internal-use software. Generally, these costs are related to significant software development projects and are amortized over their estimated useful life, typically three to seven years, upon implementation of the software. We also capitalize certain costs incurred during the application development stage of implementation of cloud computing arrangements. Amounts capitalized for cloud arrangements are amortized on a straight-line basis over a period of three to seven years and are reported as a component of other long-term assets.

Intangible Assets — Intangible assets, excluding trademarks (which are considered to have an indefinite life), consist primarily of engineering drawings, patents, existing customer relationships, software, distribution networks and other items that are being amortized over their estimated useful lives generally ranging from four to 40 years. These assets are reviewed for impairment whenever events and circumstances indicate impairment may have occurred.

Valuation of Goodwill, Indefinite-Lived Intangible Assets and Other Long-Lived Assets — The value of goodwill and indefinite-lived intangible assets is tested for impairment as of December 31 each year or whenever events or circumstances indicate such assets may be impaired. The identification of our reporting units begins at the operating segment level and considered whether components one level below the operating segment levels should be identified as reporting units for purpose of testing goodwill for impairment based on certain conditions. These conditions included, among other factors, (i) the extent to which a component represents a business and (ii) the aggregation of economically similar components within the operating segments and resulted in three reporting units. Other factors that were considered in determining whether the aggregation of components was appropriate included the similarity of the nature of the products and services, the nature of the production processes, the methods of distribution and the types of industries served.

Accounting Standards Codification ("ASC") 350 allows an optional qualitative assessment, prior to a quantitative assessment test, to determine whether it is more likely than not that the fair value of a reporting unit exceeds its carrying amount. We generally do not attempt a qualitative assessment and proceed directly to the quantitative test. If the carrying value of a reporting unit exceeds its fair value, the goodwill of that reporting unit is impaired and an impairment loss is recorded equal to the excess of the carrying value over its fair value. We estimate the fair value of our reporting units based on an income approach, whereby we calculate the fair value of a reporting unit based on the present value of estimated future cash flows. A discounted cash flow analysis requires us to make various judgmental assumptions about future sales, operating margins, growth rates and discount rates, which are based on our budgets, business plans, economic projections, anticipated future cash flows and market participants.

We did not record an impairment of goodwill in 2021, 2020 or 2019; however, the estimated fair value of our pump reporting unit reduced moderately in 2020 due to decreased broad-based capital spending resulting from the ongoing COVID-19 pandemic, however in 2021 we did see a modest improvement in the pump reporting unit estimated fair value due to anticipated improvements in mid to long-term capital spending. The pump reporting unit is a component of FPD reporting segment and is primarily focused on highly engineered custom and pre-configured pump products and systems. As of December 31, 2021 our pump reporting unit had approximately $467 million of goodwill and an estimated fair value that exceeded its carrying value by approximately 82% as compared to approximately $483 million and $469 million of goodwill and an estimated fair value that exceeded its carrying value by approximately 46% and 131% as of December 31, 2020 and 2019, respectively. The key factors considered in determining the estimated fair value of our reporting units included the annual operating plan and forecasted operating results, successful execution of our current continuous improvement and identified strategic initiatives, a constant cost of capital, continued stabilization and mid to long-term improvement of the macro-economic conditions of the oil and gas market, and a relatively stable global gross domestic product. Although we have concluded that there is no impairment on the goodwill associated with our pump reporting unit as of December 31, 2021, we will continue to closely monitor its performance and related market conditions for future indicators of potential impairment and reassess accordingly.

We also considered our market capitalization in our evaluation of the fair value of our goodwill. Our market capitalization decreased as compared with 2020, however this did not indicate a potential impairment of our goodwill as of December 31, 2021.

Impairment losses for indefinite-lived intangible assets are recognized whenever the estimated fair value is less than the carrying value. Fair values are calculated for trademarks using a "relief from royalty" method, which estimates the fair value of a trademark by determining the present value of estimated royalty payments that are avoided as a result of owning the trademark. This method includes judgmental assumptions about sales growth and discount rates that have a significant impact on the fair value and are substantially consistent with the assumptions used to determine the fair value of our reporting unit discussed above. We did not record a material impairment of our trademarks in 2021, 2020 or 2019.

The recoverable value of other long-lived assets, including property, plant and equipment and finite-lived intangible assets, is reviewed when indicators of potential impairments are present. The recoverable value is based upon an assessment of the estimated future cash flows related to those assets, utilizing assumptions similar to those for goodwill. Additional considerations related to our long-lived assets include expected maintenance and improvements, changes in expected uses and ongoing operating performance and utilization.

Deferred Loan Costs — Deferred loan costs, consisting of fees and other expenses associated with debt financing, are amortized over the term of the associated debt using the effective interest method. Additional amortization is recorded in periods where optional prepayments on debt are made.

Fair Values of Financial Instruments — Our financial instruments are presented at fair value in our consolidated balance sheets, with the exception of our long-term debt. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models may be applied.

Assets and liabilities recorded at fair value in our consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Hierarchical levels, as defined by ASC 820, "Fair Value Measurements and Disclosures," are directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities. An asset or a liability’s categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation. Hierarchical levels are as follows:

Level I — Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level II — Inputs (other than quoted prices included in Level I) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.

Level III — Inputs reflect management’s best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

Recurring fair value measurements are limited to investments in derivative instruments. The fair value measurements of our derivative instruments are determined using models that maximize the use of the observable market inputs including interest rate curves and both forward and spot prices for currencies, and are classified as Level II under the fair value hierarchy. The fair values of our derivative instruments are included in Note 9.

Derivatives and Hedging Activities — We have a foreign currency derivatives and hedging policy outlining the conditions under which we can enter into financial derivative transactions. We do not use derivative instruments for trading or speculative purposes. All derivative instruments are recognized on the balance sheet at their fair values.

We employ a foreign currency economic hedging strategy to mitigate certain financial risks resulting from foreign currency exchange rate movements that impact foreign currency denominated receivables and payables, firm committed transactions and forecasted sales and purchases. The changes in the fair values are recognized immediately in other income (expense), net in the consolidated statements of income. See Note 9 for further discussion of forward exchange contracts.

We are exposed to risk from credit-related losses resulting from nonperformance by counterparties to our financial instruments. We perform credit evaluations of our counterparties under forward exchange contracts and expect all counterparties to meet their obligations. If necessary, we would adjust the values of our derivative contracts for our or our counterparties’ credit risks.

Foreign Currency Translation — Assets and liabilities of our foreign subsidiaries are translated to U.S. dollars at exchange rates prevailing at the balance sheet date, while income and expenses are translated at average rates for each month. Translation gains and losses are reported as a component of accumulated other comprehensive loss. Transactional currency gains and losses arising from transactions in currencies other than our sites’ functional currencies are included in our consolidated results of operations.

Transaction and translation gains and losses arising from intercompany balances are reported as a component of accumulated other comprehensive loss when the underlying transaction stems from a long-term equity investment or from debt designated as not due in the foreseeable future. Otherwise, we recognize transaction gains and losses arising from intercompany transactions as a component of income. Where intercompany balances are not long-term investment related or not designated as due beyond the foreseeable future, we may mitigate risk associated with foreign currency fluctuations by entering into forward exchange contracts.

Stock-Based Compensation — Stock-based compensation is measured at the grant-date fair value. The exercise price of stock option awards and the value of restricted shares, restricted share units and performance-based unit awards (collectively referred to as "Restricted Shares") are set at the closing price of our common stock on the New York Stock Exchange on the date of grant, which is the date such grants are authorized by our Board of Directors. Restricted share units and performance-based units refer to restricted awards that do not have voting rights and accrue dividends, and are forfeited if vesting does not occur.

The intrinsic value of Restricted Shares, which is typically the product of share price at the date of grant and the number of Restricted Shares granted, is amortized on a straight-line basis to compensation expense over the periods in which the restrictions lapse based on the expected number of shares that will vest. We account for forfeitures as they occur resulting in the reversal of cumulative expense previously recognized.

Earnings Per Share — We use the two-class method of calculating Earnings Per Share ("EPS"), which determines earnings per share for each class of common stock and participating security as if all earnings for the period had been distributed. Unvested restricted share awards that earn non-forfeitable dividend rights qualify as participating securities and, accordingly, are included in the basic computation as such. Our unvested Restricted Shares participate on an equal basis with common shares; therefore, there is no difference in undistributed earnings allocated to each participating security.

Research and Development Expense — Research and development costs are charged to expense when incurred. Aggregate research and development costs included in SG&A were $34.2 million, $36.1 million and $42.0 million in 2021, 2020 and 2019, respectively. Costs incurred for research and development primarily include salaries and benefits and consumable supplies, as well as rent, professional fees, utilities and the depreciation of property and equipment used in research and development activities.

Accounting Developments

Pronouncements Implemented

In January 2020, the FASB issued ASU No. 2020-01, "Investments—Equity Securities (Topic 321), Investments—Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815): Clarifying the Interactions between Topics 321, 323 and 815." The amendments of the ASU addresses accounting for the transition into and out of the equity method and measurement of certain purchased options and forward contracts to acquire investments. The ASU is effective for annual periods beginning after December 15, 2020 and the amendments should be applied retrospectively to all periods presented. The adoption of this ASU did not have an impact on our consolidated financial condition, results of operations or net cash flows.

In March of 2020, the FASB issued ASU No. 2020-04, "Reference Rate Reform (Topic 848): Facilitation of The Effects of Reference Rate Reform on Financial Reporting." The ASU provides guidance designed to enable the process for migrating away from reference rates such as the London Interbank Offered Rate ("LIBOR") and others to new reference rates. Further, the amendments of the ASU provides optional expedients and exceptions for applying U.S. GAAP to contract modifications and hedging relationships, subject to meeting certain criteria, that reference LIBOR or another reference rate expected to be discontinued. The amendments are effective as of March 12, 2020 through December 31, 2022 and may be applied to contract modifications and hedging relationships from the beginning of an interim period that includes or is subsequent to March 12, 2020. At this time, we do not have hedging relationships that reference LIBOR or another reference rate expected to be discontinued and therefore, have not applied the practical expedients and exceptions as required by the ASU. The Company’s Senior Credit Facility agreement includes a transition clause in the event LIBOR is discontinued, as such, we do not expect the transition of LIBOR to have a material impact on our consolidated financial statements. The adoption of this ASU did not have an impact on our consolidated financial condition and results of operations.

In October 2020, the FASB issued ASU No. 2020-10, "Codification Improvements: Amendments to the FASB Accounting Standards Codification." The amendments in this ASU do not change GAAP and, therefore, are not expected to result in a significant change in practice. Rather, the amendments are intended to improve codification guidance and disclosure requirements in Company's financial statements and notes to the financial statements. The amendments are effective for annual periods beginning after December 15, 2020 and the amendments should be applied retrospectively to all periods presented. The adoption of this ASU did not have an impact on our consolidated financial condition, results of operations or net cash flows.

Pronouncements Not Yet Implemented

In October 2021, the FASB issued ASU No. 2021-08, "Accounting for Contract Assets and Contract Liabilities from Contracts with Customers." The amendments in this Update improve comparability for both the recognition and measurement of acquired revenue contracts with customers at the date of and after a business combination. The amendments are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years and should be applied prospectively to business combinations occurring on or after the effective date of the amendments. We are currently evaluating the impact of ASU No. 2021-08.

In November 2021, the FASB issued ASU No. 2021-10, "Government Assistance (Topic 832)." The amendments in this ASU do not change GAAP and, therefore, are not expected to result in a significant change in practice. Rather, the amendments aim to provide increased transparency by requiring business entities to disclose information about certain types of government assistance they receive in the notes to the financial statements. The amendments are effective for annual periods beginning after December 15, 2021 and can be applied either prospectively or retrospectively. We are currently evaluating the impact of ASU No. 2021-10 and we anticipate that our adoption of this ASU will not have an impact on our disclosures.

2. REVISION TO PREVIOUSLY REPORTED FINANCIAL INFORMATION

During the first quarter of 2021, we identified an accounting error involving foreign currency transactions beginning with the first quarter of 2020 though the year ended December 31, 2020. These adjustments increased retirement obligations and other liabilities by $1.5 million, retained earnings by $14.1 million and accumulated other comprehensive loss by $15.6 million as of December 31, 2020.

The following tables present the impact to affected line items on our consolidated financial statements for the periods indicated for the correction of the accounting error involving foreign currency transactions identified in the first quarter of 2021:

	December 31, 2020		
(Amounts in thousands)	**As Reported**	**Adjustments**	**As Revised**
Retirement obligations and other liabilities	516,087	1,479	517,566
Retained earnings	3,656,449	14,094	3,670,543
Total Flowserve Corporation shareholders' equity	1,732,470	(1,479)	1,730,991
Total equity	1,762,800	(1,479)	1,761,321

	Three Months Ended December 31, 2020		
(Amounts in thousands)	**As Reported**	**Adjustments**	**As Revised**
Other income (expense), net	(17,811)	(931)	(18,742)
Earnings before income taxes	61,314	(931)	60,383
Provision for income taxes	(856)	89	(767)
Net earnings, including noncontrolling interests	60,458	(842)	59,616
Net earnings attributable to Flowserve Corporation	$ 56,893	$ (842)	$ 56,051
Basic	$ 0.44	$ (0.01)	$ 0.43
Diluted	0.43	—	0.43

	Three Months Ended December 31, 2020		
(Amounts in thousands)	**As Reported**	**Adjustments**	**As Revised**
Net earnings, including noncontrolling interests	$ 60,458	$ (842)	$ 59,616
Other comprehensive income (loss):			
Foreign currency translation adjustments, net of taxes	41,411	862	42,273
Other comprehensive income (loss)	24,803	862	25,665
Comprehensive income (loss), including noncontrolling interests	85,261	20	85,281
Comprehensive income (loss) attributable to Flowserve Corporation	$ 81,698	$ 20	$ 81,718

(Amounts in thousands)	Year Ended December 31, 2020 As Reported	Adjustments	As Revised
Other income (expense), net	(10,254)	15,480	5,226
Earnings before income taxes	186,812	15,480	202,292
Provision for income taxes	(60,031)	(1,386)	(61,417)
Net earnings, including noncontrolling interests	126,781	14,094	140,875
Net earnings attributable to Flowserve Corporation	$ 116,326	$ 14,094	$ 130,420
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$ 0.89	$ 0.11	$ 1.00
Diluted	0.89	0.11	1.00

(Amounts in thousands)	Year Ended December 31, 2020 As Reported	Adjustments	As Revised
Net earnings, including noncontrolling interests	$ 126,781	$ 14,094	$ 140,875
Other comprehensive income (loss):			
Foreign currency translation adjustments, net of taxes	388	(15,573)	(15,185)
Other comprehensive income (loss)	(8,991)	(15,573)	(24,564)
Comprehensive income (loss), including noncontrolling interests	117,790	(1,479)	116,311
Comprehensive income (loss) attributable to Flowserve Corporation	$ 106,565	$ (1,479)	$ 105,086

The consolidated statements of cash flows and shareholders' equity for the year ended December 31, 2020 have been revised to reflect the impacts of the above described error.

3. REVENUE RECOGNITION

The majority of our revenues relate to customer orders that typically contain a single commitment of goods or services which have lead times under a year. Longer lead time, more complex contracts with our customers typically have multiple commitments of goods and services, including any combination of designing, developing, manufacturing, modifying, installing and commissioning of flow management equipment and providing services and parts related to the performance of such products. Control transfers over time when the customer is able to direct the use of and obtain substantially all of the benefits of our work as we perform.

Our primary method for recognizing revenue over time is the percentage of completion ("POC") method. Revenue from products and services transferred to customers over time accounted for approximately 15%, 22% and 19% of total revenue for the years ended December 31, 2021, 2020 and 2019, respectively. If control does not transfer over time, then control transfers at a point in time. We recognize revenue at a point in time at the level of each performance obligation based on the evaluation of certain indicators of control transfer, such as title transfer, risk of loss transfer, customer acceptance and physical possession. Revenue from products and services transferred to customers at a point in time accounted for approximately 85%, 78% and 81% of total revenue for the years ended December 31, 2021, 2020 and 2019, respectively.

Disaggregated Revenue

We conduct our operations through two business segments based on the type of product and how we manage the business:

- Flowserve Pump Division ("FPD") for custom, highly-engineered pumps, pre-configured industrial pumps, pump systems, mechanical seals, auxiliary systems and replacement parts and related services; and
- Flow Control Division ("FCD") for engineered and industrial valves, control valves, actuators and controls and related services.

Our revenue sources are derived from our original equipment manufacturing and our aftermarket sales and services. Our original equipment revenues are generally related to originally designed, manufactured, distributed and installed equipment that can range from pre-configured, short-cycle products to more customized, highly-engineered equipment ("Original Equipment"). Our aftermarket sales and services are derived from sales of replacement equipment, as well as maintenance, advanced diagnostic, repair and retrofitting services ("Aftermarket"). Each of our two business segments generate Original Equipment and Aftermarket revenues.

The following table presents our customer revenues disaggregated by revenue source:

	December 31, 2021		
(Amounts in thousands)	**FPD**	**FCD**	**Total**
Original Equipment	$ 899,519	$ 804,744	$ 1,704,263
Aftermarket	1,568,579	268,218	1,836,797
	$ 2,468,098	$ 1,072,962	$ 3,541,060

	December 31, 2020		
(Amounts in thousands)	**FPD**	**FCD**	**Total**
Original Equipment	$ 1,091,906	$ 808,585	$ 1,900,491
Aftermarket	1,581,799	245,844	1,827,643
	$ 2,673,705	$ 1,054,429	$ 3,728,134

	December 31, 2019		
(Amounts in thousands)	**FPD**	**FCD**	**Total**
Original Equipment	$ 994,719	$ 967,271	$ 1,961,990
Aftermarket	1,709,726	267,981	1,977,707
	$ 2,704,445	$ 1,235,252	$ 3,939,697

Our customer sales are diversified geographically. The following table presents our revenues disaggregated by geography, based on the shipping addresses of our customers:

	December 31, 2021					
(Amounts in thousands)	FPD		FCD		Total	
North America(1)	$	955,283	$	389,766	$	1,345,049
Latin America(1)		211,150		30,554		241,704
Middle East and Africa		311,161		107,533		418,694
Asia Pacific		482,596		333,513		816,109
Europe		507,908		211,596		719,504
	$	2,468,098	$	1,072,962	$	3,541,060

	December 31, 2020					
(Amounts in thousands)	FPD		FCD		Total	
North America(1)	$	1,039,285	$	429,572	$	1,468,857
Latin America(1)		191,517		26,393		217,910
Middle East and Africa		359,403		110,539		469,942
Asia Pacific		537,792		270,238		808,030
Europe		545,708		217,687		763,395
	$	2,673,705	$	1,054,429	$	3,728,134

	December 31, 2019					
(Amounts in thousands)	FPD		FCD		Total	
North America(1)	$	1,085,627	$	542,182	$	1,627,809
Latin America(1)		202,247		28,899		231,146
Middle East and Africa		355,937		98,959		454,896
Asia Pacific		499,932		315,886		815,818
Europe		560,702		249,326		810,028
	$	2,704,445	$	1,235,252	$	3,939,697

(1) North America represents United States and Canada; Latin America includes Mexico.

On December 31, 2021, the aggregate transaction price allocated to unsatisfied (or partially unsatisfied) performance obligations related to contracts having an original expected duration in excess of one year was approximately $430 million. We estimate recognition of approximately $346 million of this amount as revenue in 2022 and an additional $84 million in 2023 and thereafter.

Contract Balances

We receive payment from customers based on a contractual billing schedule and specific performance requirements as established in our contracts. We record billings as accounts receivable when an unconditional right to consideration exists. A contract asset represents revenue recognized in advance of our right to bill the customer under the terms of a contract. A contract liability represents our contractual billings in advance of revenue recognized for a contract.

The following table presents opening and closing balances of contract assets and contract liabilities, current and long-term, for the years ended December 31, 2021 and 2020:

(Amounts in thousands)	Contract Assets, net (Current)	Long-term Contract Assets, net(1)	Contract Liabilities (Current)	Long-term Contract Liabilities(2)
Balance — January 1, 2020	$ 272,914	$ 9,280	$ 221,095	$ 1,652
Revenue recognized that was included in contract liabilities at the beginning of the period	—	—	(180,522)	—
Increase due to revenue recognized in the period in excess of billings	925,244	—	—	—
Increase due to billings arising during the period in excess of revenue recognized	—	—	140,391	—
Amounts transferred from contract assets to receivables	(917,885)	(1,666)	—	—
Currency effects and other, net	(2,539)	(6,475)	13,263	(830)
Balance — December 31, 2020	$ 277,734	$ 1,139	$ 194,227	$ 822
Revenue recognized that was included in contract liabilities at the beginning of the period	—	—	(153,221)	—
Increase due to revenue recognized in the period in excess of billings	784,934	—	—	—
Increase due to billings arising during the period in excess of revenue recognized	—	—	165,990	—
Amounts transferred from contract assets to receivables	(848,031)	(2,329)	—	—
Currency effects and other, net	(19,039)	1,616	(4,031)	(358)
Balance — December 31, 2021	$ 195,598	$ 426	$ 202,965	$ 464

(1) Included in other assets, net.
(2) Included in retirement obligations and other liabilities.

4. ALLOWANCE FOR EXPECTED CREDIT LOSSES

The allowance for credit losses is an estimate of the credit losses expected over the life of our financial assets and instruments. We assess and measure expected credit losses on a collective basis when similar risk characteristics exist, including market, geography, credit risk and remaining duration. Financial assets and instruments that do not share risk characteristics are evaluated on an individual basis. Our estimate of the allowance balance is assessed and quantified using internal and external valuation information relating to past events, current conditions and reasonable and supportable forecasts over the contractual terms of an asset.

Our primary exposure to expected credit losses is through our trade receivables and contract assets. For these financial assets, we record an allowance for expected credit losses that, when deducted from the gross asset balance, presents the net amount expected to be collected. Primarily, our experience of historical credit losses provides the basis for our estimation of the allowance. We estimate the allowance based on an aging schedule and according to historical losses as determined from our history of billings and collections. Additionally, we adjust the allowance for factors that are specific to our customers' credit risk such as financial difficulties, liquidity issues, insolvency, and country and geopolitical risks. We also consider both the current and forecasted macroeconomic conditions as of the reporting date. As identified and needed, we adjust the allowance and recognize adjustments in the income statement each period. Trade receivables are written off against the allowance in the period when the receivable is deemed to be uncollectible and further collection efforts have ceased. Subsequent recoveries of previously written off amounts are reflected as a reduction to credit impairment losses in the consolidated statements of income.

Contract assets represent a conditional right to consideration for satisfied performance obligations that become a receivable when the conditions are satisfied. Generally, contract assets are recorded when contractual billing schedules differ from revenue recognition based on timing and are managed through the revenue recognition process. Based on our historical credit loss experience, the current expected credit loss for contract assets is estimated to be approximately 1% of the asset balance.

The following table presents the changes in the allowance for expected credit losses for our trade receivables and short-term contract assets as of December 31, 2021, 2020 and 2019:

(Amounts in thousands)	Trade receivables	Short-term contract assets
Beginning balance, January 1, 2021	$ 75,176	$ 3,205
Charges to cost and expenses, net of recoveries	3,934	—
Write-offs	(2,015)	—
Currency effects and other, net	(2,759)	(812)
Ending balance, December 31 , 2021	$ 74,336	$ 2,393
Beginning balance, January 1, 2020	$ 53,412	$ 206
Adoption of ASU 2016-13	6,970	2,779
Charges to cost and expenses, net of recoveries	9,326	—
Currency effects and other, net	5,468	220
Ending balance, December 31 , 2020	$ 75,176	$ 3,205
Beginning balance, January 1, 2019	$ 51,501	$ —
Charges to cost and expenses, net of recoveries	734	206
Currency effects and other, net	1,177	—
Ending balance, December 31 , 2019	$ 53,412	$ 206

Our allowance on long-term receivables, included in other assets, net, represent receivables with collection periods longer than 12 months and the balance primarily consists of reserved receivables associated with the national oil company in Venezuela. The following table presents the changes in the allowance for long-term receivables as of December 31, 2021, 2020 and 2019:

(Amounts in thousands)	2021	2020	2019
Beginning balance, January 1,	$ 67,842	$ 68,555	$ 68,792
Adoption of ASU 2016-13	—	(679)	—
Currency effects and other, net	(146)	(34)	(237)
Ending balance, December 31,	$ 67,696	$ 67,842	$ 68,555

We also have exposure to credit losses from off-balance sheet exposures, such as financial guarantees and standby letters of credit, where we believe the risk of loss is immaterial to our financial statements as of December 31, 2021.

5. LEASES

We have operating and finance leases for certain manufacturing facilities, offices, service and quick response centers, machinery, equipment and automobiles. Our leases have remaining lease terms of up to 31 years. The terms and conditions of our leases may include options to extend or terminate the lease which are considered and included in the lease term when these options are reasonably certain of exercise.

We determine if a contract is (or contains) a lease at inception by evaluating whether the contract conveys the right to control the use of an identified asset. For all classes of leased assets, we have elected the practical expedient to account for any non-lease components in the contract together with the related lease component in the same unit of account. For lease contracts containing more than one lease component, we allocate the contract consideration to each of the lease components on the basis of relative standalone prices in order to identify the lease payments for each lease component.

ROU assets and lease liabilities are recognized in our consolidated balance sheets at the commencement date based on the present value of remaining lease payments over the lease term. Additionally, ROU assets include any lease payments made at or before the commencement date, as well as any initial direct costs incurred, and are reduced by any lease incentives received. As most of our operating leases do not provide an implicit rate, we apply our incremental country-specific borrowing rate to determine the present value of remaining lease payments. Our incremental borrowing country-specific rate is determined based on information available at the commencement date of the lease.

Operating leases are included in operating lease right-of-use assets, net and operating lease liabilities in our consolidated balance sheets. Finance leases are included in property plant and equipment, debt due within one year and long-term debt due after one year in our consolidated balance sheets.

For all classes of leased assets, we have applied an accounting policy election to exclude short-term leases from recognition in our consolidated balance sheets. A short-term lease has a lease term of 12 months or less at the commencement date and does not include a purchase option that is reasonably certain of exercise. We recognize short-term lease expense in our consolidated income statements on a straight-line basis over the lease term. Our short-term lease expense and short-term lease commitments as of December 31, 2021 are immaterial.

We have certain lease contracts with terms and conditions that provide for variability in the payment amount based on changes in facts or circumstances occurring after the commencement date. These variable lease payments are recognized in our consolidated income statements as the obligation is incurred.

We have certain lease contracts where we provide a guarantee to the lessor that the value of an underlying asset will be at least a specified amount at the end of the lease. Estimated amounts expected to be paid for residual value guarantees are included in lease liabilities and ROU assets.

We had $15.8 million and $0.4 million of legally binding minimum lease payments for operating leases signed but not yet commenced as of December 31, 2021 and 2020. We did not have material subleases, leases that imposed significant restrictions or covenants, material related party leases or sale-leaseback arrangements.

Other information related to our leases is as follows:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Finance Leases:		
ROU assets recorded under finance leases	$ 28,416	$ 27,624
Accumulated depreciation associated with finance leases	(12,227)	(9,463)
Total finance leases ROU assets, net(1)	$ 16,189	$ 18,161
Total finance leases liabilities(2)	$ 16,477	$ 18,287

The costs components of operating and finance leases are as follows:

	December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Operating Lease Costs:			
Fixed lease expense(3)	$ 57,482	$ 57,050	$ 57,450
Variable lease expense(3)	9,331	7,299	6,492
Total operating lease expense	$ 66,813	$ 64,349	$ 63,942
Finance Lease Costs:			
Depreciation of finance lease ROU assets(3)	$ 5,374	$ 5,392	$ 4,729
Interest on lease liabilities(4)	617	646	352
Total finance lease expense	$ 5,991	$ 6,038	$ 5,081

(1) Included in property plant and equipment, net
(2) Included in debt due within one year and long-term debt due after one year, accordingly
(3) Included in cost of sales and selling, general and administrative expense, accordingly
(4) Included in interest expense

Supplemental cash flows information related to our leases is as follows:

	December 31,		
(Amounts in thousands, except lease term and discount rate)	2021	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases(1)	$ 61,240	$ 66,478	$ 64,725
Financing cash flows from finance leases(2)	5,285	4,704	4,465
ROU assets obtained in exchange for lease obligations:			
Operating leases	$ 35,542	$ 62,425	$ 14,569
Finance leases	4,177	13,124	10,615
Weighted average remaining lease term (in years)			
Operating leases	8 years	9 years	9 years
Finance leases	6 years	7 years	3 years
Weighted average discount rate (percent)			
Operating leases	3.9 %	4.2 %	4.5 %
Finance leases	3.4 %	3.5 %	3.6 %

(1) Included in our consolidated statement of cash flows, operating activities, prepaid expenses and other assets, net and retirement obligations and other
(2) Included in our consolidated statement of cash flows, financing activities, payments under other financing arrangements

Future undiscounted lease payments under operating and finance leases as of December 31, 2021, were as follows:

Year ending December 31,	Operating Leases	Finance Leases
	(Amounts in thousands)	
2022	39,602	5,277
2023	34,342	3,871
2024	29,800	2,461
2025	24,041	1,591
2026	19,653	716
Thereafter	87,367	4,597
Total future minimum lease payments	$ 234,805	$ 18,513
Less: Imputed interest	(35,391)	(2,036)
Total	$ 199,414	$ 16,477
Other current liabilities	$ 32,628	$ —
Operating lease liabilities	166,786	—
Debt due within one year	—	5,169
Long-term debt due after one year	—	11,308
Total	$ 199,414	$ 16,477

6. GOODWILL AND OTHER INTANGIBLE ASSETS

The changes in the carrying amount of goodwill for the years ended December 31, 2021 and 2020 are as follows:

	FPD	FCD	Total
		(Amounts in thousands)	
Balance as of December 31, 2019	$ 786,630	$ 406,380	$ 1,193,010
Currency translation and other	18,425	13,451	31,876
Balance as of December 31, 2020	$ 805,055	$ 419,831	$ 1,224,886
Currency translation and other	(17,842)	(10,565)	(28,407)
Balance as of December 31, 2021	$ 787,213	$ 409,266	$ 1,196,479

The following table provides information about our intangible assets for the years ended December 31, 2021 and 2020:

		December 31, 2021		December 31, 2020	
	Useful Life (Years)	Ending Gross Amount	Accumulated Amortization	Ending Gross Amount	Accumulated Amortization
		(Amounts in thousands, except years)			
Finite-lived intangible assets:					
Engineering drawings(1)	10-22	$ 89,699	$ (86,275)	$ 90,638	$ (83,620)
Existing customer relationships(2)	5-10	82,420	(67,279)	85,214	(62,796)
Patents	9-16	26,339	(26,339)	27,015	(27,015)
Other	4-40	93,849	(46,436)	93,923	(43,633)
		$ 292,307	$ (226,329)	$ 296,790	$ (217,064)
Indefinite-lived intangible assets(3)		$ 88,069	$ (1,585)	$ 90,355	$ (1,585)

(1) Engineering drawings represent the estimated fair value associated with specific acquired product and component schematics.
(2) Existing customer relationships acquired prior to 2011 had a useful life of five years.
(3) Accumulated amortization for indefinite-lived intangible assets relates to amounts recorded prior to the implementation date of guidance issued in ASC 350.

The following schedule outlines actual amortization expense recognized during 2021 and an estimate of future amortization based upon the finite-lived intangible assets owned at December 31, 2021:

	Amortization Expense
	(Amounts in thousands)
Actual for year ended December 31, 2021	$ 13,435
Estimated for year ended December 31, 2022	11,150
Estimated for year ended December 31, 2023	8,597
Estimated for year ended December 31, 2024	6,839
Estimated for year ended December 31, 2025	2,098
Estimated for year ended December 31, 2026	1,876
Thereafter	35,419

Amortization expense for finite-lived intangible assets was $13.6 million in 2020 and $13.8 million in 2019.

7. INVENTORIES

Inventories, net consisted of the following:

	December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Raw materials	$ 318,348	$ 321,600	328,080
Work in process	242,143	210,174	192,993
Finished goods	213,096	221,532	218,408
Less: Excess and obsolete reserve	(95,300)	(86,078)	(78,644)
Inventories, net	$ 678,287	$ 667,228	$ 660,837

During 2021, 2020 and 2019, we recognized expenses of $15.6 million, $14.9 million and $17.1 million, respectively, for excess and obsolete inventory. These expenses are included in COS in our consolidated statements of income.

8. STOCK-BASED COMPENSATION PLANS

Effective January 1, 2020, our shareholders approved the Flowserve Corporation 2020 Long-Term Incentive Plan (“2020 Plan”). The 2020 Plan replaces and supersedes the Flowserve Corporation Equity and Incentive Compensation Plan ("2010 Plan") in its entirety. The 2020 Plan authorizes the issuance of 12,500,000 shares of our common stock in the form of restricted shares, restricted share units and performance-based units (collectively referred to as "Restricted Shares"), incentive stock options, non-statutory stock options, stock appreciation rights and bonus stock, in addition to any shares available for issuance or subject to forfeiture under the expired 2010 Plan. Of the shares of common stock authorized under the 2020 Plan and remaining shares under the 2010 Plan, 11,349,702 were available for issuance as of December 31, 2021. Restricted Shares primarily vest over a three year period. Restricted Shares granted to employees who retire and have achieved at least 55 years of age and 10 years of service continue to vest over the original vesting period ("55/10 Provision").

Stock Options — Options granted to officers, other employees and directors allow for the purchase of common shares at the market value of our stock on the date the options are granted. Options generally become exercisable after three years. Options generally expire ten years from the date of the grant or within a short period of time following the termination of employment or cessation of services by an option holder. As of December 31, 2021, 114,943 stock options were outstanding and exercisable, with a grant date fair value of $2.0 million recognized over three years and a weighted average exercise price of $48.63. As of December 31, 2020, compensation associated with these stock options was fully earned. Using the Black-Scholes option pricing model to estimate the fair value of each option award, as of December 31, 2021 the total fair value of stock options vested was $2.0 million. No stock options were exercisable during the year ended December 31, 2019. No stock options were granted, canceled or vested during years ended December 31, 2021, 2020 or 2019. The weighted average remaining contractual life of options outstanding at December 31, 2021, 2020 and 2019 was 5.3 years, 6.3 years and 7.3 years, respectively.

Restricted Shares — Generally, the restrictions on Restricted Shares do not expire for a minimum of one year and a maximum of three years, and shares are subject to forfeiture during the restriction period. Most typically, Restricted Share grants have staggered vesting periods over one to three years from grant date. The intrinsic value of the Restricted Shares, which is typically the product of share price at the date of grant and the number of Restricted Shares granted, is amortized on a straight-line basis to compensation expense over the periods in which the restrictions lapse.

Awards of Restricted Shares are valued at the closing market price of our common stock on the date of grant. The unearned compensation is amortized to compensation expense over the vesting period of the Restricted Shares, except for awards related to the 55/10 Provision which are expensed when granted. As of December 31, 2021 and 2020, we had $24.2 million and $18.7 million, respectively, of unearned compensation cost related to unvested Restricted Shares, which is expected to be recognized over a weighted-average period of approximately one year. The total fair value of Restricted Shares vested during the years ended December 31, 2021, 2020 and 2019 was $25.2 million, $26.4 million and $16.8 million, respectively.

We recorded stock-based compensation for Restricted Shares as follows:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in millions)		
Stock-based compensation expense	$ 29.5	$ 27.3	$ 23.9
Related income tax benefit	(6.7)	(6.2)	(5.4)
Net stock-based compensation expense	$ 22.8	$ 21.1	$ 18.5

The following table summarizes information regarding Restricted Shares:

	Year Ended December 31, 2021	
	Shares	Weighted Average Grant-Date Fair Value
Number of unvested Restricted Shares:		
Outstanding — beginning of year	1,373,657	$ 46.76
Granted	1,058,836	39.46
Vested	(569,362)	44.22
Canceled	(192,120)	46.28
Outstanding — end of year	1,671,011	$ 43.06

Unvested Restricted Shares outstanding as of December 31, 2021, includes approximately 506,000 units with performance-based vesting provisions issuable in common stock and vest upon the achievement of pre-defined performance metrics. Targets for outstanding performance awards are based on our average return on invested capital, total shareholder return ("TSR") or free cash flow as a percent of net income over a three-year period. Performance units issued in 2021 include a secondary measure, relative total shareholder return, which can increase or decrease the number of vesting units by 15% depending on the Company's performance versus peers. Performance units issued in 2019 and 2020 have a vesting percentage between 0% and 200%, while the 2021 performance units have a vesting percentage up to 230%. Compensation expense is recognized ratably over a cliff-vesting period of 36 months, based on the fair value of our common stock on the date of grant, adjusted for actual forfeitures. During the performance period, earned and unearned compensation expense is adjusted based on changes in the expected achievement of the performance targets for all performance-based units granted except for the TSR-based units. Vesting provisions range from 0 to approximately 1,054,000 shares based on performance targets. As of December 31, 2021, we estimate vesting of approximately 312,000 shares based on expected achievement of performance targets.

9. DERIVATIVES AND HEDGING ACTIVITIES

Our risk management and foreign currency derivatives and hedging policy specifies the conditions under which we may enter into derivative contracts. See Note 1 for additional information on our purpose for entering into derivatives and our overall risk management strategies. We enter into foreign exchange forward contracts to hedge our cash flow risks associated with transactions denominated in currencies other than the local currency of the operation engaging in the transaction.

Foreign exchange contracts had notional values of $425.2 million and $388.1 million at December 31, 2021 and 2020, respectively. At December 31, 2021, the length of foreign exchange contracts currently in place ranged from 3 days to 21 months.

We are exposed to risk from credit-related losses resulting from nonperformance by counterparties to our financial instruments. We perform credit evaluations of our counterparties under forward exchange contracts and expect all counterparties to meet their obligations. We have not experienced credit losses from our counterparties.

The fair values of foreign exchange contracts are summarized below:

	Year Ended December 31, 2021	2020
	(Amounts in thousands)	
Current derivative assets	$ 740	$ 2,857
Noncurrent derivative assets	2	249
Current derivative liabilities	2,924	682
Noncurrent derivative liabilities	82	—

Current and noncurrent derivative assets are reported in our consolidated balance sheets in prepaid expenses and other and other assets, net, respectively. Current and noncurrent derivative liabilities are reported in our consolidated balance sheets in accrued liabilities and retirement obligations and other liabilities, respectively.

The impact of net changes in the fair values of foreign exchange contracts are summarized below:

	Year Ended December 31, 2021	2020	2019
	(Amounts in thousands)		
Gains (losses) recognized in income	$ 3,295	$ (10,294)	$ (6,495)

Gains and losses recognized in our consolidated statements of income for foreign exchange contracts are classified as other income (expense), net.

As a means of managing the volatility of foreign currency exposure with the Euro/U.S. dollar exchange rate, we entered into cross-currency swaps agreements ("Swaps") as a hedge of our Euro investment in certain of our international subsidiaries. Accordingly, on April 14, 2021 and March 9, 2021, we entered into Swaps, with termination dates of October 1, 2030 and an early termination date of March 11, 2025, respectively. Also, during the third quarter of 2020 we entered into a cross currency swap agreement with an early termination date of September 22, 2025. The swap agreements are designated as net investment hedges and as of December 31, 2021 the combined notional value of these swaps was €423.2 million. The swaps are classified as Level II under the fair value hierarchy.

The fair values of our cross-currency swaps are summarized below:

	Year Ended December 31, 2021	2020
	(Amounts in thousands)	
Other assets, net	$ 23,129	$ —
Retirement obligations and other liabilities	—	18,091

We exclude the interest accruals on the swaps from the assessment of hedge effectiveness and recognize the interest accruals in earnings within interest expense. For each reporting period, the change in the fair value of the swap attributable to changes in the spot rate and differences between the change in the fair value of the excluded components and the amounts recognized in earnings under the swap accrual process are reported in accumulated other comprehensive loss ("AOCL") on our consolidated balance sheets. For the period ended December 31, 2021, an interest accrual of $(6.3) million was recognized within interest expense in our consolidated statements of income.

The cumulative net investment hedge (gain) loss, net of deferred taxes, under cross-currency swaps recorded in AOCL on our consolidated balance sheets are summarized below:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
(Gain) loss-included component (1)	$ (15,578)	$ 6,067	$ —
(Gain) loss-excluded component (2)	(2,111)	7,769	—
(Gain) loss recognized in AOCL	$ (17,689)	$ 13,836	$ —

(1) Change in the fair value of the swaps attributable to changes in spot rates.
(2) Change in the fair value of the swaps due to changes other than those attributable to spot rates.

In March 2015, we designated €255.7 million of our 1.25% EUR Senior Notes due 2022 ("2022 Euro Senior Notes") discussed in Note 13 as a net investment hedge of our Euro investment in certain of our international subsidiaries. On September 22, 2020, we increased the designated hedged value on the 2022 Euro Senior Notes to €336.3 million, which reflected the remaining balance of the 2022 Euro Senior Notes. For each reporting period, the change in the carrying value due to the remeasurement of the effective portion is reported in AOCL on our consolidated balance sheets and the remaining change in the carrying value of the ineffective portion, if any, is recognized in other income (expense), net in our consolidated statements of income. As a result of the redemption of our 2022 Euro Senior Notes discussed in Note 13, in the first quarter of 2021 we dedesignated the hedged value of our net investment hedge.

Prior to the dedesignation, the cumulative impact recorded in AOCL on our consolidated balance sheets from the change in carrying value due to the remeasurement of the effective portion of the net investment hedge are summarized below:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Loss recorded in AOCL	$ (29,554)	$ (34,973)	$ (12,084)

Prior to the dedesignation of the net investment hedge, we used the spot method to measure the effectiveness of both net investment hedges and evaluate the effectiveness on a prospective basis at the beginning of each quarter. We did not record any ineffectiveness for the years ended December 31, 2020 and 2019.

10. FAIR VALUE OF FINANCIAL INSTRUMENTS

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models may be applied. Assets and liabilities recorded at fair value in our consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Recurring fair value measurements are limited to investments in derivative instruments. The fair value measurements of our derivative instruments are determined using models that maximize the use of the observable market inputs including interest rate curves and both forward and spot prices for currencies, and are classified as Level II under the fair value hierarchy. The fair values of our derivatives are included above in Note 9.

The carrying value of our financial instruments as reflected in our consolidated balance sheets approximates fair value, with the exception of our long-term debt. The estimated fair value of our long-term debt, excluding the Senior Notes, approximates the carrying value and is classified as Level II under the fair value hierarchy. The carrying value of our debt is included in Note 13. The estimated fair value of our Senior Notes at December 31, 2021 was $999.3 million compared to the carrying value of $988.1 million. The estimated fair value of the Senior Notes is based on Level I quoted market rates. The carrying amounts of our other financial instruments (i.e., cash and cash equivalents, accounts receivable, net and accounts payable) approximated fair value due to their short-term nature at December 31, 2021 and December 31, 2020.

11. DETAILS OF CERTAIN CONSOLIDATED BALANCE SHEET CAPTIONS

The following tables present financial information of certain consolidated balance sheets captions.

Accounts Receivable, net — Accounts receivable, net were:

	December 31, 2021	December 31, 2020
	(Amounts in thousands)	
Trade accounts receivables	$ 770,280	$ 808,459
Less: allowance for expected credit losses	(55,264)	(59,280)
Other short-term receivables	43,266	20,179
Less: allowance for expected credit losses	(19,072)	(15,896)
Accounts receivable, net	$ 739,210	$ 753,462

Property, Plant and Equipment, net — Property, plant and equipment, net were:

	December 31, 2021	December 31, 2020
	(Amounts in thousands)	
Land	$ 62,613	$ 65,894
Buildings and improvements	441,627	446,008
Machinery, equipment and tooling	751,944	699,256
Software, furniture and fixtures and other	451,566	439,063
Gross property, plant and equipment	1,707,750	1,650,221
Less: accumulated depreciation	(1,191,823)	(1,093,348)
Property, plant and equipment, net	$ 515,927	$ 556,873

Accrued Liabilities — Accrued liabilities were:

	December 31, 2021	December 31, 2020
	(Amounts in thousands)	
Wages, compensation and other benefits	$ 204,347	$ 225,133
Commissions and royalties	21,911	22,847
Warranty costs and late delivery penalties	23,741	27,757
Sales and use tax	20,782	29,067
Income tax	47,186	31,378
Other	127,125	127,040
Accrued liabilities	$ 445,092	$ 463,222

"Other" accrued liabilities include professional fees, lease obligations, insurance, interest, freight, accrued cash dividends payable, legal and environmental matters, derivative liabilities, restructuring reserves and other items, none of which individually exceed 5% of current liabilities.

Retirement Obligations and Other Liabilities — Retirement obligations and other liabilities were:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Pension and postretirement benefits	$ 188,999	$ 225,994
Deferred taxes	9,169	85,824
Operating lease liabilities	166,786	176,246
Legal and environmental	86,561	101,203
Uncertain tax positions and other tax liabilities	37,013	50,259
Other	30,320	54,286
Retirement obligations and other liabilities	$ 518,848	$ 693,812

"Other" includes derivative liabilities, deferred compensation liabilities, asset retirement obligations, insurance-related liabilities and other items, none of which exceed 5% of retirement obligations and other liabilities.

12. EQUITY METHOD INVESTMENTS

We occasionally enter into joint venture arrangements with local country partners as our preferred means of entry into countries where barriers to entry may exist. Similar to our consolidated subsidiaries, these unconsolidated joint ventures generally operate within our primary businesses of designing, manufacturing, assembling and distributing fluid motion and control products and services. We have agreements with certain of these joint ventures that restrict us from otherwise entering the respective market and certain joint ventures produce and/or sell our products as part of their broader product offering. Net earnings from investments in unconsolidated joint ventures is reported in net earnings from affiliates in our consolidated statements of income. Given the integrated role of the unconsolidated joint ventures in our business, net earnings from affiliates is presented as a component of operating income.

As of December 31, 2021, we had investments in six joint ventures, one located in each of Chile, China, India, Saudi Arabia, South Korea and the United Arab Emirates that were accounted for using the equity method and are immaterial for disclosure purposes.

13. DEBT AND FINANCE LEASE OBLIGATIONS

Debt, including finance lease obligations, consisted of:

	December 31, 2021	December 31, 2020
	(Amounts in thousands)	
1.25% EUR Senior Notes due March 17, 2022, net of unamortized discount and debt issuance costs of $1,070 at December 31, 2020	$ —	$ 410,243
3.50% USD Senior Notes due September 15, 2022, net of unamortized discount and debt issuance costs of $1,235 at December 31, 2020	—	498,765
4.00% USD Senior Notes due November 15, 2023, net of unamortized discount and debt issuance costs of $1,345 at December 31, 2020	—	298,655
3.50% USD Senior Notes due October 1, 2030, net of unamortized discount and debt issuance costs of $5,611 and $6,147 at December 31, 2021 and 2020, respectively	494,389	493,853
2.80% USD Senior Notes due January 15, 2032, net of unamortized discount and debt issuance costs of $6,273 as of December 31, 2021	493,727	—
Term Loan Facility, interest rate of 1.45% and net of debt issuance costs of $639 as December 31, 2021	291,861	—
Finance lease obligations and other borrowings	22,851	25,390
Debt and finance lease obligations	1,302,828	1,726,906
Less amounts due within one year	41,058	8,995
Total debt due after one year	$ 1,261,770	$ 1,717,911

Scheduled maturities of our Senior Notes and other debt, are (amounts in thousands):

	Term Loan	Senior Notes and other debt	Total
		(Amounts in thousands)	
2022	$ 32,500	$ 8,558	$ 41,058
2023	39,635	14,294	53,929
2024	59,863	—	59,863
2025	59,905	—	59,905
2025	99,958	—	99,958
Thereafter	—	988,115	988,115
Total	$ 291,861	$ 1,010,967	$ 1,302,828

Senior Notes

On September 23, 2021, we completed a public offering of $500.0 million in aggregate principal amount of January 15, 2032 ("2032 Senior Notes"). The 2032 Senior Notes bear an interest rate of 2.80% per year, payable on January 15 and July 15 of each year, commencing on January 15, 2022. The 2032 Senior Notes and were priced at 99.656% of par value, reflecting a discount to the aggregate principal amount. On October 12, 2021, the combined proceeds of the 2032 Senior Notes offering and term loan facility, in addition to a portion of our excess cash balance, were used to redeem our 4.00% Senior Notes due November 2023 (“2023 Senior Notes”) and our 3.50% Senior Notes due September 2022 (“2022 Senior Notes”). As a result of the redemption, the Company incurred a loss on early extinguishment of $38.0 million, which included the impact of a $36.1 million make-whole premium.

On September 14, 2020, we completed a public offering of $500.0 million in aggregate principal amount of senior notes due October 1, 2030 ("2030 Senior Notes"). The 2030 Senior Notes bear an interest rate of 3.50% per year, payable on April 1 and October 1 of each year, commencing on April 1, 2021. The 2030 Senior Notes were priced at 99.656% of par value, reflecting a discount to the aggregate principal amount. We used a portion of the net proceeds of the 2030 Senior Notes offering to fund a partial tender offer of our 2022 Euro Senior Notes. During the third quarter of 2020 we had tendered $191.4 million of our 2022 Euro Senior Notes and have recorded in interest expense an early extinguishment loss of $1.2 million. On March 19, 2021, we redeemed the remaining $400.9 million of our 2022 Euro Senior Notes and have recorded a loss on early extinguishment of $7.6 million, which included the impact of a $6.6 million make-whole premium.

On March 17, 2015, we completed a public offering of €500.0 million of Euro senior notes in aggregate principal amount due March 17, 2022. The 2022 Euro Senior Notes bear an interest rate of 1.25% per year, payable each year on March 17. The 2022 Euro Senior Notes were priced at 99.336% of par value, reflecting a discount to the aggregate principal amount.

On November 1, 2013 we completed the public offering of $300.0 million in aggregate principal amount of 2023 Senior Notes due November 15, 2023. The 2023 Senior Notes bear an interest rate of 4.00% per year, payable on May 15 and November 15 of each year and were priced at 99.532% of par value, reflecting a discount to the aggregate principal amount.

On September 11, 2012, we completed the public offering of $500.0 million in aggregate principal amount of 2022 Senior Notes due September 15, 2022. The 2022 Senior Notes bear an interest rate of 3.50% per year, payable on March 15 and September 15 of each year and were priced at 99.615% of par value, reflecting a discount to the aggregate principal amount.

We have the right to redeem the 2032 Senior Notes and 2030 Senior Notes at any time prior to October 15, 2031 and July 1, 2030, respectively, in whole or in part, at our option, at a redemption price equal to the greater of: (1) 100% of the principal amount of the senior notes being redeemed; or (2) the sum of the present values of the remaining scheduled payments of principal and interest in respect of the Senior Notes being redeemed discounted to the redemption date on a semi-annual basis, at the applicable Treasury Rate plus 25 and 45 basis points, respectively. In addition, at any time on or after October 15, 2031 and July 1, 2030 for the 2032 Senior Notes and 2030 Senior Notes, respectively, we may redeem the Senior Notes at a redemption price equal to 100% of the principal amount of the Senior Notes being redeemed. In each case, we will also pay the accrued and unpaid interest on the principal amount being redeemed to the redemption date.

Senior Credit Facility

On September 13, 2021 ("Closing Date"), we amended and restated our credit agreement ("Amended and Restated Credit Agreement") under our Senior Credit Facility ("Credit Facility") with Bank of America, N.A. ("Administrative Agent") and the other lenders to provide greater flexibility in maintaining adequate liquidity and access to available borrowings. The Amended and Restated Credit Agreement, (i) retained, from the previous credit agreement, the $800.0 million unsecured Revolving Credit Facility, which includes a $750.0 million sublimit for the issuance of letters of credit and a $30.0 million sublimit for swing line loans ii) provides for an up to $300 million unsecured Term Loan Facility (the "Term Loan"), (iii) extends the maturity date of the agreement to September 13, 2026, (iv) reduces commitment fees, (v) extends net leverage ratio covenant definition through the maturity of the agreement, and (vi) provides the ability to make certain adjustments to the otherwise applicable commitment fee, interest rate and letter of credit fees based on the Company’s performance against to-be-established key performance indicators with respect to certain of the Company’s environmental, social and governance targets. Most other terms and conditions under the previous credit agreement (the "then existing credit agreement") remained unchanged. In conjunction with the amendment and restatement of the previous credit agreement we recorded a loss on early extinguishment of $0.6 million in the third quarter of 2021 related to deferred financing fees.

On the Closing Date, approximately $300.0 million was drawn under the unsecured Term Loan to fund, in part, the previously announced redemption of the Company's 2022 Senior Notes and 2023 Senior Notes.

The interest rates per annum applicable to the Revolving Credit Facility are unchanged under the Amended and Restated Credit Agreement. The interest rates per annum applicable to the Credit Facility, other than with respect to swing line loans, are LIBOR plus between 1.000% to 1.750%, depending on our debt rating by either Moody's Investors Service, Inc. ("Moody's") or Standard & Poor's Financial Services LLC ("S&P"), or, at our option, the Base Rate (as defined in the Amended and Restated Credit Agreement) plus between 0.000% to 0.750% depending on our debt rating by either Moody's or S&P. At December 31, 2021, the interest rate on the Revolving Credit Facility was LIBOR plus 1.375% in the case of LIBOR loans and the Base Rate plus 0.375% in the case of Base Rate loans. In addition, a commitment fee is payable quarterly in arrears on the daily unused portions of the Credit Facility. The commitment fee will be between 0.080% and 0.250% of unused amounts under the Credit Facility depending on our debt rating by either Moody's or S&P. The commitment fee was 0.175% (per annum) during the period ended December 31, 2021.

Under the terms and conditions of the Amended and Restated Credit Agreement, interest rates per annum applicable to the Term Loan are stated as LIBOR plus between 0.875% to 1.625%, depending on the Company's debt rating by either Moody's or S&P, or, at the option of the Company, the Base Rate plus between 0.000% to 0.625% depending on the Company's debt rating by either Moody's or S&P.

As of December 31, 2021, and December 31, 2020, we had no revolving loans outstanding under the Senior Credit Facility. We had outstanding letters of credit of $78.3 million and $58.1 million at December 31, 2021, and December 31, 2020, respectively. After consideration of the financial covenants under our Senior Credit Facility and outstanding letters of credit, as of December 31, 2021, the amount available for borrowings under our Senior Credit Facility was limited to $614.2 million. As of December 31, 2020, the amount available for borrowings under our Revolving Credit facility was $741.9 million.

Financial Covenants — Our compliance with the financial covenants under the Senior Notes and Senior Credit Facility are tested quarterly. We were in compliance with all covenants as of December 31, 2021. We have scheduled repayments of $7.5 million due in each of the next three quarters and $10.0 million on December 31, 2022, on our Term Loan.

14. PENSION AND POSTRETIREMENT BENEFITS

We sponsor several noncontributory defined benefit pension plans, covering substantially all U.S. employees and certain non-U.S. employees, which provide benefits based on years of service, age, job grade levels and type of compensation. Retirement benefits for all other covered employees are provided through contributory pension plans, cash balance pension plans and government-sponsored retirement programs. All funded defined benefit pension plans receive funding based on independent actuarial valuations to provide for current service and an amount sufficient to amortize unfunded prior service over periods not to exceed 30 years, with funding falling within the legal limits prescribed by prevailing regulation. We also maintain unfunded defined benefit plans that, as permitted by local regulations, receive funding only when benefits become due.

Our defined benefit plan strategy is to ensure that current and future benefit obligations are adequately funded in a cost-effective manner. Additionally, our investing objective is to achieve the highest level of investment performance that is compatible with our risk tolerance and prudent investment practices. Because of the long-term nature of our defined benefit plan liabilities, our funding strategy is based on a long-term perspective for formulating and implementing investment policies and evaluating their investment performance.

The asset allocation of our defined benefit plans reflects our decision about the proportion of the investment in equity and fixed income securities, and, where appropriate, the various sub-asset classes of each. At least annually, we complete a comprehensive review of our asset allocation policy and the underlying assumptions, which includes our long-term capital markets rate of return assumptions and our risk tolerances relative to our defined benefit plan liabilities.

The expected rates of return on defined benefit plan assets are derived from review of the asset allocation strategy, expected long-term performance of asset classes, risks and other factors adjusted for our specific investment strategy. These rates are impacted by changes in general market conditions, but because they are long-term in nature, short-term market changes do not significantly impact the rates.

Our U.S. defined benefit plan assets consist of a balanced portfolio of equity and fixed income securities. Our non-U.S. defined benefit plan assets include a significant concentration of United Kingdom ("U.K.") fixed income securities. We monitor investment allocations and manage plan assets to maintain acceptable levels of risk.

For all periods presented, we used a measurement date of December 31 for each of our U.S. pension plans, non-U.S. pension plans and postretirement medical plans.

U.S. Defined Benefit Plans

We maintain qualified and non-qualified defined benefit pension plans in the U.S. The qualified plan provides coverage for substantially all full-time U.S. employees who receive benefits, up to an earnings threshold specified by the U.S. Department of Labor. The non-qualified plans primarily cover a small number of employees including current and former members of senior management, providing them with benefit levels equivalent to other participants, but that are otherwise limited by U.S. Department of Labor rules. The U.S. plans are designed to operate as "cash balance" arrangements, under which the employee has the option to take a lump sum payment at the end of their service. The difference between total accumulated benefit obligation and total projected benefit obligation ("Benefit Obligation") is immaterial.

The following are assumptions related to the U.S. defined benefit pension plans:

	Year Ended December 31,		
	2021	**2020**	**2019**
Weighted average assumptions used to determine Benefit Obligations:			
Discount rate	3.00 %	2.62 %	3.41 %
Rate of increase in compensation levels	3.50	3.63	3.50
Weighted average assumptions used to determine net pension expense:			
Long-term rate of return on assets	6.00 %	6.00 %	6.00 %
Discount rate	2.62	3.41	4.34
Rate of increase in compensation levels	3.50	3.56	3.50
Weighted-average interest crediting rates	3.79 %	3.79 %	3.79 %

At December 31, 2021 as compared with December 31, 2020, we increased our discount rate from 2.62% to 3.00% based on an analysis of publicly-traded investment grade U.S. corporate bonds, which had a higher yield due to current market conditions. In determining 2021 expense, the expected rate of return on U.S. plan assets remained constant at 6.00%, primarily based on our target allocations and expected long-term asset returns. The long-term rate of return assumption is calculated using a quantitative approach that utilizes unadjusted historical returns and asset allocation as inputs for the calculation. For all U.S. plans, we adopted the Pri-2012 mortality tables and the MP-2021 improvement scale published in October 2021. We applied the Pri-2012 tables based on the constituency of our plan population for union and non-union participants. We adjusted the improvement scale to utilize the Proxy SSA Long Term Improvement Rates, consistent with assumptions adopted by the Social Security Administration trustees, based on long-term historical experience. Currently, we believe this approach provides the best estimate of our future obligation. Most plan participants elect to receive plan benefits as a lump sum at the end of service, rather than an annuity. As such, the updated mortality tables had an immaterial effect on our pension obligation.

Net pension expense for the U.S. defined benefit pension plans (including both qualified and non-qualified plans) was:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Service cost	$ 25,162	$ 25,893	$ 23,245
Interest cost	11,952	15,100	17,584
Expected return on plan assets	(25,377)	(25,794)	(25,645)
Settlement (gain) loss	—	128	—
Amortization of unrecognized prior service cost	188	184	164
Amortization of unrecognized net loss	7,725	6,977	3,675
U.S. net pension expense	$ 19,650	$ 22,488	$ 19,023

The following summarizes the net pension (liability) asset for U.S. plans:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Plan assets, at fair value	$ 488,281	$ 477,680
Benefit Obligation	(471,825)	(487,418)
Funded status	$ 16,456	$ (9,738)

The following summarizes amounts recognized in the balance sheet for U.S. plans:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Noncurrent assets	$ 22,398	$ —
Current liabilities	(170)	(233)
Noncurrent liabilities	(5,772)	(9,505)
Funded status	$ 16,456	$ (9,738)

The following is a summary of the changes in the U.S. defined benefit plans' pension obligations:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ 487,418	$ 471,462
Service cost	25,162	25,893
Interest cost	11,952	15,100
Plan amendments and settlements	—	(953)
Actuarial (gain) loss (1)	(11,208)	29,166
Benefits paid	(41,499)	(53,250)
Balance — December 31	$ 471,825	$ 487,418
Accumulated benefit obligations at December 31	$ 471,024	$ 486,501

(1) The actuarial gain in 2021 and loss in 2020 primarily reflect the impact of changes in the discount rate.

The following table summarizes the expected cash benefit payments for the U.S. defined benefit pension plans in the future (amounts in millions):

2022	$ 40.3
2023	40.7
2024	39.4
2025	39.9
2026	41.3
2027-2031	192.2

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for U.S. plans, net of tax:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ (49,321)	$ (49,510)
Amortization of net loss	5,907	5,336
Amortization of prior service cost	144	140
Net gain (loss) arising during the year	13,256	(5,328)
Settlement gain	—	98
Prior service cost arising during the year	—	(57)
Balance — December 31	$ (30,014)	$ (49,321)

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Unrecognized net loss	$ (29,344)	$ (48,460)
Unrecognized prior service cost	(670)	(861)
Accumulated other comprehensive loss, net of tax	$ (30,014)	$ (49,321)

The following is a reconciliation of the U.S. defined benefit pension plans' assets:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ 477,680	$ 482,553
Return on plan assets	31,501	47,992
Company contributions	20,599	1,412
Benefits paid	(41,499)	(53,250)
Settlements	—	(1,027)
Balance — December 31	$ 488,281	$ 477,680

We contributed $20.6 million and $1.4 million to the U.S. defined benefit pension plans during 2021 and 2020, respectively. These payments exceeded the minimum funding requirements mandated by the U.S. Department of Labor rules. Our estimated contribution in 2022 is expected to be approximately $20 million, excluding direct benefits paid.

All U.S. defined benefit plan assets are held by the qualified plan. The asset allocations for the qualified plan at the end of 2021 and 2020 by asset category, are as follows:

	Target Allocation at December 31,		Percentage of Actual Plan Assets at December 31,	
Asset category	**2021**	**2020**	**2021**	**2020**
Cash and cash equivalents	1 %	— %	1 %	1 %
Cash and cash equivalents	1 %	— %	1 %	1 %
Global Equity	27 %	31 %	26 %	30 %
Global Real Assets	15 %	12 %	16 %	13 %
Equity securities	42 %	43 %	42 %	43 %
Diversified Credit	15 %	12 %	15 %	14 %
Liability-Driven Investment	42 %	45 %	42 %	42 %
Fixed income	57 %	57 %	57 %	56 %

None of our common stock is directly held by our qualified plan. Our investment strategy is to earn a long-term rate of return consistent with an acceptable degree of risk and minimize our cash contributions over the life of the plan, while taking into account the liquidity needs of the plan. We preserve capital through diversified investments in high quality securities. Our current allocation target is to invest approximately 42% of plan assets in equity securities and 57% in fixed income securities. Within each investment category, assets are allocated to various investment strategies. Professional money management firms manage our assets, and we engage a consultant to assist in evaluating these activities. We periodically review the allocation target, generally in conjunction with an asset and liability study and in consideration of our future cash flow needs. We regularly rebalance the actual allocation to our target investment allocation.

Plan assets are invested in commingled funds. Our "Pension and Investment Committee" is responsible for setting the investment strategy and the target asset allocation for the plan's assets. As the qualified plan approached fully funded status, we implemented a Liability-Driven Investing ("LDI") strategy, which more closely aligns the duration of the plan's assets with the duration of its liabilities. The LDI strategy results in an asset portfolio that more closely matches the behavior of the liability, thereby reducing the volatility of the plan's funded status.

The plan's financial instruments, shown below, are presented at fair value. See Note 1 for further discussion on how the hierarchical levels of the fair values of the Plan's investments are determined. The fair values of our U.S. defined benefit plan assets were:

	At December 31, 2021				At December 31, 2020			
		Hierarchical Levels				Hierarchical Levels		
	Total	I	II	III	Total	I	II	III
	(Amounts in thousands)				(Amounts in thousands)			
Cash and cash equivalents	$ 6,192	$ 6,192	$ —	$ —	$ 5,986	$ 5,986	$ —	$ —
Commingled Funds:								
Equity securities								
Global Equity(a)	128,269	—	128,269	—	142,401	—	142,401	—
Global Real Assets(b)	79,089	—	79,089	—	61,604	—	61,604	—
Fixed income securities								
Diversified Credit(c)	71,100	—	71,100	—	66,995	—	66,995	—
Liability-Driven Investment(d)	203,631	—	203,631	—	200,694	—	200,694	—
	$ 488,281	$ 6,192	$ 482,089	$ —	$ 477,680	$ 5,986	$ 471,694	$ —

(a) Global Equity fund seeks to closely track the performance of the MSCI All Country World Index.
(b) Global Real Asset funds seek to provide exposure to the listed global real estate investment trusts and infrastructure markets.
(c) Diversified Credit funds seek to provide exposure to the high yield, emerging markets, bank loans and securitized credit markets.
(d) Liability-Driven Investment ("LDI") funds seek to invest in high quality fixed income securities that collectively closely match those found in discount curves used to value the plan's liabilities.

Non-U.S. Defined Benefit Plans

We maintain defined benefit pension plans, which cover some or all of our employees in the following countries: Austria, Belgium, Canada, France, Germany, India, Italy, Japan, Mexico, The Netherlands, Sweden, Switzerland and the U.K. The assets of the plans in the U.K. (two plans), The Netherlands and Canada represent 93% of the total non-U.S. plan assets ("non-U.S. assets"). Details of other countries' plan assets have not been provided due to immateriality.

The following are assumptions related to the non-U.S. defined benefit pension plans:

	Year Ended December 31,		
	2021	2020	2019
Weighted average assumptions used to determine Benefit Obligations:			
Discount rate	1.71 %	1.23 %	1.61 %
Rate of increase in compensation levels	3.18	3.11	3.12
Weighted average assumptions used to determine net pension expense:			
Long-term rate of return on assets	2.37 %	2.37 %	3.37 %
Discount rate	1.23	1.61	2.42
Rate of increase in compensation levels	3.11	3.12	3.28
Weighted-average interest crediting rates	1.41 %	1.00 %	1.00 %

At December 31, 2021, as compared with December 31, 2020, we increased our average discount rate for non-U.S. plans from 1.23% to 1.71% based on analysis of bonds and other publicly-traded instruments, by country, which had higher yields due to market conditions. To determine 2021 pension expense, our average expected rate of return on plan assets remained constant at 2.37% based on our target allocations and expected long-term asset returns. As the expected rate of return on plan assets is long-term in nature, short-term market fluctuations do not significantly impact the rate.

Many of our non-U.S. defined benefit plans are unfunded, as permitted by local regulation. The expected long-term rate of return on assets for funded plans was determined by assessing the rates of return for each asset class and is calculated using a quantitative approach that utilizes unadjusted historical returns and asset allocation as inputs for the calculation. We work with our actuaries to determine the reasonableness of our long-term rate of return assumptions by looking at several factors including historical returns, expected future returns, asset allocation, risks by asset class and other items.

Net pension expense for non-U.S. defined benefit pension plans was:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Service cost	$ 7,336	$ 7,052	$ 5,728
Interest cost	5,544	6,572	8,867
Expected return on plan assets	(6,204)	(5,018)	(7,535)
Amortization of unrecognized net loss	4,509	4,315	2,933
Amortization of unrecognized prior service cost	300	262	265
Settlement loss and other	640	708	859
Non-U.S. net pension expense	$ 12,125	$ 13,891	$ 11,117

The following summarizes the net pension liability for non-U.S. plans:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Plan assets, at fair value	$ 275,941	$ 287,308
Benefit Obligation	(420,809)	(469,998)
Funded status	$ (144,868)	$ (182,690)

The following summarizes amounts recognized in the balance sheet for non-U.S. plans:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Noncurrent assets	$ 22,655	$ 18,910
Current liabilities	(7,205)	(8,121)
Noncurrent liabilities	(160,318)	(193,479)
Funded status	$ (144,868)	$ (182,690)

The following is a reconciliation of the non-U.S. plans' defined benefit pension obligations:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ 469,998	$ 425,617
Service cost	7,336	7,052
Interest cost	5,544	6,572
Employee contributions	74	80
Settlements and other	(3,140)	(2,701)
Actuarial (gains) losses (1)	(24,493)	23,781
Net benefits and expenses paid	(17,316)	(15,700)
Currency translation impact(2)	(17,194)	25,297
Balance — December 31	$ 420,809	$ 469,998
Accumulated benefit obligations at December 31	$ 399,757	$ 446,097

(1) Actuarial gains and losses primarily reflects the impact of changes in the discount rates for all plans.
(2) In 2021, the currency translation gain reflects the strengthening of the U.S. dollar against the Euro and the British pound, while in 2020 the currency translation loss reflects the weakening of the U.S. dollar against the Euro and the British pound.

The following table summarizes the expected cash benefit payments for the non-U.S. defined benefit plans in the future (amounts in millions):

2022	$ 16.1
2023	16.3
2024	17.7
2025	17.5
2026	18.2
2027-2031	96.8

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for non-U.S. plans, net of tax:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ (97,246)	$ (89,337)
Amortization of net loss	4,207	4,410
Net losses arising during the year	17,995	(7,432)
Settlement losses	616	681
Prior service cost arising during the year	—	(467)
Currency translation impact and other	3,847	(5,101)
Balance — December 31	$ (70,581)	$ (97,246)

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Unrecognized net loss	$ (67,192)	$ (93,417)
Unrecognized prior service cost	(3,389)	(3,829)
Accumulated other comprehensive loss, net of tax	$ (70,581)	$ (97,246)

The following is a reconciliation of the non-U.S. plans' defined benefit pension assets:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ 287,308	$ 262,559
Return on plan assets	1,631	21,897
Employee contributions	74	80
Company contributions	11,964	11,279
Settlements	(3,096)	(2,939)
Currency translation impact and other	(4,624)	10,132
Net benefits and expenses paid	(17,316)	(15,700)
Balance — December 31	$ 275,941	$ 287,308

UK pension plans contributed to the change in the non-US plan assets due to lower and higher asset returns in 2021 and 2020, respectively. Our contributions to non-U.S. defined benefit pension plans in 2022 are expected to be approximately $2 million, excluding direct benefits paid.

The asset allocations for the non-U.S. defined benefit pension plans at the end of 2021 and 2020 are as follows:

	Target Allocation at December 31,		Percentage of Actual Plan Assets at December 31,	
Asset category	**2021**	**2020**	**2021**	**2020**
Cash and cash equivalents	— %	1 %	— %	1 %
Cash and cash equivalents	— %	1 %	— %	1 %
North American Companies	1 %	1 %	1 %	1 %
Global Equity	1 %	1 %	1 %	1 %
Equity securities	2 %	2 %	2 %	2 %
U.K. Government Gilt Index	42 %	39 %	42 %	39 %
Liability-Driven Investment	9 %	12 %	9 %	12 %
Fixed income	51 %	51 %	51 %	51 %
Multi-asset	20 %	20 %	20 %	20 %
Buy-in Contracts	20 %	20 %	20 %	20 %
Other	7 %	6 %	7 %	6 %
Other types	47 %	46 %	47 %	46 %

None of our common stock is held directly by these plans. In all cases, our investment strategy for these plans is to earn a long-term rate of return consistent with an acceptable degree of risk and minimize our cash contributions over the life of the plan, while taking into account the liquidity needs of the plan and the legal requirements of the particular country. We preserve capital through diversified investments in high quality securities.

Asset allocation differs by plan based upon the plan’s benefit obligation to participants, as well as the results of asset and liability studies that are conducted for each plan and in consideration of our future cash flow needs. Professional money management firms manage plan assets and we engage a consultant in the U.K. to assist in evaluation of these activities. The assets of the U.K. plans are overseen by a group of Trustees who review the investment strategy, asset allocation and fund selection. These assets are passively managed as they are invested in index funds that attempt to match the performance of the specified benchmark index.

The fair values of the non-U.S. assets were:

	At December 31, 2021				At December 31, 2020			
		Hierarchical Levels				Hierarchical Levels		
	Total	I	II	III	Total	I	II	III
	(Amounts in thousands)				(Amounts in thousands)			
Cash	$ 2,264	$ 2,264	$ —	—	$ 2,304	$ 2,304	$ —	$ —
Commingled Funds:								
Equity securities								
North American Companies(a)	2,609	—	2,609	—	2,555	—	2,555	—
Global Equity(b)	2,516	—	2,516	—	2,451	—	2,451	—
Fixed income securities								
U.K. Government Gilt Index(c)	115,450	—	115,450	—	112,298	—	112,298	—
Liability-Driven Investment(d)	25,387	—	25,387	—	34,543	—	34,543	—
Other Types of Investments:								
Multi-asset(e)	54,824	—	54,824	—	57,205	—	57,205	—
Buy-in Contracts(f)	54,896	—	—	54,896	59,249	—	—	59,249
Other(g)	17,995	—	—	17,995	16,703	—	—	16,703
	$ 275,941	$ 2,264	$ 200,786	$ 72,891	$ 287,308	$ 2,304	$ 209,052	$ 75,952

(a) North American Companies represents U.S. and Canadian large cap equity funds, which are managed to track their respective benchmarks (FTSE All-World USA Index and FTSE All-World Canada Index).
(b) Global Equity represents actively managed global equity funds, taking a top-down strategic view on the different regions by analyzing companies based on fundamentals, market-driven, thematic and quantitative factors to generate alpha.
(c) U.K. Government Gilt Index represents U.K. government issued fixed income investments which are passively managed to track their respective benchmarks.
(d) LDI seeks to invest in fixed income securities that collectively closely match those found in discount curves used to value the plan's liabilities.
(e) Multi-asset seeks an attractive risk-adjusted return by investing in a diversified portfolio of strategies, including equities and fixed income.
(f) The Buy-in Contracts ("Contract" or "Contracts") represent assets held by plans, whereby the cost of providing benefits to plan participants is funded by the Contract. The Contracts are held by the plans for the benefit of plan participants in the Netherlands and U.K. The fair value of these assets are based on the current present value of accrued benefits and will fluctuate based on changes in the obligations associated with covered plan members as well as the assumptions used in the present value calculation. The fair value of asset held in the Netherlands Contract as of January 1, 2021 was $27.4 million, with contributions and currency adjustments resulting in a fair value of $24.3 million at December 31, 2021. Similarly, the fair value of asset held in the U.K. plan Contract as of January 1, 2021 was $31.8 million, with contributions and currency adjustments resulting in a fair value of $30.6 million at December 31, 2021.
(g) Includes assets held by plans outside the United Kingdom, the Netherlands and Canada. Details have not been provided due to immateriality.

Defined Benefit Pension Plans with Accumulated Benefit Obligations in Excess of Plan Assets

The following summarizes key pension plan information regarding U.S. and non-U.S. plans whose accumulated benefit obligations exceed the fair value of their respective plan assets.

	December 31,	
	2021	2020
	(Amounts in thousands)	
Benefit Obligation	$ 230,688	$ 735,912
Accumulated benefit obligation	215,535	716,534
Fair value of plan assets	59,232	526,502

In 2021, the fair value of its plan assets exceeded the benefit obligation for the U.S. plan, and is not included in the table above.

Postretirement Medical Plans

We sponsor several defined benefit postretirement medical plans covering certain current retirees and a limited number of future retirees in the U.S. These plans provide for medical and dental benefits and are administered through insurance companies and health maintenance organizations. The plans include participant contributions, deductibles, co-insurance provisions and other limitations and are integrated with Medicare and other group plans. We fund the plans as benefits and health maintenance organization premiums are paid, such that the plans hold no assets in any period presented. Accordingly, we have no investment strategy or targeted allocations for plan assets. Benefits under our postretirement medical plans are not available to new employees or most existing employees.

The following are assumptions related to postretirement benefits:

	Year Ended December 31,		
	2021	2020	2019
Weighted average assumptions used to determine Benefit Obligation:			
Discount rate	2.83 %	2.32 %	3.27 %
Weighted average assumptions used to determine net expense:			
Discount rate	2.32 %	3.27 %	4.20 %

The assumed ranges for the annual rates of increase in medical costs used to determine net expense were 7.0% for 2021, 7.0% for 2020 and 7.5% for 2019, with a gradual decrease to 5.0% for 2029 and future years.

Net postretirement benefit cost for postretirement medical plans was:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Interest cost	$ 399	$ 596	$ 754
Amortization of unrecognized prior service cost	122	122	122
Amortization of unrecognized net gain	(21)	(132)	(215)
Net postretirement benefit expense	$ 500	$ 586	$ 661

The following summarizes the accrued postretirement benefits liability for the postretirement medical plans:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Postretirement Benefit Obligation	$ 17,021	$ 18,648
Funded status	$ (17,021)	$ (18,648)

The following summarizes amounts recognized in the balance sheet for postretirement Benefit Obligation:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Current liabilities	$ (2,239)	$ (2,342)
Noncurrent liabilities	(14,782)	(16,306)
Funded status	$ (17,021)	$ (18,648)

The following is a reconciliation of the postretirement Benefit Obligation:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ 18,648	$ 18,862
Interest cost	399	596
Employee contributions	874	916
Medicare subsidies receivable	67	7
Actuarial losses	1,225	2,434
Net benefits and expenses paid	(4,192)	(4,167)
Balance — December 31	$ 17,021	$ 18,648

The following presents expected benefit payments for future periods (amounts in millions):

	Expected Payments
2022	$ 2.3
2023	2.1
2024	1.9
2025	1.7
2026	1.5
2027-2031	5.8

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for postretirement benefits, net of tax:

	2021	2020
	(Amounts in thousands)	
Balance — January 1	$ (1,213)	$ 656
Amortization of net gain	(16)	(101)
Amortization of prior service cost	94	94
Net losses arising during the year	(937)	(1,862)
Balance — December 31	$ (2,072)	$ (1,213)

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31, 2021	December 31, 2020
	(Amounts in thousands)	
Unrecognized net (loss)	$ (1,420)	$ (470)
Unrecognized prior service cost	(652)	(743)
Accumulated other comprehensive income, net of tax	$ (2,072)	$ (1,213)

We made contributions to the postretirement medical plans to pay benefits of $3.3 million in 2021, $3.2 million in 2020 and $2.9 million in 2019. Because the postretirement medical plans are unfunded, we make contributions as the covered individuals' claims are approved for payment. Accordingly, contributions during any period are directly correlated to the benefits paid.

Defined Contribution Plans

We sponsor several defined contribution plans covering substantially all U.S. and Canadian employees and certain other non-U.S. employees. Employees may contribute to these plans, and these contributions are matched in varying amounts by us, including opportunities for discretionary matching contributions by us. Defined contribution plan expense was $19.9 million in 2021, $20.0 million in 2020 and $20.4 million in 2019.

15. EARNINGS PER SHARE

The following is a reconciliation of net earnings of Flowserve Corporation and weighted average shares for calculating net earnings per common share. Earnings per weighted average common share outstanding was calculated as follows:

	Year Ended December 31, 2021	2020	2019
	(Amounts in thousands, except per share data)		
Net earnings of Flowserve Corporation	$ 125,949	$ 130,420	$ 238,828
Dividends on restricted shares not expected to vest	—	—	—
Earnings attributable to common and participating shareholders	$ 125,949	$ 130,420	$ 238,828
Weighted average shares:			
Common stock	130,277	130,373	131,012
Participating securities	28	22	22
Denominator for basic earnings per common share	130,305	130,395	131,034
Effect of potentially dilutive securities	552	655	685
Denominator for diluted earnings per common share	130,857	131,050	131,719
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$ 0.97	$ 1.00	$ 1.82
Diluted	0.96	1.00	1.81

Diluted earnings per share is based upon the weighted average number of shares as determined for basic earnings per share plus shares potentially issuable in conjunction with stock options, restricted shares, restricted share units and performance share units.

For the years ended December 31, 2021, 2020 and 2019, unvested restricted shares of 156,578, 375,203 and 140,459, respectively, were excluded from the computation of diluted earnings per share because the effect of their exercise would be anti-dilutive.

16. LEGAL MATTERS AND CONTINGENCIES

Asbestos-Related Claims

We are a defendant in a substantial number of lawsuits that seek to recover damages for personal injury allegedly caused by exposure to asbestos-containing products manufactured and/or distributed by our heritage companies in the past. Typically, these lawsuits have been brought against multiple defendants in state and federal courts. While the overall number of asbestos-related claims in which we or our predecessors have been named has generally declined in recent years, there can be no assurance that this trend will continue, or that the average cost per claim to us will not further increase. Asbestos-containing materials incorporated into any such products were encapsulated and used as internal components of process equipment, and we do not believe that significant emission of asbestos fibers occurred during the use of this equipment.

Our practice is to vigorously contest and resolve these claims, and we have been successful in resolving a majority of claims with little or no payment, other than legal fees. Activity related to asbestos claims during the periods indicated was as follows**:**

	2021	2020	2019
Beginning claims, January 1,(1)	8,366	8,345	8,666
New claims	2,482	2,140	2,314
Resolved claims	(2,211)	(2,203)	(2,601)
Other(2)	75	84	(34)
Ending claims, December 31,(1)	8,712	8,366	8,345

(1) Beginning and ending claims data in each period excludes inactive claims, as the Company considers it unlikely that inactive cases will be pursued further by the respective plaintiffs. A claim is classified as inactive either due to inactivity over a period of time or if designated as inactive by the applicable court.

(2) Represents the net change in claims as a result of the reclassification of active cases as inactive and inactive cases as active during the period indicated. Cases moved from active to inactive status are removed from the claims count without being accounted for as a "Resolved claim", and cases moved from inactive status to active status are added back to the claims count without being accounted for as a "New claim".

The following table presents the changes in the estimated asbestos liability as of December 31, 2021, 2020 and 2019:

mounts in thousands)		2021	2020	2019
ginning balance, January 1,	$	99,350	$ 97,979	$ 87,985
sbestos liability adjustments, net		3,919	8,462	12,949
ash payment activity		(7,521)	(8,445)	(5,439)
ther, net		(1,505)	1,354	2,484
ding balance, December 31,	$	94,243	$ 99,350	$ 97,979

The Company incurred expenses of approximately $10.0 million, $15.8 million and $20.9 million during the periods ended December 31, 2021, 2020 and 2019, respectively, to defend, resolve or otherwise dispose of outstanding claims, including legal and other related expenses. These expenses are included within SG&A in the Consolidated Statements of Income.

The Company had cash inflows/(outflows) (net of insurance and/or indemnity) to defend, resolve or otherwise dispose of outstanding claims, including legal and other related expenses of approximately $(4.7) million, $4.8 million and $(11.3) million during the periods ended December 31, 2021, 2020 and 2019, respectively.

Historically, a high percentage of resolved claims have been covered by applicable insurance or indemnities from other companies, and we believe that a substantial majority of existing claims should continue to be covered by insurance or indemnities, in whole or in part.

We believe that our reserve for asbestos claims and the receivable for recoveries from insurance carriers that we have recorded for these claims reflects reasonable and probable estimates of these amounts. Our estimate of our ultimate exposure for asbestos claims, however, is subject to significant uncertainties, including the timing and number and types of new claims, unfavorable court rulings, judgments or settlement terms and ultimate costs to settle. Additionally, including the continued viability of carriers, may also impact the amount of probable insurance recoveries. We believe that these uncertainties could have a material adverse impact on our business, financial condition, results of operations and cash flows, though we currently believe the likelihood is remote.

Additionally, we have claims pending against certain insurers that, if in future periods are resolved more favorably than reflected in the recorded receivables, would result in discrete gains in the applicable year.

Other

We are currently involved as a potentially responsible party at four former public waste disposal sites in various stages of evaluation or remediation. The projected cost of remediation at these sites, as well as our alleged "fair share" allocation, will remain uncertain until all studies have been completed and the parties have either negotiated an amicable resolution or the matter has been judicially resolved. At each site, there are many other parties who have similarly been identified. Many of the other parties identified are financially strong and solvent companies that appear able to pay their share of the remediation costs. Based on our information about the waste disposal practices at these sites and the environmental regulatory process in general, we believe that it is likely that ultimate remediation liability costs for each site will be apportioned among all liable parties, including site owners and waste transporters, according to the volumes and/or toxicity of the wastes shown to have been disposed of at the sites. We believe that our financial exposure for existing disposal sites will not be materially in excess of accrued reserves.

We are also a defendant in a number of other lawsuits, including product liability claims, that are insured, subject to the applicable deductibles, arising in the ordinary course of business, and we are also involved in other uninsured routine litigation incidental to our business. We currently believe none of such litigation, either individually or in the aggregate, is material to our business, operations or overall financial condition. However, litigation is inherently unpredictable, and resolutions or dispositions of claims or lawsuits by settlement or otherwise could have an adverse impact on our financial position, results of operations or cash flows for the reporting period in which any such resolution or disposition occurs.

Although none of the aforementioned potential liabilities can be quantified with absolute certainty except as otherwise indicated above, we have established or adjusted reserves covering exposures relating to contingencies, to the extent believed to be reasonably estimable and probable based on past experience and available facts. While additional exposures beyond these reserves could exist, they currently cannot be estimated. We will continue to evaluate and update the reserves as necessary and appropriate.

17. WARRANTY RESERVE

We have recorded reserves for product warranty claims that are included in current liabilities. The following is a summary of the activity in the warranty reserve:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Balance — January 1	$ 27,944	$ 30,854	$ 32,033
Accruals for warranty expense, net of adjustments	19,179	21,701	26,215
Settlements made	(23,230)	(24,611)	(27,394)
Balance — December 31	$ 23,893	$ 27,944	$ 30,854

18. SHAREHOLDERS' EQUITY

Dividends – Generally, our dividend date-of-record is in the last month of the quarter, and the dividend is paid the following month. Any subsequent dividends will be reviewed by our Board of Directors and declared in its discretion.

Dividends declared per share were as follows:

	Year Ended December 31,		
	2021	2020	2019
Dividends declared per share	$ 0.80	$ 0.80	$ 0.76

Share Repurchase Program – In 2014, our Board of Directors approved a $500.0 million share repurchase authorization. Our share repurchase program does not have an expiration date, and we reserve the right to limit or terminate the repurchase program at any time without notice.

We repurchased 440,000 shares of our outstanding common stock for $17.5 million, 1,057,115 shares of our outstanding common stock for $32.1 million and 324,889 shares of our outstanding common stock for $15.0 million during the years ended December 31, 2021, 2020 and 2019, respectively. As of December 31, 2021, we have $96.1 million of remaining capacity under our current share repurchase program.

19. INCOME TAXES

The provision for income taxes consists of the following:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
Current:			
U.S. federal	$ 66,486	$ 40,234	$ 22,001
Foreign	29,987	42,487	61,976
State and local	1,478	5,894	4,506
Total current	97,951	88,615	88,483
Deferred:			
U.S. federal	(92,021)	(50,038)	(1,644)
Foreign	(4,339)	26,742	(12,243)
State and local	(4,185)	(3,902)	897
Total deferred	(100,545)	(27,198)	(12,990)
Total provision	$ (2,594)	$ 61,417	$ 75,493

The provision for income taxes differs from the statutory corporate rate due to the following:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in millions)		
Statutory federal income tax at 21%	$ 28.1	$ 39.2	$ 67.7
Base Erosion and Anti-abuse Tax	7.6	—	—
Foreign impact, net	(158.0)	0.1	4.5
Change in valuation allowances	146.6	26.9	0.3
State and local income taxes, net	(2.7)	2.0	5.4
Reversal of deferred tax liabilities following legal entity reorganizations	(22.6)	—	—
Research and development credit	(3.6)	(5.2)	(5.4)
Non-deductible items	4.4	1.8	1.9
Other, net	(2.4)	(3.4)	1.1
Total	(2.6)	61.4	75.5
Effective tax rate	(1.9)%	30.4 %	23.4 %

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act of 2017 (the “Tax Reform Act”), which provided the base-erosion and anti-abuse tax (“BEAT”) provision which effectively creates a new minimum tax on certain deductible payments to foreign affiliates. For the year ended December 31, 2021, we are subject to $7.6 million of BEAT tax.

For the year ended December 31, 2021, the net foreign impact is driven mainly by the Hungarian net operating loss and foreign tax credit carryforward that are both fully offset in the change in valuation allowance (see discussion below).

In response to the COVID-19 pandemic, many governments have enacted or are contemplating measures to provide aid and economic stimulus. These measures may include deferring the due dates of tax payments or other changes to their income and non-income-based tax laws. The Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”), which was enacted on March 27, 2020 in the U.S., includes measures to assist companies, including temporary changes to income and non-income-based tax laws. For the years ended December 31, 2021 and 2020, there were no material tax impacts to our consolidated financial statements as they relate to the CARES Act or any other global COVID-19 measures. We continue to monitor additional guidance issued by the U.S. Treasury Department, the Internal Revenue Service and others.

For the years ended December 31, 2021, 2020 and 2019 we have asserted indefinite reinvestment on certain earnings of our foreign subsidiaries. As of December 31, 2021, we have not recorded approximately $21.1 million of deferred tax liabilities associated with remaining unremitted earnings considered indefinitely reinvested, primarily related to foreign withholding taxes that would be due upon repatriation of the designated earnings to the U.S.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the consolidated deferred tax assets and liabilities were:

	December 31,	
	2021	2020
	(Amounts in thousands)	
Deferred tax assets related to:		
Retirement benefits	$ 17,212	$ 29,754
Net operating loss carryforwards	200,196	108,643
Inventories	21,216	36,402
Credit and capital loss carryforwards	185,832	136,956
Warranty and accrued liabilities	26,116	27,483
Operating lease liability	27,211	25,446
Section 59(e) capitalized expenses	43,434	21,668
Other	95,779	76,202
Total deferred tax assets	616,996	462,554
Valuation allowances	(415,962)	(287,410)
Net deferred tax assets	201,034	175,144
Deferred tax liabilities related to:		
Property, plant and equipment	—	(11,714)
Goodwill and intangibles	(123,133)	(123,486)
Foreign undistributed earnings	(15,529)	(50,332)
Operating lease right-of-use-assets	(25,556)	(25,799)
Other	(1,936)	(19,100)
Total deferred tax liabilities	(166,154)	(230,431)
Deferred tax asset/(liabilities), net	$ 34,880	$ (55,287)

We have $1,643.4 million of U.S. and foreign net operating loss carryforwards at December 31, 2021. Of this total, $24.7 million are state net operating losses. Net operating losses generated in the U.S., if unused, will expire in 2027. The majority of our foreign net operating losses, with the exception of the gross net operating loss of $1,256.5 million in Hungary that has a full valuation allowance (see discussion below), carry forward without expiration. Additionally, we have $86.4 million of foreign tax credit carryforwards at December 31, 2021. The foreign tax credit carryforwards, if unused, will expire in 2026, 2028-2031 tax years.

Our valuation allowances primarily relate to the deferred tax assets established for U.S. foreign tax credit carryforwards of $86.4 million, Hungarian net operating loss carryforward of $113.1 million, a foreign capital loss carryforward of $94.9 million, and other foreign deferred tax assets of $121.6 million. The Hungarian net operating loss carryforward was a result of a local statutory impairment of investments in subsidiaries. It is more likely than not that the loss will not be utilized within its five year carryforward period and, therefore, has a full valuation allowance. The foreign capital loss carryforward was the result of a reorganization of certain foreign subsidiaries in 2019. Due to its capital nature, it is more likely than not that the loss will not be utilized within its ten year carryforward period and, therefore, has a full valuation allowance.

Earnings before income taxes comprised:

	Year Ended December 31,		
	2021	2020	2019
	(Amounts in thousands)		
U.S.	$ (52,915)	$ 73,109	$ 110,500
Foreign	186,504	129,183	211,933
Total	$ 133,589	$ 202,292	$ 322,433

A tabular reconciliation of the total gross amount of unrecognized tax benefits, excluding interest and penalties, is as follows (in millions):

	2021	2020	2019
Balance — January 1	$ 54.8	$ 40.6	$ 41.2
Gross amount of increase (decrease) in unrecognized tax benefits resulting from tax positions taken:			
During a prior year	8.0	3.8	8.8
During the current period	4.5	11.1	6.3
Decreases in unrecognized tax benefits relating to:			
Settlements with taxing authorities	(10.2)	(0.2)	(11.4)
Lapse of the applicable statute of limitations	(5.1)	(2.5)	(3.2)
Increase (decrease) in unrecognized tax benefits relating to foreign currency translation adjustments	(2.1)	2.0	(1.1)
Balance — December 31	$ 49.9	$ 54.8	$ 40.6

The amount of gross unrecognized tax benefits at December 31, 2021, was $67.1 million, which includes $17.2 million of accrued interest and penalties. Of this amount $54.3 million, if recognized, would favorably impact our effective tax rate.

With limited exception, we are no longer subject to U.S. federal income tax audits for years through 2017, state and local income tax audits for years through 2015 or foreign income tax audits for years through 2014. We are currently under examination for various years in Canada, Germany, India, Indonesia, Italy, Malaysia, Mexico, the Philippines, Saudi Arabia, the U.S. and Venezuela.

It is reasonably possible that within the next 12 months the effective tax rate will be impacted by the resolution of some or all of the matters audited by various taxing authorities. It is also reasonably possible that we will have the statute of limitations close in various taxing jurisdictions within the next 12 months. As such, we estimate we could record a reduction in our tax expense up to approximately $13 million within the next 12 months.

The following schedule presents the changes in deferred tax asset valuation allowance as follows:

(Amounts in thousands)	Balance at Beginning of Year	Additions Charged to Cost and Expenses	Additions Charged to Other Accounts—Acquisitions and Related Adjustments	Deductions From Reserve	Balance at End of Year
Year Ended December 31, 2021					
Deferred tax asset valuation allowance(1):	287,410	178,203	(15,572)	(34,079)	415,962
Year Ended December 31, 2020					
Deferred tax asset valuation allowance(1):	266,414	49,950	(529)	(28,425)	287,410
Year Ended December 31, 2019					
Deferred tax asset valuation allowance(1):	133,929	145,010	1,832	(14,357)	266,414

(1) Deductions from reserve result from the expiration or utilization of net operating losses and foreign tax credits previously reserved. Additions in 2021 include generation of net operating losses and foreign tax credits and in 2019 include the generation of a capital loss carryforward.

20. BUSINESS SEGMENT INFORMATION

Our business segments share a focus on industrial flow control technology and have a high number of common customers. These segments also have complementary product offerings and technologies that are often combined in applications that provide us a net competitive advantage. Our segments also benefit from our global footprint and our economies of scale in reducing administrative and overhead costs to serve customers more cost effectively.

We conduct our operations through two business segments based on type of product and how we manage the business:

- FPD for custom, highly-engineered pumps, pre-configured industrial pumps, pump systems, mechanical seals, auxiliary systems and replacement parts and related services; and
- FCD for engineered and industrial valves, control valves, actuators and controls and related services.

Our corporate headquarters does not constitute a separate division or business segment. Amounts classified as "Eliminations and All Other" include corporate headquarters costs and other minor entities that do not constitute separate segments. Intersegment sales and transfers are recorded at cost plus a profit margin, with the sales and related margin on such sales eliminated in consolidation.

The following is a summary of the financial information of our reportable segments as of and for the years ended December 31, 2021, 2020 and 2019 reconciled to the amounts reported in the consolidated financial statements.

	FPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
			(Amounts in thousands)		
Year Ended December 31, 2021:					
Sales to external customers	$2,468,098	$ 1,072,962	$ 3,541,060	$ —	$ 3,541,060
Intersegment sales	2,750	2,924	5,674	(5,674)	—
Segment operating income (loss)	243,203	119,651	362,854	(92,095)	270,759
Depreciation and amortization	51,094	21,286	72,380	27,442	99,822
Identifiable assets	2,927,346	1,223,316	4,150,662	599,106	4,749,768
Capital expenditures	21,575	12,283	33,858	21,078	54,936

	FPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
			(Amounts in thousands)		
Year Ended December 31, 2020:					
Sales to external customers	$2,673,705	$ 1,054,429	$ 3,728,134	$ —	$ 3,728,134
Intersegment sales	1,965	3,120	5,085	(5,085)	—
Segment operating income (loss)	270,960	125,573	396,533	(146,256)	250,277
Depreciation and amortization	52,390	21,949	74,339	26,414	100,753
Identifiable assets	3,039,069	1,308,136	4,347,205	967,472	5,314,677
Capital expenditures	21,714	14,043	35,757	21,648	57,405

	FPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
			(Amounts in thousands)		
Year Ended December 31, 2019:					
Sales to external customers	$ 2,704,445	$ 1,235,252	$ 3,939,697	$ —	$ 3,939,697
Intersegment sales	1,833	3,631	5,464	(5,464)	—
Segment operating income (loss)	343,514	191,945	535,459	(148,836)	386,623
Depreciation and amortization	50,845	23,577	74,422	31,482	105,904
Identifiable assets	2,974,161	1,333,926	4,308,087	630,190	4,938,277
Capital expenditures	26,450	14,449	40,899	34,817	75,716

Geographic Information — We attribute sales to different geographic areas based on our facilities' locations. Long-lived assets are classified based on the geographic area in which the assets are located and exclude deferred taxes, goodwill and intangible assets. Sales and long-lived assets by geographic area are as follows:

	Year Ended December 31, 2021			
	Sales	Percentage	Long-Lived Assets(a)	Percentage
	(Amounts in thousands, except percentages)			
United States	$ 1,376,771	38.9 %	$ 476,176	49.2 %
EMA(1)	1,270,326	35.9 %	298,426	30.8 %
Asia(2)	557,314	15.7 %	141,810	14.6 %
Other(3)	336,649	9.5 %	51,688	5.4 %
Consolidated total	$ 3,541,060	100.0 %	$ 968,100	100.0 %

	Year Ended December 31, 2020			
	Sales	Percentage	Long-Lived Assets	Percentage
	(Amounts in thousands, except percentages)			
United States	$ 1,463,680	39.3 %	$ 455,622	46.2 %
EMA(1)	1,385,245	37.2 %	336,577	34.1 %
Asia(2)	535,440	14.4 %	138,947	14.1 %
Other(3)	343,769	9.1 %	55,278	5.6 %
Consolidated total	$ 3,728,134	100.0 %	$ 986,424	100.0 %

	Year Ended December 31, 2019			
	Sales	Percentage	Long-Lived Assets	Percentage
	(Amounts in thousands, except percentages)			
United States	$ 1,632,582	41.4 %	$ 481,474	48.0 %
EMA(1)	1,397,308	35.5 %	312,668	31.2 %
Asia(2)	551,759	14.0 %	143,848	14.3 %
Other(3)	358,048	9.1 %	64,846	6.5 %
Consolidated total	$ 3,939,697	100.0 %	$ 1,002,836	100.0 %

(1) "EMA" includes Europe, the Middle East and Africa. Germany accounted for approximately 6% for 2021, 7% for 2020 and 6% for 2019, of consolidated long-lived assets. No other individual country within this group represents 10% or more of consolidated totals for any period presented.
(2) "Asia" includes Asia and Australia. No individual country within this group represents 10% or more of consolidated totals for any period presented.
(3) "Other" includes Canada and Latin America. No individual country within this group represents 10% or more of consolidated totals for any period presented.

Net sales to international customers, including export sales from the U.S., represented approximately 67% of total sales in 2021, 65% of total sales in 2020 and 63% of total sales in 2019.

Major Customer Information — We have a large number of customers across a large number of manufacturing and service facilities and do not have sales to any individual customer that represent 10% or more of consolidated sales for any of the years presented.

21. ACCUMULATED OTHER COMPREHENSIVE LOSS

The following presents the components of accumulated other comprehensive loss (AOCL), net of related tax effects:

	2021				2020			
(Amounts in thousands)	Foreign currency translation items(1)	Pension and other post-retirement effects	Cash flow hedging activity	Total(1)	Foreign currency translation items(1)	Pension and other post-retirement effects	Cash flow hedging activity	Total(1)
Balance - January 1	$ (456,549)	$ (146,723)	$ (488)	$ (603,760)	$ (441,364)	$ (137,161)	$ (671)	$ (579,196)
Other comprehensive income (loss) before reclassifications	524	34,960	(848)	34,636	(15,185)	(18,979)	183	(33,981)
Amounts reclassified from AOCL	—	10,098	—	10,098	—	9,417	—	9,417
Net current-period other comprehensive income (loss)	524	45,058	(848)	44,734	(15,185)	(9,562)	183	(24,564)
Balance - December 31	$ (456,025)	$ (101,665)	$ (1,336)	$ (559,026)	$ (456,549)	$ (146,723)	$ (488)	$ (603,760)

(1) Includes foreign currency translation adjustments attributable to noncontrolling interests of $4.6 million, $5.9 million and $5.1 million for December 31, 2021, 2020 and 2019, respectively. For the year ended December 31, 2021, foreign currency translation impacts primarily represented the weakening of the Euro, Colombian peso and Mexican peso exchange rates versus the U.S. dollar for the period. For the year ended December 31, 2020, foreign currency translation impacts primarily represented the strengthening of the Euro, Chinese yuan, British pound and Canadian dollar exchange rates versus the U.S. dollar for the period. Amounts in parentheses indicate debits.

The following table presents the reclassifications out of AOCL:

(Amounts in thousands)	Affected line item in the statement of income	2021(1)	2020(1)
Pension and other postretirement effects			
Amortization of actuarial losses(2)	Other income (expense), net	$ (12,213)	$ (11,161)
Prior service costs(2)	Other income (expense), net	(610)	(568)
Settlements and other(2)	Other income (expense), net	(640)	(836)
	Tax benefit	3,365	3,148
	Net of tax	$ (10,098)	$ (9,417)

(1) Amounts in parentheses indicate decreases to income. None of the reclassification amounts have a noncontrolling interest component.
(2) These accumulated other comprehensive loss components are included in the computation of net periodic pension cost. See Note 14 for additional details.

22. REALIGNMENT AND TRANSFORMATION PROGRAMS

In the second quarter of 2020, we identified and initiated certain realignment activities resulting from our Flowserve 2.0 Transformation Program (defined below) to right-size our organizational operations based on the current business environment, with the overall objective to reduce our workforce costs, including manufacturing optimization through the consolidation of certain facilities ("2020 Realignment Program"). The realignment activities consist of restructuring and non-restructuring charges. Restructuring charges represent costs associated with the relocation of certain business activities and facility closures and include related severance costs. Non-restructuring charges are primarily employee severance associated with the workforce reductions. Expenses are primarily reported in cost of sales ("COS") or selling, general and administrative ("SG&A"), as applicable, in our consolidated statements of income. The total investment in these activities is anticipated to be approximately $95 million and the majority of the charges were incurred in 2020 and 2021. There are certain other realignment activities that are being evaluated, but have not yet been finalized and therefore not included in total anticipated realignment investment above.

In the second quarter of 2018, we launched and committed resources to our Flowserve 2.0 Transformation ("Flowserve 2.0 Transformation"), a program designed to transform our business model to drive operational excellence, reduce complexity, accelerate growth, improve organizational health and better leverage our existing global platform. The Flowserve 2.0 Transformation expenses incurred primarily consisted of professional services, project management and related travel costs recorded in SG&A expenses. As of December 31, 2020, the Flowserve 2.0 Transformation efforts were substantially completed. For the period ended December 31, 2021, there were no Flowserve 2.0 Transformation charges.

Generally, the aforementioned charges will be paid in cash, except for asset write-downs, which are non-cash charges. The following is a summary of total charges, net of adjustments, related to our realignment activities and Flowserve 2.0 Transformation charges.

	December 31, 2021				
(Amounts in thousands)	FPD	FCD	Subtotal–Reportable Segments	All Other	Consolidated Total
Restructuring Charges					
COS	$ 8,046	$ 811	$ 8,857	$ —	$ 8,857
SG&A(1)	665	(9)	656	—	656
	$ 8,711	$ 802	$ 9,513	$ —	$ 9,513
Non-Restructuring Charges					
COS	$ 6,203	$ 1,196	$ 7,399	$ 590	$ 7,989
SG&A	368	708	1,076	3,913	4,989
	$ 6,571	$ 1,904	$ 8,475	$ 4,503	$ 12,978
Total Realignment Charges					
COS	$ 14,249	$ 2,007	$ 16,256	$ 590	$ 16,846
SG&A	1,033	699	1,732	3,913	5,645
Total	$ 15,282	$ 2,706	$ 17,988	$ 4,503	$ 22,491

(Amounts in thousands)	December 31, 2020 FPD	FCD	Subtotal–Reportable Segments	All Other	Consolidated Total
Restructuring Charges					
COS	$ 19,510	$ 1,122	$ 20,632	$ —	$ 20,632
SG&A	156	335	491	(16)	475
	$ 19,666	$ 1,457	$ 21,123	$ (16)	$ 21,107
Non-Restructuring Charges					
COS	$ 19,328	$ 7,285	$ 26,613	$ 52	$ 26,665
SG&A	11,166	4,605	15,771	18,527	34,298
	$ 30,494	$ 11,890	$ 42,384	$ 18,579	$ 60,963
Transformation Charges					
SG&A	$ —	$ —	$ —	$ 22,719	$ 22,719
	$ —	$ —	$ —	$ 22,719	$ 22,719
Total Realignment and Transformation Charges					
COS	$ 38,838	$ 8,407	$ 47,245	$ 52	$ 47,297
SG&A	11,322	4,940	16,262	41,230	57,492
Total	$ 50,160	$ 13,347	$ 63,507	$ 41,282	$ 104,789

The following is a summary of total inception to date charges, net of adjustments, related to the Realignment Program initiated in 2020:

(Amounts in thousands)	Inception to Date				
	FPD	FCD	Subtotal–Reportable Segments	All Other	Consolidated Total
Restructuring Charges					
COS	$ 25,875	$ 2,037	$ 27,912	$ —	$ 27,912
SG&A	716	333	1,049	(17)	1,032
	$ 26,591	$ 2,370	$ 28,961	$ (17)	$ 28,944
Non-Restructuring Charges					
COS	$ 25,407	$ 723	$ 26,130	$ 642	$ 26,772
SG&A	11,049	5,262	16,311	21,795	38,106
	$ 36,456	$ 5,985	$ 42,441	$ 22,437	$ 64,878
Total Realignment Charges					
COS	$ 51,282	$ 2,760	$ 54,042	$ 642	$ 54,684
SG&A	11,765	5,595	17,360	21,778	39,138
Total	$ 63,047	$ 8,355	$ 71,402	$ 22,420	$ 93,822

Restructuring charges represent costs associated with the relocation or reorganization of certain business activities and facility closures and include costs related to employee severance at closed facilities, contract termination costs, asset write-downs and other costs. Severance costs primarily include costs associated with involuntary termination benefits. Contract termination costs include costs related to the termination of operating leases or other contract termination costs. Asset write-downs include accelerated depreciation of fixed assets, accelerated amortization of intangible assets, divestiture of certain non-strategic assets and inventory write-downs. Other costs generally include costs related to employee relocation, asset relocation, vacant facility costs (i.e., taxes and insurance) and other charges.

The following is a summary of restructuring charges, net of adjustments, for our restructuring activities. Restructuring charges incurred related to our 2020 Realignment Program:

(Amounts in thousands)	December 31, 2021				
	Severance	Contract Termination	Asset Write-Downs	Other	Total
COS	$ 964	$ 34	$ 2,683	$ 5,176	$ 8,857
SG&A	167	—	—	489	656
Total	$ 1,131	$ 34	$ 2,683	$ 5,665	$ 9,513

	December 31, 2020									
(Amounts in thousands)		Severance		Contract Termination		Asset Write-Downs		Other		Total
COS	$	16,927	$	52	$	1,409	$	2,244	$	20,632
SG&A		223		—		11		241		475
Total	$	17,150	$	52	$	1,420	$	2,485	$	21,107

The following is a summary of total inception to date charges, net of adjustments, related to our 2020 Realignment Program:

	Inception to Date									
(Amounts in thousands)		Severance		Contract Termination		Asset Write-Downs		Other		Total
COS	$	16,202	$	86	$	4,095	$	7,529	$	27,912
SG&A		251		—		14		767		1,032
Total	$	16,453	$	86	$	4,109	$	8,296	$	28,944

The following represents the activity, primarily severance, related to the restructuring reserve for the Realignment Programs for the years ended December 31, 2021 and 2020:

(Amounts in thousands)		2021		2020
Balance at January 1,	$	18,255	$	6,703
Charges		6,829		19,686
Cash expenditures		(18,942)		(9,146)
Other non-cash adjustments, including currency		(1,274)		1,012
Balance at December 31,	$	4,868	$	18,255

23. QUARTERLY FINANCIAL DATA (UNAUDITED)

The following presents a summary of the unaudited quarterly data for 2021 and 2020 (amounts in millions, except per share data):

	2021			
Quarter	**4th**	**3rd**	**2nd**	**1st**
Sales	$ 919.5	$ 866.1	$ 898.2	$ 857.3
Gross profit	267.1	253.5	278.2	250.9
Earnings before income taxes	20.8	41.4	50.5	21.0
Net earnings attributable to Flowserve Corporation	16.7	49.8	45.4	14.1
Earnings per share(1):				
Basic	$ 0.13	$ 0.38	$ 0.35	$ 0.11
Diluted	0.13	0.38	0.35	0.11

	2020			
Quarter	**4th**	**3rd**	**2nd**	**1st**
Sales	$ 985.3	$ 924.3	$ 925.0	$ 893.5
Gross profit	295.4	285.2	269.7	266.5
Earnings before income taxes	60.4	78.0	12.8	51.2
Net earnings attributable to Flowserve Corporation	56.1	56.1	6.1	12.1
Earnings per share(1):				
Basic	$ 0.43	$ 0.43	$ 0.05	$ 0.09
Diluted	0.43	0.43	0.05	0.09

(1) Earnings per share is computed independently for each of the quarters presented. The sum of the quarters may not equal the total year amount due to the impact of changes in weighted average quarterly shares outstanding or rounding.

Our Quarterly Reports on Form 10-Q filed for the respective periods in 2020 were adjusted to reflect the impact of the revision as described in Note 2 of this Annual Report.

ITEM 9. *CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE*

None.

ITEM 9A. *CONTROLS AND PROCEDURES*

Disclosure Controls and Procedures

Our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act") are designed to provide reasonable assurance that the information, which we are required to disclose in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the U.S. SEC rules and forms, and that such information is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

In connection with the preparation of this Annual Report on Form 10-K for the year ended December 31, 2021, our management, under the supervision and with the participation of our Principal Executive Officer and our Principal Financial Officer, carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2021. Based on this evaluation, our Principal Executive Officer and Principal Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2021.

Management's Report on Internal Control Over Financial Reporting

Our management, under the supervision and with the participation of our Principal Executive Officer and Principal Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). Internal control over financial reporting includes policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Under the supervision and with the participation of our Principal Executive Officer and Principal Financial Officer, our management conducted an assessment of our internal control over financial reporting as of December 31, 2021, based on the criteria established in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, our management concluded our internal control over financial reporting was effective as of December 31, 2021, based on criteria in *Internal Control - Integrated Framework* (2013) issued by the COSO.

The effectiveness of our internal control over financial reporting as of December 31, 2021, has been audited by PricewaterhouseCoopers LLP, our independent registered public accounting firm, as stated in their report, which is included herein.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) during the quarter ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect our internal control over financial reporting.

Other

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with existing policies or procedures may deteriorate.

ITEM 9B. *OTHER INFORMATION*

None.

ITEM 9C. *DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS*

Not applicable.

PART III

ITEM 10. *DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE*

The information required in this Item 10 is incorporated by reference to all information under the captions "Security Ownership of Directors and Certain Executive Officers," "Security Ownership of Certain Beneficial Owners," "Proposal One: Election of Directors," "Executive Officers," "Shareholder Proposals and Nominations," "Delinquent Section 16(a)

Reports,” to the extent applicable, and “Certain Relationships and Related Transactions" in our definitive Proxy Statement relating to our 2022 annual meeting of shareholders.

We have adopted a Code of Conduct that applies to all of our directors, officers and employees, including our Principal Executive, Principal Financial and Principal Accounting Officers, or persons performing similar functions. Our Code of Conduct is available on the Company’s website at www.flowserve.com under the “Investors - Corporate Governance” caption. We intend to disclose future amendments to certain provisions of the Code of Conduct, and waivers of the Code of Conduct granted to executive officers and directors, on the website within four business days following the date of the amendment or waiver.

ITEM 11. *EXECUTIVE COMPENSATION*

The information required in this Item 11 is incorporated by reference to all information under the captions “Executive Compensation,” “Proposal Two: Advisory Vote to Approve Executive Compensation,” “Delinquent Section 16(a) Reports,” to the extent applicable, “Security Ownership of Directors and Certain Executive Officers,” “Compensation Committee Interlocks and Insider Participation” and “Certain Relationships and Related Transactions” in our definitive Proxy Statement relating to our 2022 annual meeting of shareholders.

ITEM 12. *SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS*

The information required in this Item 12 is incorporated by reference to all information under the captions “Security Ownership of Directors and Certain Executive Officers,” “Security Ownership of Certain Beneficial Owners,” “Equity Compensation Plan Information” and “Executive Compensation” in our definitive Proxy Statement relating to our 2022 annual meeting of shareholders.

ITEM 13. *CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE*

The information required in this Item 13 is incorporated by reference to all information under the captions “Role of the Board; Corporate Governance Matters,” “Board Committees” and “Certain Relationships and Related Transactions” in our definitive Proxy Statement relating to our 2022 annual meeting of shareholders.

ITEM 14. *PRINCIPAL ACCOUNTANT FEES AND SERVICES*

The information required in this Item 14 is incorporated by reference to all information under the caption “Other Audit Information” in our definitive Proxy Statement relating to our 2022 annual meeting of shareholders.

PART IV

ITEM 15. *EXHIBITS AND FINANCIAL STATEMENT SCHEDULES*

(a) Documents filed as a part of this Annual Report:

1. *Consolidated Financial Statements*

The following consolidated financial statements and notes thereto are filed as part of this Annual Report:

Report of Independent Registered Public Accounting Firm (PCAOB ID 238)

Flowserve Corporation Consolidated Financial Statements:

Consolidated Balance Sheets at December 31, 2021 and 2020:

For each of the three years in the period ended December 31, 2021:

Consolidated Statements of Income

Consolidated Statements of Comprehensive Income

Consolidated Statements of Shareholders’ Equity

Consolidated Statements of Cash Flows

Notes to Consolidated Financial Statements

2. *Consolidated Financial Statement Schedules*

None

Financial statement schedules not included in this Annual Report have been omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

3. *Exhibits*

The exhibits of this Annual Report on Form 10-K included herein are set forth below.

Exhibit No.	Description
3.1	Restated Certificate of Incorporation of Flowserve Corporation, as amended and restated effective May 20, 2021 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated May 25, 2021).
3.2	Flowserve Corporation By-Laws, as amended and restated effective May 20, 2021 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated May 25, 2021).
4.1	Senior Indenture, dated September 11, 2012, by and between Flowserve Corporation and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated September 11, 2012).
4.2	First Supplemental Indenture, dated September 11, 2012, by and among Flowserve Corporation, certain of its subsidiaries and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated September 11, 2012).
4.3	Second Supplemental Indenture, dated November 1, 2013, by and among Flowserve Corporation, certain of its subsidiaries and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated November 1, 2013).
4.4	Third Supplemental Indenture, dated March 17, 2015, by and among Flowserve Corporation, certain of its subsidiaries and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated March 17, 2015).
4.5	Fourth Supplemental Indenture, dated September 21, 2020, between Flowserve Corporation and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K dated September 22, 2020).
4.6	Fifth Supplemental Indenture, dated September 23, 2021, by and between Flowserve Corporation and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated September 23, 2021).
4.7	Description of Registrant’s Securities (incorporated by reference to Exhibit 4.5 to the Registrant’s Annual Report on Form 10-K (File No. 001-13179) dated February 18, 2020).
10.1	Amended and Restated Credit Agreement, dated as of September 13, 2021, among Flowserve Corporation, Bank of America, N.A., as swing line lender, a letter of credit issuer and administrative agent, and the other lenders and sing line lenders referred to therein (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated September 13, 2021).
10.2	Amended and Restated Flowserve Corporation Director Cash Deferral Plan, effective January 1, 2009 (incorporated by reference to Exhibit 10.7 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2008).*

Exhibit No.	Description
10.3	Amended and Restated Flowserve Corporation Director Stock Deferral Plan, dated effective January 1, 2009 (incorporated by reference to Exhibit 10.8 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2008).*
10.4	Trust for Non-Qualified Deferred Compensation Benefit Plans, dated February 11, 2011 (incorporated by reference to Exhibit 10.8 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2010).*
10.5	Flowserve Corporation Deferred Compensation Plan (incorporated by reference to Exhibit 10.23 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2000).*
10.6	Amendment No. 1 to the Flowserve Corporation Deferred Compensation Plan, as amended and restated, effective June 1, 2000 (incorporated by reference to Exhibit 10.50 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2002).*
10.7	Amendment to the Flowserve Corporation Deferred Compensation Plan, dated December 14, 2005 (incorporated by reference to Exhibit 10.70 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2004).*
10.8	Amendment No. 3 to the Flowserve Corporation Deferred Compensation Plan, as amended and restated effective June 1, 2000 (incorporated by reference to Exhibit 10.22 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2007).*
10.9	Flowserve Corporation Senior Management Retirement Plan, amended and restated effective November 2, 2018 (incorporated by reference to Exhibit 10.13 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2018).*
10.10	Flowserve Corporation Supplemental Executive Retirement Plan, amended and restated effective November 2, 2018 (incorporated by reference to Exhibit 10.14 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2018).*
10.11	Flowserve Corporation Equity and Incentive Compensation Plan (incorporated by reference to Appendix A to the Registrant's Proxy Statement on Schedule 14A (File No. 001-13179) dated April 3, 2009).*
10.12	Flowserve Corporation 2020 Long-Term Incentive Plan (incorporated by reference to Appendix A to the Registrant's Proxy Statement on Schedule 14A (File No. 001-13179) dated April 11, 2019).*
10.13	Form of Restrictive Covenants Agreement for Officers (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated as of March 9, 2006).*
10.14	Form of Indemnification Agreement for all Directors and Officers (incorporated by reference to Exhibit 10.47 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2015).
10.15	Offer Letter, dated as of February 6, 2017, by and between Flowserve Corporation and R. Scott Rowe (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated as of February 8, 2017).*
10.16	Flowserve Corporation Change In Control Severance Plan, amended and restated effective November 2, 2018 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended September 30, 2018).*
10.17	Flowserve Corporation Executive Officer Severance Plan, as amended and restated effective November 2, 2018 (incorporated by reference to Exhibit 10.20 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2018).*
10.18	Flowserve Corporation Annual Incentive Plan, as amended and restated effective February 14, 2017 (incorporated by reference to Exhibit 10.44 to the Registrant's Annual Report on Form 10-K (File No. 001-13179) for the year ended December 31, 2016).*
10.19	Amendment to Flowserve Corporation Annual Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended March 31, 2020).*
10.20	Form of Restrictive Covenants Agreement for Officer (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended June 30, 2020).*
10.21	Form of Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended June 30, 2020).*

Exhibit No.	Description
10.22+	Form of 2021 Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan (Annual Award).*
10.23+	Form of 2021 Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan (Retention Award).*
10.24	Form of Performance Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan (TSR) (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended June 30, 2020).*
10.25	Form of Performance Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan (ROIC) (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-13179) for the quarter ended June 30, 2020).*
10.26+	Form of 2021 Performance Restricted Stock Unit Agreement for certain officers pursuant to the Flowserve Corporation 2020 Long-Term Incentive Plan.*
14.1	Flowserve Corporation Employee Code of Conduct (incorporated by reference to Exhibit 14.1 to the Registrant's Current Report on Form 8-K (File No. 001-13179) dated as of August 15, 2019).
21.1+	Subsidiaries of the Registrant.
23.1+	Consent of PricewaterhouseCoopers LLP.
31.1+	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1++	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2++	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2021, formatted in Inline XBRL (included as Exhibit 101).

* Management contracts and compensatory plans and arrangements required to be filed as exhibits to this Annual Report on Form 10-K.

\+ Filed herewith.

\++ Furnished herewith.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

FLOWSERVE CORPORATION

By: /s/ R. Scott Rowe

R. Scott Rowe
President and Chief Executive Officer

Date: February 23, 2022

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

Signature	Title	Date
/s/ David E. Roberts David E. Roberts	Non-Executive Chairman of the Board	February 23, 2022
/s/ R. Scott Rowe R. Scott Rowe	President, Chief Executive Officer and Director (Principal Executive Officer)	February 23, 2022
/s/ Amy B. Schwetz Amy B. Schwetz	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 23, 2022
/s/ Scott K. Vopni Scott K. Vopni	Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 23, 2022
/s/ Sujeet Chand Sujeet Chand	Director	February 23, 2022
/s/ Ruby R. Chandy Ruby R. Chandy	Director	February 23, 2022
/s/ Gayla J. Delly Gayla J. Delly	Director	February 23, 2022
/s/ Roger L. Fix Roger L. Fix	Director	February 23, 2022
/s/ John R. Friedery John R. Friedery	Director	February 23, 2022
/s/ John L. Garrison John L. Garrison	Director	February 23, 2022
/s/ Michael C. McMurray Michael C. McMurray	Director	February 23, 2022
/s/ Carlyn R. Taylor Carlyn R. Taylor	Director	February 23, 2022

EXHIBIT 10.22

RESTRICTED STOCK UNIT AGREEMENT

FLOWSERVE CORPORATION
2020 LONG-TERM INCENTIVE PLAN

This Restricted Stock Unit Agreement (this "***Agreement***") is made and entered into by and between Flowserve Corporation, a New York corporation (the "***Company***") and _________________ (the "***Participant***") as of _________________ (the "***Date of Grant***"). All capitalized terms used in this Agreement and not otherwise defined herein have the meanings given to such terms in the Plan (as defined below).

WHEREAS, the Company has adopted the Flowserve Corporation 2020 Long-Term Incentive Plan (the "***Plan***") to strengthen the ability of the Company to retain the services of key Employees and Outside Directors and to increase the interest of such persons in the Company's welfare.

WHEREAS, the Organization and Compensation Committee of the Board of Directors of the Company believes that the grant of Restricted Stock Units to the Participant as described herein is consistent with the stated purposes for which the Plan was adopted.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereafter set forth and for other good and valuable consideration, the Company and the Participant agree as follows:

1. *Restricted Stock Units*

(a) In order to encourage the Participant's contribution to the successful performance of the Company, and in consideration of the covenants and promises of the Participant herein contained, the Company hereby grants to the Participant as of the Date of Grant, an Award of _________________ Restricted Stock Units (the "***RSU***s"), which will be converted into the number of shares of Common Stock of the Company equal to the number of vested RSUs, subject to the conditions and restrictions set forth below and in the Plan. The RSUs granted pursuant to this Agreement will be subject to the Company's "Clawback and Forfeiture Policy," as the same may be modified from time to time.

(b) *No Shareholder Rights*

The RSUs granted pursuant to this Agreement do not and shall not entitle the Participant to any rights of a stockholder of the Company prior to the date shares of Common Stock are issued to the Participant in settlement of the Award. The Participant's rights with respect to RSUs shall remain forfeitable at all times prior to the date on which rights become vested and the restrictions with respect to the Restricted Stock Units lapse in accordance with this Agreement.

2. *Vesting and Conversion of RSUs into Common Stock*

(a) Subject to the provisions of Paragraph 3 below, the RSUs shall vest ratably over a three-year period following the Date of Grant, with 1/3 of the RSUs vesting on the first anniversary of the Date of Grant (rounded up to the nearest whole RSU), 1/3 of the RSUs vesting on the second anniversary of the Date of Grant (rounded down to the nearest whole RSU), and the remaining 1/3 of the RSUs vesting on the third anniversary of the Date of Grant (each such date, a "***Vesting Date***"). In any event, subject to the provisions of Paragraph 3 below, the RSUs shall cease to vest following the Participant's termination of employment with the Company.

(b) Subject to the provisions of Paragraph 3 below, as soon as practicable, but in no event later than the date that is two and a half (2½) months following the date on which the RSUs vest in accordance with the schedule set forth in Paragraph 2(a) above, the Company shall convert the vested RSUs into the number of whole shares, rounded up to the nearest whole share, of Common Stock equal to the number of vested RSUs, subject to the provisions of the Plan and this Agreement. The value of such shares of Common Stock shall not bear any interest owing to the passage of time.

(c) Following conversion of the vested RSUs into shares of Common Stock, such shares of Common Stock will be registered and transferred of record to the Participant. The delivery of any shares of Common Stock pursuant to this Agreement is subject to the provisions of Paragraphs 8 and 10 below.

(d) Each year that this Agreement is in effect, the Participant will receive credits ("***Dividend Equivalents***") based upon the cash dividends that would have been paid on the number of shares of Common Stock equal to 100% of the RSUs as if such shares of Common Stock were actually held by the Participant. Dividend Equivalents shall be deemed to be reinvested in additional shares of Common Stock (which may thereafter accrue additional Dividend Equivalents). Any such reinvestment shall be at the Fair Market Value of the Common Stock at the time thereof. Dividend Equivalents may be settled in cash or shares of Common Stock, or any combination thereof, as determined by the Committee, in its sole and absolute discretion. The settlement of Dividend Equivalents in the form of shares of Common Stock will constitute a Bonus Stock Award for purposes of the Plan. Following conversion of the vested RSUs into shares of Common Stock, the Participant also shall receive a distribution of the Dividend Equivalents accrued with respect to such RSUs prior to the date of such conversion. In the event any RSUs do not vest, the Participant shall forfeit his or her right to any Dividend Equivalents accrued with respect to such unvested RSUs.

3. *Effect of Termination of Employment or Services*

(a) The RSUs granted pursuant to this Agreement shall vest in accordance with the vesting schedule reflected in Paragraph 2(a) above, on condition that the Participant remains employed by or continues to provide services to the Company or a Subsidiary through the applicable vesting dates set forth in Paragraph 2(a). If, however, either:

(i) the Company and its Subsidiaries terminate the Participant's employment or service relationship; or

(ii) the Participant terminates his or her employment or service relationship,

(in each case not as a result of Total and Permanent Disability, death or a Special End of Service) then the RSUs that have not vested in accordance with the vesting schedule reflected in Paragraph 2(a) above, as of the date of the termination of employment (or cessation of services, as applicable), shall be forfeited by the Participant to the Company.

(b) *Termination due to Death, Total and Permanent Disability or Special End of Service*. In the event the Participant's employment with the Company terminates due to his or her Total and Permanent Disability or death, then on the date of such termination of employment (the "***Death/ Disability Vesting Date***"), 100% of the RSUs shall vest. Notwithstanding Paragraph 2(b) above and subject to Paragraph 24, as soon as practicable, but in no event later than the date that is two and a half (2½) months following the Death/ Disability Vesting Date, the Company shall convert the vested RSUs into the number of whole shares of Common Stock, rounded up to the nearest whole share, equal to the number of vested RSUs, subject to the provisions of the Plan and this Agreement, and shall deliver such shares (in accordance with Paragraph 2(c) above) to the Participant (or the Participant's estate).

In the event the Participant's employment with the Company terminates due to his or her Special End of Service, then on the Vesting Date the Participant shall be entitled to receive the number of shares of Common Stock that would have been payable to such Participant if he or she had continued to provide services through such Vesting Date in accordance with Paragraph 2. For purposes of this Agreement, the terms "***Special End of Service***" shall mean the voluntary termination of a Participant's employment with the Company for any reason other than due to the Participant's death, Total and Permanent Disability, reduction-in-force, or "cause" (as determined by the Committee in its sole discretion) on or after attaining both (i) age 55 and (ii) 10 years of service with the Company or its subsidiaries.

(c) Notwithstanding Paragraphs 2(a) and 3(a) above, upon the cessation of the Participant's employment or services (whether voluntary or involuntary), the Committee may, in its sole and absolute discretion, elect to accelerate the vesting of some or all of the unvested RSUs.

4. *Non-Solicitation and Non-Recruitment Covenants*

(a) Participant acknowledges that that he or she has become and will continue to become familiar with new and on-going Confidential Information (as defined below). Participant recognizes and agrees that: (i) the Company has devoted a considerable amount of time, effort and expense to develop its Confidential Information and business goodwill; (ii) the Confidential Information and the Company's business goodwill are valuable assets to the Company; and (iii) any unauthorized use or disclosure of the Company's Confidential Information would cause irreparable harm to the Company, including damage to the Company's business goodwill, for which there is no adequate remedy at law. For these reasons, Participant agrees that, to protect the Company's Confidential Information (as defined below) and business goodwill, it is necessary to enter into the following restrictive covenants. As used in this Paragraph 4, references to the "***Company***" refer to the Company and its Subsidiaries.

Participant, whether individually or as a principal, partner, stockholder, manager, agent, consultant, contractor, employee, lender, investor, volunteer, director or officer of any corporation or association or in any other manner or capacity whatsoever, agrees that during Participant's employment by the Company and for a period of one (1) year following the date on which Participant's employment ceases (for whatever reason) (the "***Restricted Period***"), Participant shall not, whether directly or indirectly, without the express prior written consent of the Company:

(I) *Non-Solicitation.* Other than for the benefit of the Company during Participant's period of employment with or engagement by the Company, curtail the business of, interfere with the Company's relationship with, solicit business from, attempt to transact business with or transact business with any customer or prospective customer of the Company with whom the Company transacted business or solicited within the preceding twenty-four (24) months, and which either: (A) Participant contacted, called on, serviced, did business with or had contact with during Participant's employment or that Participant attempted to contact, call on, service, or do business with during Participant's employment or engagement; (B) Participant became acquainted with or dealt with, for any reason, as a result of Participant's employment or engagement by the Company; or (C) Participant received Confidential Information regarding during Participant's employment with or engagement by the Company. This restriction applies only to business that is in the scope of services or products provided by the Company.

(II) *Non-Recruitment.* Hire, recruit, solicit for employment, induce or encourage to leave the employment of or engagement by the Company, or otherwise cease their employment or engagement with the Company, on behalf of Participant or any other person or entity, any current employee or independent contractor of the Company or its subsidiaries (including those employees on vacation and approved leaves of absence, disability or other approved absence with the legal right to return to employment) or any former employee or independent contractor of the Company or its subsidiaries whose employment or engagement ceased no more than three (3) months earlier.

For purposes of this Agreement, "***Confidential Information***" includes any trade secrets or confidential or proprietary information of the Company and its affiliates, including, but not limited to, the following:

(A) information concerning customers, clients, marketing, business and operational methods of the Company and its customers or clients, contracts, financial or other data, technical data, e-mail and other correspondence or any other confidential or proprietary information possessed, owned or used by the Company;

(B) business records, product construction, product specifications, financial information, audit processes, pricing, business strategies, marketing and promotional practices (including internet-related marketing) and management methods and information;

(C) financial data, strategies, systems, research, plans, reports, recommendations and conclusions;

(D) names, arrangements with, or other information relating to, any of the Company's customers, clients, suppliers, financiers, owners, representatives and other persons who have business relationships with the Company or who are prospects for business relationships with the Company; and

(E) any non-public matter or thing obtained or ascertained by Participant through Participant's association with the Company, the use or disclosure of which may reasonably be construed to be contrary to the best interests of any the Company.

(b) *Remedies.* Participant acknowledges that the restrictions contained in this Paragraph 4, in view of the nature of the Company's business, are reasonable and necessary to protect the Company's legitimate business interests and business goodwill and that any violation of these restrictions would result in irreparable injury to the Company. The existence of any claim or cause of action by Participant against the Company, whether predicated on this Agreement or otherwise, shall not constitute a defense to the enforcement by the Company of the restrictive covenants contained in Paragraph 4.

(i) *Forfeiture by Participant*. If Participant breaches any restriction in this Paragraph 4, the Company shall be entitled to, in addition to any legal remedies available to the Company, undertake any or all of the following: (A) require Participant to forfeit any RSUs (whether then vested or unvested) that have not yet been converted into Common Stock as of the date of such violation; (B) require Participant to immediately sell to the Company a number of shares of Common Stock equal to the gross number of RSUs converted into Common Stock hereunder, for the then-current Fair Market Value of such shares; (C) require Participant to immediately pay to the Company any gain that the Participant realized on any sale of shares of Common Stock issued in settlement of the RSUs granted hereunder; (D) discontinue future grants of any and all equity awards under any equity incentive plan in which Participant may participate; (E) recover damages incurred by the Company as a result of the breach; and (F) recover its attorneys' fees, costs and expenses incurred in connection with such actions. To the extent that the provisions of this Paragraph 4 are inconsistent with the terms of any other agreement between the Company and the Participant, the Company and Participant agree that the provisions of this Paragraph 4 shall control.

(ii) *Injunctive Relief and Damages.* Participant acknowledges and agrees that a breach of Paragraph 4 will result in irreparable harm and continuing damage to the Company, and that money damages and the remedies set forth in Paragraph 4(b)(i) above would be not be sufficient remedies to the Company for any such breach or threatened breach. Therefore, Participant agrees that the Company shall also be entitled to a temporary restraining order and injunctive relief restraining Participant from the commission of any breach of Paragraph 4. Nothing contained in this Agreement shall be construed as prohibiting the Company from pursuing any other remedies available to it for any breach or threatened breach, including, without limitation, the remedies set forth in Paragraph 4(b)(i) or the recovery of money damages, attorneys' fees and costs.

(c) *Tolling.* If Participant violates any of the restrictions contained in this Paragraph 4, the Restricted Period will be suspended and will not run in favor of Participant until such time that Participant cures the violation to the satisfaction of the Company.

5. *Limitation of Rights*

Nothing in this Agreement or the Plan shall be construed to:

(a) give the Participant any right to be awarded any further RSUs or any other Award in the future, even if RSUs or other Awards are granted on a regular or repeated basis, as grants of RSUs and other Awards are completely voluntary and made solely in the discretion of the Committee;

(b) give the Participant or any other person any interest in any fund or in any specified asset or assets of the Company or any Subsidiary; or

(c) confer upon the Participant the right to continue in the employment or service of the Company or any Subsidiary, or affect the right of the Company or any Subsidiary to terminate the employment or service of the Participant at any time or for any reason.

6. *Data Privacy*

By execution of this Agreement, the Participant acknowledges that he or she has read and understands the Flowserve Corporation Employee Data Protection Policy and Flowserve's Privacy Policy. The Participant hereby consents to the collection, processing, transmission, use and electronic and manual storage of his or her personal data by the Company, Wells Fargo Shareowner Services ("***Wells Fargo***") and Merrill Lynch & Co., Inc. ("***Merrill Lynch***") in order to facilitate Plan administration. The Participant understands and acknowledges that this consent applies to all personally-identifiable data relevant to Plan administration, including the Participant's name, home address, work email address, job title, GEMS ID, National Identification Number or Social Security Number, employee status, work location, work phone number, tax class, previous equity grant transaction data and compensation data. The Participant further agrees to furnish to the Company any additional information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

The Participant understands that for purposes of Plan administration, the Participant's personal data will be collected and processed at 5215 N. O'Connor Blvd, Suite 2300, Irving, Texas (USA), and transferred to Wells Fargo at 161 North Concord Exchange, South St. Paul, Minnesota (USA) and Merrill Lynch at 4 World Financial Center, 250 Vesey St., New York, New York (USA).

7. *Prerequisites to Benefits*

Neither the Participant, nor any person claiming through the Participant, shall have any right or interest in the RSUs awarded hereunder, unless and until all the terms, conditions and provisions of this Agreement and the Plan which affect the Participant or such other person shall have been complied with as specified herein.

8. *Delivery of Shares*

No shares of Common Stock shall be delivered to the Participant upon conversion of the RSUs into shares of Common Stock until:

(a) all the applicable taxes required to be withheld have been paid or withheld in full;

(b) the approval of any governmental authority required in connection with this RSU, or the issuance of shares of Common Stock hereunder under has been received by the Company; and

(c) if required by the Committee, the Participant has delivered to the Committee an Investment Letter in form and content satisfactory to the Company as provided in Paragraph 10 hereof.

9. *Successors and Assigns*

This Agreement shall bind and inure to the benefit of and be enforceable by the Participant, the Company and their respective permitted successors and assigns (including personal representatives, heirs and legatees), except that the Participant may not assign any rights or obligations under this Agreement except to the extent and in the manner expressly permitted herein.

10. *Securities Act*

The Company will not be required to deliver any shares of Common Stock pursuant to this Agreement if, in the opinion of counsel for the Company, such issuance would violate the Securities Act of 1933, as amended (the "***Securities Act***") or any other applicable federal or state securities laws or regulations. The Committee may require that the Participant, prior to the issuance of any such shares, sign and deliver to the Company a written statement, which shall be in a form and contain content acceptable to the Committee, in its sole discretion ("***Investment Letter***"):

(a) stating that the Participant is acquiring the shares for investment and not with a view to the sale or distribution thereof;

(b) stating that the Participant will not sell any shares of Common Stock that the Participant may then own or thereafter acquire except either:

(i) through a broker on a national securities exchange, or

(ii) with the prior written approval of the Company; and

(c) containing such other terms and conditions as counsel for the Company may reasonably require to assure compliance with the Securities Act or other applicable federal or state securities laws and regulations.

11. *Federal and State Taxes*

(a) Any amount of Common Stock and/or cash that is payable or transferable to the Participant hereunder may be subject to the payment of or reduced by any amount or amounts which the Company is required to withhold under the then applicable provisions of the laws of the jurisdiction where the Participant is employed, and, if applicable, the Internal Revenue Code of 1986, as amended (the "***Code***"), or its successors, or any other foreign, federal, state or local tax withholding requirement. When the Company is required to withhold any amount or amounts under the applicable provisions of any foreign, federal, state or local requirement or the Code, the Company shall withhold from the Common Stock to be issued to the Participant a number of shares necessary to satisfy the Company's withholding obligations. The number of shares of Common Stock to be withheld shall be based upon the Fair Market Value of the shares on the date of withholding.

(b) Notwithstanding Paragraph 11(a) above, if the Participant elects, and the Committee agrees, the Company's withholding obligations may instead be satisfied as follows:

(i) the Participant may direct the Company to withhold cash that is otherwise payable to the Participant;

(ii) the Participant may deliver to the Company a sufficient number of shares of Common Stock then owned by the Participant for a period of at least six (6) months to satisfy the Company's withholding obligations, based on the Fair Market Value of the shares as of the date of withholding;

(iii) the Participant may deliver sufficient cash to the Company to satisfy its withholding obligations; or

(iv) any combination of the alternatives described in Paragraphs 11(b)(i) through 11(b)(iii) above.

(c) Authorization of the Participant to the Company to withhold taxes pursuant to one or more of the alternatives described in Paragraph 11(b) above must be in a form and content acceptable to the Committee. The payment or authorization to withhold taxes by the Participant shall be completed prior to the delivery of any shares pursuant to this Agreement. An authorization to withhold taxes pursuant to this provision will be irrevocable unless and until the tax liability of the Participant has been fully paid.

12. *Copy of Plan*

By the electronic acceptance of this Agreement, the Participant acknowledges receipt of a copy of the Plan.

13. *Administration*

This Agreement is subject to the terms and conditions of the Plan. The Plan is administered by the Committee in accordance with its terms. The Committee has sole and complete discretion with respect to all matters reserved to it by the Plan and the decisions of the majority of the Committee with respect to the Plan and this Agreement shall be final and binding upon the Participant and the Company. Neither the Company nor the members of the Board or the Committee will be liable for any act, omission or determination taken or made in good faith with respect to this Agreement or the RSUs granted hereunder. In the event of any conflict between the terms and conditions of this Agreement and the Plan, the provisions of the Plan shall control.

14. *Adjustment of Number of Shares of RSUs*

The number of RSUs granted hereunder shall be subject to adjustment in accordance with Articles 12 and 13 of the Plan.

15. *Non-transferability*

The RSUs granted by this Agreement are not transferable by the Participant other than by will or pursuant to applicable laws of descent and distribution. The RSUs and any rights and privileges in connection therewith, cannot be transferred, assigned, pledged or hypothecated by operation of law, or otherwise, and is not otherwise subject to execution, attachment, garnishment or similar process. In the event of such occurrence, this Agreement will automatically terminate and will thereafter be null and void.

16. *Remedies*

The Company shall be entitled to recover from the Participant reasonable attorneys' fees incurred in connection with the enforcement of the terms and provisions of this Agreement whether by an action to enforce specific performance or for damages for its breach or otherwise.

17. *Information Confidential*

As partial consideration for the granting of the Award hereunder, the Participant hereby agrees to keep confidential all information and knowledge, except that which has been disclosed in any public filings required by law, that the Participant has relating to the terms and conditions of this Agreement. However, such information may be disclosed as required by law and may be given in confidence to the Participant's spouse and tax and financial advisors. In the event any breach of this promise comes to the attention of the Company, it shall take into consideration that breach in determining whether to recommend the grant of any future similar award to the Participant, as a factor weighing against the advisability of granting any such future award to the Participant.

18. *Amendments*

Except as otherwise provided in the Plan or below, this Agreement may be amended only by a written agreement executed by the Company and the Participant. Notwithstanding the foregoing, the Board or the Committee may amend this Agreement to the extent necessary or advisable in light of any addition to or change in any federal or state, tax or securities law or other law or regulation, which change occurs after the Date of Grant and by its terms applies to the Award or to the extent that such amendment is not materially adverse to the Participant.

19. *Governing Law*

This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Texas (excluding any conflict of laws, rule or principle of Texas law that might refer the governance, construction, or interpretation of this Plan to the laws of another state).

20. *Severability*

Whenever possible, each provision of this Agreement will be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of this Agreement (or portion thereof) is held to be illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining provisions (or remaining portion of such provision) of this Agreement, but such provision (or portion thereof) shall be fully severable and this Agreement shall be construed and enforced as if the illegal or invalid provision (or portion thereof) had never been included.

21. *Headings*

The titles and headings of paragraphs are included for convenience of reference only and are not to be considered in construction of the provisions of this Agreement.

22. *Word Usage*

Words used in the masculine shall apply to the feminine where applicable, and wherever the context of this Agreement dictates, the plural shall be read as the singular and the singular as the plural.

23. *Execution of Receipts and Releases*

Any payment of cash or any issuance or transfer of shares of Common Stock or other property to the Participant or to the Participant's legal representative, heir, legatee or distributee, in accordance with the provisions of this Agreement, shall, to the extent thereof, be in full satisfaction of all claims of such persons under this Agreement. The Company may require the Participant or the Participant's legal representative, heir, legatee or distribute, as a condition precedent to such payment or issuance, to execute a release and receipt therefor in such form as it shall determine.

24. *Code Section 409A*

Notwithstanding anything herein to the contrary, in the case of a conversion of vested RSUs and registration and transfer of shares of Common Stock on account of any termination of service (other than death), if the Participant is a "specified employee" as defined in Section 1.409A-1(i) of the final Treasury Regulations under Section 409A of the Code, then solely to the extent required under Section 409A of the Code, a distribution of such shares to the Participant shall not occur until the date which is six (6) months following the date of the Participant's termination of service (or, if earlier, the date of the Participant's death).

25. *Electronic Delivery and Acceptance.*

The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an on-line or electronic system established and maintained by the Company or a third party designated by the Company.

26. *Insider Trading Restrictions/Market Abuse Laws.*

The Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the shares of Common Stock are listed and in applicable jurisdictions including the United States and the Participant's country or his or her broker's country, if different, which may affect the Participant's ability to accept, acquire, sell or otherwise dispose of shares, RSUs or rights linked to the value of shares of Common Stock (e.g., Dividend Equivalents) during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before he or she possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. The Participant acknowledges that it is the Participant's responsibility to comply with any applicable restrictions, and the Participant should speak with his or her personal legal advisor on this matter.

27. *Participant Acceptance.*

The Participant must accept the terms and conditions of this Agreement either electronically through the electronic acceptance procedure established by the Company or through a written acceptance delivered to the Company in a form satisfactory to the Company. In no event shall any shares of Common Stock be issued (or other securities or property distributed) under this Agreement in the absence of such acceptance. By accepting the RSUs, Participant agrees that the RSUS are granted under and governed by the terms and conditions of the Plan and this Agreement. Participant has reviewed the Plan and this Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to accepting this Agreement and fully understands all provisions of the Plan and this Agreement.

The Company and the Participant are executing this Agreement effective as of the Date of Grant set forth in the introductory clause.

FLOWSERVE CORPORATION

____
Chief Executive Officer

EXHIBIT 10.23

RESTRICTED STOCK UNIT AGREEMENT

FLOWSERVE CORPORATION
2020 LONG-TERM INCENTIVE PLAN

This Restricted Stock Unit Agreement (this "***Agreement***") is made and entered into by and between Flowserve Corporation, a New York corporation (the "***Company***") and _______________ (the "***Participant***") as of _______________ (the "***Date of Grant***"). All capitalized terms used in this Agreement and not otherwise defined herein have the meanings given to such terms in the Plan (as defined below).

WHEREAS, the Company has adopted the Flowserve Corporation 2020 Long-Term Incentive Plan (the "***Plan***") to strengthen the ability of the Company to retain the services of key Employees and Outside Directors and to increase the interest of such persons in the Company's welfare.

WHEREAS, the Organization and Compensation Committee of the Board of Directors of the Company believes that the grant of Restricted Stock Units to the Participant as described herein is consistent with the stated purposes for which the Plan was adopted.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereafter set forth and for other good and valuable consideration, the Company and the Participant agree as follows:

1. *Restricted Stock Units*

(a) In order to encourage the Participant's contribution to the successful performance of the Company, and in consideration of the covenants and promises of the Participant herein contained, the Company hereby grants to the Participant as of the Date of Grant, an Award of _______________ Restricted Stock Units (the "***RSUs***"), which will be converted into the number of shares of Common Stock of the Company equal to the number of vested RSUs, subject to the conditions and restrictions set forth below and in the Plan.

(b) *No Shareholder Rights*

The RSUs granted pursuant to this Agreement do not and shall not entitle the Participant to any rights of a stockholder of the Company prior to the date shares of Common Stock are issued to the Participant in settlement of the Award. The Participant's rights with respect to RSUs shall remain forfeitable at all times prior to the date on which rights become vested and the restrictions with respect to the Restricted Stock Units lapse in accordance with this Agreement.

2. *Vesting and Conversion of RSUs into Common Stock*

(a) Subject to the provisions of Paragraph 3 below, the RSUs shall vest ratably over a three-year period following the Date of Grant, with 1/3 of the RSUs vesting on the second anniversary of the Date of Grant (rounding up to the nearest whole RSU) and 2/3 of the RSUs vesting on the third anniversary of the Date of Grant (each such date, a ***"Vesting Date"***). In any event, subject to the provisions of Paragraph 3 below, the RSUs shall cease to vest following the Participant's termination of employment with the Company.

(b) Subject to the provisions of Paragraph 3 below, as soon as practicable, but in no event later than the date that is two and a half (2½) months following the date on which the RSUs vest in accordance with the schedule set forth in Paragraph 2(a) above, the Company shall convert the vested RSUs into the number of whole shares, rounded up to the nearest whole share, of Common Stock equal to the number of vested RSUs, subject to the provisions of the Plan and this Agreement. The value of such shares of Common Stock shall not bear any interest owing to the passage of time.

(c) Following conversion of the vested RSUs into shares of Common Stock, such shares of Common Stock will be registered and transferred of record to the Participant. The delivery of any shares of Common Stock pursuant to this Agreement is subject to the provisions of Paragraphs 7 and 9 below.

(d) Each year that this Agreement is in effect, the Participant may receive credits (“***Dividend Equivalents***”) based upon the cash dividends that would have been paid on the number of shares of Common Stock equal to 100% of the RSUs as if such shares of Common Stock were actually held by the Participant. Dividend Equivalents shall be deemed to be reinvested in additional shares of Common Stock (which may thereafter accrue additional Dividend Equivalents). Any such reinvestment shall be at the Fair Market Value of the Common Stock at the time thereof. Dividend Equivalents may be settled in cash or shares of Common Stock, or any combination thereof, as determined by the Committee, in its sole and absolute discretion. The settlement of Dividend Equivalents in the form of shares of Common Stock will constitute a Bonus Stock Award for purposes of the Plan. Following conversion of the vested RSUs into shares of Common Stock, the Participant also shall receive a distribution of the Dividend Equivalents accrued with respect to such RSUs prior to the date of such conversion. In the event any RSUs do not vest, the Participant shall forfeit his or her right to any Dividend Equivalents accrued with respect to such unvested RSUs.

3. *Effect of Termination of Employment or Services*

(a) The RSUs granted pursuant to this Agreement shall vest in accordance with the vesting schedule reflected in Paragraph 2(a) above, on condition that the Participant remains employed by or continues to provide services to the Company or a Subsidiary through the applicable vesting dates set forth in paragraph 2(a). If, however, either:

(i) the Company and its Subsidiaries terminate the Participant’s employment or service relationship; or

(ii) the Participant terminates his or her employment or service relationship,

then the RSUs that have not vested in accordance with the vesting schedule reflected in Paragraph 2(a) above, as of the date of the termination of employment (or cessation of services, as applicable), shall be forfeited by the Participant to the Company.

(b) Notwithstanding Paragraphs 2(a) and 3(a) above, upon the cessation of the Participant’s employment or services (whether voluntary or involuntary), the Committee may, in its sole and absolute discretion, elect to accelerate the vesting of some or all of the unvested RSUs.

4. *Limitation of Rights*

Nothing in this Agreement or the Plan shall be construed to:

(a) give the Participant any right to be awarded any further RSUs or any other Award in the future, even if RSUs or other Awards are granted on a regular or repeated basis, as grants of RSUs and other Awards are completely voluntary and made solely in the discretion of the Committee;

(b) give the Participant or any other person any interest in any fund or in any specified asset or assets of the Company or any Subsidiary; or

(c) confer upon the Participant the right to continue in the employment or service of the Company or any Subsidiary, or affect the right of the Company or any Subsidiary to terminate the employment or service of the Participant at any time or for any reason.

5. *Data Privacy*

By execution of this Agreement, the Participant acknowledges that he or she has read and understands the Flowserve Corporation Employee Data Protection Policy and Flowserve’s Privacy Policy. The Participant hereby consents to the collection, processing, transmission, use and electronic and manual storage of his or her personal data by the Company, Wells Fargo Shareowner Services (“***Wells Fargo***”) and Merrill Lynch & Co., Inc. (“***Merrill Lynch***”) in order to facilitate Plan administration. The Participant understands and acknowledges that this consent applies to all personally-identifiable data relevant to Plan administration, including the Participant’s name, home address, work email address, job title, GEMS ID, National Identification Number or Social Security Number, employee status, work location, work phone number, tax class, previous equity grant transaction data and compensation data. The Participant further agrees to furnish to the Company any additional information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

The Participant understands that for purposes of Plan administration, the Participant’s personal data will be collected and processed at 5215 N. O’Connor Blvd, Suite 2300, Irving, Texas (USA), and transferred to Wells Fargo at 161 North Concord

Exchange, South St. Paul, Minnesota (USA) and Merrill Lynch at 4 World Financial Center, 250 Vesey St., New York, New York (USA).

6. *Prerequisites to Benefits*

Neither the Participant, nor any person claiming through the Participant, shall have any right or interest in the RSUs awarded hereunder, unless and until all the terms, conditions and provisions of this Agreement and the Plan which affect the Participant or such other person shall have been complied with as specified herein.

7. *Delivery of Shares*

No shares of Common Stock shall be delivered to the Participant upon conversion of the RSUs into shares of Common Stock until:

(a) all the applicable taxes required to be withheld have been paid or withheld in full;

(b) the approval of any governmental authority required in connection with this RSU, or the issuance of shares of Common Stock hereunder under has been received by the Company; and

(c) if required by the Committee, the Participant has delivered to the Committee an Investment Letter in form and content satisfactory to the Company as provided in Paragraph 9 hereof.

8. *Successors and Assigns*

This Agreement shall bind and inure to the benefit of and be enforceable by the Participant, the Company and their respective permitted successors and assigns (including personal representatives, heirs and legatees), except that the Participant may not assign any rights or obligations under this Agreement except to the extent and in the manner expressly permitted herein.

9. *Securities Act*

The Company will not be required to deliver any shares of Common Stock pursuant to this Agreement if, in the opinion of counsel for the Company, such issuance would violate the Securities Act of 1933, as amended (the "***Securities Act***") or any other applicable federal or state securities laws or regulations. The Committee may require that the Participant, prior to the issuance of any such shares, sign and deliver to the Company a written statement, which shall be in a form and contain content acceptable to the Committee, in its sole discretion ("***Investment Letter***"):

(a) stating that the Participant is acquiring the shares for investment and not with a view to the sale or distribution thereof;

(b) stating that the Participant will not sell any shares of Common Stock that the Participant may then own or thereafter acquire except either:

(i) through a broker on a national securities exchange, or

(ii) with the prior written approval of the Company; and

(c) containing such other terms and conditions as counsel for the Company may reasonably require to assure compliance with the Securities Act or other applicable federal or state securities laws and regulations.

10. *Federal and State Taxes*

(a) Any amount of Common Stock and/or cash that is payable or transferable to the Participant hereunder may be subject to the payment of or reduced by any amount or amounts which the Company is required to withhold under the then applicable provisions of the laws of the jurisdiction where the Participant is employed, and, if applicable, the Internal Revenue Code of 1986, as amended (the "***Code***"), or its successors, or any other foreign, federal, state or local tax withholding requirement. When the Company is required to withhold any amount or amounts under the applicable provisions of any foreign, federal, state or local requirement or the Code, the Company shall withhold from the Common Stock to be issued to the Participant a number of shares necessary to satisfy the Company's withholding obligations. The number of shares of Common Stock to be withheld shall be based upon the Fair Market Value of the shares on the date of withholding.

(b) Notwithstanding Paragraph 10(a) above, if the Participant elects, and the Committee agrees, the Company's withholding obligations may instead be satisfied as follows:

(i) the Participant may direct the Company to withhold cash that is otherwise payable to the Participant;

(ii) the Participant may deliver to the Company a sufficient number of shares of Common Stock then owned by the Participant for a period of at least six (6) months to satisfy the Company's withholding obligations, based on the Fair Market Value of the shares as of the date of withholding;

(iii) the Participant may deliver sufficient cash to the Company to satisfy its withholding obligations; or

(iv) any combination of the alternatives described in Paragraphs 10(b)(i) through 10(b)(iii) above.

(c) Authorization of the Participant to the Company to withhold taxes pursuant to one or more of the alternatives described in Paragraph 10(b) above must be in a form and content acceptable to the Committee. The payment or authorization to withhold taxes by the Participant shall be completed prior to the delivery of any shares pursuant to this Agreement. An authorization to withhold taxes pursuant to this provision will be irrevocable unless and until the tax liability of the Participant has been fully paid.

11. *Copy of Plan*

By the electronic acceptance of this Agreement, the Participant acknowledges receipt of a copy of the Plan.

12. *Administration*

This Agreement is subject to the terms and conditions of the Plan. The Plan is administered by the Committee in accordance with its terms. The Committee has sole and complete discretion with respect to all matters reserved to it by the Plan and the decisions of the majority of the Committee with respect to the Plan and this Agreement shall be final and binding upon the Participant and the Company. Neither the Company nor the members of the Board or the Committee will be liable for any act, omission or determination taken or made in good faith with respect to this Agreement or the RSUs granted hereunder. In the event of any conflict between the terms and conditions of this Agreement and the Plan, the provisions of the Plan shall control.

13. *Adjustment of Number of Shares of RSUs*

The number of RSUs granted hereunder shall be subject to adjustment in accordance with Articles 12 and 13 of the Plan.

14. *Non-transferability*

The RSUs granted by this Agreement are not transferable by the Participant other than by will or pursuant to applicable laws of descent and distribution. The RSUs and any rights and privileges in connection therewith, cannot be transferred, assigned, pledged or hypothecated by operation of law, or otherwise, and is not otherwise subject to execution, attachment, garnishment or similar process. In the event of such occurrence, this Agreement will automatically terminate and will thereafter be null and void.

15. *Remedies*

The Company shall be entitled to recover from the Participant reasonable attorneys' fees incurred in connection with the enforcement of the terms and provisions of this Agreement whether by an action to enforce specific performance or for damages for its breach or otherwise.

16. *Information Confidential*

As partial consideration for the granting of the Award hereunder, the Participant hereby agrees to keep confidential all information and knowledge, except that which has been disclosed in any public filings required by law, that the Participant has relating to the terms and conditions of this Agreement. However, such information may be disclosed as required by law and may be given in confidence to the Participant's spouse and tax and financial advisors. In the event any breach of this promise comes to the attention of the Company, it shall take into consideration that breach in determining whether to recommend the grant of any future similar award to the Participant, as a factor weighing against the advisability of granting any such future award to the Participant.

17. *Amendments*

Except as otherwise provided in the Plan or below, this Agreement may be amended only by a written agreement executed by the Company and the Participant. Notwithstanding the foregoing, the Board or the Committee may amend this Agreement to the extent necessary or advisable in light of any addition to or change in any federal or state, tax or securities law or other law or regulation, which change occurs after the Date of Grant and by its terms applies to the Award or to the extent that such amendment is not materially adverse to the Participant.

18. *Governing Law*

This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Texas (excluding any conflict of laws, rule or principle of Texas law that might refer the governance, construction, or interpretation of this Plan to the laws of another state).

19. *Severability*

If any provision of this Agreement is held to be illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining provisions of this Agreement, but such provision shall be fully severable and this Agreement shall be construed and enforced as if the illegal or invalid provision had never been included.

20. *Headings*

The titles and headings of paragraphs are included for convenience of reference only and are not to be considered in construction of the provisions of this Agreement.

21. *Word Usage*

Words used in the masculine shall apply to the feminine where applicable, and wherever the context of this Agreement dictates, the plural shall be read as the singular and the singular as the plural.

22. *Execution of Receipts and Releases*

Any payment of cash or any issuance or transfer of shares of Common Stock or other property to the Participant or to the Participant's legal representative, heir, legatee or distributee, in accordance with the provisions of this Agreement, shall, to the extent thereof, be in full satisfaction of all claims of such persons under this Agreement. The Company may require the Participant or the Participant's legal representative, heir, legatee or distribute, as a condition precedent to such payment or issuance, to execute a release and receipt therefor in such form as it shall determine.

23. *Code Section 409A*

Notwithstanding anything herein to the contrary, in the case of a conversion of vested RSUs and registration and transfer of shares of Common Stock on account of any termination of service (other than death), if the Participant is a "specified employee" as defined in Section 1.409A-1(i) of the final Treasury Regulations under Section 409A of the Code, then solely to the extent required under Section 409A of the Code, a distribution of such shares to the Participant shall not occur until the date which is six (6) months following the date of the Participant's termination of service (or, if earlier, the date of the Participant's death).

24. *Electronic Delivery and Acceptance.*

The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an on-line or electronic system established and maintained by the Company or a third party designated by the Company.

25. *Insider Trading Restrictions/Market Abuse Laws.*

The Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the shares of Common Stock are listed and in applicable jurisdictions including the United States and the Participant's country or his or her broker's country, if different, which may affect the Participant's ability to accept, acquire, sell or otherwise dispose of shares, RSUs or rights linked to the value of shares of Common Stock (e.g., Dividend Equivalents) during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before he or she possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) “tipping” third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. The Participant acknowledges that it is the Participant’s responsibility to comply with any applicable restrictions, and the Participant should speak with his or her personal legal advisor on this matter.

26. *Participant Acceptance.*

The Participant must accept the terms and conditions of this Agreement either electronically through the electronic acceptance procedure established by the Company or through a written acceptance delivered to the Company in a form satisfactory to the Company. In no event shall any shares of Common Stock be issued (or other securities or property distributed) under this Agreement in the absence of such acceptance. By accepting the RSUs, Participant agrees that the RSUS are granted under and governed by the terms and conditions of the Plan and this Agreement. Participant has reviewed the Plan and this Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to accepting this Agreement and fully understands all provisions of the Plan and this Agreement.

The Company and the Participant are executing this Agreement effective as of the Date of Grant set forth in the introductory clause.

FLOWSERVE CORPORATION

____

Chief Executive Officer

EXHIBIT 10.26

PERFORMANCE RESTRICTED STOCK UNIT AGREEMENT

FLOWSERVE CORPORATION
2020 LONG-TERM INCENTIVE PLAN

This Performance Restricted Stock Unit Agreement (this "***Agreement***") is made and entered into by and between Flowserve Corporation, a New York corporation (the "***Company***"), and _________________ (the "***Participant***") as of _________________ (the "***Date of Grant***"). All capitalized terms used in this Agreement and not otherwise defined herein have the meanings given to such terms in the Plan (as defined below).

WHEREAS, the Company has adopted the Flowserve Corporation 2020 Long-Term Incentive Plan (the "***Plan***") to strengthen the ability of the Company to retain the services of key Employees and Outside Directors and to increase the interest of such persons in the Company's welfare.

WHEREAS, the Committee believes that the grant of Performance Restricted Stock Units to the Participant as described herein is consistent with the stated purposes for which the Plan was adopted.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereafter set forth and for other good and valuable consideration, the Company and the Participant agree as follows:

1. *Performance Restricted Stock Units*

(a) In order to encourage the Participant's contribution to the successful performance of the Company, and in consideration of the covenants and promises of the Participant herein contained, the Company hereby grants to the Participant as of the Date of Grant, an Award of _________________ Restricted Stock Units subject to performance conditions (the "***Performance Shares***"), which will be converted into a number of shares of Common Stock of the Company equal to the number of vested Performance Shares or, as determined in the sole discretion of the Committee, into an equivalent amount of cash, subject to the conditions and restrictions set forth below and in the Plan. The Performance Shares granted hereunder shall constitute a Performance Award within the meaning of the Plan. The Performance Shares granted pursuant to this Agreement will be subject to the Company's "Clawback and Forfeiture Policy," as the same may be modified from time to time.

(b) *No Shareholder Rights* The Performance Shares granted pursuant to this Agreement do not and shall not entitle the Participant to any rights of a stockholder of the Company prior to the date shares of Common Stock are issued to the Participant in settlement of the Award. The Participant's rights with respect to Performance Shares shall remain forfeitable at all times prior to the date on which rights become vested and the restrictions with respect to the Performance Shares lapse in accordance with this Agreement.

2. *Vesting and Settlement of Performance Shares*

The Performance Shares will be earned based on the Company's performance against the three performance metrics outlined below for the period beginning January 1, ____ and ending December 31, ____ (the "***Performance Cycle***").

(a) *Return on Invested Capital.* One-half of the Performance Shares (the "***ROIC Performance Shares***") will be earned based on the Company's return on invested capital performance over each of the three calendar years of the Performance Cycle with such ROIC Performance Shares allocated evenly among each of the three years of the Performance Cycle (the "***ROIC Performance Goals***"), and subject to further adjustment as provided under Paragraph 2(c) below. The Committee has established the threshold, target and maximum ROIC Performance Goal for the ____ calendar year, as set forth in Appendix A attached hereto. The Committee will establish and communicate to the Participant a threshold, target and maximum ROIC Performance Goal for the ____ and ____ calendar years prior to March 30, ____ and March 30, ____, respectively, in accordance with the requirements of Section 6.7 of the Plan. Following the end of the Performance Cycle, the Committee shall compare the actual performance of the Company with the ROIC Performance Goals and certify, in writing, whether and to what extent the ROIC Performance Goals have been achieved for such Performance Cycle. Subject to the provisions of Paragraph 3 below, upon written certification by the Committee, which shall occur no later than March 15 of the year following the year in which the Performance Cycle ends, as to whether, and to what extent, the ROIC Performance Goals have been achieved, the ROIC Performance Shares will become vested (the "***Vesting Date***") and will be eligible for conversion in accordance with the following schedule, in each case, subject to further adjustment as provided under Paragraph 2(c) below:

(i) If the ROIC Performance Goal achieved is less than the threshold, the ROIC Performance Shares will not vest.

(ii) If the threshold ROIC Performance Goal is achieved, then 50% of the ROIC Performance Shares will vest.

(iii) If the target ROIC Performance Goal is achieved, then 100% of the ROIC Performance Shares will vest.

(iv) If the maximum ROIC Performance Goal is achieved or exceeded, then 200% of the ROIC Performance Shares will vest.

(v) If the ROIC Performance Goal achieved is between the threshold and the target, or between target and maximum, the number of ROIC Performance Shares that will vest will be interpolated on a straight-line basis between the two nearest designated points.

(b) *Free Cash Flow.* The remaining one-half of the Performance Shares (the "***FCF Performance Shares***") will be earned based on achievement of the Company's average annual free cash flow performance as a percentage of net income over each of the three years in the Performance Cycle (the "***FCF Performance Goal***"), subject to further adjustment as provided under Paragraph 2(c) below. The Committee has established a threshold, target, stretch and maximum FCF Performance Goal with respect to the Award, as set forth in Appendix A attached hereto. Following the end of the Performance Cycle, the Committee shall compare the actual performance of the Company with the FCF Performance Goal and certify, in writing, whether and to what extent the FCF Performance Goal has been achieved for such Performance Cycle. Subject to the provisions of Paragraph 3 below, upon written certification by the Committee on the Vesting Date as to whether, and to what extent, the FCF Performance Goal has been achieved, the FCF Performance Shares will become vested on the Vesting Date and will be eligible for conversion in accordance with the following schedule, in each case, subject to further adjustment as provided under Paragraph 2(c) below:

(i) If the FCF Performance Goal achieved is less than the threshold, the FCF Performance Shares will not vest.

(ii) If the threshold FCF Performance Goal is achieved, then 50% of the FCF Performance Shares will vest.

(iii) If the target FCF Performance Goal is achieved, then 100% of the FCF Performance Shares will vest.

(iv) If the stretch target FCF Performance Goal is achieved, then 120% of the FCF Performance Shares will vest.

(v) If the maximum FCF Performance Goal is achieved or exceeded, then 200% of the FCF Performance Shares will vest.

(vi) If the FCF Performance Goal achieved is between the threshold and the target, between the target and the stretch target, or between stretch target and maximum, the number of FCF Performance Shares that will vest will be interpolated on a straight-line basis between the two nearest designated points.

(c) *Relative Total Shareholder Return Modifier*. ROIC Performance Shares and FCF Performance Shares which vest pursuant to the foregoing Paragraphs 2(a) and 2(b) shall be subject to adjustment in the aggregate based on the Company's relative total shareholder return performance as compared to the total shareholder return performance of the constituent companies in a performance peer group over the Performance Cycle ("***Relative TSR***"). The Committee has established the Company's performance peer group for purposes of calculating the Relative TSR performance as set forth in Appendix A attached hereto. Subject to the provisions of Paragraph 3 below, upon written certification by the Committee on the Vesting Date as to whether, and to what extent, the Relative TSR has been achieved, the Performance Shares will become vested on the Vesting Date and will be eligible for conversion in accordance with the following schedule:

(i) If the Relative TSR achieved is below the 25th percentile, the aggregate percentage of Performance Shares that have vested pursuant to the foregoing Paragraphs 2(a) and 2(b) shall be reduced by 15% and such reduced amount shall be eligible for conversion.

(ii) If the Relative TSR achieved is between the 25th percentile and the 75th percentile, the aggregate percentage of Performance Shares that have vested pursuant to the foregoing Paragraphs 2(a) and 2(b) shall be neither reduced nor increased and such amount shall be eligible for conversion.

(iii) If the Relative TSR achieved is greater than the 75th percentile, the aggregate percentage of Performance Shares that have vested pursuant to the foregoing Paragraphs 2(a) and 2(b) shall be increased by 15% and such increased amount shall be eligible for conversion.

(d) Except as otherwise provided in Paragraph 3 below, no later than March 15 of the year following the year in which the Performance Cycle ends, the Company shall convert the vested Performance Shares into the number of whole shares, rounded up to the nearest whole share, of Common Stock equal to the number of vested Performance Shares, subject to the provisions of the Plan and the Agreement, or into a cash amount determined in accordance with Paragraph 2(g) below, and shall deliver such shares (in accordance with Paragraph 2(e) below) or cash to the Participant. The value of such shares of Common Stock shall not bear any interest owing to the passage of time.

(e) Following conversion of the vested Performance Shares into shares of Common Stock, such shares of Common Stock will be registered and transferred of record to the Participant. The delivery of any shares of Common Stock pursuant to this Agreement is subject to the provisions of Paragraphs 8 and 10 below.

(f) Each year that this Agreement is in effect, the Participant will receive credits ("***Dividend Equivalents***") based upon the cash dividends that would have been paid on the number of shares of Common Stock equal to 100% of the Performance Shares as if such shares of Common Stock were actually held by the Participant. Dividend Equivalents shall be deemed to be reinvested in additional shares of Common Stock (which may thereafter accrue additional Dividend Equivalents). Any such reinvestment shall be at the Fair Market Value of the Common Stock at the time thereof. Dividend Equivalents may be settled in cash or shares of Common Stock, or any combination thereof, as determined by the Committee, in its sole and absolute discretion. The settlement of Dividend Equivalents in the form of shares of Common Stock will constitute a Bonus Stock Award for purposes of the Plan. Following conversion of the vested Performance Shares into shares of Common Stock, the Participant also shall receive a distribution of the Dividend Equivalents accrued with respect to such Performance Shares prior to the date of such conversion. In the event any Performance Shares do not vest, the Participant shall forfeit his or her right to any Dividend Equivalents accrued with respect to such unvested Performance Shares.

(g) Notwithstanding the foregoing provisions of Paragraphs 2(e) and 2(f), the Committee may, in its sole and absolute discretion, in lieu of distributing any shares of Common Stock to the Participant, elect to pay the Participant an amount in cash equal to the Fair Market Value on the date of conversion of the shares of Common Stock that the Participant otherwise would be entitled to receive pursuant to this Agreement.

3. *Effect of Termination of Employment or Services*

(a) The Performance Shares granted pursuant to this Agreement shall vest in accordance with the provisions of Paragraphs 2(a)-2(c) above, on condition that the Participant remains employed by or continues to provide services to the Company or a Subsidiary through the end of the Performance Cycle. If, however, (i) the Company and its Subsidiaries terminate the Participant's employment or service relationship or (ii) the Participant terminates his or her employment or service relationship (in each case, not as a result of Total and Permanent Disability, death or Special End of Service), then, except as otherwise provided in Paragraphs 3(b) and 3(c) below, the Performance Shares that have not previously vested in accordance with the vesting schedule reflected in Paragraphs 2(a)-2(c) above, as of the date of such termination of employment (or cessation of services, as applicable), shall be forfeited by the Participant to the Company.

(b) *Termination due to Death, Total and Permanent Disability or Special End of Service*.

(i) In the event the Participant's employment with the Company terminates due to his or her Total and Permanent Disability or death, then on the date of such termination of employment (the "***Death/Disability Vesting Date***"), 100% of the outstanding Performance Shares shall vest as if the target Performance Goal has been achieved. Notwithstanding Paragraph 2(d) above, no later than March 15 of the year following the year in which the Death/Disability Vesting Date occurs, the Company shall convert the vested Performance Shares into the number of whole shares of Common Stock, rounded up to the nearest whole share, equal to the number of vested Performance Shares, subject to the provisions of the Plan and this Agreement, or into a cash amount determined in accordance with Paragraph 2(g) above, and shall deliver such shares (in accordance with Paragraph 2(e) above) or cash to the Participant (or the Participant's estate).

(ii) In the event the Participant's employment with the Company terminates due to his or her Special End of Service, then on the Vesting Date the Participant shall be entitled to receive the number of shares of Common Stock that would have been payable to such Participant if he or she had continued to provide services through such Vesting Date in accordance with Paragraph 2. For purposes of this Agreement, the term "***Special End of Service***" shall mean the voluntary termination of a Participant's employment with the Company for any reason other than due to the Participant's death, Total and Permanent Disability, reduction-in-force or "cause" (as determined by the Committee in its sole discretion) on or after the date the Participant attains both (i) age 55 and (ii) 10 years of service with the Company or its subsidiaries.

(c) *Other Termination Provisions*. In the event a Participant's employment with the Company is terminated due to the Participant's reduction-in-force (as determined in the sole discretion of the Committee), termination triggering payment under the Flowserve Corporation Executive Officer Severance Plan (as the same may be amended), or if a Participant is reassigned to a position not eligible for Plan participation, and such termination or reassignment occurs in the final year of the Performance Cycle, then on the Vesting Date the Participant (or the Participant's estate) shall be entitled to receive a number of shares of Common Stock equal to (i) the number of shares of Common Stock that would have been payable to such Participant if he or she had continued to provide services through the end of the Performance Cycle as determined by the Committee in accordance with Paragraph 2, multiplied by (ii) a fraction, the numerator of which is the number of full months (counting the month in which the Participant's termination of employment occurs as a full month) during the Performance Cycle that the Participant was employed by the Company, and the denominator of which is the total number of months in the Performance Cycle.

4. *Non-Solicitation and Non-Recruitment Covenants*

(a) Participant acknowledges that that he or she has become and will continue to become familiar with new and on-going Confidential Information (as defined below). Participant recognizes and agrees that: (i) the Company has devoted a considerable amount of time, effort and expense to develop its Confidential Information and business goodwill; (ii) the Confidential Information and the Company's business goodwill are valuable assets to the Company; and (iii) any unauthorized use or disclosure of the Company's Confidential Information would cause irreparable harm to the Company, including damage to the Company's business goodwill, for which there is no adequate remedy at law. For these reasons, Participant agrees that, to protect the Company's Confidential Information (as defined below) and business goodwill, it is necessary to enter into the following restrictive covenants. As used in this Paragraph 4, references to the "***Company***" refer to the Company and its Subsidiaries.

Participant, whether individually or as a principal, partner, stockholder, manager, agent, consultant, contractor, employee, lender, investor, volunteer, director or officer of any corporation or association or in any other manner or capacity whatsoever, agrees that during Participant's employment by the Company and for a period of one (1) year following the date on which Participant's employment ceases (for whatever reason) (the ***"Restricted Period"***), Participant shall not, whether directly or indirectly, without the express prior written consent of the Company:

(I) *Non-Solicitation*. Other than for the benefit of the Company during Participant's period of employment with or engagement by the Company, curtail the business of, interfere with the Company's relationship with, solicit business from, attempt to transact business with or transact business with any customer or prospective customer of the Company with whom the Company transacted business or solicited within the preceding twenty-four (24) months, and which either: (A) Participant contacted, called on, serviced, did business with or had contact with during Participant's employment or that Participant attempted to contact, call on, service, or do business with during Participant's employment or engagement; (B) Participant became acquainted with or dealt with, for any reason, as a result of Participant's employment or engagement by the Company; or (C) Participant received Confidential Information regarding during Participant's employment with or engagement by the Company. This restriction applies only to business that is in the scope of services or products provided by the Company.

(II) *Non-Recruitment*. Hire, recruit, solicit for employment, induce or encourage to leave the employment of or engagement by the Company, or otherwise cease their employment or engagement with the Company, on behalf of Participant or any other person or entity, any current employee or independent contractor of the

Company or its subsidiaries (including those employees on vacation and approved leaves of absence, disability or other approved absence with the legal right to return to employment) or any former employee or independent contractor of the Company or its subsidiaries whose employment or engagement ceased no more than three (3) months earlier.

For purposes of this Agreement, ***"Confidential Information"*** includes any trade secrets or confidential or proprietary information of the Company and its affiliates, including, but not limited to, the following:

(A) information concerning customers, clients, marketing, business and operational methods of the Company and its customers or clients, contracts, financial or other data, technical data, e-mail and other correspondence or any other confidential or proprietary information possessed, owned or used by the Company;

(B) business records, product construction, product specifications, financial information, audit processes, pricing, business strategies, marketing and promotional practices (including internet-related marketing) and management methods and information;

(C) financial data, strategies, systems, research, plans, reports, recommendations and conclusions;

(D) names, arrangements with, or other information relating to, any of the Company's customers, clients, suppliers, financiers, owners, representatives and other persons who have business relationships with the Company or who are prospects for business relationships with the Company; and

(E) any non-public matter or thing obtained or ascertained by Participant through Participant's association with the Company, the use or disclosure of which may reasonably be construed to be contrary to the best interests of any the Company.

(b) *Remedies*. Participant acknowledges that the restrictions contained in this Paragraph 4, in view of the nature of the Company's business, are reasonable and necessary to protect the Company's legitimate business interests and business goodwill and that any violation of these restrictions would result in irreparable injury to the Company. The existence of any claim or cause of action by Participant against the Company, whether predicated on this Agreement or otherwise, shall not constitute a defense to the enforcement by the Company of the restrictive covenants contained in Paragraph 4.

(i) *Forfeiture by Participant*. If Participant breaches any restriction in this Paragraph 4, the Company shall be entitled to, in addition to any legal remedies available to the Company, undertake any or all of the following: (A) require Participant to forfeit any Performance Shares (whether then vested or unvested) that have not yet been converted into Common Stock (or an equivalent cash payment) as of the date of such violation; (B) require Participant to immediately sell to the Company a number of shares of Common Stock equal to the gross number of Performance Shares converted into Common Stock hereunder, for the then-current Fair Market Value of such shares; (C) require Participant to immediately pay to the Company any cash settlement of Performance Shares hereunder or any gain that the Participant realized on any sale of shares of Common Stock issued in settlement of the Performance Shares granted hereunder; (D) discontinue future grants of any and all equity awards under any equity incentive plan in which Participant may participate; (E) recover damages incurred by the Company as a result of the breach; and (F) recover its attorneys' fees, costs and expenses incurred in connection with such actions. To the extent that the provisions of this Paragraph 4 are inconsistent with the terms of any other agreement between the Company and the Participant, the Company and Participant agree that the provisions of this Paragraph 4 shall control.

(ii) *Injunctive Relief and Damages.* Participant acknowledges and agrees that a breach of Paragraph 4 will result in irreparable harm and continuing damage to the Company, and that money damages and the remedies set forth in Paragraph 4(b)(i) above would be not be sufficient remedies to the Company for any such breach or threatened breach. Therefore, Participant agrees that the Company shall also be entitled to a temporary restraining order and injunctive relief restraining Participant from the commission of any breach of Paragraph 4. Nothing contained in this Agreement shall be construed as prohibiting the Company from pursuing any other remedies available to it for any breach or threatened breach, including, without limitation, the remedies set forth in Paragraph 4(b)(i) or the recovery of money damages, attorneys' fees and costs.

(c) *Tolling*. If Participant violates any of the restrictions contained in this Paragraph 4, the Restricted Period will be suspended and will not run in favor of Participant until such time that Participant cures the violation to the satisfaction of the Company.

5. *Limitation of Rights*

Nothing in this Agreement or the Plan shall be construed to:

(a) give the Participant any right to be awarded any further Performance Shares or any other Award in the future, even if Performance Shares or other Awards are granted on a regular or repeated basis, as grants of Performance Shares and other Awards are completely voluntary and made solely in the discretion of the Committee;

(b) give the Participant or any other person any interest in any fund or in any specified asset or assets of the Company or any Subsidiary; or

(c) confer upon the Participant the right to continue in the employment or service of the Company or any Subsidiary, or affect the right of the Company or any Subsidiary to terminate the employment or service of the Participant at any time or for any reason.

6. *Data Privacy*

By execution of this Agreement, the Participant acknowledges that he or she has read and understands the Flowserve Corporation Employee Data Protection Policy and Flowserve's Privacy Policy. The Participant hereby consents to the collection, processing, transmission, use and electronic and manual storage of his or her personal data by the Company, Wells Fargo Shareowner Services ("***Wells Fargo***") and Merrill Lynch & Co., Inc. ("***Merrill Lynch***") in order to facilitate Plan administration. The Participant understands and acknowledges that this consent applies to all personally-identifiable data relevant to Plan administration, including the Participant's name, home address, work email address, job title, GEMS ID, National Identification Number or Social Security Number, employee status, work location, work phone number, tax class, previous equity grant transaction data and compensation data. The Participant further agrees to furnish to the Company any additional information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

The Participant understands that for purposes of Plan administration, the Participant's personal data will be collected and processed at 5215 N. O'Connor Blvd, Suite 2300, Irving, Texas (USA), and transferred to Wells Fargo at 161 North Concord Exchange, South St. Paul, Minnesota (USA) and Merrill Lynch at 4 World Financial Center, 250 Vesey St., New York, New York (USA).

7. *Prerequisites to Benefits*

Neither the Participant, nor any person claiming through the Participant, shall have any right or interest in the Performance Shares awarded hereunder, unless and until all the terms, conditions and provisions of this Agreement and the Plan which affect the Participant or such other person shall have been complied with as specified herein.

8. *Delivery of Shares*

No shares of Common Stock shall be delivered to the Participant upon conversion of the Performance Shares into shares of Common Stock until:

(a) all the applicable taxes required to be withheld have been paid or withheld in full;

(b) the approval of any governmental authority required in connection with the Performance Shares, or the issuance of shares of Common Stock hereunder under has been received by the Company; and

(c) if required by the Committee, the Participant has delivered to the Committee an Investment Letter in form and content satisfactory to the Company as provided in Paragraph 10 hereof.

9. *Successors and Assigns*

This Agreement shall bind and inure to the benefit of and be enforceable by the Participant, the Company and their respective permitted successors and assigns (including personal representatives, heirs and legatees), except that the Participant may not assign any rights or obligations under this Agreement except to the extent and in the manner expressly permitted herein.

10. *Securities Act*

The Company will not be required to deliver any shares of Common Stock pursuant to this Agreement if, in the opinion of counsel for the Company, such issuance would violate the Securities Act of 1933, as amended (the "***Securities Act***") or any other applicable federal or state securities laws or regulations. The Committee may require that the Participant, prior to the issuance of any such shares, sign and deliver to the Company a written statement, which shall be in a form and contain content acceptable to the Committee, in its sole discretion ("***Investment Letter***"):

(a) stating that the Participant is acquiring the shares for investment and not with a view to the sale or distribution thereof;

(b) stating that the Participant will not sell any shares of Common Stock that the Participant may then own or thereafter acquire except either:

(i) through a broker on a national securities exchange, or

(ii) with the prior written approval of the Company; and

(c) containing such other terms and conditions as counsel for the Company may reasonably require to assure compliance with the Securities Act or other applicable federal or state securities laws and regulations.

11. *Federal and State Taxes*

(a) Any amount of Common Stock or cash that is payable or transferable to the Participant hereunder may be subject to the payment of or reduced by any amount or amounts which the Company is required to withhold under the then applicable provisions of the laws of the jurisdiction where the Participant is employed, and, if applicable, the Internal Revenue Code of 1986, as amended (the "***Code***"), or its successors, or any other foreign, federal, state or local tax withholding requirement. When the Company is required to withhold any amount or amounts under the applicable provisions of any foreign, federal, state or local requirement or the Code, the Company shall withhold from the Common Stock to be issued to the Participant a number of shares necessary to satisfy the Company`s withholding obligations. The number of shares of Common Stock to be withheld shall be based upon the Fair Market Value of the shares on the date of withholding.

(b) Notwithstanding Paragraph 11(a) above, if the Participant elects, and the Committee agrees, the Company's withholding obligations may instead be satisfied as follows:

(i) the Participant may direct the Company to withhold cash that is otherwise payable to the Participant;

(ii) the Participant may deliver to the Company a sufficient number of shares of Common Stock then owned by the Participant for a period of at least six (6) months to satisfy the Company`s withholding obligations, based on the Fair Market Value of the shares as of the date of withholding;

(iii) the Participant may deliver sufficient cash to the Company to satisfy its withholding obligations; or

(iv) any combination of the alternatives described in Paragraphs 11(b)(i) through 11(b)(iii) above.

(c) Authorization of the Participant to the Company to withhold taxes pursuant to one or more of the alternatives described in Paragraph 11(b) above must be in a form and content acceptable to the Committee. The payment or authorization to withhold taxes by the Participant shall be completed prior to the delivery of any shares pursuant to this Agreement. An authorization to withhold taxes pursuant to this provision will be irrevocable unless and until the tax liability of the Participant has been fully paid.

12. *Copy of Plan*

By the electronic acceptance of this Agreement, the Participant acknowledges receipt of a copy of the Plan.

13. *Administration*

This Agreement is subject to the terms and conditions of the Plan. The Plan is administered by the Committee in accordance with its terms. The Committee has sole and complete discretion with respect to all matters reserved to it by the Plan and the decisions of the majority of the Committee with respect to the Plan and this Agreement shall be final and binding upon the Participant and the Company. Neither the Company nor the members of the Board or the Committee will be liable for any act, omission or determination taken or made in good faith with respect to this Agreement or the Performance Shares granted hereunder. In the event of any conflict between the terms and conditions of this Agreement and the Plan, the provisions of the Plan shall control.

14. *Adjustment of Number of Performance Shares*

The number of Performance Shares granted hereunder shall be subject to adjustment in accordance with Articles 12 and 13 of the Plan.

15. *Non-transferability*

The Performance Shares granted by this Agreement are not transferable by the Participant other than by will or pursuant to applicable laws of descent and distribution. The Performance Shares and any rights and privileges in connection therewith, cannot be transferred, assigned, pledged or hypothecated by operation of law, or otherwise, and is not otherwise subject to execution, attachment, garnishment or similar process. In the event of such occurrence, this Agreement will automatically terminate and will thereafter be null and void.

16. *Remedies*

The Company shall be entitled to recover from the Participant reasonable attorneys' fees incurred in connection with the enforcement of the terms and provisions of this Agreement whether by an action to enforce specific performance or for damages for its breach or otherwise.

17. *Information Confidential*

As partial consideration for the granting of the Award hereunder, the Participant hereby agrees to keep confidential all information and knowledge, except that which has been disclosed in any public filings required by law, that the Participant has relating to the terms and conditions of this Agreement. However, such information may be disclosed as required by law and may be given in confidence to the Participant's spouse and tax and financial advisors. In the event any breach of this promise comes to the attention of the Company, it shall take into consideration that breach in determining whether to recommend the grant of any future similar award to the Participant, as a factor weighing against the advisability of granting any such future award to the Participant.

18. *Amendments*

Except as provided otherwise in the Plan or below, this Agreement may be amended only by a written agreement executed by the Company and the Participant. Notwithstanding the foregoing, the Board or the Committee may amend this Agreement to the extent necessary or advisable in light of any addition to or change in any federal or state, tax or securities law or other law or regulation, which change occurs after the Date of Grant and by its terms applies to the Award or to the extent that such amendment is not materially adverse to the Participant.

19. *Governing Law*

This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Texas (excluding any conflict of laws, rule or principle of Texas law that might refer the governance, construction, or interpretation of this Plan to the laws of another state).

20. *Severability*

Whenever possible, each provision of this Agreement will be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of this Agreement (or portion thereof) is held to be illegal or invalid for any reason, the illegality or invalidity shall not affect the remaining provisions (or remaining portion of such provision) of this Agreement, but such provision (or portion thereof) shall be fully severable and this Agreement shall be construed and enforced as if the illegal or invalid provision (or portion thereof) had never been included.

21. *Headings*

The titles and headings of paragraphs are included for convenience of reference only and are not to be considered in construction of the provisions of this Agreement.

22. *Word Usage*

Words used in the masculine shall apply to the feminine where applicable, and wherever the context of this Agreement dictates, the plural shall be read as the singular and the singular as the plural.

23. *Execution of Receipts and Releases*

Any payment of cash or any issuance or transfer of shares of Common Stock or other property to the Participant or to the Participant's legal representative, heir, legatee or distributee, in accordance with the provisions of this Agreement, shall, to the extent thereof, be in full satisfaction of all claims of such persons under this Agreement. The Company may require the Participant or the Participant's legal representative, heir, legatee or distribute, as a condition precedent to such payment or issuance, to execute a release and receipt therefor in such form as it shall determine.

24. *Electronic Delivery and Acceptance.*

The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. The Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through an on-line or electronic system established and maintained by the Company or a third party designated by the Company.

25. *Insider Trading Restrictions/Market Abuse Laws.*

The Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the shares of Common Stock are listed and in applicable jurisdictions including the United States and the Participant's country or his or her broker's country, if different, which may affect the Participant's ability to accept, acquire, sell or otherwise dispose of shares, Performance Shares or rights linked to the value of shares of Common Stock (e.g., Dividend Equivalents) during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before he or she possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. The Participant acknowledges that it is the Participant's responsibility to comply with any applicable restrictions, and the Participant should speak with his or her personal legal advisor on this matter.

26. *Participant Acceptance.*

The Participant must accept the terms and conditions of this Agreement either electronically through the electronic acceptance procedure established by the Company or through a written acceptance delivered to the Company in a form satisfactory to the Company. In no event shall any shares of Common Stock be issued (or other securities or property distributed) under this Agreement in the absence of such acceptance. By accepting the Performance Shares, Participant agrees that the Performance Shares are granted under and governed by the terms and conditions of the Plan and this Agreement. Participant has reviewed the Plan and this Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to accepting this Agreement and fully understands all provisions of the Plan and this Agreement.

The Company and the Participant are executing this Agreement effective as of the Date of Grant set forth in the introductory clause.

FLOWSERVE CORPORATION

____
Chief Executive Officer

EXHIBIT 21.1

SUBSIDIARIES
FLOWSERVE CORPORATION

NAME OF SUBSIDIARY	JURISDICTION OF INCORPORATION	PERCENTAGE OWNERSHIP
ARABIAN SEALS COMPANY, LTD.	Saudi Arabia	40%
AUDCO ITALIANA S.R.L.	Italy	12.5%
AUDCO LIMITED	United Kingdom	100%
BW/IP NEW MEXICO, INC.	United States	100%
CALDER GMBH	Switzerland	100%
COOPERATIE FLOWSERVE W.A.	Netherlands	100%
FLOWCOM INSURANCE COMPANY, INC.	United States	100%
FLOWSERVE - AL MANSOORI SERVICES COMPANY LTD.	United Arab Emirates	49%
FLOWSERVE - AL RUSHAID COMPANY LTD	Saudi Arabia	51%
FLOWSERVE (AUSTRIA) GMBH	Austria	100%
FLOWSERVE (B) SDN. BND.	Brunei	100%
FLOWSERVE (MAURITIUS) CORPORATION	Mauritius	100%
FLOWSERVE (PHILIPPINES), INC.	Philippines	100%
FLOWSERVE (SHANGHAI) LIMITED	China	100%
FLOWSERVE (THAILAND) LIMITED	Thailand	100%
FLOWSERVE / ABAHSAIN FLOW CONTROL CO. LTD.	Saudi Arabia	60%
FLOWSERVE / ABAHSAIN SEAL COMPANY LIMITED	Saudi Arabia	60%
FLOWSERVE AHAUS GMBH	Germany	100%
FLOWSERVE ALGERIA SARL	Algeria	100%
FLOWSERVE AUSTRALIA PTY. LTD.	Australia	100%
FLOWSERVE B.V.	Netherlands	100%
FLOWSERVE BELGIUM N.V.	Belgium	100%
FLOWSERVE BOLIVIA S.R.L.	Bolivia	100%
FLOWSERVE CA ULC	Canada	100%
FLOWSERVE CANADA CORP.	Canada	100%
FLOWSERVE CANADA HOLDCO ULC	Canada	100%
FLOWSERVE CHILE S.P.A.	Chile	100%
FLOWSERVE COLOMBIA S.A.S.	Colombia	100%
FLOWSERVE CONTROL VALVES GMBH	Austria	100%
FLOWSERVE CORPORATION	United States	100%
FLOWSERVE CV HOLDINGS LLC	United States	100%
FLOWSERVE CV1 GP LLC	United States	100%
FLOWSERVE CZECH REPUBLIC, S.R.O.	Czech Republic	100%
FLOWSERVE DE VENEZUELA C.C.A.	Venezuela	100%
FLOWSERVE DE VENEZUELA LLC	United States	100%
FLOWSERVE DO BRASIL LTDA.	Brazil	100%
FLOWSERVE DORTMUND GMBH & CO. KG	Germany	100%
FLOWSERVE DORTMUND VERWALTUNGS GMBH	Germany	100%
FLOWSERVE ECUADOR CIA. LTDA.	Ecuador	100%
FLOWSERVE EMA HOLDINGS B.V.	Netherlands	100%
FLOWSERVE ESSEN GMBH	Germany	100%
FLOWSERVE FINLAND OY	Finland	100%
FLOWSERVE FLOW CONTROL GMBH	Germany	100%

FLOWSERVE FLUID MOTION AND CONTROL (SUZHOU) CO., LTD.	China	100%
FLOWSERVE FRANCE HOLDING S.A.S.	France	100%
FLOWSERVE FRANCE S.A.S.	France	100%
FLOWSERVE FSD S.A.S.	France	100%
FLOWSERVE GB LIMITED	United Kingdom	100%
FLOWSERVE GERMANY HOLDINGS BV	Netherlands	100%
FLOWSERVE GLOBAL HOLDINGS HUNGARY KFT	Hungary	100%
FLOWSERVE GULF FZE	United Arab Emirates	100%
FLOWSERVE HOLDINGS COOPERATIEF W.A.	Netherlands	100%
FLOWSERVE HOLDINGS, INC.	United States	100%
FLOWSERVE HUNGARY CANHOLD KFT	Hungary	100%
FLOWSERVE HUNGARY HOLDINGS KFT	Hungary	100%
FLOWSERVE HUNGARY SERVICES KFT	Hungary	100%
FLOWSERVE INDIA CONTROLS PVT. LTD.	India	100%
FLOWSERVE INTERNATIONAL B.V.	Netherlands	100%
FLOWSERVE INTERNATIONAL HOLDINGS LLC	United States	100%
FLOWSERVE INTERNATIONAL LIMITED	United Kingdom	100%
FLOWSERVE INTERNATIONAL MIDDLE EAST VALVES LLC	United States	100%
FLOWSERVE INTERNATIONAL, INC.	United States	100%
FLOWSERVE JAPAN CO. LTD.	Japan	100%
FLOWSERVE KAZAKHSTAN LLP	Kazakhstan	100%
FLOWSERVE KOREA LTD.	South Korea	100%
FLOWSERVE KSM CO. LTD.	South Korea	40%
FLOWSERVE LA HOLDINGS S. DE R.L. DE C.V.	Mexico	100%
FLOWSERVE MANAGEMENT COMPANY	United States	100%
FLOWSERVE MEXICO HOLDINGS LLC	United States	100%
FLOWSERVE MICROFINISH PUMPS PVT. LTD.	India	76%
FLOWSERVE MICROFINISH VALVES PVT. LTD.	India	76%
FLOWSERVE MOROCCO SARL AU	Morocco	100%
FLOWSERVE NETHERLANDS C.V.	Netherlands	100%
FLOWSERVE NETHERLANDS VIII C.V.	Netherlands	100%
FLOWSERVE NORWAY AS	Norway	100%
FLOWSERVE PERU S.A.C.	Peru	100%
FLOWSERVE POMPES S.A.S.	France	100%
FLOWSERVE PTE. LTD.	Singapore	100%
FLOWSERVE S.A.	Spain	100%
FLOWSERVE S.A.S.	France	100%
FLOWSERVE S.R.L.	Argentina	100%
FLOWSERVE S.R.L.	Italy	100%
FLOWSERVE SALES INTERNATIONAL, S.A.S.	France	100%
FLOWSERVE SANMAR LIMITED	India	40%
FLOWSERVE SERVICES & TRADING LLC	Qatar	49%
FLOWSERVE SIHI (BELGIUM) BVBA	Belgium	100%
FLOWSERVE SIHI (FRANCE) SAS	France	100%
FLOWSERVE SIHI (SCHWEIZ) GMBH	Switzerland	100%
FLOWSERVE SIHI (SPAIN) S.L.	Spain	100%
FLOWSERVE SIHI AUSTRIA GMBH	Austria	100%
FLOWSERVE SIHI BULGARIA EOOD	Bulgaria	100%
FLOWSERVE SIHI CZ S.R.O.	Czech Republic	100%

FLOWSERVE SIHI GERMANY GMBH	Germany	100%
FLOWSERVE SIHI HOLDING GmbH	Germany	100%
FLOWSERVE SIHI HUNGARY KFT	Hungary	100%
FLOWSERVE SIHI ROMANIA SRL	Romania	100%
FLOWSERVE SIZDIRMAZLIK COZUMLERI TICARET LTD. STI.	Turkey	100%
FLOWSERVE SOLUTIONS (CHENGDU) CO. LTD.	China	100%
FLOWSERVE SOLUTIONS (MALAYSIA) SDN. BHD.	Malaysia	100%
FLOWSERVE SOUTH AFRICA (PROPRIETARY) LIMITED	South Africa	100%
FLOWSERVE SPAIN S.L.	Spain	100%
FLOWSERVE SUPPLY SOLUTIONS PTD LTD.	Singapore	100%
FLOWSERVE TREASURY B.V.	Netherlands	100%
FLOWSERVE US HOLDINGS LLC	United States	100%
FLOWSERVE US INC.	United States	100%
FLOWSERVE VIETNAM CO., LLC	Vietnam	100%
FLOWSERVE XD CHANGSHA PUMP CO., LTD.	China	50%
FLOWSERVE, S. DE R.L. DE C.V.	Mexico	100%
FLS CANADA ULC	Canada	100%
HALBERG MASCHINENBAU GMBH	Germany	100%
INDUSTRIAS MEDINA S.A. DE C.V.	Mexico	36.6%
INGERSOLL-DRESSER PUMPS S.R.L.	Italy	100%
INMOBILIARIA INDUSTRIAL DE LEON S.A. DE C.V.	Mexico	37%
INVENSYS FLOW CONTROL AUSTRALASIA PTY. LTD.	Australia	100%
KSM CO. LTD	Republic of Korea	40%
LIMITORQUE INDIA LIMITED	India	24%
MAQUILADORA INDUSTRIAL DE LEON S.A. DE C.V.	Mexico	37%
NAF AB	Sweden	100%
OOO FLOWSERVE	Russian Federation	100%
PMV AUTOMATION AB	Sweden	100%
PT FLOWSERVE	Indonesia	100%
SIHI CHILE S.A.	Chile	50%
SIHI PUMPS & SERVICES (THAILAND) LTD.	Thailand	100%
SIHI PUMPS (MALAYSIA) SDN. BHD.	Malaysia	100%
SIHI PUMPS (TAIWAN) CO. LTD.	Taiwan	100%
STERLING FLUID SYSTEMS (POLSKA) SP ZOO	Poland	100%
STERLING INDUSTRY CONSULT GMBH	Germany	100%
THOMPSONS, KELLY & LEWIS PTY. LIMITED	Australia	100%
WORTHINGTON S.R.L.	Italy	100%
YKV CORPORATION	Japan	15%

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-230796) and Form S-8 (Nos. 333-234407, 333-163251, and 333-82081) of Flowserve Corporation of our report dated February 23, 2022 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Dallas, Texas
February 23, 2022

EXHIBIT 31.1

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, R. Scott Rowe, certify that:

1. I have reviewed this Annual Report on Form 10-K for the fiscal year ended December 31, 2021 of Flowserve Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the consolidated financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ R. Scott Rowe

R. Scott Rowe

President and Chief Executive Officer
(Principal Executive Officer)

Date: February 23, 2022

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Amy B. Schwetz, certify that:

1. I have reviewed this Annual Report on Form 10-K for the fiscal year ended December 31, 2021 of Flowserve Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the consolidated financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Amy B. Schwetz

Amy B. Schwetz

Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: February 23, 2022

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, R. Scott Rowe, President and Chief Executive Officer of Flowserve Corporation (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) the Annual Report on Form 10-K of the Company for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Annual Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Annual Report fairly presents, in all material respects, the consolidated financial condition and results of operations of the Company.

/s/ R. Scott Rowe

R. Scott Rowe

President and Chief Executive Officer
(Principal Executive Officer)

Date: February 23, 2022

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Amy B. Schwetz, Senior Vice President and Chief Financial Officer of Flowserve Corporation (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) the Annual Report on Form 10-K of the Company for the period ended December 31, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Annual Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Annual Report fairly presents, in all material respects, the consolidated financial condition and results of operations of the Company.

/s/ Amy B. Schwetz

Amy B. Schwetz
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: February 23, 2022