

# E-fuels Market worth \$90.85 billion by 2030, growing at a CAGR of 21.31% - Exclusive Report by 360iResearch

The Global E-fuels Market to grow from USD 19.36 billion in 2022 to USD 90.85 billion by 2030, at a CAGR of 21.31%.

PUNE, MAHARASHTRA, INDIA , December 8, 2023 /EINPresswire.com/ -- The "<u>E-fuels Market</u> by Product Type (E-Diesel, E-Gasoline, E-Kerosene), State (Gas, Liquid), Source, Technology, End-Use - Global Forecast 2023-2030" report has been added to 360iResearch.com's offering.

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E-fuels, or electrofuels, are synthesized fuels produced via a process known as 'power to liquid,' using water, renewable electricity, and carbon dioxide (CO2) from the air. This eco-friendly alternative significantly diminishes the carbon footprint, contributing to sustainable transportation and energy systems. E-fuels primarily find their use in the progressive transportation sector, offering a clean and sustainable solution for automobiles, aviation, and marine transportation. Stringent emission standards and increasing demand for low-emission transport sector alternatives globally are driving the e-fuels market growth. However, the high production costs, lack of established supply chains, and competition with battery-based electric vehicles pose significant challenges to the adoption of e-fuels. Moroever, technological advancements in fuel efficiency and renewable energy integration into E-fuel production, emphasis on cost-effective and energy-efficient production, and robust storage and distribution infrastructure development present the future growth prospect for the e-fuels market.

Product Type: Expanding usage of hydrogen as a versatile e-fuel for power generation E-diese is a synthetic fuel derived from CO2 and water that delivers lower engine noise and virtually soot-free combustion. Notable for heavy-duty and commercial vehicle applications, Ediesel gained preference due to its compatibility with existing diesel infrastructure. E-gasoline, a synthetic gasoline, is virtually carbon-neutral as it uses recycled CO2 from the air and green energy. Produced through the process of power-to-liquid, e-gasoline is an advanced biofuel that has the potential to replace traditional fossil fuels. This synthetic fuel is used without adjustment in gasoline engines, making it a promising choice for the future of sustainable transportation. Ethanol is widely used as a fuel additive for cars. Being derived from a variety of plant materials, it is considered renewable and, therefore, less harmful to the environment. Renewable hydrogen presents a notable opportunity for clean energy. When used in fuel cells, it emits only water, making it desirable for applications in transportation and power generation. Systems to effectively store and distribute hydrogen are currently being developed and optimized. Ekerosene is rampantly used in the aviation industry as a cleaner alternative to regular aviation fuel. It has been designed to reduce carbon emissions, aiming at helping the aviation industry to meet its greenhouse gas targets. E-Methane offers the benefit of mitigating carbon emissions while utilizing existing natural gas infrastructure. This fuel is produced by using renewable energy to split water into hydrogen and oxygen and then combine that hydrogen with captured carbon dioxide to form methane. E-methanol, synthesized by reacting hydrogen with carbon dioxide, presents potent environmental benefits, such as a reduced carbon footprint. Currently, its most common application is as an alternative fuel, especially in the maritime industry.

End-use: Emerging application of e-fuels across the automotive industry to reduce carbon emissions

In the automotive industry, e-fuels carry the promise to revolutionize car fueling systems. Modern cars use e-fuels without requiring any modification, providing a seamless transition away from fossil fuels. They accommodate the current refueling infrastructure and are seen as a promising solution to reduce CO2 emissions without compromising the convenience of the existing petrol and diesel systems. In the marine sector, e-fuels represent an alternative to the predominantly used heavy fuel oil, which has high sulfur levels and emits significant greenhouse gases. E-fuels, such as methanol, could comply with stricter emission controls, which is crucial for the shipping industry to meet its emission reduction goals. E-fuels, particularly the hydrogen variant, play a critical role in the industrial sector. Hydrogen, an e-fuel, serves as an energyintensive substitute for natural gas and coal in various industrial processes, such as steel production and the manufacturing of ammonia and methanol. In the railway industry, e-fuels serve mainly as a substitute for diesel fuels. With railroads combating to reduce their carbon footprints, e-fuels, particularly hydrogen-based, are gaining momentum. The aviation sector emits significant CO2 emissions, the mitigation of which represents a global challenge. E-fuels are projected to be the solution for achieving the industry's targets to reduce CO2 emissions

State: Growing adoption of gas e-fuels gas across high-usage sectors as a cleaner alternative Gas e-fuels, primarily synthesized gases such as hydrogen, constitute a significant portion of the e-fuel market. With their wider utilization in high-usage sectors such as transportation and

power generation, these e-gases are at the forefront of emission-cutting strategies among various states. Some states verify a greater preference toward gas e-fuels due to their industrial usage and better energy-to-weight ratio compared to liquid e-fuels. Liquid e-fuels, such as synthetic gasoline and diesel, are chemically identical to their fossil-based counterparts and can be used as drop-in fuels in existing vehicles and infrastructure. In states with robust automobile industries and an extensive network of refueling stations, liquid e-fuels seem to be a more fitting alternative.

Technology: Growing usage of hydrogen technology which suits eco-conscious companies looking to minimize emissions

The Fischer-Tropsch technology serves as a critical pathway in transforming a combination of carbon monoxide and hydrogen into liquid hydrocarbons. This fits the need for industries desiring large-scale liquid fuel production. Hydrogen technology, primarily hydrogen fuel cells, presents itself as an energy-efficient and environmentally friendly solution that converts chemical energy from hydrogen fuel into electricity. This makes it a preferred choice for industries seeking CO2 emission reduction and energy efficiency. Reverse-water-gas-shift (RWGS) technology is a way to effectively convert carbon dioxide into carbon monoxide, which can be further processed into fuel. It is a catalyst for industries committed to negating carbon footprints.

Source: Rising preference for solar energy as it provides constant energy to manufacture E-fuels Solar energy, converted into electric or thermal energy, has proven its utility over the years for residential and commercial needs and also as a significant player in the e-fuels market. Its needbased preference stems from its renewability, sustainability, and substantial cost-effectiveness in the long run. Wind energy, the energy derived from the force of the wind, offers an incredibly low CO2 footprint and is a vital component of the e-fuels category. The need-based preference for wind energy in e-fuels stems from its scalability, reduced emission footprint, and the flexibility it offers in operations.

# **Regional Insights:**

In the Americas, there is a significant and accelerating growth rate in the e-fuels market, attributed to increased government investments and regulations promoting the use of ecofriendly fuels. The U.S. and Canada are presently at the forefront, spearheading technological advances and product developments in this sector. The EMEA region shows promising growth in the e-fuels market, with Europe contributing majorly to the adoption of e-fuels to meet their CO2 reduction targets. However, the Middle East and Africa represent untapped potential owing to minimal to moderate advancements in the e-fuels market. The fastest growth rate in the e-fuels market is expected within the APAC region. This is mainly attributed to increased environmental awareness and stringent government regulations regarding carbon emissions, especially in countries including Japan and China. Moreover, emerging economies such as India are anticipated to contribute significantly to the e-fuels market in the near future with the government's vision for renewable energy utilization.

# FPNV Positioning Matrix:

The FPNV Positioning Matrix is essential for assessing the E-fuels Market. It provides a comprehensive evaluation of vendors by examining key metrics within Business Strategy and Product Satisfaction, allowing users to make informed decisions based on their specific needs. This advanced analysis then organizes these vendors into four distinct quadrants, which represent varying levels of success: Forefront (F), Pathfinder (P), Niche (N), or Vital(V).

# Market Share Analysis:

The Market Share Analysis offers an insightful look at the current state of vendors in the E-fuels Market. By comparing vendor contributions to overall revenue, customer base, and other key metrics, we can give companies a greater understanding of their performance and what they are up against when competing for market share. The analysis also sheds light on just how competitive any given sector is about accumulation, fragmentation dominance, and amalgamation traits over the base year period studied.

# Key Company Profiles:

The report delves into recent significant developments in the E-fuels Market, highlighting leading vendors and their innovative profiles. These include Alternoil GmbH, Arcadia eFuels, atmosfair gGmbH, BP PLC, CAC ENGINEERING GMBH, Ceres Power Holdings PLC, E-Fuel Corporation, Enel Green Power S.p.A., ENGIE Group, ExxonMobil Corporation, HIF Global, Infinium, Linde PLC, MaireTecnimont S.p.A., Neste Corporation, Norsk e-Fuel AS, Repsol, S.A, RWE AG, Sasol Limited, Saudi Arabian Oil Company, Siemens AG, Sunfire GmbH, Synhelion SA, TotalEnergies SE, and Ørsted A/S.

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Market Segmentation & Coverage:

This research report categorizes the E-fuels Market in order to forecast the revenues and analyze trends in each of following sub-markets:

Based on Product Type, market is studied across E-Diesel, E-Gasoline, E-Kerosene, E-Methane, E-Methanol, Ethanol, and Hydrogen. The E-Methanol is projected to witness significant market share during forecast period.

Based on State, market is studied across Gas and Liquid. The Liquid is projected to witness significant market share during forecast period.

Based on Source, market is studied across Solar and Wind. The Solar is projected to witness

significant market share during forecast period.

Based on Technology, market is studied across Fischer-Tropsch, Hydrogen technology, and Reverse-Water-Gas-Shift (RWGS). The Reverse-Water-Gas-Shift (RWGS) is projected to witness significant market share during forecast period.

Based on End-Use, market is studied across Automotive, Aviation, Industrial, Marine, and Railway. The Automotive is projected to witness significant market share during forecast period.

Based on Region, market is studied across Americas, Asia-Pacific, and Europe, Middle East & Africa. The Americas is further studied across Argentina, Brazil, Canada, Mexico, and United States. The United States is further studied across California, Florida, Illinois, New York, Ohio, Pennsylvania, and Texas. The Asia-Pacific is further studied across Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. The Europe, Middle East & Africa is further studied across Denmark, Egypt, Finland, France, Germany, Israel, Italy, Netherlands, Nigeria, Norway, Poland, Qatar, Russia, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, and United Kingdom. The Europe, Middle East & Africa commanded largest market share of 37.84% in 2022, followed by Asia-Pacific.

Key Topics Covered:

- 1. Preface
- 2. Research Methodology
- 3. Executive Summary
- 4. Market Overview
- 5. Market Insights
- 6. E-fuels Market, by Product Type
- 7. E-fuels Market, by State
- 8. E-fuels Market, by Source
- 9. E-fuels Market, by Technology
- 10. E-fuels Market, by End-Use
- 11. Americas E-fuels Market
- 12. Asia-Pacific E-fuels Market
- 13. Europe, Middle East & Africa E-fuels Market
- 14. Competitive Landscape
- 15. Competitive Portfolio
- 16. Appendix

The report provides insights on the following pointers:

1. Market Penetration: Provides comprehensive information on the market offered by the key players

2. Market Development: Provides in-depth information about lucrative emerging markets and

analyzes penetration across mature segments of the markets

3. Market Diversification: Provides detailed information about new product launches, untapped geographies, recent developments, and investments

4. Competitive Assessment & Intelligence: Provides an exhaustive assessment of market shares, strategies, products, certification, regulatory approvals, patent landscape, and manufacturing capabilities of the leading players

5. Product Development & Innovation: Provides intelligent insights on future technologies, R&D activities, and breakthrough product developments

The report answers questions such as:

1. What is the market size and forecast of the E-fuels Market?

2. Which are the products/segments/applications/areas to invest in over the forecast period in the E-fuels Market?

3. What is the competitive strategic window for opportunities in the E-fuels Market?

- 4. What are the technology trends and regulatory frameworks in the E-fuels Market?
- 5. What is the market share of the leading vendors in the E-fuels Market?
- 6. What modes and strategic moves are considered suitable for entering the E-fuels Market?

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