

Non-Destructive Testing (NDT) Equipment - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Non-Destructive Testing Equipment Market size is estimated at USD 3.02 billion in 2024, and is expected to reach USD 4.28 billion by 2029, growing at a CAGR of 7.20% during the forecast period (2024-2029).

Non-destructive testing (NDT) involves the inspection, testing, or evaluation of components, materials, or assemblies. It involves examining disparities in characteristics or discontinuities, primarily without hampering the product's serviceability or part.

Key Highlights

- The market sizing encompasses the revenue generated through the sales of different types of NDT equipment for different end-user industries such as oil and gas, power and energy, aerospace and defense, automotive & transportation, construction, etc. in different regions across the world. The study also tracks the key market parameters, underlying growth influencers, and major vendors operating in the industry, which supports the market estimations and growth rates over the forecast period.
- Several governmental agencies and regional bodies across the world formulated stringent measures, primarily for assuring the safety of buildings. These measures have mandated the use of NDT and other evaluation techniques for conducting fitness checks. This is important for gaining building clearances from concerned authorities for infrastructural projects. These checks include structural strength evaluation, fire safety, and emergency protocol compliance tests.
- NDT emerged as the most feasible method for monitoring the aging of structures periodically, in place of traditional methods. The restrictive cost and challenge of constructing new infrastructure resulted in the notable aging of existing structures and prompted companies to explore ways to extend the life of existing assets.
- There has been an incremental rise in the demand for skilled NDT technicians across the world. The demand currently outweighs the supply due to many reasons. Non-destructive testing can only be performed by certified professionals who undergo detailed training in the presence of subject-matter experts to gain expertise on the various techniques and skills involved in analyzing the

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data.

-During the beginning of the pandemic, lockdown measures significantly reduced electricity demand in the commercial and industrial sectors. The International Energy Agency (IEA) estimated that the global electricity demand would be decreased by 2.5% in Q1 2020, and it showed an approximately 5% contraction by the end of the year. This contraction ultimately resulted in the slowdown of expansion projects, which, in case, slowed down the requirement for radiography testing in the projects. After experiencing a steep decline in 2020, global electricity demand was expected to rebound modestly in 2021. With the recovery of the world economy in 2021, electricity demand was forecast to grow by around 3%. Moreover, the growth of renewable power generation was forecast to continue in 2021, with an increase of more than 6% .

Non-Destructive Testing Equipment Market Trends

Oil and Gas holds Highest Market Share

- The oil and gas industry accounts for the largest market share as nondestructive testing plays a critical role in the industry for both the integrity of equipment and the safety of petroleum refining and extraction operations. Ultrasonic and eddy current NDT testing solutions are often used in the industry for careful inspection of welds and metals for flaws and corrosion, which helps keep potentially hazardous chemicals and fluids safely contained within pipes and pressure vessels.
- Moreover, oil and gas have carbon, hydrogen, and sulfides that have the ability to corrode steel unpredictably and with unexpected speed. NDT provides an effective method for inspecting these materials and detecting corrosion before it creates a larger-scale issue. According to Baker Hughes, as of October 2022, there were 966 land rigs in that region, with a further 14 rigs located offshore.
- One of the primary drivers of the increased deployment of NDT technologies is the rising number of oil and gas projects globally. Though oil demand decreased in 2020 due to the pandemic, it has gradually started recovering. For instance, as per IEA, global oil consumption is projected to reach 104.1 mb/d by 2026, representing an increase of 4.4 mb/d from 2019 levels. Moreover, in 2021, there was a significant increase in the global rig fleet as oil demand increased again following the pandemic-induced economic slump.
- Another driver is the stringent regulatory environments, largely enforced to reduce the number of personnel safety incidents in the oil and gas industry. The increasing instances of infrastructure failures, such as refinery blasts, leakages in nuclear reactors, and pipeline explosions, in recent times have prompted governments around the world to enact stringent safety regulations, driving increased adoption of NDT equipment.
- Moreover, Waygate Technologies, a provider of (NDT) solutions for industrial inspection, presented selected highlights of advanced robotic and remote visual inspection at the SPRINT Robotics World Conference 2022. The exhibited solutions were expected to create new ways to inspect the oil and gas as well as petrochemical industries by eliminating the need for a human entry in confined and hazardous spaces.

Asia Pacific is Expected to be the Fastest Growing Market

- The end-user industries in the United States, such as manufacturing, transportation, aviation, oil and gas, marine, and power generation, among others, are governed by many different federal and state agencies that require mandatory NDT testing for inspection. Non-destructive testing (NDT) ensures the continued operation and safety of infrastructure and equipment across the United States. Often, the use of non-destructive testing equipment is required in the United States as a law.
- For instance, according to the Federal Aviation Administration (FAA), the 200,000+ aircraft in the United States must undergo periodic safety inspections using NDT. Also, the military equipment is subjected to Department of Defense NDT standards. These

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standards are often made using the information provided by independent testing associations, such as the American Society for Nondestructive Testing (ASNT).

- According to the US Energy Information Administration, US crude oil production averaged 9.9 million b/d in February 2021, which was down by 1.2 million b/d from January. The US crude oil production in the forecast averages 11.3 million b/d in the fourth quarter of 2021 and then rises to an average of 11.8 million b/d in 2022. The need for more pipeline transportation capacity and increasing crude oil production have propelled the expansion of crude oil pipeline infrastructure. Such an increase in the need for oil and gas infrastructure is expected to fuel the demand for NDT equipment in the market.

- The Canadian GDP is majorly dominated by the oil and gas sector, with capital investments and exports. Attractive provincial incentives to encourage drilling, increased implementation of long horizontal wells and multistage fracturing in shale resources are the major drivers in the growth of the Canadian oil and gas industry. Also, in 2021, the country's oil and gas extraction industry saw growth in revenue after experiencing a turbulent 2020, driven by a rebound in economic activity and demand for energy products. For instance, in 2021, Canada's oil and gas extraction companies reported total assets of USD 452.9 billion, up 2.6% from 2020, as per Statistics Canada.

- With NDT being one of the most common methods to evaluate the properties of oil and gas pipelines without destroying the serviceability of the original system, the increase in oil and gas production translates to a higher demand for the market. The aerospace industry in Canada continues to be a significant contributor to the economy and accounts for a substantial portion of the total demand for NDT equipment in the region. As per the State of Canada's Aerospace Industry Report released by the Aerospace Industries Association of Canada (AIAC), in partnership with Innovation, Science, and Economic Development Canada (ISED), the Canadian aerospace industry contributed over USD 24 billion in GDP in 2021.

Non-Destructive Testing Equipment Industry Overview

The Non-Destructive Testing (NDT) Equipment Market concentration is moderately high with the presence of key players like Olympus Corporation, Baker Hughes, YXLON International GmbH (COMET Holding AG), OloNDT group, and Applus+ Laboratories among others. Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

- September 2022 - WaygateTechnologies, a Baker Hughes business and world leader in nondestructive testing (NDT) solutions for industrial inspection, introduced Krautkramer SpotVision, a new phased array ultrasonic solution for spot weld inspection. By using the inspection device, e.g., on chassis parts during the manufacturing process, car companies can reduce downtime while ensuring that their products meet high-quality standards and product safety is guaranteed. The Krautkramer SpotVision solution combines a new phased array probe with the latest software and the KrautkramerMentor UT flaw detector.

- March 2022 - Bureau Veritas joined VAKT, a blockchain-enabled platform designed to shape trust between commodities traders. With its help, the company would receive nominations digitally via the platform and upload all test and inspection data once work is complete.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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