



Surging forth with future electromobility



The MINI brand has underlined its ambition to offer a fully electric model line-up in less than a decade with significant sales growth for its MINI Electric Hatch BEV both locally and abroad.

There were 291 MINI Electric Hatch registrations in Australia in 2021, which was a remarkable 210% up on the 2020 figure. The MINI Electric Hatch launched to wide acclaim and interest in 2020 with the majority of the first allocation – offered exclusively online – reserved within one week. Since launch, 385 MINI

Electric Hatch models have been registered in Australia.

The news follows a milestone for the vehicle in Germany, with in excess of 10,000 registered during 2021 alone – an uplift of 132%. This meant that one in five MINIs registered in Germany are now fully electric, and every third MINI is electrified following 70% growth for the MINI Countryman Hybrid.

The PHEV model also recorded significant growth in Australia, with 141 registrations in 2021, marking an increase of 156%. Nearly one in 10 MINI registrations in Australia are now electrified in the wake of last

year's results.

In addition, total MINI registrations in Australia last year were 3,579, which was up by 15.3%, confirming strong interest across all model lines including the high-performance John Cooper Works (JCW) offerings.

The next-generation MINI Countryman will come off the production line at the Leipzig Plant as a fully electric model in 2023, while in the same year production of fully electric MINI models based on all-new electric vehicle architecture will commence in China. MINI's plan to offer a fully electric product line-up will gather pace in the coming years.

Ground-breaking colour change concept at CES



BMW unveiled a new exterior colour changing technology, developed with E Ink for the BMW iX, at the 2022 Consumer Electronics Show in Las Vegas.

According to BMW, the prospective “future technology” will allow consumers to change the exterior shade of their vehicles, while E Ink said BMW has the creative freedom to customise the patterns and materials.

BMW said that digital experiences won't just be limited to displays in the future; rather, there will be more and more melding of the real and virtual, and with the BMW iX Flow, they are bringing the car body to life.

According to E Ink USA, the way a manufacturer goes into actual production will determine the repair process. However, as it's a film, a collision repairer can assume that repairing a section of the car would also suggest a section of the film would be replaced as well.

The electronic ink is made up of millions of microcapsules filled with white and black pigments that are moved up or down using an electric field to change the surface colour. A specially developed body wrap is tailored precisely to the contours of BMW's all-electric Sports Activity Vehicle.

E Ink added that the “innovative and rugged” digital paper paired with BMW's intelligent design algorithms enables the exterior to change from black to white in a dynamic flow. But it isn't just about appearances. A switch to black – or a darker colour – will absorb more warmth from the sun, while a switch to white – or a lighter colour – will reflect sunlight to decrease interior heating during warm weather.

As a first-of-its-kind concept car, the BMW iX Flow shows what is possible – how we may experience the world around us in the future.

Out of this world



Nissan has unveiled a lunar rover prototype jointly developed with the Japan Aerospace Exploration Agency (JAXA) at its recent Nissan Futures event. Nissan and JAXA have been working on driving controllability of the rovers since January 2020.

A lunar rover must be able to traverse the Moon's powdery, rocky and undulating terrain and also be energy efficient. Furthermore, energy sources for operating vehicles in space are limited. Nissan's research applies the motor control technology it has developed through its production of mass-market electric vehicles such as the LEAF as well as the e-4ORCE all-wheel control technology featured on the all-new Ariya electric crossover. In particular, it is e-4ORCE that is boosting the lunar rover's performance over tricky terrain.

Nissan has focused on the development of stable driving performance that enables customers to drive their cars with greater confidence. Nissan's e-4ORCE technology precisely controls all four wheels independently to minimise the amount of wheel spin, providing the driver with confidence in various conditions.

Through the joint research, Nissan aims to contribute to the technological evolution of automotive technology and space exploration technology by sharing know-how gained from test-vehicle development and combining it with JAXA's knowledge of rover research.

By conducting research with Nissan, which has expertise in electrified technologies, JAXA aims to apply their findings to the development of higher-performance lunar rovers.

Toshiyuki Nakajima, general manager of the Advanced Vehicle Engineering Department in charge of e-4ORCE control development at Nissan, added: “We aim for the ultimate driving performance through our research and development, and believe the know-how gained from this joint research with JAXA will lead to innovations in our vehicles that will bring benefits to customers.”

Powering forward with electrification



Ford Motor Company is planning to nearly double production of the F-150 Lightning pickup to 150,000 trucks per year to meet high demand for the first all-electric version of America's best-selling vehicle, the F-Series.

Flexibility is key to Ford's production system and is the way teams are now working to deliver the company's future line-up of electric vehicles. The pride and quality United Auto Workers (UAW) members are putting into building the iconic Ford F-150 Lightning is evident in the high pre-production demand. UAW members are leading the way in doubling the amount of vehicles Ford is producing for this game-changing model of the legendary union-built vehicle.

The Lightning is drawing interest from customers of competitor brands at a record rate in North America, with more than 75% of reservation holders new to the Ford brand. Production of the 2022 F-150 Lightning pickup will begin in the northern spring.

Ford is committed to leading the electric vehicle revolution, investing more than \$30 billion in electric vehicles through to 2025. Over the next two years, Ford aims to emerge as the clear No.2 electric vehicle maker in North America and then challenge the No.1 spot as huge investments in battery and electric vehicle manufacturing come onstream. Within 24 months, Ford will have the global capacity to produce 600,000 battery electric vehicles annually.

Ford is building the largest, most advanced and most efficient auto production facility in its 118-year history in Tennessee, where it will assemble next-generation F-Series electric pickups. Together with SK Innovation, Ford is also building three new BlueOval SK battery plants to produce advanced lithium-ion batteries to power next-generation Ford and Lincoln vehicles.

Expanding human reach



Hyundai Motor Company shared its vision for pioneering the use of robotics in both the real world and the metaverse at the 2022 Consumer Electronics Show in Las Vegas.

Hyundai's presentations reflected how the company's robotics business will drive a paradigm shift towards future mobility, going beyond the traditional means of transportation to fulfill unlimited freedom of movement for humankind. Robotics is an essential part of Hyundai's transformation into a smart mobility solution provider. Having acquired Boston Dynamics, an innovator in the field, Hyundai has sharpened its focus on advancing robotics to enhance people's lives through a range of mobility solutions.

The company sees robotics and mobility as complementary in that one accelerates development of the other, and vice versa. Together, they form a synergistic combination that will add value to the business and drive progress for humanity, starting with a robotics-based Mobility of Things (MoT) ecosystem.

In support of its future vision for robotics and mobility, the company revealed its new concept of "Metamobility" with the goal of pioneering a smart device and metaverse connection that will expand the role of mobility to virtual reality (VR), ultimately allowing people to overcome the physical limitations of movement in time and space.

The company envisions that the distinctions between future mobilities will be blurred through the further development of robotics technology such as AI and autonomous driving. Diverse mobilities, including automobiles and urban air mobility (UAM) will also serve as smart devices for access to the metaverse platform.

Hyundai is harnessing the power of robotics to achieve great things, envisioning future mobility solutions made possible by advanced robotics – even expanding its mobility solutions to Metamobility. This vision will enable unlimited freedom of movement and progress for humanity.

More Good Design awards in Korea



Kia has been awarded two prestigious

design awards for two of its latest models, with the Kia EV6 electric crossover and fourth-generation Kia Carnival MPV taking top honours in the "Transportation" category in the annual Good Design Awards.

The all-new EV6 is Kia's first dedicated battery electric vehicle (BEV) and is the first Kia to be based on the brand's new Electric Global Modular Platform (E-GMP), delivering a highly impressive 528 km real-world driving range and ultra-fast recharging capabilities.

The EV6's bold conceptual styling incorporates Kia's highly acclaimed new design philosophy, "Opposites United", which takes inspiration from the contrasts found in nature and humanity. Key exterior highlights include sleek daytime running lights that form part of the car's "Digital Tiger Face", a contemporary and aerodynamic side profile, and a bold crossover-inspired silhouette. The interior benefits from the E-GMP platform, which facilitates a high-tech, spacious and welcoming environment.

The all-new Kia Carnival MPV, penned at Kia's California design studio, wears a bold and boxy appearance that conveys the visual language found on the brand's highly successful line-up of rugged SUVs, including the Telluride, Sorento and Seltos. Dramatic lines adorn the hood and help to enhance the vehicle's aggressive character, while the well-defined wheel arches provide a sense of volume to the Carnival's side profile. The three-row interior offers a premium and flexible layout resulting in best-in-class passenger and cargo room.

The awards are an endorsement of the approach Kia took with styling and is a tribute to the collaborative efforts of the talented international design team. The two accolades are the latest in a string of design awards handed to Kia by the Good Design jury in recent years.