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Next Generation Spare Parts Management

Preparing for Maintenance in Tomorrow's Offshore Energy Transition

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In today's equipment-intensive industry landscape industrial maintenance holds a key role in ensuring continuous production, safety, and environmental responsibility. A vital enabler for optimal maintenance is the role of spare parts management. In the absence of spare parts, maintenance cannot be performed in most cases. Spare parts management concerns covering current and future maintenance needs through defining, adjusting, and maintaining stock strategies and logistics capabilities and thereby enabling adequate spare parts availability. It has been deemed difficult for organizations to reach optimal spare part availability due to several challenges of today such as complex spare part portfolios, lack of data utilization, irregular failure rates, etc.

Moving toward tomorrow's energy transition, it is becoming even more critical for organizations to reach optimal spare parts availability coverage, due to new challenges arising with the installation of new and more advanced assets as well as with the decommissioning of old assets. However, opportunity exists for organizations to start early adoption of data-driven spare parts management approaches to improve practices today. By adopting these approaches, it is possible to prepare for optimal maintenance and spare parts management practices from the beginning of the new assets of tomorrow. This contribution presents a data-driven end-to-end approach to spare parts management consisting of several support methodologies, which have been co-created and tested with approximately 35 industry experts in a 2-year Actions Research project. The Case study results show 22.5% stock value reduction, decision making automation and support initiatives, which have been tested on 32.521 spare parts with the case company.