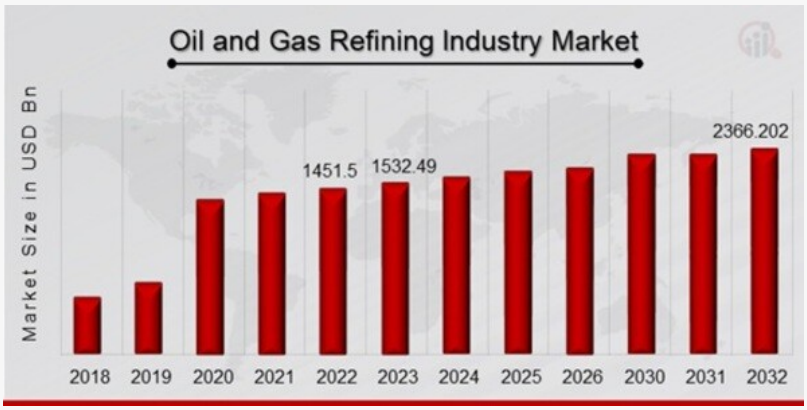
Oil and Gas Refining Market to Reach USD 2366.202 Billion By 2032, Rising Demand for Refined Fuel to Drive the Market

Growing expenditures in building new oil refineries and modernizing existing ones, industrialization and oil refining technology advancements



Oil_and_Gas_Refining_Industry_Market_Overview

NEW YORK, NY, UNITED STATES, April 24, 2025 /EINPresswire.com/ -- North America Transmission Infrastructure Market Size was valued at USD 13.566 Billion in 2022. The North America transmission infrastructure market industry is projected to grow USD 21.99 Billion by 2032, exhibiting a compound annual growth rate (CAGR) of 5.00% during the forecast period (2023 - 2032).

Introduction to North America's Power Transmission Backbone

The North America transmission infrastructure market is undergoing a historic transformation driven by electrification, decarbonization, digitalization, and the urgent need for grid modernization. With the integration of renewable energy, aging grid systems, and escalating electricity demands, the region is investing heavily in new transmission lines, substations, high-voltage direct current (HVDC) systems, and smart grid technologies.

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Market Overview and Growth Potential

The transition to clean energy, especially in the U.S. and Canada.

Rising interconnection projects between provinces and states.

Deployment of advanced grid solutions including energy storage integration.

Government incentives and policy reforms under acts like the U.S. Inflation Reduction Act and Canada's Clean Electricity Regulations.

Key Market Drivers

1. Renewable Energy Integration

The accelerating shift toward wind, solar, and hydroelectric power demands a robust and flexible transmission network. In Texas, for example, the CREZ (Competitive Renewable Energy Zones) project is a benchmark, delivering wind power across vast distances. Similarly, Canada is seeing exponential investments in interprovincial HVDC links to facilitate hydro exports from Quebec and Manitoba.

2. Grid Reliability and Resilience

Severe weather events, wildfires, and aging infrastructure have exposed vulnerabilities in North America's power systems. Upgrades and replacements of aging transformers, conductors, and switchgear are pivotal to enhancing grid reliability. In California and New York, utilities are investing in undergrounding transmission lines and implementing real-time monitoring systems.

3. Electrification of the Economy

As electric vehicles (EVs), electrified heating systems, and industrial electrification rise in adoption, the demand for stable and high-capacity transmission infrastructure is surging. Utilities and transmission operators are investing in bulk power transfer capabilities and load balancing mechanisms to support the coming load.

4. Cross-Border Interconnections

Projects like the Champlain Hudson Power Express (CHPE) and the Northern Pass Transmission Project exemplify the strategic importance of cross-border transmission. These projects not only diversify energy sources but also enhance grid stability across North America.

Technological Advancements in Transmission Infrastructure

High Voltage Direct Current (HVDC) Systems

HVDC is becoming a cornerstone of long-distance and interregional power transmission. Unlike AC systems, HVDC minimizes energy losses, is easier to control, and is ideal for integrating

variable renewables. The U.S. is seeing landmark projects like the SOO Green HVDC Link and the SunZia Transmission Project.

Smart Grid and Digital Technologies

Digitization is revolutionizing grid management. Supervisory Control and Data Acquisition (SCADA), Phasor Measurement Units (PMUs), and Grid Edge Devices are now integral to modern transmission systems. These allow for real-time fault detection, automated rerouting, and predictive maintenance—reducing downtimes and boosting efficiency.

Advanced Conductors and Materials

Technologies like High-Temperature Low-Sag (HTLS) conductors, composite core wires, and self-healing insulation materials are being used to improve performance, reduce losses, and extend the lifespan of transmission assets.

Regulatory Framework and Policy Support

Government mandates and regulatory bodies play a vital role in shaping the North American transmission market:

In the U.S., FERC Order 1000 and 1920 are streamlining the planning and permitting processes for regional and interregional transmission lines.

Canada’s Regulatory Framework for Clean Electricity promotes pan-Canadian electricity trading and infrastructure harmonization.

Mexico is working under CENACE and CRE to modernize and expand its electric grid, particularly in underserved regions.

Challenges Facing the Transmission Market

Despite promising growth, the market faces key hurdles:

Permitting Delays: Multi-jurisdictional approval processes can stall critical projects for years.

Land Use Conflicts: Transmission lines often face opposition from local communities and environmental groups.

Investment Shortfalls: There is a substantial gap between required and actual investment, especially in rural and remote areas.

Cybersecurity Threats: As the grid becomes digitized, it also becomes more vulnerable to

cyberattacks, demanding robust cyber-physical resilience strategies.

Major Players and Strategic Initiatives

Prominent companies shaping the future of North America's transmission infrastructure include:

Nexans

Siemens Energy

ABB

General Cable

Prysmian Group

LS Cable & System

KE International

Kalpataru Power Transmission Limited

East African Cables

Midal Cables Ltd.

These players are involved in EPC (engineering, procurement, construction), equipment manufacturing, and long-term service agreements. Their strategic initiatives range from AI-powered grid optimization to greenfield HVDC corridors.

Regional Outlook

United States

The U.S. remains the largest market, with states like California, Texas, and New York leading in smart transmission grid upgrades. The Biden administration’s infrastructure package allocates over USD 20 billion for electric transmission improvements alone.

Canada

Canada’s transmission investments are focused on interprovincial connectivity and grid decarbonization. Hydro-rich provinces like Quebec are exporting surplus electricity via major

HVDC projects, fostering regional cooperation.

Mexico

Mexico is ramping up transmission development to stabilize its grid and support industrial zones. The Prodesen 2022-2036 Plan outlines over USD 10 billion in transmission investments.

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Future Outlook and Strategic Recommendations

The future of the North America transmission infrastructure market is intrinsically linked to climate targets, economic development, and technological innovation. To remain competitive and reliable, stakeholders must:

Prioritize resilience-based planning and climate-proof designs.

Streamline permitting and stakeholder engagement processes.

Enhance grid interoperability across borders and jurisdictions.

Invest in workforce training and R&D for grid modernization.

With coordinated action and sustained investment, North America can build a next-generation transmission network capable of powering a clean, secure, and inclusive energy future.

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