

# Asia Pacific Petroleum Refining Hydrogen Generation Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 - 2032

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## Abstracts

Asia Pacific Petroleum Refining Hydrogen Generation Market, valued at USD 21.5 billion in 2023, is expected to grow at a CAGR of 6.9% from 2024 to 2032. This market involves the production of hydrogen, primarily used in petroleum refinery processes like hydrocracking and desulfurization. These processes help break down heavy hydrocarbons, remove sulfur compounds, and improve fuel quality. Hydrogen helps in enhancing the efficiency and environmental performance of modern refineries. The increasing regulatory pressure on refineries to reduce emissions and combat climate change is driving the adoption of hydrogen for cleaner fuel production.

Refineries are integrating sustainable practices, especially in hydrocracking and desulfurization, to meet higher environmental standards. This trend is adopted by investing in renewable energy sources for producing hydrogen, such as electrolysis using solar or wind power, to further reduce carbon footprint. In terms of delivery mode, the captive hydrogen generation segment is forecast to exceed USD 32 billion by 2032. On-site production helps refineries cut transportation and logistics costs, making it more efficient. Stricter regulatory standards for low-sulfur fuels and reduced greenhouse gas emissions are pushing refineries to adopt on-site hydrogen production to comply with both local and international environmental regulations.

Additionally, the increasing demand for clean energy in petrochemical processes is boosting the need for captive hydrogen production, enhancing refinery responsiveness while minimizing storage and handling issues related to external supply. Regarding production processes, the steam reformer segment is set to expand at a CAGR of over 6.5% through 2032. Steam reforming is particularly cost-effective when using natural gas as a feedstock, making it a widely adopted method in hydrogen generation for

refineries. Technological advancements in steam reforming, such as improved catalysts and process optimization, further enhance the efficiency and reliability of hydrogen production. China is expected to be a significant player in the Asia Pacific petroleum refining hydrogen generation market, with projections estimating its market to reach USD 15 billion by 2032. The country's growing crude oil processing capacity is fueling the demand for hydrogen, particularly for desulfurization processes required to meet stringent emission standards for gasoline and diesel production. Government initiatives promoting green fuel solutions for refinery operations further boost hydrogen adoption in China.

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