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India Electrical Steel Market By Type (Grain Oriented Electrical Steel, Non-Grain Oriented Electrical Steel), By Application (Transformers, Motors & Generators, and Inductors), By Vertical (Automotive, Construction, Manufacturing, Energy & Power, and Others), and By Region, Competition, Forecast and Opportunities, 2029F By Type (Bladder, Piston, Diaphragm, and Spring), By Application (Blow Out Preventers (BOP), Mud Pumps, Offshore Rigs, and Others), By Deployment (Onshore, Offshore), By Region and Competition

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Abstracts

India electrical steel market is predicted to proliferate during the forecast period owing to various driving factors such as growing demand for electrical steel from various industries and high consumption of electrical steel in motors and transformers across the country.

Electrical steel is also called silicon electrical steel, silicon steel, relay steel, and transformer steel. Electrical steel is a specialty steel that is used in the cores of electromagnetic equipment including motors, generators, and transformers that helps in minimizing power loss. It is an iron alloy with silicon as the primary adding component in place of carbon. Specific magnetic qualities are produced by the precise formulation, including a tiny hysteresis area that results in low power loss per cycle, a low core loss, and high permeability. Cold-rolled strips, less than 2 mm thick, are typically used to produce electrical steel. The laminated cores of transformers, as well as the stator and

rotor of electric motors, are made by cutting these strips into certain shapes and then stacking them together. Laminations can be finished-shaped by being cut using a punch and die, or, in lesser numbers, by laser cutting or wire electrical discharge machining.

The rising demand for electric motors from residential, commercial, and industrial sectors is the major driver that is propelling the market of electrical steel across the country. Electrical steel is widely used to create power generators with enhanced electromagnetic properties and minimal carbon dioxide emissions, as well as motors with increased magnetic flux and torque. Additionally, the increased use of hybrid and electric vehicles (H/EVs) is boosting market expansion. The usage of electric steel declined the weight of vehicle parts while improving their appearance and safety. Accordingly, the market is expanding as a result of the rising demand for electrical steel for low-energy loss power transmission over long distances and infrastructure development projects. The development of several products, such as non-grain-oriented electrical steel with uniform magnetic properties, is another factor that drives the market growth.

Increasing Demand for Electrical Steel from the Automotive Industry

The rising demand for electrical steel in the automotive industry results in the improvement of vehicle performance. Additionally, the reduction in vehicle weight is attributed to the rapidly expanding automotive industry and the growing popularity of hybrid cars. The market of electrical steel is boosted due to supportive government regulations that encourage environmental conservation through vehicles across the nation.

Additionally, various market players have invested in the automobile industry which is directly increasing the demand for electrical steel across the country. For instance,

> In January 2023, MG Motor India invested USD 100 million to expand capacity across the nation.
>
> In December 2022, Mahindra & Mahindra invested USD 1.2 billion in an EV manufacturing plant in Pune.
>
> As of November 2022, Maruti Suzuki India had spent around USD 865.12 million on several projects, including building a new plant in Haryana and launching new models.

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> In April 2022, Tata Motors invested USD 3.08 billion in its passenger vehicle business over the next five years.

Thus, investment in the automotive industry by the major market players of the automotive industry is directly impacting the market of electrical steel. Therefore, the market for electrical steel is expected to boost in the coming years.

Electric steel plays a vital role in the automotive industry where electric motors are made up of electrical steel & used to improve fuel economy. These systems convert electrical energy into mechanical energy by energizing copper windings in a stator, which creates a magnetic field then causes the rotor to spin. Therefore, with the growing applications of electrical steel in the automotive industry, the market is likely to proliferate in the coming years. Additionally, as the electric vehicle market grows, the demand for EV materials such as electrical steel is growing in lockstep. Motors are essential for the effectiveness and overall performance of EVs because they determine a vehicle's horsepower. As a result, automakers aiming for the largest portion of the growing EV market are searching for superior electrical steels. Several manufacturers of electric vehicles are focusing on improving their capacity to produce electrical steel for EVs. For instance, on February 21, 2023, Thyssenkrupp, the German engineering company with interests in high-grade electrical steel manufacturing in India, explore possibilities for expanding its production capacity. Currently, the company has an annual capacity to produce electrical steel of 50, 000 tonnes and plans to increase capacity to 65,000 tonnes through technological interventions, enough to produce 1.2 million motors for EVs. Hence, due to all these factors, the demand for electrical steel is expected to rise along with the expansion of the automotive industry during the forecast period.

Growth in the deployment of Renewable Energy

Electrical steel is used in onshore and offshore wind turbines. Almost every component of a wind turbine is made of steel, from the foundation to the tower, gears, and casings. Electrical steel provides the strength for taller and more efficient wind turbines. That is why the Indian government is focusing on sustainable development and trying to increase the share of renewable energy in total energy consumption and generation across the nation. Presently, in the renewable energy sector, the union government and major MNCs are planning to massive investments to meet climate action goals. For instance,

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In February 2023, the Indian government invested around USD 4.3 billion, in clean energy. Through this investment, the government aimed to develop solar projects in the Himalayas region of Ladakh.

In June 2021, the Prime Minister of India stated that renewable energy capacity in India increased by 250% between 2014 and 2021.

India launched the Mission Innovation CleanTech Exchange, a global initiative that is going to accelerate clean energy innovation.

The world's largest renewable energy park of 30 GW capacity solar-wind hybrid project is under installation in Gujarat.

India offered a great opportunity for investments in the renewables energy sector worth USD 196.98 billion in projects underway in India.

Therefore, the increasing investment in the renewable energy sector is for decreasing dependence on coal for energy generation. This is resulting in increased deployment of renewable energy and correspondingly increasing the demand for electrical steel.

Challenges:

Silicon is a fundamental alloying material used in the production of electrical steel. In India, 50% demand of silicon is fulfilled by imports from countries like China, Malaysia, United States, and others. Silicon prices increase owing to an increase in the manufacturing cost due to surge in the price of raw materials such as silica, carbon electrodes, and coal. Moreover, sometimes there is a disturbance in carbon supplies, which affects silicon production.

Market Segmentation

The India electrical steel market is segmented based on type, application, and vertical. Based on type, the market is further segmented into grain-oriented electrical steel and non-grain-oriented electrical steel. Based on application, the market is further segmented into transformers, motors & generators, and inductors. Based on vertical, the market is divided into automotive, construction, manufacturing, energy & power, and others. The market analysis also studies the regional segmentation to devise regional market segmentation, divided among North India, South India, West India, and East

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India.

Company Profiles

Aperam Alloys India Private Limited (AAIPL), ArcelorMittal India Private Ltd, TATA Steel Limited, POSCO Electrical Steel India Private Limited, Steel Authority of India Limited, Nippon Steel Engineering India Pvt. Ltd, Voestalpine High Performance Metals India Pvt. Ltd., Thyssenkrupp Electrical Steel India Private Limited, and JSM Steel India Private Limited are the major players that are driving the growth of the India electrical steel market.

Report Scope:

In this report, the India electrical steel market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

India Electrical Steel Market, By Type:

Grain Oriented Electrical Steel

Non-Grain Oriented Electrical Steel

India Electrical Steel Market, By Application:

Transformers

Motors & Generators

Inductors

India Electrical Steel Market, By Vertical:

Automotive

Construction

Manufacturing

Energy & Power

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Others

India Electrical Steel Market, By Region:

North India

South India

West India

East India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India electrical steel market.

Available Customizations:

With the given market data, TechSci 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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