Innovate, achieve, advance

© EKO EMPOWER

Words: James Loginov, Head of Marketing & Communications, EKO Instruments

How EKO Instruments plan to support the next generation of scientists, students and engineers; young people, working to imagine, invent and create solutions to seemingly impossible challenges.

While 'Corporate Social Responsibility' (CSR) can still feel like a relatively new concept, popularised in the 1990s and 2000s, spurred on more recently by the growth of social media, it is, for many Japanese companies, a deeply ingrained part of their business culture and practice.

The idea that a business has a duty or a responsibility to better the world around it and contribute to the greater good of the wider community grew during the rapid post-war industrialisation of Japan, in part, as a response to the environmental damage it caused. Far from resisting new rules and regulations imposed by the government, Japanese companies raced to mitigate or offset their impact through voluntary initiatives that went further than simple compliance.

Beyond business and industry, 'Shinto', often regarded as Japan's indigenous religion, encourages people to learn and adapt to nature, with ceremonies, festivals, and ubiquitous shrines and symbols, even in inner-city Tokyo, venerating the natural world, a part of everyday life.

In this respect, CSR, particularly regarding environmental issues, is both personal and professional, traditional and new.

EKO Instruments was founded in 1927 and, over ninety years later, remains a family-owned business. This history, and continuity, helps to affirm our commitment to our customers, our community, and more recently to initiatives such as the United Nations Sustainable Development Goals (SDGs), in turn leading to our pledge in 2019 to phase out all single-use and non-recyclable plastics from product packaging by the end of 2022.

Our history also provides stability. Stability, combined with a Japanese obsession with quality and craftsmanship, has helped EKO lead the industry with the highest quality solar energy sensors. But history and stability also confer on us a responsibility to do more, to find new ways to help build a better, more sustainable future. This led us to create 'EMPOWER'.

'For over 90-years, our company has been driven to engineer the most accurate and innovative solutions for our customers across science, academia, and the renewable energy industries. With EKO EMPOWER, we want to help the next generation to accelerate global efforts towards sustainability, and contribute to improving education, reducing inequality, and eliminating discrimination.'

President, EKO Instruments,
Toshikazu Hasegawa

EMPOWER

In 2019, EKO Instruments Japan sponsored the 'Kogakuin University Solar Car Team' at the Bridgestone World Solar Car Challenge (BWSC). The toughest and most prestigious solar car race in the world, watched by a global audience of over 25 million.

An endurance battle as much as a race, the BSWC is a 3,000 km trek through the Australian Outback, from Darwin to Adelaide, with every vehicle powered exclusively by energy from the sun. The race challenges young engineers, mainly from university-based teams, to push the limits of innovation and engineering, contributing to the ongoing development of solar technologies and solar-powered vehicles.

It also generates industry partnerships

James Loginov

Toshikazu Hasegawa

Ruben Holsbeekx

across sectors, from energy and automotive, through to financial, material sciences, and IT, giving participants not just a fantastic learning experience but the opportunity to fast track their careers.

EKO provided the Kogakuin team with a set of pyranometers to measure solar irradiance. The team used these sensors to help generate as much power as possible from their solar array and for performance monitoring during the race itself. Despite crashing twice due to adverse weather conditions and strong winds, the Kogakuin team finished 5th and won the 'CSIRO Technical Innovation Award', a remarkable achievement against a record 53 entries from 24 countries.

In 2020, we started searching for new ways to support and promote the SDG's, particularly the goals around 'Affordable and Clean Energy', 'Quality Education', and 'Gender Equality'.

We kept coming back to the determination, perseverance, and ingenuity of the Kogakuin team during the race in Australia. We realised that they, and other solar car teams around the world, were already fantastic examples of these goals, and other SDG's, in action.

Working on a solar car team is, by definition, a unique educational opportunity, and many teams include and encourage more participation by female, and LGBTQ+, students. Each team strives to be more efficient, acting responsibly to create something new, helping to drive future economic growth, and the transition to affordable, clean, renewable energy.

'EMPOWER' evolved from an aim to 'do more' and has become a practical way for us to contribute to activities and organisations that offer young people learning opportunities and real experience in engineering, clean energy, and atmospheric sciences, starting with six university-based solar car racing teams.

'Sustainability, and the global sustainability goals published by the United Nations, aren't only about solving problems today. They encourage us to focus on the future... Through EMPOWER, I hope we can contribute to a virtuous cycle of inspiration, innovation, and improvement that benefits all.'

President, EKO Instruments,
Toshikazu Hasegawa

Solar car teams

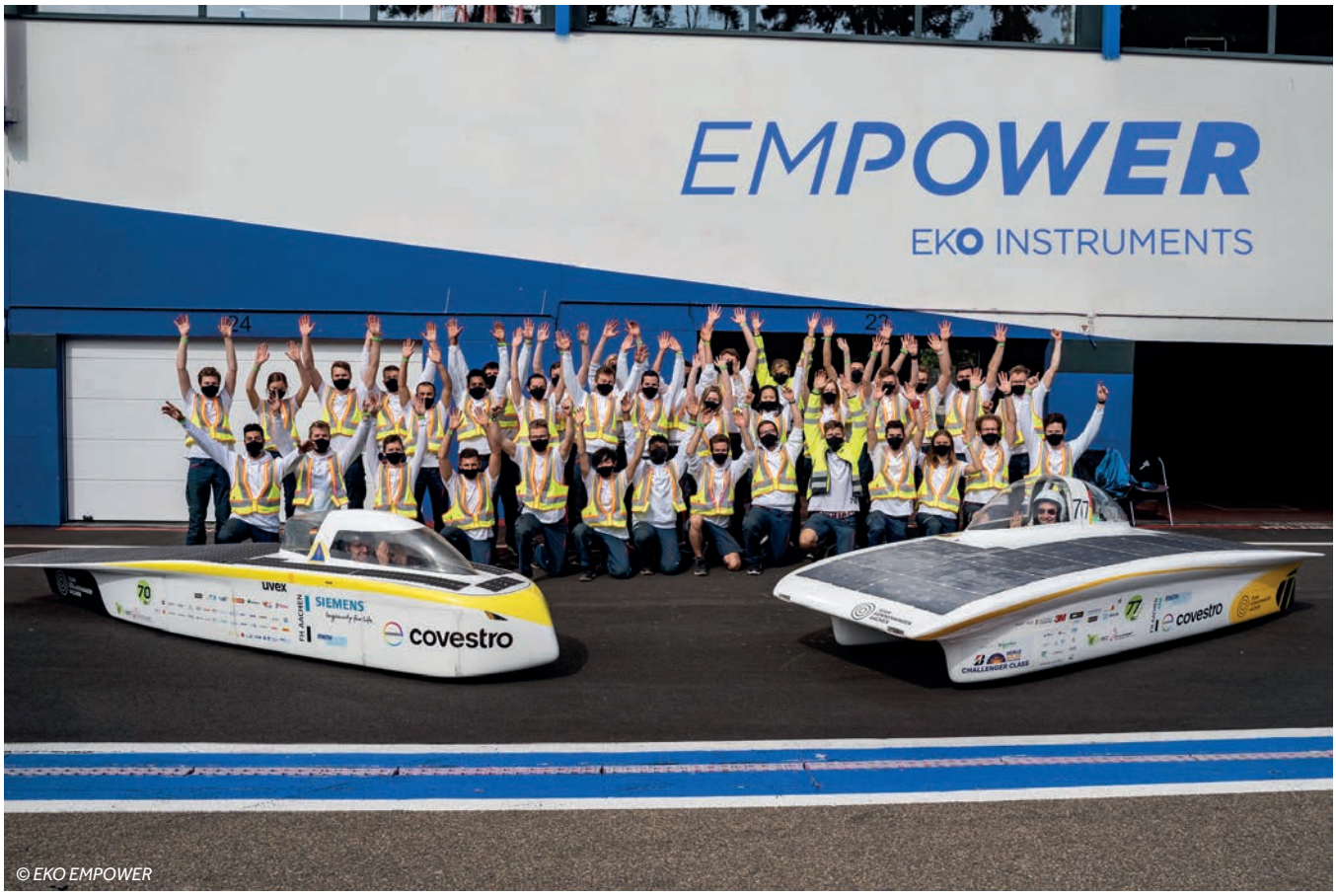
Our six teams, chosen from around the world, include the 'Agoria Solar Team' from Belgium, winners of the 2019 Bridgestone World Solar Challenge, the 'University of Michigan Solar Car Team' from the United States, the 'Kogakuin University Solar Team' from Japan, and 'Team Sonnenwagen Aachen' from Germany, with others yet to be announced.

'The idea of building a car as a student is downright great. Not only can you take on the responsibility of building a solar car, which is very instructive from a technical point of view, you also get to learn how to work as part of a complex team, and gain logistical experience... It's an incredible gift to take this package of knowledge and experience into a professional career at such a young age.'

Agoria Solar Team,
Ruben Holsbeekx

EKO Instruments started to deliver sensors, including our industry-leading MS-80S Class A Pyranometer, and other tools, to each team in the summer of 2020; to help them

© EKO EMPOWER



© EKO EMPOWER

'Enthusiasm definitely helps with a challenge this big, on top of studies... but what I enjoy most is working together with my team, researching and developing innovative solutions to counter climate change, this is what motivates us day and night; the chance to contribute towards a cleaner future.'

Sonnenwagen Aachen e.V.
Tim Sanders

develop their cars, plan their strategies, and refine their designs.

The first significant test for the new Agoria and Sonnenwagen teams arrived with the 24-hour iLumen European Solar Challenge at the Circuit Zolder in Belgium. Held in September 2020, the race was able to proceed, despite the Covid-19 pandemic, with social distancing and other precautions in effect.

The Agoria Solar Team entered two cars, the BluePoint and the older Punch 2. The BluePoint came first with the highest number of laps after 24-hours of racing, delivering a third straight win for the team, while the Punch 2 finished in sixth place.

Sonnenwagen, likewise entering two cars, managed to finish in fifth and eighth place despite setbacks, also managing to set the second-fastest lap time of the entire race.

With the success of the European Solar Challenge behind them, both teams began to look ahead to the BWSC in October and the chance to go up against the best teams from around the world. However, in February 2021, the organisers of the BWSC announced that this year's race was cancelled due to the ongoing risk from Covid-19.

Despite the disappointment, every team supported by EKO has chosen to continue developing their cars, to target other races and opportunities and, though the challenge may be different, each team and each student's passion to continue, continues to inspire us to 'do more' through our technical partnerships, and the provision of industry-leading environmental and solar sensors.

Future

EKO Instruments will celebrate its centenary year in 2027, marking 100-years of firsts.

From the first Japanese made pyranometer in 1933 and the first locally designed and built dome pyranometer in 1955, through the development of the world's first UV-B sensor in 1990 and the launch of the revolutionary MS-80 Class A pyranometer in 2016; EKO has a history of leadership.

Not only were we the first solar sensor manufacturer to achieve ISO 17125 accreditation for our pyranometer and pyrheliometer calibration laboratory in Tokyo, but we also remain today the only manufacturer to own and operate our own solar parks; a unique testbed for product development, with a combined annual power generation capacity of 2,066,290↑kWh.

EKO's future and the future of EMPOWER will build on this legacy and our corporate vision to lead with commitment, inspire with innovation, and engineer solutions for a more sustainable world.

Follow EKO | EMPOWER on Twitter @EKO_emPower

www.eko-eu.com