Strategy for Next-Generation Technologies in the Transforming Automotive Industry

Structural changes in the automotive industry and impact on coatings

Unprecedented transformation taking place in the automotive industry

The automotive industry is undergoing the biggest change ever since its commencement. This change has created numerous business opportunities and prompted paint manufacturers including ourselves to revisit their conventional products, application processes, and supply chains.

Carbon neutrality is one of the biggest themes in the industry. To meet increasingly stringent environmental regulations globally, many automobile manufacturers have prioritized environmental impact reductions, including achieving zero CO_2 emissions, as a key agenda as they look ahead to 2050.

Carbon neutrality initiatives of automobile manufacturers are focused mainly on reducing CO_2 emissions from two sources: emissions from manufacturing and other activities within the company (Scope 1 and 2) and emissions across the supply chain outside the control of the company, ranging from material procurement to sales and the disposal of products (Scope 3).

Procuring alternative energy and simplifying manufacturing processes are some of the measures car makers are considering in order to reduce Scope 1 and 2 emissions. In the paint application process, they are looking to shorten the process and use alternative coating technologies to replace current coating application.

To reduce Scope 3 emissions, the automotive industry is economizing and increasing the efficiency of resources by shifting to new energy vehicles (electrification) and promoting car sharing services in order to reduce CO_2 emissions throughout the whole process of sales, use, and disposal of the vehicles.

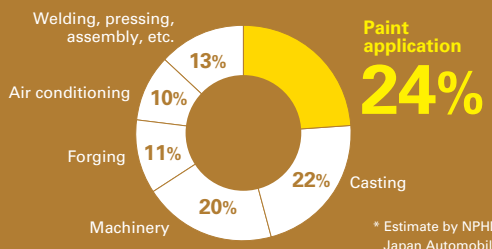
In addition, a paradigm shift is occurring in the industry, often represented by Connected, Autonomous, Shared, and Electric (CASE) and Mobility as a Service (MaaS). These shifts are expected to change the structure of the automotive industry demonstrated by new entrants from outside the industry in addition to current major players.

Changes in the paint and coatings spurred by evolution in the automotive industry

The automotive coatings industry is undergoing a significant transformation in line with changes in the automotive industry. The emergence of new needs are opening up numerous business opportunities. In other words, the future growth of paint manufacturers, including ourselves, will depend on whether we can break away from our conventional thinking and provide new value to our customers.

Carbon neutrality initiatives in the automotive industry are requiring paint manufacturers to speedily respond to such moves. In expanding our business opportunities, it is critical how quickly we serve our customers and help solve the problems they are facing. For instance, revisiting paint production processes and selection of raw materials, as well as developing environmentally friendly coatings which consume less energy in paint

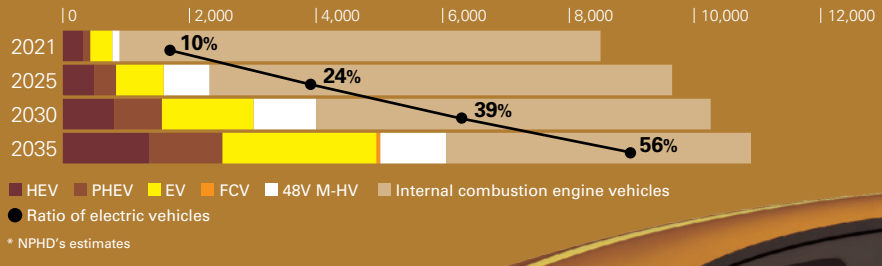
CO_2 emissions in the automobile manufacturing process



* Estimate by NPHD based on data from Japan Automobile Manufacturers Association

Automobile sales by powertrain type

(10,000 units)



* NPHD's estimates

booth and drying furnaces.

Although CASE and MaaS may have only a limited direct impact on coatings itself, such shifts create various growth potential. In the electric vehicle segment, current car makers are expanding their business domains to fit to the new environments while totally different enterprises enter the sector, generating new markets for us to increase our sales and market share.

Automobile manufacturers, which are our existing customers, are pushing out the boundaries of their business beyond automobile manufacturing and into peripheral areas. This offers paint manufacturers new business opportunities that are not bound by our conventional business scope.

With advancing vehicle performances, the possibilities for value added by coatings are also expanding. For example, NPAC is developing decorative films that are transparent for light emitted by sensors, which are vital for self-driving vehicles and other applications. As the sharing economy grows, we also anticipate a change in end-user needs regarding vehicles, colors and functionalities such as coatings with vivid colors and coatings that can easily change car body appearance depending on users' preferences. The possibilities to be exploited are endless. In this environment, providing solutions to emerging needs in the new era as coatings technology specialists will give us the most critical competitive advantage.

Research and development activities at NPAC, aiming towards a global leading company

In the Volatile, Uncertain, Complex, Ambiguous (VUCA) environment, NPAC will continue proactive research and development activities for next-generation technologies. Our aim is to become a global leading company that can provide services and added value as a valuable partner to our customers by both refining the technologies we have accumulated over many years and also producing new ideas.

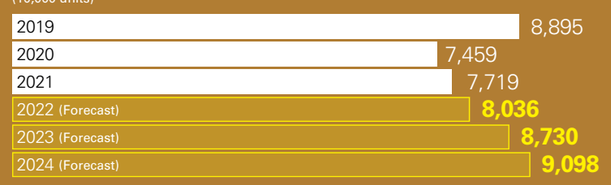
Research and development activities for next-generation technologies

NPAC is speeding up the shift to next-generation coatings, such as environmentally friendly coatings and coatings with anti-viral property, while also improving our existing products. Our goal is to help create a sustainable society and to respond to customers' needs involving CASE and MaaS. In addition, core technologies we have accumulated since our founding to develop new coating technologies should provide greater added value to our stakeholders.

Decorative film technology, one of our focus areas, can provide design flexibility that cannot be achieved through conventional coatings. Moreover, this technology is expected to help automobile manufactures cut back CO_2 emissions (Scope 1 and 2). Although our focus with the film technology has been on automotive interior Center Information Displays, film application is now considered to be a realistic option in exteriors, which are becoming more multi-functional, as well as in non-automotive applications. We see our decorative film as a technology that will allow us to constantly tackle social issues while meeting customers' needs. NPAC successfully launched functional decorative films covered with our coatings in February 2022. Further business development will be conducted to sell these films without restricting our scope to these activities to customers within Japan or in the automotive industry, in order to make decorative films one of our core businesses. Apart from film, NPAC is also a developer of in-mold coating technology, which is a direct coating process that does not require a paint booth or a drying furnace.

Our business is on a global scale. Therefore a global collaboration platform where our members provide technical assistance and exchange information is one of the key areas we are reinforcing. This enables us to respond more quickly to the needs of our customers around the world.

Global automobile production*
(10,000 units)



* IHS Markit

Design creation by decorating film
(plate finish, auto body colors, patterns, matte finish, glossy finish)

Shinji Takedagawa
Representative Director
& President,
Nippon Paint Automotive
Coatings Co., Ltd. (NPAC)

PROFILE

Shinji Takedagawa joined the former Nippon Paint Co., Ltd. after graduating from Rikkyo University College of Economics in 1984. After 38 years of experience in sales, planning, and management in the automotive coatings business. He transferred to Nippon Paint Automotive Coatings Co., Ltd. following its launch in 2015. Appointed as Managing Director in 2018 and the Deputy President and Executive Corporate Officer in January 2021. Current position from August 2021 and has since been leading the automotive coatings business of Nippon Paint Group. As the President of NPAC, he has the goal of driving growth of the company to become a global leading company in the automotive coatings industry as the most trusted partner for its customers.

Aiming to Improve Profitability and Strengthening Our Global Business Structure

Automotive production is continuing to decline, due to the influence of the pandemic and parts shortages such as semiconductor chips. The paint industry is also impacted by the ongoing price increases and unstable supply of raw materials and logistics bottlenecks.

Actions for improving profitability

We must rise to the challenge of improving profitability in the current market environment with rising prices of raw materials and sluggish car production. In order for us to become a growing company even in such harsh conditions, productivity improvement and optimization are key areas we are working on.

Against the backdrop of the structural changes in our industry, we must break away from the conventional business approaches. In fact, our operational process improvement is in progress across the company, pushing us to think outside the box. For instance, rigorous improvement activities are underway with the goal of streamlining operations. Examples include a bottom-up initiative where we solicit areas for improvements within the company and launch projects to tackle issues, the realignment of production and sales frameworks from a long-term perspective, and the consolidation of inefficient operations. For issues that require discussions among several divisions over the long term, cross-divisional projects are being formed in which measures for reform are being discussed on a daily basis.

In order to cope with rising raw material prices and manufacturing costs caused by numerous external factors, we are taking actions such as cost reduction activities and implementing an optimal procurement and production system from a global perspective. Our goals are to eliminate concerns about supply challenges and improve profitability. Adjusting selling prices in accordance with market conditions has also been one of our key initiatives.

Strengthening our overseas business infrastructure

In accordance with our strategy to integrate our business entities in Asia, in May 2022, NPAC has completed the integration of business entities in China. Aiming at creating synergies and reinforcing foundation, operations are integrated in China and other Asian countries where we anticipate a rapid growth. As new energy vehicles are increasingly accepted in Asia, we aim to quickly raise our market share by leveraging our extensive distribution and technical network without missing any opportunities that occur in the transformation of the automotive industry.

In the Americas, management structure was changed in April 2022, instituting the post of Chairman, who is responsible for overseeing operations throughout the Americas, including Mexico and Brazil. These measures have established a framework for creating synergies in the Americas while maintaining autonomous management in each country. In 2023, a new factory is slated for completion in Chattanooga, Tennessee, USA. The new factory, which is designed for energy conservation and advanced automation for next-generation manufacturing, will enable us to expand market share through unified activities throughout the Americas, strengthening existing businesses and shifting to local production of electrodeposition coatings.

NPAC strives to improve our global market presence and expand our businesses. By reinforcing our global network, we seek to be the best partner to our customers operating on a global scale.