

#### e Creation Story

# Expanding the rental business in North America and Europe New values being created around the world

The diversification of people's lifestyles is picking up the pace accelerated with changes in the social environment. Above all, there is growing value perceived in "switching from ownership to shared services," where an asset is used only when and in the amount required, instead of owning it. This suggests the people are becoming more aware of using assets efficiently. This trend can also be seen in the world of construction machinery.

Ahead of such changes in social environment, since 2017 the HCM Group has worked to reform its business structure through its mid-term management plan called CONNECT TOGETHER 2019. One of the key strategies under this plan is to enter the rental business in developed countries.





In order to achieve sustainable development, it is essential to pursue an economic model with less social and environmental impacts by sharing existing materials, services, and spaces. We believe that by increasing the convenience of renting construction machinery, and making it a valid option, we can contribute to achieving the SDGs.

## Expanding the rental business as key to deepening our value chain strategy

In August 2018, HCM announced capital participation in ACME Lift Company in the United States (hereinafter, "ACME"), marking our official launch of the rental business in North America. ACME is a construction machinery rental company with 3,500 partner locations throughout North America and an excellent client base.

In addition, it is also known as a pioneer in the re-rental business, where it lends to rental companies that are focused on Aerial work platform, who in turn sublet the machinery. Unlike automobiles, which can be quickly turned around for a new rental upon their return, the rental of construction machinery is not as simple. This is because there is need for maintenance to clear any dirt or mud on the vehicle, assembly of any requested attachment (accessories) for the next customer, as well as transportation of the vehicle to their next construction site. Having the manufacturer, who possesses the knowledge of their products to provide these services, ensures that the machinery is kept in the optimal condition, which also extends service life. In other words, the rental business can be viewed as a customer-oriented business model which not only effectively utilizes resources in terms of the manufacturing of machines but also enhances the profitability of customers' assets. The HCM Group aims to acguire know-how in the re-rental business in the United States,

# Idling economy, which maximizes product life cycle value

In order to create a customer-oriented business model, it is crucial to always monitor the operation status of construction machinery. Hitachi Construction Machinery's proprietary information solution, "ConSite," which remotely monitors machinery in operation at each site and predicts operating failures, makes this possible. The monitoring and optimal maintenance at the right time not only make the machines excellent for use as used vehicles, they also extend service life, maximizing life cycle value. This practice not only represents the "sharing economy" where everyone shares an asset owned by people and businesses, but is also known as "idling economy" where unoccupied resources and assets are turned into new values while being utilized efficiently.

From a society of ownership to shared use. In a time when people's values are shifting, construction machinery makers are not only expected to develop products, but also step up their role in terms of providing services from user training, management and operation consulting as well as fulfilling their duties to

#### Future Developments

Going forward, we will globally expand our rental of quality machinery as well as implement initiatives in order to provide new ICT and IoT-based solutions to flexibly address social issues such as the worldwide shortage of technicians.

which is the world's largest rental market, in order to expand the Group's rental business. In January 2019, we established Synergy Hire as a new company to engage in the rental business in the U.K.



preserve the environment. At the same time, this also serves as an opportunity to further relationships of trust while expanding contact points with customers. The HCM group will explore new forms of partnerships with customers through the rental business.



Carrying out the required maintenance for the next rental

our business

Strategy



Value Creation Stor

Comfortable work environments and productivity Manufacturing reforms pursued simultaneously

Taking into account Japan's declining birthrate and aging population, along with worker shortages, disasters, and unusual weather, issues that pose a risk to our business activities are becoming more severe with each passing year. The HCM Group has initiated a large-scale reorganization and reforms of its domestic development and production sites since October 2018 in order to enhance its high productivity and global competitiveness. We are developing a production system that enables productive and comfortable work environment by implementing labor-saving ICT on production lines and developing frontlines that are worker friendly.

#### **Relevant SDGs**



One universal goal is for everyone to have employment, in which they find the job meaningful and decent. To achieve this goal, it is essential to develop a workplace that enables a high level of economic productivity through innovation, as well as allows a diverse workforce to exert their abilities while working safely and securely.

## Launched the largest scale reforms since the Group's inception

The HCM Group has reorganized its development structure that was once categorized by product, and centralize construction and mining machinery at the Tsuchiura Works, and compact machines at the Shiga Works.

Furthermore, production bases have been categorized by function, while structure reforms entailing development of new production lines is underway. This goal means the establishment of a flexible production structure that can adapt to changes in demand, and attain a higher level of technical development capability. Moreover, in order to achieve this goal in today's market with labor shortages, it is imperative to establish a manufacturing environment that promotes both ease of work and productivity. The reform that started in 2018 entails a complete overhaul of the functions of our seven domestic major bases, at a large scale that has never been done before.

## Developing a production line safe for seniors, women and non-Japanese employees

On the conventional frontlines of production, experienced workers with skills and knowledge have led processes and supported high productivity and quality. However, as the birthrate declines and population ages more, there is a lower number of experienced and skilled workers, which means a reduced number of hands on deck. As a result, we have thoroughly analyzed work attitudes and processes and implemented various efforts to largely reduce physical labor as part of this reform, for those with less experiences or physical strength to feel empowered to work. At Shiga Plant (Hitachi Construction Machinery Tierra), which was first to implement the reform ahead of others, the number of steps was reduced by 30% compared to before, while robots have been adopted for the handling of heavy parts, giving rise to new production lines with advanced automation and energy-saving features.

For example, robots have the same proficiency as skilled workers in the assembly of traveling equipment, including the ability to properly tighten bolts and prevent loosening. We have



Hitachi Construction

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roles and increase global competitiveness

HCM prides itself on always implementing reforms on the frontlines. We have promptly implemented production process reform by bundling each stage of the process from development to sales. Prior to reorganization this time around, we successfully launched new processes while increasing productivity by introducing robots and developing programs focused on younger employees on the frontlines. Moreover, feedback from female employees is actively reflected in workplace improvements, which has a positive impact on employment. Soon, the production line of mini wheel loaders will be moved to our Works plant. This means efficiency and worker friendliness are required in all aspects of our work, including not only the production floor but also development and design. We aim to increase production capacity throughout Hitachi Construction Machinery Tierra by 1.5 times through creating a workplace where anyone can play an active role.

Plant name	Status of business structure reforms in 2022	
Tsuchiura Works	Development base	Centralize development resources related to "construction" and "mining"
	Construction plant	Production of medium hydraulic excavators, and medium/large wheel loaders
Ryugasaki Works (Former KCM Corporation)		Production of main parts
Hitachinaka-Rinko Works	Mining plant	Production of large hydraulic excava- tors for mines, rigid dump trucks, and ultra-large wheel loaders
Hitachinaka Works	Components plant	Production of parts for construction and mining
Kasumigaura Works		
Hitachi construc- tion Machinery Tierra Shiga Works	Development base	Centralize development resources for compact machines
	Compact plant	Production of mini excavators and mini wheel loaders
Banshu Works (Former KCM Corporation)		Production of main parts

### Position of the seven major domestic bases

also made safety improvements, such as adjusting the height of carts to ensure workers maintain an ergonomically correct posture during tasks and widening conveyor belts. Tablet devices with multilingual interfaces are made available to non-Japanese workers so that they can always check work guidelines.



Every effort is made to eliminate work using stairs or on an elevated location, and eliminate the need to bend down.

The tool cart moves with the worker on a conveyor line to reduce the burden of having to carry them.

# Creating a workplace that enables a diverse workforce to actively take on their



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Quickly turning latent needs into reality Toward a new era in electric-powered excavators

The HCM Group has always been committed to development of electric-powered construction machinery in hopes of contributing to environmental issues such as climate change and resource depletion. Until now, we implemented efforts mainly within the Japan market. In October 2018, we established a new company, European Application Center (EAC), with KTEG, a Group company of our European dealer, Kiesel (headquarters: Baienfurt, Baden-Württemberg, Germany). We are promoting the development of electric-powered construction machinery in the European market.

#### **Relevant SDGs**



Climate change is the biggest threat to development. Its impact weighs heavily on those in the weakest position. As it is a universal goal to achieve a carbon-free society to prevent global warming, the need for electric-powered construction machinery is expected to grow in the future.

## Accelerated development in Germany The synergy between the two companies drives rapid developwhere EV shift is advancing

Europe is one of the markets with the strictest regulations aimed towards the prevention of global warming and realization of a carbon-free society. This makes it a high demand area for electric-powered construction machinery. Particularly, in Germany the automotive industry is seeing a quicker shift towards EV. This trend of EV shift is expected to spread sooner or later to construction machinery.

The HCM Group has launched a new development company in Germany, which is known worldwide for its advanced environmental awareness. This company has started the development of electric-powered construction machinery geared towards the European market. The goal is for customers to try out machines at their work sites and implement improvements; thereby enhancing the speed of development.KTEG excels at marketing in Europe and possesses a wealth of knowledge on the ever-changing regulations, along with know-how to actualize customers' latent needs. On the other hand, HCM possesses a high level of technology, including base technology, among them those related to electrification including battery and drive system.

## Achieve zero emission while maintaining usability

Since electric-powered construction machinery is not equipped with an engine, they offer the excellent benefit of environmental friendliness due to a lack of waste products such as exhaust or CO2 emission from the excavator, engine oil and filters. However, we must not let power or operability fall short as it may hinder the customers' productivity at their work sites. HCM aims to reduce environmental impacts by minimizing exhaust gas and CO2 emissions while achieving highly productive electric-powered construction machinery.

In April 2019, we announced two new concept models of electric-powered excavators, the ZE85 (8 ton class) and ZE19 (2 ton class), at an international trade show on construction machinery called bauma 2019, held in Munich, Germany. These



# underpin our speedy turnaround time for development.

One thing that surprised us in our joint development with KTEG was that the speed of development was very rapid. This illustrates that there is so much more for us to learn. At the same time, however, we also realized that the basic technology we have accumulated after spending tireless hours was what made rapid turnaround possible in the development of machines with high functionality and quality. It is difficult to predict exactly when the electric-powered construction machinery market will expand. Therefore, we aim to offer quality products that we can be proud before this demand arrives. Right now, this is what we are wholly focusing on.

Hitachi Construction Machinery Co., Ltd. General Manager, Marketing Strategy Group, General Manager, Corporate Planning Office, Corporate Strategy Div. Ichirou Hirami

ment of machines that meet the specific needs of the European market.

History of HCM's development of electric powered construction machinery

HCM has engaged in development of higher efficiency and electric systems with energy-saving and clean solutions as one of the development goals for construction machinery. Particularly, electric-powered hydraulic excavators were first launched in the market in 1971. While currently most machines are powered through a cable using commercial power supply, we are also developing battery powered excavators

2006	Development of battery powered hydraulic excavator ZX70B (7-ton class) Development of 2WAY eco excavator (commercial power supply and battery powered 5-ton class)
2010	Development of lithium-ion battery mini excavator ZX35B (3.5 ton class)
2019	Development (conceptual model) of motorized excavator ZE85, ZE19

models received positive feedback from customers in the European market, where domestic manufacturers are known to dominate. In the future, we aim to continue our development, by expanding from 13-ton to 30-ton class construction machinery, to further expand the business.



Demonstration of 7E85

The skills accumulated over years of experience and desire to tackle challenges



Value Creation Story



# Preparing for future large-scale disasters The role of construction machinery

The recent spate of earthquakes, typhoons and torrential rains in Japan have had serious impacts on people's lives and the economy. Companies and governments are both working hard to make preparations for minimizing damages and restoring operations promptly following an emergency. Construction machinery play a vital role in the onsite recovery work for various types of disasters. The HCM Group is working to develop a support system so that it can be useful to communities at the time of a major disaster.

#### Relevant SDGs



Securing resilience in the face of urban disasters is an urgent issue that must be addressed in response to the frequent occurrence of natural disasters. Resilience requires a network for collaboration and cooperation utilizing the strengths of various actors.

# Construction machinery is critical for evacuation and recovery work at the scene of disasters

In 2018, Japan experienced a number of major earthquakes and torrential downpours, resulting in extensive damages in Western Japan and Hokkaido. The HCM Group provided assistance<sup>\*1</sup> to local governments so as to aid in the rescue of victims and in the reconstruction of communities following these disasters. Construction machinery is vital to the removal, sorting and disposal of earth and sand and debris. In particular, hydraulic excavators (backhoes, Double-Arm Working Machine), Track Mounted crushers, Track Mounted screeners, and Rigid Dump Trucks are needed for each stage of recovery work.

Hitachi Construction Machinery Japan, which engages in construction machinery rentals, sales and services, works together as a company to quickly supply construction machinery to areas hit by disasters. First, following its Disaster Response Manual, a disaster support headquarters that reports directly to the president is set up at the head office, while disaster support

## Concluding collaboration agreements for disasters Acting as a company communities rely on during an emergency

Hitachi Construction Machinery Japan has until now provided support at the request of affected local governments. However, the spate of disasters over the past several years has increased the need\*<sup>2</sup> to have agreements on support in place before a disaster strikes.

In October 2018, the Niiza servicing office of our Tokyo Branch concluded an agreement on the priority supply of rental equipment and supplies at the time of a disaster at the request of Nishitokyo City\*<sup>3</sup>. Nishitokyo City concluded this agreement with Hitachi Construction Machinery Japan and two other companies to work directly with companies to receive priority provision of supplies and equipment following a disaster, in order to protect the safety of local residents. The Tokyo Branch sales office and Niiza servicing office are now formulating a plan on how to specifically support the city during an emergency, based



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# Using ICT and networks to equipment and people

The Niiza servicing office owns around 1.7 billion yen worth of rental equipment, making it among the largest in all of Japan. Nevertheless, there is always a shortage of equipment following a major disaster. Therefore, it is building a support system network so that it can collaborate with other branch sales offices across Japan during an emergency. In addition, the scene of disasters not only lack construction equipment, but also operators to use them. HCM's ICT construction machinery featuring machine control and machine guidance make it possible for operators with little experience to operate machines like a pro. These machines are likely to play a major part during a disaster with people shortages. Our business operations regularly support everyone in the community. We are prepared to aid communities during an emergency using the HCM Group's technologies and network.

teams are also set up at each branch office. After checking damages locally, each team works together to carry out the initial response and then provide specific assistance after examining the need for dispatch of equipment, personnel, and transport methods to reach the scene.

\*1 Various forms of support include charitable donations, provision of construction machinery, and operator training for construction machinery, etc.



Track Mounted screen screen can be used to sort and process earth and soil at the scene of a disaster.

# on their experience in providing aid to the scenes of disasters in the past.



Practical training on recovery work using a mini excavator (Asakura City, Fukuoka Prefecture)

VOICE

#### Using ICT and networks to aid the recovery at the scene of disasters lacking