

# **Malaysia Diesel Genset Market By Capacity (0-100 kVA, 101-350 kVA, 351-1000 kVA, Above 1000 kVA), By Application (Standby Power, Prime Power, Peak Shaving, Cogeneration), By End-User (Residential, Commercial, Industrial, Government), By Fuel Type (Biodiesel, Hybrid), By Region, Competition, Forecast and Opportunities, 2019-2029F**

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## **Abstracts**

The Malaysia Diesel Genset Market was valued at USD 84.68 Million in 2023 and is expected to reach USD 117.88 Million by 2029 with a CAGR of 5.51% during the forecast period.

The Malaysia diesel genset market is experiencing significant growth, driven by a combination of infrastructural developments, industrial expansion, and frequent power outages. Diesel generators, or gensets, provide a reliable backup power solution essential for ensuring continuous operations across various sectors. In Malaysia, the demand for diesel gensets is particularly pronounced due to the country's ongoing efforts to upgrade its infrastructure, including the construction of new highways, buildings, and public facilities. These projects require dependable power sources to maintain construction timelines and ensure the safety and efficiency of operations, thereby driving the demand for diesel gensets.

Furthermore, Malaysia's robust industrial sector, encompassing manufacturing, oil and gas, and agriculture, is a major consumer of diesel gensets. These industries often operate in remote locations or areas where grid power is unreliable or unavailable. Diesel generators offer a crucial solution for these operations, providing the necessary power to keep machinery and equipment running smoothly. The agriculture sector, in

particular, benefits from diesel gensets for powering irrigation systems and processing facilities, ensuring that agricultural activities are not disrupted by power outages.

The commercial sector in Malaysia also significantly contributes to the diesel genset market's growth. Businesses such as shopping malls, hotels, hospitals, and office buildings require uninterrupted power to operate efficiently. Power outages can lead to substantial financial losses and disrupt customer service, making backup power solutions indispensable. Diesel gensets are favored in these settings for their ability to deliver a stable and reliable power supply, ensuring business continuity during grid failures.

In addition to these factors, the Malaysian government's focus on improving rural electrification presents a substantial opportunity for the diesel genset market. Many rural and remote areas in Malaysia still lack access to reliable electricity, and diesel gensets serve as a viable solution to bridge this gap. These generators provide a dependable source of power for households, schools, and small businesses in off-grid areas, contributing to the overall development and quality of life in these regions. Technological advancements in diesel gensets, such as enhanced fuel efficiency, reduced emissions, and integration with renewable energy sources, are further propelling the market. Modern diesel generators are designed to be more environmentally friendly and cost-effective, aligning with global trends towards sustainability. These advancements make diesel gensets an attractive option for both urban and rural applications in Malaysia.

## Key Market Drivers

### Infrastructure Development

The Malaysia diesel genset market is significantly driven by extensive infrastructure development across the country. Malaysia's ongoing projects in constructing highways, bridges, airports, and public buildings require reliable and uninterrupted power supply to meet tight construction schedules and maintain operational efficiency. Diesel generators serve as critical backup power sources in construction sites, ensuring that activities can continue without disruption due to power outages. The Malaysian government's focus on enhancing infrastructure to support economic growth further fuels the demand for diesel gensets. These generators are also crucial in the early stages of construction projects where permanent power infrastructure may not yet be established. As Malaysia continues to invest heavily in infrastructure development, the diesel genset market is set

to grow robustly, providing the necessary support to sustain these large-scale projects.

### Industrial Expansion

The expansion of Malaysia's industrial sector is another major driver of the diesel genset market. Industries such as manufacturing, oil and gas, mining, and agriculture often operate in areas where the electricity grid is either unreliable or non-existent. Diesel gensets provide a dependable power solution to support industrial machinery, production processes, and other operational needs. In the manufacturing sector, for example, continuous power is essential to maintain production lines and avoid costly downtimes. The oil and gas industry, particularly in offshore and remote onshore locations, relies on diesel generators to power drilling rigs, processing facilities, and worker accommodations. Similarly, the agricultural sector uses diesel gensets to power irrigation systems, cold storage facilities, and processing units, ensuring that agricultural productivity is not hampered by power issues. The growing industrial activities in Malaysia underscore the importance of diesel generators in ensuring operational efficiency and continuity.

### Commercial Sector Demand

The commercial sector in Malaysia, encompassing shopping malls, hotels, hospitals, and office buildings, significantly drives the demand for diesel gensets. These establishments require a reliable power supply to ensure smooth operations and deliver uninterrupted services to customers. Power outages can lead to substantial financial losses, disrupt business activities, and compromise customer satisfaction. For instance, hospitals need continuous power to operate life-saving equipment, while hotels require it to maintain guest comfort and services. Diesel generators provide an essential backup power solution, ensuring that commercial enterprises can continue functioning seamlessly during power disruptions. Additionally, the rapid growth of the e-commerce sector and data centers in Malaysia further boosts the demand for diesel gensets, as these facilities require continuous and reliable power to handle massive amounts of data and ensure operational uptime.

### Rural Electrification Efforts

Malaysia's efforts to enhance rural electrification present a significant driver for the diesel genset market. Many rural and remote areas in the country still lack access to reliable grid electricity. Diesel generators offer a viable solution to bridge this gap, providing a dependable power source for households, schools, health clinics, and small

businesses in these regions. The Malaysian government's initiatives to improve rural infrastructure and quality of life drive the demand for diesel gensets as they provide an immediate and practical solution to power challenges in off-grid areas. These generators are often used as standalone power sources or in combination with renewable energy systems to ensure a continuous power supply, contributing to the socio-economic development of rural communities. As rural electrification efforts intensify, the demand for diesel gensets in these areas is expected to rise.

## Key Market Challenges

### Environmental Regulations and Compliance

The Malaysia diesel genset market faces significant challenges due to stringent environmental regulations and compliance requirements. Diesel generators, although efficient, are known for emitting pollutants such as nitrogen oxides (NOx), particulate matter (PM), and carbon dioxide (CO<sub>2</sub>). These emissions contribute to air pollution and climate change, prompting the Malaysian government to enforce strict emission standards to mitigate environmental impact. The implementation of these regulations requires genset manufacturers and operators to invest in advanced technologies such as selective catalytic reduction (SCR) and diesel particulate filters (DPFs) to reduce emissions. Compliance with these standards increases the production and operational costs of diesel gensets, making them less competitive compared to other power generation solutions. Additionally, non-compliance with environmental regulations can result in hefty fines and legal penalties, further burdening companies operating in this market. As the government continues to tighten environmental standards, the diesel genset market must adapt by developing greener technologies and adopting cleaner fuels, which could be a substantial financial and technical challenge for many players in the industry.

### High Operational and Maintenance Costs

Another major challenge in the Malaysia diesel genset market is the high operational and maintenance costs associated with diesel generators. Diesel gensets require regular maintenance to ensure optimal performance and longevity, including oil changes, filter replacements, and engine inspections. These maintenance activities are not only time-consuming but also costly, as they require skilled technicians and high-quality replacement parts. Additionally, the fluctuating prices of diesel fuel can significantly impact the operational costs of gensets, making them an expensive power solution in the long run. The need for continuous fuel supply, especially in remote areas,

adds to the logistical and financial burden. High operational and maintenance costs can deter potential buyers, particularly small and medium-sized enterprises (SMEs) with limited budgets, from investing in diesel gensets. As a result, the market faces the challenge of providing cost-effective maintenance solutions and optimizing fuel efficiency to remain competitive and attractive to a broader customer base.

### Competition from Alternative Energy Sources

The increasing adoption of alternative energy sources poses a significant challenge to the Malaysia diesel genset market. Renewable energy solutions such as solar, wind, and biomass are gaining traction due to their sustainability and decreasing costs. Technological advancements and government incentives are making renewable energy more accessible and affordable, encouraging businesses and households to shift towards cleaner power solutions. The growing popularity of hybrid systems, which combine renewable energy with battery storage, offers a reliable and sustainable alternative to diesel gensets. These systems provide continuous power supply without the environmental impact associated with diesel generators. As a result, the diesel genset market faces stiff competition from these emerging technologies. To stay relevant, diesel genset manufacturers must innovate and integrate renewable energy solutions into their product offerings, which requires substantial investment in research and development. Overcoming this challenge involves finding a balance between traditional diesel technology and new, sustainable energy solutions to meet the evolving needs of the market.

### Infrastructure and Logistical Challenges

Infrastructure and logistical challenges present another significant hurdle for the Malaysia diesel genset market. The distribution and installation of diesel generators, particularly in remote and rural areas, require robust infrastructure and efficient logistics. Malaysia's diverse geography, which includes urban centers, rural communities, and remote islands, complicates the delivery and maintenance of diesel gensets. Poor road conditions, limited access to some areas, and inadequate transportation networks can delay the deployment and servicing of generators, impacting their reliability and performance. Additionally, the storage and handling of diesel fuel pose logistical challenges, including the need for secure storage facilities and consistent supply chains to avoid fuel shortages. Addressing these infrastructure and logistical issues requires substantial investment in transportation and distribution networks, as well as strategic planning to ensure timely and efficient delivery of products and services. Companies in the diesel genset market must develop robust supply chain strategies and partnerships

to overcome these challenges and maintain a competitive edge.

## Key Market Trends

### Increasing Demand from the Construction Sector

The construction sector in Malaysia is a significant driver for the diesel genset market. With numerous infrastructure projects underway, including highways, railways, residential buildings, and commercial complexes, the need for reliable power sources during construction activities has escalated. Diesel gensets are preferred in the construction industry due to their robustness, portability, and ability to provide consistent power in areas where grid access might be limited or unstable. These generators ensure that construction work proceeds without interruptions, which is crucial for meeting project deadlines and maintaining operational efficiency. Additionally, the Malaysian government's focus on developing smart cities and upgrading existing infrastructure is further boosting the demand for diesel gensets. Construction sites often require mobile power solutions that can be easily transported and installed, making diesel gensets an ideal choice. As urbanization and industrialization continue to progress, the construction sector's reliance on diesel gensets is expected to grow, driving market expansion.

### Expansion of the Industrial Sector

Malaysia's industrial sector, encompassing manufacturing, mining, and oil and gas, is another key contributor to the diesel genset market. These industries frequently operate in remote locations or areas with unreliable power supply, necessitating a dependable backup power solution. Diesel gensets provide the necessary power to keep machinery and production lines running smoothly, preventing costly downtime and ensuring continuous operations. In the oil and gas industry, particularly in offshore and remote onshore sites, diesel generators are crucial for powering drilling rigs, camps, and processing facilities. The manufacturing sector, which includes electronics, automotive, and food processing, also relies on diesel gensets to maintain production during power outages. As Malaysia continues to position itself as a manufacturing hub in Southeast Asia, the demand for reliable power solutions like diesel gensets is anticipated to increase. The industrial sector's expansion, driven by both domestic and foreign investments, will play a significant role in propelling the diesel genset market forward.

### Technological Advancements and Efficiency Improvements



Technological advancements in diesel genset design and performance are shaping the market landscape in Malaysia. Modern diesel generators are becoming more fuel-efficient, producing fewer emissions and operating more quietly compared to older models. These improvements align with global trends towards sustainability and environmental responsibility, making diesel gensets more attractive to businesses and industries seeking to reduce their carbon footprint. Enhanced fuel efficiency translates to lower operational costs, which is a critical factor for companies looking to optimize their energy expenditures. Additionally, the integration of smart technologies and remote monitoring systems allows for better maintenance and management of gensets, ensuring they operate at peak efficiency. The adoption of hybrid gensets, which combine diesel engines with renewable energy sources such as solar or wind power, is also on the rise. These hybrid systems offer the dual benefits of reliability and sustainability, further driving their popularity in the Malaysian market. As technological advancements continue to evolve, they will play a crucial role in the growth and adoption of diesel gensets.

### Growing Commercial Sector and Urbanization

The commercial sector in Malaysia, including retail, hospitality, healthcare, and office buildings, is a significant market for diesel gensets. The ongoing urbanization and the development of new commercial hubs in cities like Kuala Lumpur, Penang, and Johor Bahru have led to increased demand for reliable backup power solutions. Commercial establishments require uninterrupted power to ensure smooth operations, customer satisfaction, and the safety of sensitive equipment. Hospitals, for instance, rely on diesel gensets to power critical medical equipment during power outages, while hotels and retail stores need backup power to maintain services and avoid revenue losses. The rise in mixed-use developments and smart city projects across Malaysia is also contributing to the demand for diesel gensets. These projects often include integrated commercial spaces that require robust power solutions. As urbanization continues to drive the expansion of the commercial sector, the need for reliable and efficient diesel gensets is expected to grow, supporting market growth.

### Segmental Insights

#### Capacity Insights

351-1000 kVA segment dominates in the Malaysia Diesel Genset market in 2023 due to its optimal balance of power output and versatility, making it suitable for a wide range of applications across various sectors. This power range is particularly favored by

industries and commercial establishments that require a reliable backup power solution capable of handling substantial loads while maintaining operational efficiency.

One of the primary drivers for the dominance of this segment is the robust industrial growth in Malaysia. The manufacturing sector, which includes electronics, automotive, and food processing industries, often requires substantial power backup solutions to ensure uninterrupted production processes. Diesel gensets in the 351-1000 kVA range are ideal for these applications, as they can provide the necessary power to keep machinery and equipment running smoothly during power outages. The ability to support large-scale operations without compromising on reliability makes this segment highly attractive to industrial users. The commercial sector also significantly contributes to the demand for 351-1000 kVA diesel gensets. Hospitals, shopping malls, hotels, and office buildings require dependable power sources to maintain their services and operations during grid failures. For instance, hospitals need to power critical medical equipment and ensure patient safety, while shopping malls and hotels must keep their lighting, heating, ventilation, and air conditioning systems operational to provide a comfortable environment for their patrons. The versatility and reliability of gensets in this power range make them a preferred choice for such commercial applications.

Moreover, the construction sector's ongoing projects in Malaysia, including infrastructure development and building construction, heavily rely on portable and robust power solutions. Diesel gensets in the 351-1000 kVA range offer the flexibility and power needed to support construction activities, from running heavy machinery to providing temporary site power. Additionally, the growing trend towards urbanization and the development of smart cities in Malaysia further boosts the demand for this segment. Urban areas require reliable and efficient power solutions to support their infrastructure and public services, making the 351-1000 kVA diesel gensets a suitable choice for these applications.

## Regional Insights

West Malaysia dominates the Malaysia Diesel Genset market in 2023 due to several key factors related to its economic activities, infrastructure development, and population density. This region is the economic powerhouse of the country, hosting the majority of Malaysia's industrial, commercial, and governmental activities, which collectively drive the high demand for diesel gensets.

West Malaysia is home to Kuala Lumpur, the capital city, and the country's primary business hub. The concentration of corporate offices, financial institutions, and



commercial establishments in Kuala Lumpur and its surrounding areas necessitates a reliable backup power supply to ensure uninterrupted operations. Diesel gensets are widely used in these commercial settings to maintain business continuity during power outages, thus contributing to the high market demand in this region.

The industrial sector in West Malaysia is highly developed, with significant manufacturing activities centered in states such as Selangor, Johor, and Penang. These states host numerous industrial parks and manufacturing facilities that produce electronics, automotive parts, consumer goods, and more. The manufacturing processes in these industries require a consistent and reliable power supply to avoid costly downtimes and maintain production efficiency. Diesel gensets in the 351-1000 kVA range are particularly popular in this sector due to their capacity to handle substantial power loads.

West Malaysia is experiencing rapid urbanization and infrastructure development. The ongoing construction projects, including residential complexes, commercial buildings, transportation networks, and smart city initiatives, rely heavily on diesel gensets for temporary and emergency power needs. Construction sites require portable and robust power solutions to operate machinery and tools, and diesel gensets are the preferred choice due to their reliability and ease of deployment.

The higher population density in West Malaysia compared to East Malaysia leads to a greater demand for residential backup power solutions. Households in urban and suburban areas often invest in diesel gensets to ensure continuous power supply during blackouts, enhancing their comfort and safety. The presence of key ports and logistics hubs in West Malaysia, such as Port Klang and Tanjung Pelepas, also drives the demand for diesel gensets. These facilities require uninterrupted power to manage cargo operations, maintain refrigeration units, and ensure overall operational efficiency.

### Key Market Players

Caterpillar Inc.

Cummins Inc.

Rolls-Royce plc

Generac Holdings Inc.

Kohler Co.

Mitsubishi Heavy Industries, Ltd.

Perkins Engines Company Limited

Yanmar Holdings Co., Ltd.

Kirloskar Oil Engines Limited

W?rtsil? Corporation

Doosan Corporation

Deere & Company

#### Report Scope:

In this report, the Malaysia Diesel Genset Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

#### Malaysia Diesel Genset Market, By Capacity:

0-100 kVA

101-350 kVA

351-1000 kVA

Above 1000 kVA

#### Malaysia Diesel Genset Market, By Application:

Standby Power

Prime Power

Peak Shaving

Cogeneration

Malaysia Diesel Genset Market, By End-User:

Residential

Commercial

Industrial

Government

Malaysia Diesel Genset Market, By Fuel Type:

Biodiesel

Hybrid

Malaysia Diesel Genset Market, By Region:

West Malaysia

East Malaysia

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Malaysia Diesel Genset Market.

Available Customizations:

Malaysia Diesel Genset Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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