

The valve market

The oil and gas industry will pay \$6 billion for Total Valve Solutions in 2015

By Bob McIlvaine, President, McIlvaine Company

The oil and gas industry is challenged with process, logistical and safety issues which cause it to look to valve suppliers and other vendors to minimize operational and maintenance problems. The operators will pay \$6 billion for these services next year. When the expenditures for valve repair parts and services are added the total addressable market next year is \$9 billion.

It should be noted that the above revenue forecasts do not include the \$10 billion for

Process changes and developments require new approaches and more reliance on third parties with the knowledge to address new situations. The development of LNG, gas to liquids, shale gas, and subsea extraction all involve difficult valve maintenance and operational challenges. A number of companies are assisting oil and gas operators with services and products under the classification of "Total Solutions". Offshore oil rigs have a number of unique factors that make servicing valves one of the most important aspects of asset management. By developing

a maintenance program to identify exactly when valves need servicing, facility operators can significantly lower downtime and drive up savings. Valve companies and other "total solutions" providers go well beyond the typical repair part supply program. Pentair Valves & Controls describes aspects of the Pentair program which result in savings for the operator: "Why the need for a maintenance schedule customized down to each individual valve? No two valves will need to be serviced at exactly the same time, and a typical offshore platform will house several thousand valves – pressure relief valves, ball valves, butterfly valves, triple offset valves, and actuation, control and check valves." Pentair also observes that "Automatically scheduling valve maintenance on a single pre-determined cycle does not take into account the unique operating conditions or exposure to elements that an individual valve experiences." By taking a customized, integrated approach to developing a valve

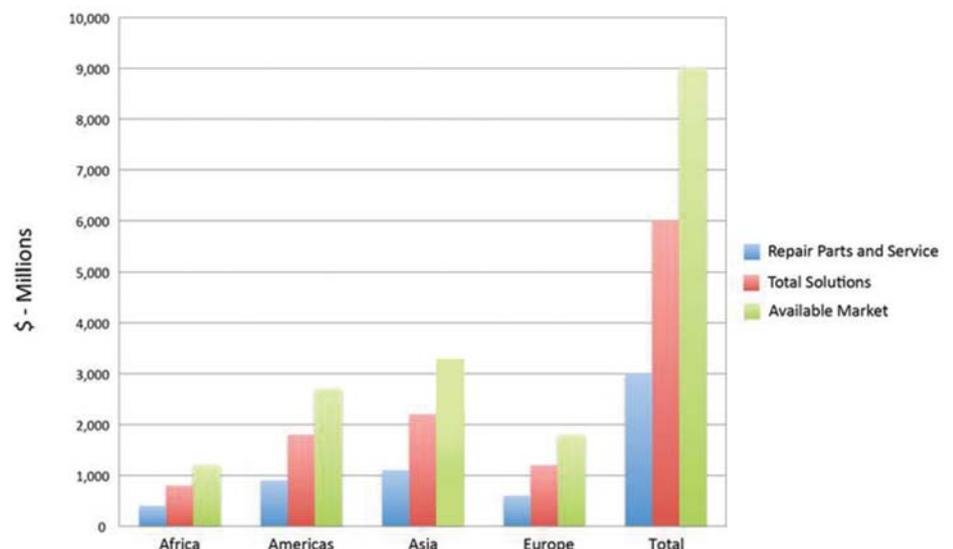
Oil and gas valve revenues 2015 \$ millions

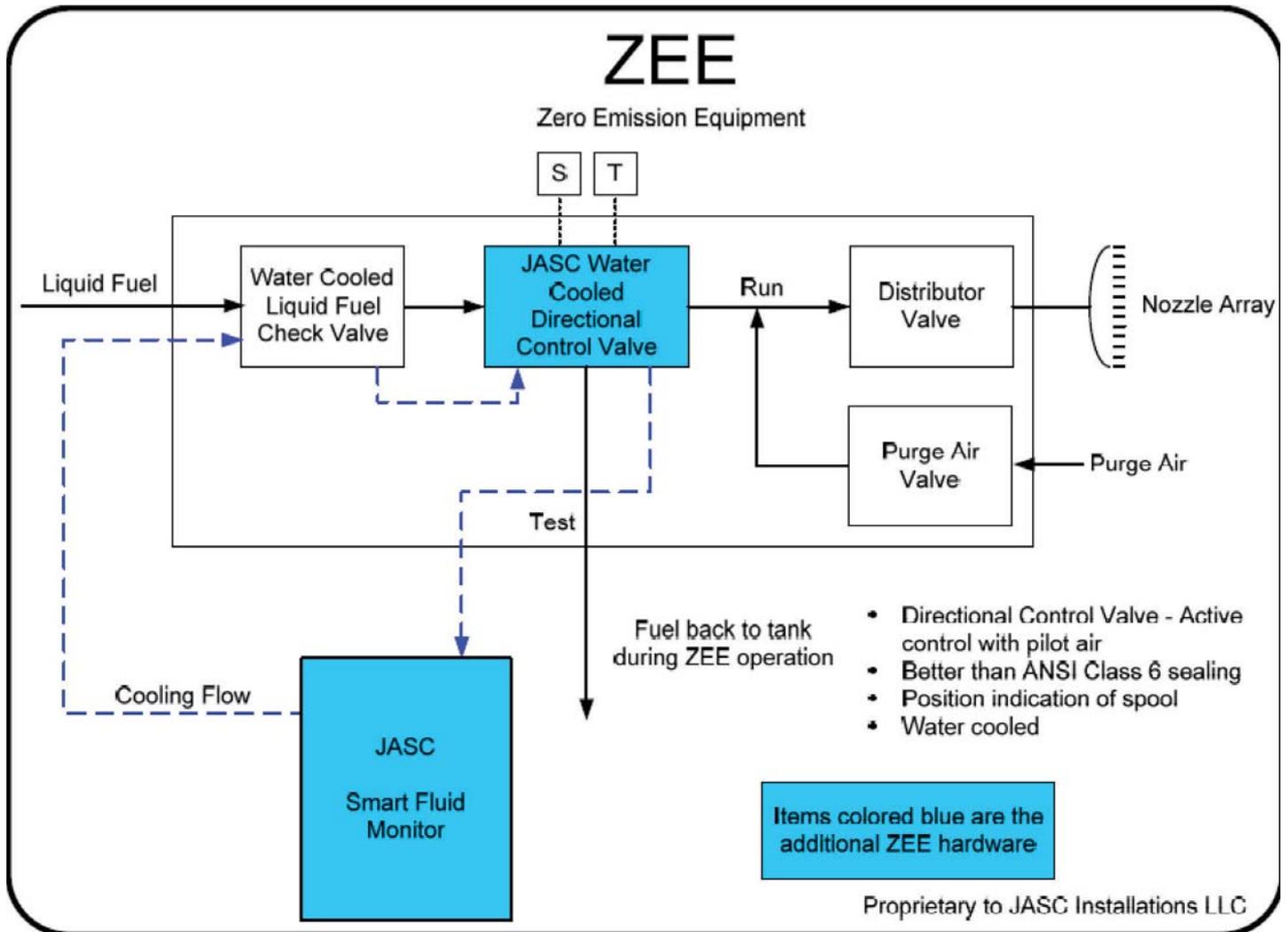
Continent	Repair parts and service	Total solutions	Available market
Africa	400	800	1200
Americas	900	1800	2700
Asia	1100	2200	3300
Europe	600	1200	1800
Total	3000	6,000	9,000

new valves which the oil and gas industry will spend next year. So the total market in oil and gas for valve suppliers taking the total solutions approach is \$19 billion in 2015.

Asia will be the largest segment. This is based on Decisive Classification. The segmentation is part of a system which divides the world into 80 significant markets. Most of the 80 are individual countries but in each sub region there is also an aggregation of small countries. At the top the world is divided into 4 continent combinations. Asia includes East Asia, West Asia and the Middle East. Africa covers the whole continent including both the south and the North. Europe includes both the West and East. The Americas includes both the North American and South American Continents.

Oil and Gas Valve Revenue - 2015





maintenance plan, facility operators can look at every unique factor: The Total Solutions approach includes much more than just management of the valve maintenance. New technology to reduce operation and maintenance is a key part of the opportunity. There has been lots of discussion on smart valves. This is an important factor in Total Solutions but the opportunity includes controls and modifications to eliminate problems. One company which has addressed specific maintenance problems and derived solutions is JASC. They came up with a solution to the wasted fuel and valve coking associated with periodically validating the operability of the liquid backup fuel system in gas turbine operations. It has always been mandated by the turbine O.E.M.'s that the back-up liquid fuel system be exercised regularly. However, for a turbine owner, adhering to this regimen of exercising the fuel system means a significant risk of trips due to high exhaust temperature spreads, paying

the high costs associated with running on liquid fuel and dealing with the significant emissions associated with burning diesel fuel. JASC has developed the Zero Emission Equipment (ZEE) Performance Test system for back-up liquid fuel systems in dual fuel turbine applications. This system will allow the gas turbine owner to operate the back-up liquid fuel system through the entire operational range of fuel flows, light-off to full speed full load without burning fuel in the nozzles. This technology expands upon JASC's water cooled fuel control designs. The benefit is that all fuel system components are operated and flowed using the turbine electronic controls. All equipment in the fuel system is tested from the main fuel tank to the control valves at the fuel nozzles as part of the process. Benefits include avoidance of coking of the valves, reduction in fuel costs, and also reduction in air pollutants and greenhouse gas emissions.

The oil and gas industry is looking to valve suppliers and others with the ability to provide solutions to their valve operation and maintenance problems. This creates a very big potential market and one that will continue to grow robustly over the next decade.



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