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Electric & Hybrid Vehicle Driveline Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Architecture (Series, Parallel, Power Split), By Transmission (Automatic Transmission (AT), Dual Clutch Transmission (DCT), Electronic Continuously Variable Transmission (E-CVT)), By Motor Output (45-100 kW, 101-250 kW, and250kW), By Vehicle Type (Hybrid Vehicles, Plug-In Electric Hybrid, Battery Electric Vehicle), By Region, Competition, 2018-2028

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Abstracts

Global Electric & Hybrid Vehicle Driveline Market has valued at USD 32 billion in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 8.6%. The Global Electric & Hybrid Vehicle Driveline Market is currently experiencing remarkable growth, driven by an increasing emphasis on reducing carbon emissions and the surging adoption of electric vehicles worldwide. This vibrant market comprises a wide range of key players engaged in the manufacturing of essential components, including electric motors, converters, and power electronics, which are indispensable for the efficient operation of electric and hybrid vehicles. Moreover, stringent government regulations pertaining to fuel efficiency and carbon emissions are playing a pivotal role in driving the expansion of this market.

Within this thriving market, the Asia-Pacific region has emerged as a dominant force, particularly due to the high production and sales of electric vehicles in countries like China and Japan. The region's strong commitment to sustainable mobility and the

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widespread availability of charging infrastructure have contributed to its rapid growth in the electric and hybrid vehicle sector. However, it is worth noting that the market growth also faces a significant challenge in the form of high costs associated with driveline components. Manufacturers and industry stakeholders are actively exploring innovative approaches to overcome this obstacle and create more cost-effective solutions, thereby driving further growth and sustainability in the electric and hybrid vehicle sector. By leveraging advanced technologies and optimizing production processes, the industry aims to make electric and hybrid vehicles more accessible to a wider consumer base and accelerate the global transition towards cleaner transportation.

As the demand for electric and hybrid vehicles continues to rise, the Global Electric & Hybrid Vehicle Driveline Market is poised for continued expansion. With ongoing advancements in battery technology, improved charging infrastructure, and increased consumer awareness, the market is expected to witness even more significant growth in the coming years. This positive trajectory not only presents lucrative opportunities for industry players but also contributes to the collective goal of achieving a greener and more sustainable future.

Key Market Drivers

Stringent Environmental Regulations

One of the primary drivers behind the surge in electric and hybrid vehicles (EVs and HEVs) is the implementation of stringent environmental regulations worldwide. Governments and regulatory bodies are setting ambitious targets to reduce carbon emissions and combat climate change. To meet these regulations, automakers are investing heavily in electric and hybrid driveline technologies, which produce fewer greenhouse gas emissions compared to traditional internal combustion engines. These regulations incentivize the development and adoption of electrified drivelines.

Sustainability and Emission Reduction

The global emphasis on sustainability and the reduction of greenhouse gas emissions is a driving force behind the shift to electric and hybrid vehicles. Consumers are increasingly conscious of their environmental footprint and are seeking eco-friendly transportation options. Electrified drivelines align with sustainability goals by offering vehicles that produce lower or zero tailpipe emissions, making them an attractive choice for environmentally conscious consumers.

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Fuel Efficiency and Energy Conservation

Fuel efficiency remains a paramount concern for both consumers and automakers. Electric and hybrid drivelines are inherently more energy-efficient than traditional internal combustion engines. Electric vehicles, in particular, can convert a higher percentage of energy from the grid into vehicle propulsion, leading to greater fuel efficiency and reduced energy consumption. This efficiency is a significant driver for the adoption of electric and hybrid driveline technologies.

Advancements in Battery Technology

The development of advanced battery technologies is a key driver for electric and hybrid vehicles' market penetration. Improvements in battery energy density, charging infrastructure, and affordability have contributed to the extended driving range and increased acceptance of electric vehicles. These advancements are essential for reducing range anxiety and making EVs more accessible to a broader range of consumers.

Government Incentives and Subsidies

Many governments worldwide offer incentives and subsidies to promote the adoption of electric and hybrid vehicles. These incentives may include tax credits, rebates, reduced registration fees, and access to high-occupancy vehicle (HOV) lanes. Such measures help lower the overall cost of ownership and encourage consumers to choose electric and hybrid drivelines.

Advancements in Electric Motor Technology

Electric motors are at the heart of electric and hybrid drivelines. Ongoing advancements in electric motor technology have led to motors that are smaller, more powerful, and more energy-efficient. These innovations contribute to improved vehicle performance, increased power output, and extended electric-only driving ranges, making electric and hybrid vehicles more appealing to consumers.

Consumer Demand for Advanced Features

Consumer preferences are shifting toward vehicles equipped with advanced features and technologies. Electric and hybrid vehicles offer a range of technological

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advancements, including regenerative braking, instant torque, and connectivity features. These features enhance the driving experience and attract tech-savvy consumers who seek the latest innovations in their vehicles.

Lower Operating Costs

Electric and hybrid vehicles typically have lower operating costs compared to traditional gasoline or diesel vehicles. Reduced fuel costs, fewer maintenance requirements, and longer-lasting components contribute to these cost savings. As consumers become more cost-conscious, the potential for lower lifetime operating expenses becomes a compelling driver for the adoption of electrified drivelines.

Corporate Sustainability Goals

Automakers are increasingly integrating sustainability into their corporate strategies. Many manufacturers have set ambitious sustainability goals, including electrifying their vehicle lineups and achieving carbon neutrality. These corporate sustainability initiatives drive investments in electric and hybrid driveline technologies to align with long-term environmental objectives.

Technological Innovation and Competition

Intense competition among automakers has led to continuous technological innovation in electric and hybrid drivelines. Companies are striving to develop proprietary technologies that give them a competitive edge in the market. This competitive landscape results in a constant stream of advancements, benefiting consumers with more efficient and feature-rich electric and hybrid vehicles.

Urbanization and Urban Mobility Challenges

Rapid urbanization and the associated challenges of congestion, pollution, and limited parking space have led to a growing interest in electric and hybrid vehicles. These vehicles offer quieter operation, reduced emissions in urban areas, and compact designs that are well-suited for city driving. As cities implement measures to combat urban challenges, electric and hybrid drivelines become increasingly attractive solutions.

Resilience to Oil Price Fluctuations

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Electric and hybrid vehicles are less susceptible to fluctuations in oil prices, providing consumers with stability in fuel costs. This resilience is particularly appealing when oil prices are volatile or on the rise. Consumers recognize that electrified drivelines offer a degree of insulation from fuel price fluctuations, making them an attractive long-term investment.

Key Market Challenges

High Manufacturing Costs

The production of drivelines for electric and hybrid vehicles involves high costs, primarily due to the utilization of advanced technologies such as regenerative braking systems and high-performance electric motors. Additionally, the integration of expensive materials like lithium-ion batteries and lightweight alloys further contributes to the overall expenses in manufacturing these drivelines.

Limited Driving Range and Battery Life

Despite significant advancements, electric and hybrid vehicles typically offer a limited driving range compared to traditional vehicles. This is due to the current limitations of battery technology, which affects the distance they can travel on a single charge. Additionally, the concern over battery life and potential charging infrastructure can create uncertainty among potential customers, as they consider the practicality and convenience of owning an electric or hybrid vehicle. However, it is important to note that ongoing research and development in battery technology is constantly improving the range and performance of these vehicles, making them a more viable and sustainable option for the future.

Infrastructure Constraints

The infrastructure for charging electric and hybrid vehicles remains underdeveloped in many regions, posing a significant challenge for potential customers. The lack of sufficient charging stations not only hinders convenience but also impacts the overall market growth of drivelines for these vehicles. As the demand for sustainable transportation continues to rise, the need for an expanded and reliable charging network becomes even more crucial to support the widespread adoption of electric and hybrid vehicles. Efforts to address this issue and invest in the development of charging infrastructure are essential to drive the future of clean and efficient transportation.

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Performance in Extreme Weather Conditions

Electric and hybrid vehicles, with their advanced drivelines, may experience a decline in performance during extreme weather conditions such as extreme cold or heat. This can potentially discourage potential customers residing in regions prone to severe weather events from making the switch to these types of vehicles, despite their numerous benefits.

Consumer Awareness and Perception

A significant and substantial portion of the global population, unfortunately, remains largely unaware of the numerous benefits that electric and hybrid vehicles have to offer. Furthermore, it is important to note that the perception towards these innovative vehicles is not always positive, with certain misconceptions prevailing. However, it is crucial to raise awareness and educate individuals about the advantages and positive impact these vehicles can have on the environment and our daily lives. By doing so, we can foster a more sustainable future and encourage a shift towards greener transportation alternatives.

Resource Scarcity

Critical components of drivelines for electric and hybrid vehicles, such as lithium for batteries, face potential scarcity issues due to the growing demand and limited availability of this valuable resource. This scarcity can result in increased costs and production complications, as manufacturers strive to secure a stable supply chain and explore alternative materials for sustainable and cost-effective solutions. The need for proactive measures and strategic partnerships in the industry becomes evident as we navigate the challenges of meeting the rising demand for these eco-friendly vehicles.

Regulatory Challenges

Auto manufacturers are required to comply with rigorous regulations governing the production of electric and hybrid vehicles. While these regulations can sometimes impede market growth and innovation, they also play a crucial role in ensuring safety, environmental sustainability, and consumer confidence in the burgeoning field of electric and hybrid transportation. By adhering to these stringent standards, manufacturers are not only contributing to a cleaner and more sustainable future but also driving advancements in technology and pushing the boundaries of automotive engineering.

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Competing Technologies

The rapid advancement of hydrogen fuel cell technology and the continuous improvement in internal combustion engines' efficiency pose a significant threat to the widespread adoption of electric and hybrid vehicles. As hydrogen fuel cell technology becomes more efficient and cost-effective, it offers a promising alternative to electric vehicles by addressing some of the limitations, such as longer refueling times and limited infrastructure. Similarly, ongoing advancements in internal combustion engines, including hybridization and electrification, contribute to their increased fuel efficiency and reduced emissions, narrowing the gap between traditional and alternative powertrains. Therefore, the automotive industry faces a complex landscape of competing technologies, each with its own set of advantages and challenges, as it strives for sustainable mobility solutions.

Technological Issues

Technical issues, such as battery leaks or electric system failures, can pose significant challenges to the for electric and hybrid vehicles driveline market globally. These challenges can result in decreased vehicle performance, increased maintenance costs, and potential safety concerns for both drivers and passengers. It is crucial for manufacturers and industry professionals to address these issues proactively and develop robust solutions to ensure the continued growth and success of the electric and hybrid vehicle market.

Key Market Trends

Rise of Electrification

Driven by increasingly stringent emission norms, growing consumer awareness about the importance of environmental conservation, and the implementation of supportive government policies, there is a remarkable global shift towards the electrification of vehicles. This transformative trend is directly contributing to the rapid growth of the global electric and hybrid vehicles driveline market, as it plays a vital role as an essential component within the powertrain systems of these eco-friendly vehicles. With the electrification revolution gaining momentum, the driveline market is poised to witness even further advancements and innovations in the coming years.

Advancements in Driveline Technologies

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Technological innovation is a prominent and ever-evolving market trend that continues to shape the automotive industry. Manufacturers are constantly investing in research and development to create advanced driveline systems that not only enhance performance, efficiency, and safety but also cater to the evolving needs of consumers. These innovations encompass a wide range of solutions, including integrated electric axles (e-axles) that seamlessly combine electric motors and traditional drivetrain components, as well as highly efficient power transfer units that optimize power distribution for optimal performance and fuel economy. By pushing the boundaries of technology, manufacturers are driving the industry forward, offering drivers a more sustainable, efficient, and enjoyable driving experience.

Increasing Demand for All-Wheel Drive (AWD) Systems

All-wheel drive (AWD) systems, known for their ability to deliver superior control and traction in adverse weather conditions and rough terrains, are gaining immense popularity among drivers. This surge in demand for AWD systems has consequently led to a significant growth in the driveline market. As these advanced systems necessitate specialized driveline components, manufacturers and suppliers are focusing on developing and innovating driveline technologies to meet the evolving needs of the automotive industry. This trend not only demonstrates the increasing importance of AWD systems for enhanced vehicle performance and safety but also highlights the opportunities and challenges present in the expanding driveline market.

Growth of Shared Mobility and Ride-hailing Services

The rapid expansion of shared mobility platforms like Uber and Lyft, along with the subsequent increase in vehicle usage rates, has led to a significant rise in wear and tear of various vehicle components, including drivelines. This growing trend has resulted in an increased demand for frequent driveline replacements, which, in turn, is fueling the market growth for driveline replacement services and products. As more and more people rely on these shared mobility options, the need for efficient and reliable drivelines becomes crucial to ensure a smooth and uninterrupted transportation experience. This presents a significant opportunity for companies operating in the driveline industry to cater to the unique needs and challenges posed by the shared mobility ecosystem.

Shift towards Lightweight Driveline Components

In an ongoing effort to enhance fuel efficiency and optimize vehicle performance,

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manufacturers are placing a strong emphasis on the utilization of lightweight driveline components. This growing trend has spurred the development and widespread adoption of innovative lightweight materials, including aluminum and carbon fiber, in the manufacturing process of driveline systems. By employing these advanced materials, manufacturers are able to achieve remarkable weight reduction without compromising on strength or durability, resulting in improved overall efficiency and performance of vehicles.

Increasing Adoption of EVs in Commercial Fleets

As businesses strive for greater sustainability, they are increasingly recognizing the advantages of electric vehicles (EVs) for their fleets. With lower total cost of ownership and significant environmental benefits, EVs are becoming the preferred choice. This growing trend has sparked a surge in demand for drivelines that are compatible with electric and hybrid commercial vehicles. By embracing these innovative driveline technologies, businesses can not only reduce their carbon footprint but also contribute to a greener and more sustainable future.

Demand Surge in Emerging Markets

Emerging markets like China and India are experiencing a significant shift towards urbanization, with more people moving to cities for better opportunities. Alongside this, there has been a notable increase in disposable incomes, allowing individuals to have more purchasing power. Moreover, there is a growing awareness of the importance of environmental sustainability, leading to a rise in demand for electric and hybrid vehicles. As a result, the need for advanced driveline technologies in these markets has become even more pronounced. The combination of these factors has created a unique and exciting landscape for the automotive industry to thrive and innovate.

Segmental Insights

Architecture Insights

The global Electric & Hybrid Vehicle Driveline Market showcases an impressive architectural structure, influenced strongly by the rapid adoption of eco-friendly transportation solutions. The market structure is underpinned by a network of key players, including original equipment manufacturers (OEMs), driveline system designers, and technology providers. This synergy allows for continuous innovations, ensuring that the market remains at the forefront of the electric and hybrid vehicle

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industry. Furthermore, the market's architecture highlights a strong emphasis on the integration of software systems for driveline control, thus facilitating optimal vehicle performance and improved energy efficiency.

Vehicle Type Insights

The global Electric & Hybrid Vehicle Driveline Market demonstrates significant diversity in vehicle type. The market includes a wide range of vehicles - from passenger cars to commercial vehicles. Passenger cars currently dominate the market due to the increasing demand for personal electric vehicles and government incentives promoting the adoption of greener transportation methods. Hybrid electric vehicles (HEVs) are expected to witness steady growth, owing to their improved fuel efficiency and lower emissions compared to conventional vehicles. Meanwhile, the market for plug-in hybrid electric vehicles (PHEVs) also shows promising potential, driven by advancements in charging infrastructure and increasing consumer awareness about environmental sustainability.

Regional Insights

The Electric & Hybrid Vehicle Driveline Market demonstrates significant growth potential across various regions globally. In North America, government regulations promoting electric vehicles (EVs) and hybrid vehicles (HVs) have spurred market growth, with the United States leading in terms of market share. Europe presents a robust market scenario, with countries like Germany and France at the forefront due to stringent emission norms and substantial investments in EV infrastructure. The Asia-Pacific region, particularly China, is expected to witness exponential growth, attributed to the government's aggressive EV adoption targets and burgeoning manufacturing capabilities. Conversely, emerging economies in Africa and South America, while still in the nascent stages, are showing promising potential due to increasing environmental awareness and governmental initiatives for clean energy vehicles.

Key Market Players

Robert Bosch GmbH

Delphi Technologies

DENSO Corporation

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Continental AG

Borg Warner Inc.

ZF Friedrichshafen AG

Valeo SA

Schaeffler AG

Report Scope:

In this report, the Global Electric & Hybrid Vehicle Driveline Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Electric & Hybrid Vehicle Driveline Market, By Architecture:

Series

Parallel

Power split

Electric & Hybrid Vehicle Driveline Market, By Vehicle Type:

Hybrid Vehicles

Plug-In Electric Hybrid

Battery Electric Vehicle

Electric & Hybrid Vehicle Driveline Market, By Transmission:

Automatic Transmission (AT)

Dual Clutch Transmission (DCT)

Electronic Continuously Variable Transmission (E-CVT)

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Electric & Hybrid Vehicle Driveline Market, By Motor Output:

- 45-100 kW
- 101-250 kW
- 250kW

Electric & Hybrid Vehicle Driveline Market, By Region:

- North America
  - United States
  - Canada
  - Mexico
- Europe & CIS
  - Germany
  - Spain
  - France
  - Russia
  - Italy
  - United Kingdom
  - Belgium
- Asia-Pacific
  - China

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India

Japan

Indonesia

Thailand

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

Turkey

Iran

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Electric & Hybrid Vehicle Driveline Market.

Available Customizations:

Global Electric & Hybrid Vehicle Driveline Market report with the given market data,

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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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