

Electrification Business

Hitachi Construction Machinery was one of the first companies to develop and manufacture electric construction machinery. We developed the first electric hydraulic excavators in 1971. Wired electric excavators based on small- and medium-sized equipment for work inside factory buildings were launched in the 1990s, and have sold well since then. Experience gained through the development in 2006 of battery type hydraulic excavators incorporating lithium-ion batteries has given the Group a major competitive advantage in this field.

Line-up that meets the needs of customers Aiming to achieve carbon neutrality

The Hitachi Construction Machinery Group has put forth a goal to reduce by 33% CO₂ emissions (over 2010 levels) from production through to disposal, and is working to achieve carbon neutrality. Electrification of construction machinery is key to achieving this. National and regional governments around the world are announcing their intention to go carbon neutral, and we are seeing a move towards the complete electrification of automobiles, with this trend also impacting construction equipment. Construction work in narrow and enclosed areas, as well as at night is increasing particularly in urban areas worldwide, and we are seeing heightened demand for operationally and environmentally functional electric mini excavators with compact bodies, no exhaust, and low emitted sound. Hitachi Construction Machinery developed the battery-powered mini excavators ZX-50UB-2 and ZX70B in 2006, and the ZX35B in 2010, releasing these to market. Leveraging our long experience and expertise

in electric equipment, in 2011 we launched the 20-ton class ZH200-A hybrid hydraulic excavator. Furthermore, in the European market which is driving demand for electric construction machinery, in 2018 we established the European Application Center GmbH (EAC) in collaboration with German company Kiesel Technologie Entwicklung GmbH (KTEG) as a development base for electric products. Centered around this, the company is rapidly conducting development near the sites of environmentally conscious clients, and is expanding its development to other models in Japan.

Electric machinery drive components are currently still expensive with major hurdles to cross in order to bring these to prices acceptable for customers, but there is still a need to expand the product line-up in readiness for a rapid expansion in the market. If future advances in cost-competitive electric drive component technologies in conjunction with the move to electric cars and trucks can be achieved, this will let us offer a wide range of electric products from mini- through to ultra-large excavators and loaders, allowing the group to fully demonstrate its strengths.

Stakeholder's Voices

Together, technologies from both companies will speed the development of electrification

KTEG has a wealth of knowledge regarding regulatory trends and productization for electrification in the European market. Having entered the market in partnership with SUNCAR HK AG, which has extensive experience in electrification, KTEG is very familiar with actual site processes, and has earned a good reputation and high customer satisfaction in Europe. Bringing Hitachi Construction Machinery and KTEG technical know-how together will let us more rapidly provide customers with electric construction machinery that better meets their needs. We feel this type of cooperation will be particularly beneficial not only in achieving zero emissions, but also in the fields of demolition products and digital services.



KTEG GmbH / EAC European Application Center GmbH
Managing Director
Harald Thum

Focus on Norway

Investment promotion activities in European countries to promote usage of electric construction machinery

Under the framework of the Paris Agreement with the aim of achieving carbon neutrality by 2050, the EU and other European countries are pushing investment promotion policies aimed at decarbonization. For example, Norway is seeing a more rapid increase in demand for electric construction machinery than in other countries because of a wide range of incentives, such as a 40% subsidy covering the price difference with a standard engine-powered model. Also, Germany has introduced a financial aid program aimed at promoting investment towards reducing carbon emissions, and the Netherlands is also considering a subsidy program for the purchase of electric construction machinery. Major European cities are also increasing numbers of low- and zero-emissions zones, and numbers of gasoline-powered vehicles are gradually decreasing. In view of this, customers in European countries are showing an ever-increasing interest in electric construction machinery.



Norway, the country that has made the biggest move to EVs, has strong requirements for electrification on worksites as well.

Selection of ZE85 electric excavator for pilot business project using only electric construction machinery

In 2019, Hitachi Construction Machinery (Europe) participated in the bauma2019 international construction machinery trade fair held in Munich, Germany, where it exhibited the ZE85 battery-powered excavator (8-ton class, KTEG brand). The ZE85 was developed in collaboration with EAC, and features a lithium-ion battery that provides 3–4 hours operation on a full charge, and that can be charged in under an hour.

In fiscal 2020, the ZE85 was selected for a zero emissions construction site pilot project in Norway's capital Oslo. This test project using only electric construction machinery was carried out in an area in front of Oslo's city hall. The test showed that power and operating duration performance of the ZE85 were comparable to engine-powered models, and these have been introduced on zero-emissions worksites. Moving forward, Hitachi Construction Machinery will continue to seize such opportunities to meet the needs of Europe which has high environmental standards and strict regulations.

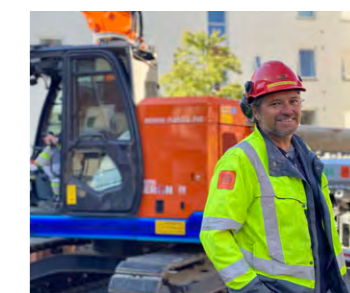


Demonstration of ZE85 exhibited at international construction machinery trade fair

Stakeholder's Voices

ZE85 showed off its superiority in Oslo

PA Entreprenør AS has been engaged in construction in and around Oslo for around 30 years. We are very mindful of the environment, and more than half of our construction equipment is emissions free. In a project in Oslo, emissions-free machinery alone completed renewals of water and sewerage systems. The ZE85 has operability, productivity, and safety characteristics similar to the ZX85, and yet is quiet enough that workers nearby can converse. This benefit also showed its advantages in Oslo. We currently own two of these machines, and plan to purchase more this year. We hope to see the ZE85 manufactured in larger quantities to bring its price down.



PA Entreprenør AS
Department Manager (CEO)
Lars Fredrik Moe-Helgesen