

# We will use our integrated technological expertise to create values that point the way to the future.

Ideal	Product development	We will make use of the integrated expertise of the Group to develop products that have advanced functionality and high quality from our advanced technological abilities.
	Product responsibility	We will provide products and services that are reliable and safe from our customers' perspective
	Customer satisfaction	We will fulfill our customers' needs with products and services that are impressive as well as exciting

## **Group Mission**

## "Kawasaki, working as one for the good of the planet"

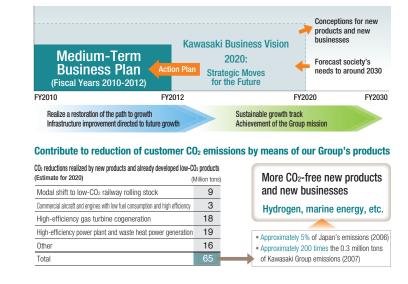
We are the Kawasaki Group, a global technology leader with diverse integrated strengths. We create new value—for a better environment and a brighter future for generations to come.

With this philosophy as a foundation, we are sending forth a wide variety of products not only to the land, sea, and air, as before, but also to the far reaches of outer space and the ocean depths.



This year we have formulated a long-term vision named the "Kawasaki Business Vision 2020: Strategic Moves for the Future," as well as a "Medium-Term Business Plan (2010-2012)." This sets forth the new products and businesses that we will create in line with our forecast of society's needs, which is to say the demands made by society, until around the year 2030.

Environmental issues are one major category of societal demand, and reducing CO<sub>2</sub> emissions is one of these issues. The Kawasaki vision calls for the company to make CO<sub>2</sub> emissions reductions by means of our products in the amount of 65 million tons by 2020. The vision looks beyond that point, as well, to the establishment of technologies for using hydrogen and marine energy that realize a CO<sub>2</sub>-free future (see pages 19 and 20).





## Contribution to Growth of the World's Shipbuilding Industry Using Accumulated Technology and Management Know-How

Mr. Shozo Kawasaki, the founder of Kawasaki Heavy Industries, Ltd. believed that Japan must have steel ships built by a Japanese shipyard, otherwise its shipping industry and marine transportation would not be secured. That spirit has been maintained over more than 130 years to date, and it is the origin of our shipbuilding business.

Today, Japan is the third country in terms of newbuilding order after China and South Korea. It is a fact, however, that Japan for a long time led the world shipbuilding industry, and we think our mission is to contribute to the growth of the world's shipbuilding industry utilizing our accumulated technology and management know-how.

As part of this mission, our company has established and is operating shipyards in China as a joint venture with a Chinese enterprise. By means of this joint venture shipbuilding business, we build the container ships, bulk carriers and other vessels at competitive price for the world wide seaborne trade, which results in the growth of Chinese economy and society as well as creation of new employment.

Because of global environmental issue and sharply rising fuel oil prices, there is a growing demand for energy saving and reduction of environmental load in the shipbuilding and marine transportation fields. By using the abundant technology of the Kawasaki Group, we are promoting the development of Eco-Ships and new propulsion systems to meet these requirements. Hydrogen is expected as a clean energy source to replace oil and LNG in the future, and we will also be pursuing the development of ships to carry liquid hydrogen to meet the needs of upcoming hydrogen society without delay.

#### **Employee Voices**

In Merchant Ship Sales Department 2, I am in charge of sales and marketing of LNG carriers to be built at our Sakaide Shipyard.

Natural gas is turned into liquid at -162°C whose volume is reduced by approximately one six-hundredth of natural gas. LNG carrier is very special tanker to transport liquefied natural gas (LNG) safely.

KHI has designed, built and delivered various types of the merchant ships, which transport the natural resources such as LNG as well as crude oil, coal, iron ore and others in the world wide market. I am very proud of my job, as Japanese shipping and shipbuilding industries contribute significantly to the energy policy of Japan by transporting the required natural resources for our daily life in Japan.

I am wondering how I am regarded as a father by my wife and daughter because I frequently come home late during weekday. Fortunately, my eleven years old daughter understands that father is working hard for my family and accepting it so far.



Susumu Aoyama

Manager, Merchant Ship Sales Department 2, Marketing & Sal Division, Ship & Offshore Struc

**Outline of Business** 

Since the founder of KHI started the shipbuilding business in 1878, the Ship & Offshore Structure Company has been building all kinds of ships with its rich experiences and latest technology, which include well reputed LNG and LPG carriers, container ships, bulk carriers, large tankers, and other merchant vessels, as well as submarines. We also have good experiences in the field of offshore research vessels and other offshore structures.

We are also operating a shipbuilding joint venture in China named Nantong COSCO KHI Ship Engineering Co., Ltd. (NACKS), which has already built various sophisticated vessels, like bulk carriers, container ships, VLCCs and we are aiming for further development.

#### **Vision**

One of the world's leading shipbuilding group that plays substantial roles in marine transportation as basic infrastructure for the world economy, and that contributes to resolution of energy saving, lower environmental load, and other such crucial issues on a global scale

#### **Product Topics**



LNG Carrier "Energy Confidence"

We were among the first to begin developing the vessels to transport liquefied natural gas, which had been receiving much attention as a clean and environment friendly fuel. We continue to incorporate advanced new technologies into our LNG carriers construction.

Ship & Offshore Structure Company Website ▶ http://www.khi.co.jp/english/ship/

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## Globally expanding a rolling stock business that contributes to global environmental preservation

The Rolling Stock Company supplies railway rolling stock and related systems and equipment, and in doing so contributes to the improvement of the infrastructure needed by society. Railways are now receiving so much favorable attention because of efforts to promote worldwide environmental measures. the increasing speed of trains and the economic growth in emerging countries. A modal shift from road to rail is underway, mainly in developed countries where transportation has been reliant on the automobile. Countries everywhere are studying the adoption of high-speed railways, which save energy, have a lower impact on the environment, and provide superior punctuality. There are also expectations for the turnkey supply of complete railway systems as transportation infrastructure for supporting the dramatic economic growth now underway in the developing countries, particularly in Asia. We will focus on supplying rolling stock, which is the key hardware, while also engaging in cooperative ventures with partners in Japan and other countries to respond to demands to serve as a system integrator as well.

We are further engaged in promoting practical applications for the GIGACELL®, a new type of nickel-metal hydride battery that was developed solely by KHI. This GIGACELL battery features a large capacity, quick charging and discharging performance, and has a long life cycle, so it is expected to have applications as a storage device and power leveling system for use with solar, wind and other such types of power generation. In addition to its use in railroad systems, its use in smart grids and other such

The Rolling Stock Company will strengthen its systems for executing international projects and work to further enhance its product lineup. In doing so, we will pursue the global expansion of the rolling stock business. The Green New Deal policy being implemented now in the United States paints a hopeful view for the railway industry, and with our production centers located in North America, we think it likely that we will also be able to contribute to this industrial policy.

#### **Employee Voices**

It has been 20 years since I joined the Rolling Stock Company. During those 20 years, the times have changed drastically and customers have become more demanding about quality. The rolling stock manufacturing being performed at the Rolling Stock Company has also entered into a period of reform. If you look inside our factories and offices, you will notice that the number of veteran employees has shrunk and the number of young employees is increasing, so the knowledge and skills of these veterans must be passed on. I think that from this standpoint, we can make our contribution to society by safety as we manufacture rolling stock that satisfies our customers.

#### Employee Family Voices (Ms. Kazuha Tani)

My father builds trains of different kinds. He makes really big trains and I think that is really great. I rode on a train that my father built, but it was so huge that I couldn't believe he makes trains like that. I hope he goes on building trains that everyone can ride on and



Rolling Stock Company Website http://www.khi.co.jp/english/rs/

#### **Outline of Business**

The Rolling Stock Company started manufacturing railway rolling stock at the Hyogo Works in 1906. Since then, the company has manufactured many renowned train cars whose names will remain in railway history and we have earned an unshakable position among Japan's foremost manufacturers.

We have manufactured high-speed rolling stock, typified by the Shinkansen "Bullet Trains," as well as express trains, commuter trains, subway trains, freight cars, locomotives, new transit systems, and other varieties of rolling stock. We supply our products not only throughout Japan, but also to the United States, China, Southeast Asia and other parts of the world. In addition to the Hyogo Works, we also have two rolling stock manufacturing plants in the United States.

With the Hyogo Works as the mother factory, our three

production centers in Japan and North America can

respond to the world's demand for rolling stock.

## **Vision**

To become a global rolling stock systems manufacturer engaging in a wide range of businesses from high-speed rail (HSR) to light-rail transit (LRT) with our world-class technologies and quality.

#### **Product Topics**



SWIMO: Low-Floor Battery-Powered Light

This is a low-floor, battery-powered tram-type light rail vehicle equipped with GIGACELL high-capacity. high-power nickel-metal hydride batteries developed exclusively by KHI and is based on the concepts of "people friendly" and "earth friendly." \*Recipient of the 19th Global Environment Grand Award (sponsored by the Sankei Group) in April 2010

Aerospace Company Website http://www.khi.co.jp/english/aero/



## Developing the human resources for the aviation industry and the space development business in Japan, and building connections to technology for the next generation

The Aerospace Company is supporting the growth of the aviation industry and the space development

In business oriented toward the Ministry of Defense, we consider our efforts in developing and manufacturing the defense aircraft that are key elements in Japan's national defense to be significant in passing on the technology for designing and manufacturing aircraft to the next generation. In other words, it is significant in terms of developing human resources. In the civil aviation business, it is important for us to continually introduce the most advanced new technologies while also considering how to produce profits. This company is presently participating in the Boeing project to develop and mass-produce an environmentally compliant next-generation passenger aircraft, the 787 Dreamliner. We are handling the forward fuselage, made of carbon fiber composite materials, as well as the main landing gear well and the main wing fixed trailing edge. In the space development business, we have been involved in development of the entirely domestically produced rockets, the H-IIA and H-IIB, for which we are handling the fairing for satellite storage in the nose and the portion of the payload attachment that releases satellites from the launch vehicle. We have also worked on the Japanese Experimental Module "Kibo," that is part of the International Space Station (ISS). The ISS is being operated with the participation of 15 countries around the world, and our work as a member of this project team is contributing to development of the space development business.

Aircraft and space development projects require over 10 years from the start of research to the completion of a final project. Our mission is to cultivate aerospace engineers who can carry forward the inheritance of Japanese technology and so make sure that connections to the next generation are maintained. This company intends to contribute to growth in the aerospace field by securing opportunities to manufacture finished products in business related to the Ministry of Defense and also expanding our civil aviation business.

#### **Employee Voices**

So far I have worked on helicopters and space equipment, and right now my work is on the P-1 fixed-wing patrol aircraft, so I have been involved in products that fly either through the air or in space. I don't think of these products merely as tools for transporting people and things. As I see it, these are products that carry a load of dreams and hopes, as well.

What would it be like if there weren't a single company in Japan that manufactures aircraft or rockets? It would feel so lacking if everything like that had to be imported. I feel great pride in this work because I think it gives many people, and not just children something to pin their hopes and dreams on.

#### At-Home Evaluation as a Kawasaki Heavy Industries Man

In some ways, I think I have a stricter evaluation waiting for me at home than at the company. "When is Kawasaki going to make an airplane that can fly on batteries? Water would be all appreciation. It may be that the public at large has even greater expectations of us!



Yasushi Shiotani

#### **Outline of Business**

Ever since 1918, when we entered the aircraft sector, the Aerospace Company has been manufacturing a wide range of products as one of Japan's premier fuselage manufacturers.

In business directed toward the Ministry of Defense, we have played major roles in developing and manufacturing a variety of aircraft, including the T-4 intermediate jet trainer, the P-3C anti-submarine warfare patrol airplane, and the OH-1 observation helicopter. We are currently the prime contractor in domestic development of the MOD's next-generation maritime patrol airplane and next-generation transport aircraft.

In the civil aviation field, we are jointly developing and manufacturing the 767, 777, and 787 aircraft with Boeing in the United States. Other work we are engaged in includes manufacturing the Kawasaki BK117 helicopter

#### **Vision**

A leader in Japan's aerospace industry and an aircraft manufacturer with solid international competitiveness in terms of quality, cost, and delivery speed.

#### **Product Topics**



#### XC-2 Next-Generation Cargo Aircraft

This is the successor to the C-1 that is currently in service with the Ministry of Defense. It has improved airspeed, range, and other performance, as well as a newly developed flight management system and an energy-saving loading and

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## Suggesting solutions to boost the realization of a low-carbon society

A variety of different CO2 reduction measures are being adopted throughout the world as ways of achieving a low-carbon society. One such measure is the use of gas-fueled cogeneration systems and other such distributed energy systems. Our company develops and manufactures gas turbines, steam turbines, and gas engines that are the core of these power generation systems. We are well aware that the quality of the products we supply directly determines the quality of the power generation systems themselves, and because of this, we are engaged day and night in efforts to develop the technology and products we need in order to provide products that are highly efficient and environmentally considerate

On the other hand, the spirit of "Omotenashi" (hospitality in Japanese) is essential. This is the attitude that provides our customers with services that resolve the particular issues they face even before those customers have become aware of what they need. It is an approach that seeks to get close to the customer's heart and mind in order to resolve problems together with the customer, and this is what could also be called the solution business. This is why we established a new Energy Solution Sales Department in April of this year, and why we have been raising our consciousness of "Omotenashi."

Our company aims to be a global equipment and systems manufacturer in the transportation systems field and the energy and environment field. In the transportation systems field, we are reinforcing our product development capabilities in order to enhance the value of our presence as a partner in the international joint development of civil aircraft engines. Meanwhile, in the energy and environment field, we will focus mainly on expanding our sales in core elements of cogeneration systems, where demand is expected to increase. This includes gas turbines, steam turbines, and gas engines. At the same time, we will also develop our business in other energy-related equipment, such as compressors.

#### **Employee Voices**

as Turbine Division manufactures jet engines for aviation and marin we use of waste heat. My job is to manage and control profit of the

ental impact, such as transport engines with good fuel economics or generation devices with higher efficiency and lower NOss. In order to meet this challenge we are always making further than and conducting more development so that we can appear to the time conduction. provements and conducting more development so that we can supply coducts that are friendly to the environment, and I feel proud to be

hope to go on doing all that I can, using whatever capabilities I have, so hat this business can grow and the Kawasaki Group can realize the global nission of "Kawasaki, working as one for the good of the planet."



Gas Turbine Business Center Website http://www.khi.co.ip/english/gasturbine/ Machinery Business Center Website ▶ http://www.khi.co.jp/english/machinery/

#### **Outline of Business**

Ever since the Gas Turbine and Machinery Company started research for jet engines during World War II, the company has been manufacturing jet engines and gas turbines. This includes parts manufacturing for jet engines installed on large passenger aircraft being jointly developed as an international project. And as a pioneer in gas turbines for industrial use, we manufacture aircraft engines, industrial gas turbines, and many types of industrial machineries. We also began producing steam turbines for marine use in 1907. Since that time, we have established a firm position in the industry through our manufacturing of marine steam turbines, marine diesel engines, and all other types of industrial machinery.

#### Vision

#### Gas Turbine Business

One of the principal gas turbine manufacturers in the world market, developing global business in the fields of energy and environment and transportation equipment centered on gas turbines as a key hardware.

A manufacturer developing global business in the fields of energy and the environment and marine through providing products with top-level technology and superior quality

#### **Product Topics**

#### L20A Green Gas Turbine

L20A Green Gas Turbine is provided as a starter for combined cycle generation to realize the principle of "greater efficiency in energy use and environmental consideration '

#### Green Gas Engine

Green Gas Engine covers the need for electric power generation of 5 to 7.8 MW. In combination with superior environmental performance, it has achieved the world's highest power generation efficiency of 48.5%



## Contributing to the world with engineering that unites energy, the environment, and industry

The Plant and Infrastructure Company offers products in the environment and energy field to contribute to resolving the world energy problem, soil and water pollution, and other such environmental problems. As part of this effort, the company is promoting waste heat power generation in China. We have installed approximately 100 waste heat power generation units in cement plants, and they are generating 2,000 MW of electricity. For the future, we intend to focus on the zero-emission eco-town concept to treat the trash and waste water generated by everyday urban living for use as fuel and industrial water, thus creating a complete cycle of energy and resource use within a city.

Meanwhile, in the field of industrial technology, we will design, procure, and deliver fertilizer plants, cement plants, and other chemical plants, as well as industrial plants for coal, steel, nonferrous metal, and so on. We hope in this way to contribute to food production and economic expansion in countries and regions that are trying to achieve growth.

This company is itself an engineering group unparalleled in the world with triple technical capabilities in energy technology, environmental technology, and industrial technology. Our strength is in combining these capabilities to achieve a certain purpose. We intend to go on improving these existing technologies to achieve a synergistic effect that will increase the number of technologies and products that are unique to us and at the top of their field. In the environment and energy field, we are engaging in development of innovative CO2 sequestration technology and hydrogen-related technology, while in the industrial machinery field, we are working on the semiconductor and liquid crystal fields, and we also plan to expand our challenge to development of automated cell culture systems and other such technology in the medical field.

#### **Employee Voices**

have also been involved in training young engineers through work as an instructor K Plant Gijutsu Juku (technical training course for the education of young engineer

lso the mother of two small children, and I am making use of our company's earing leave and flex-time systems. Just recently, my husband had to be away for weeks on a job assignment, and I managed to make it through his absence by nating my work hours using flex-time and by doing whatever work assignments I in advance. The time I spend at the company is short because I am raising my en, but I will go ahead and do the best I can by figuring out how to work more



### Plant & Infrastructure Company Website ▶ http://www.khi.co.jp/english/kplant/

### **Outline of Business**

The Plant and Infrastructure Company has been designing, procuring, and supplying all types of industrial equipment and facilities since the 1960s. These include cement plants, chemical plants, and other such large plants, exhaust gas desulfurizers and other such air pollution control equipment, and boilers for power generation and industrial use.

We further engage in design, procurement, and supply of waste incinerators, sewage treatment units, and other facilities and equipment for environmental protection. We also manufacture LNG tanks and other steel structures as well as shield machines and other excavation machinery for use in underground construction.

In China, we have also undertaken a joint venture with the CONCH Group, the largest enterprise in the Chinese cement industry, to design, manufacture, and market waste heat power generation equipment in cement plants. We are promoting the dissemination of such waste heat power generation equipment in China, and so contributing to energy conservation and environmental

#### **Vision**

A plant manufacturer of distinctive character providing products and technology that are involved primarily in energy conservation, resource conservation, and resource recycling, and that are capable of contributing to global environmental preservation and CO<sub>2</sub> reduction

#### **Product Topics**



#### Waste Treatment Facility for Use in Cement Kilns

This integrates the processes of a cement plant and a waste incinerator to render the waste non-toxic decrease its quantity, and enable recycling of resources. We are manufacturing these facilities in a joint venture with the CONCH Group in China.

Nominated for the Blue Sky Award of the United



## Manufacturing products that both satisfy the needs of a low-carbon society and fulfill the customer's desire for something "Fun to Ride"

As a division directed to general consumers, our company conducts product development to provide Kawasaki enthusiasts with satisfying performance and design. At the same time, it is our important responsibility to comply with the stringent environmental controls such as noise and exhaust emissions in different countries, as well as assuring safety by sufficient braking capability and other devises. Mitigation of the environmental impact of production is also part of our responsibility to society, and we strive to use less energy in production that is ever cleaner.

The leisure motorcycle market is expected to grow in the emerging countries, and we want to provide "Fun to Ride" products there, as well. In order to increase the number of Kawasaki enthusiasts in this way, we aim to provide products with improved quality and functionality at reasonable prices. Our company was early to deploy plants overseas, and in Southeast Asia, we have production underway in Thailand, the Philippines, and Indonesia, but we also made full-scale efforts to penetrate the Brazilian and Indian markets.

For the future, we intend to take the improvement of environmental technology as our theme and develop new technologies, electric-powered motorcycles, and other products that satisfy both the needs of a low-carbon society and of people who desire the joy of riding. There is also the area of general-purpose engine products, where we intend to press ahead with product development and marketing activities to have Kawasaki engines used by as many people as possible. In this we are looking to the needs for support of bio fuel and LPG, as well as the expanding market for engines with agricultural applications in the emerging countries.

#### **Employee Voices**

I am making the best use of my experience in the production engine the company. In the production engineering division, we were on the energy-using side, but now I am taking pains to set up arrangements for production that uses as little energy as possible, and for manufacturing of products that have less environmental impact. Society now is paying attention to global warming, recycling, and other environmental issues. Wit that impetus, we are hoping to broaden the range of environmental protection measures here in our company, as well.

Just lately, I took a vacation to take a trip to Guam. I thoroughly enjoyed the nature there under the beautiful sky and came back with a solid new appreciation for the importance and the pleasures of the global environment. I'm thinking of putting that to use at work, too.



Motorcycle & Engine Company Website ▶ http://www.kawasaki-cp.khi.co.jp/index\_e.html

#### **Outline of Business**

The Motorcycle & Engine Company manufactures a broad range of products, including motorcycles. ATVs (all-terrain vehicles), recreation utility vehicles, utility vehicles, JET SKI® watercraft and general-purpose gasoline engines; and supplies them to markets around the world.

Kawasaki began production of motorcycle engines in 1953, and has introduced a number of historically renowned motorcycles, such as the Z1 and GPz900R. Currently popular models include the Ninia 250R and 71000. The company has also been marketing various kinds of general-purpose gasoline engines, ranging from ultra-miniature 23cc engines to 1000cc V-twin engines, as well as brush cutters, blowers, etc., equipped with those engines.

In addition to the Akashi Works, which is the "mother factory," production bases are deployed in the United States, South America, and Asian

A leading world-level manufacturer of engines and personal vehicles centered mainly on motorcycles advancing through further penetration of "Fun to Ride" products against a background of advanced



The Sport Tourer model 1400GTR is newly equipped with rider support technology to enhance driving safety and systems to promote greater efficiency and fuel economy when driving.



## Building bonds of trust with the customer and providing behind-the-scenes support for environmental protection and production efficiency improvement

The Precision Machinery Company, with Japan as its base, has established centers in the United Kingdom, Germany, the United States, South Korea, and China through which we are carrying on a global expansion of our production, marketing, and services. In hydraulic equipment, we are presently concentrating our production and marketing efforts in China, where the market for hydraulic excavators is expanding into the largest in the world. In industrial robots, too, the needs for automation are growing rapidly in China as well as in other developing countries, and we are gearing up our organization for the

A key part of global expansion is the ability to provide products with performance and quality that are the same everywhere in the world. In order to achieve this, we consider it necessary to deploy our conceptual approach to manufacturing, which we could call the Kawasaki Way, at our bases throughout the world. Amid growing concern over global environmental problems, there is demand for greater energy saving and heightened efficiency in construction machinery and industrial machinery itself. We have been increasing the efficiency of hydraulic equipment by increasing the rated pressure and reducing pressure losses, and this has contributed to energy saving of the machines which load our equipments on board. We intend to contribute to further energy saving and CO2 reduction in the future by developing hybrid equipment that combines hydraulic and electric systems, and by developing hydrogen gas valves for use in fuel cells, and other such products.

In the field of industrial robots, customers have a need to build product lines capable of lower cost and higher quality production. This company will respond to these needs by proposing our unique solutions that combine thoroughgoing space saving and energy saving with reduced total cost as well as further advanced robot intelligence.

#### **Employee Voices**

Precision Machinery Company Website http://www.khi.co.jp/english/kpm/ Robot Business Center Website http://www.khi.co.jp/english/robot/

### **Outline of Business**

The Precision Machinery Company originated in 1916, when we began manufacturing hydraulic steering gear. Ever since then, we have been manufacturing pumps, motors, valves, and other hydraulic equipment that are important functional components in many different kinds of construction machinery and land-based hydraulic machinery used in assembling those components as well as other maritime hydraulic equipment including steering gear and deck machinery.

In 1969, we were the first to begin manufacturing industrial robots in Japan, and since that time we have manufactured large numbers of welding robots, handling robots, assembly robots.

#### **Vision**

#### **Hydraulic Equipment Business**

A top brand manufacturer on the world level in the motion control field as well as a provider of drive and control equipment, engineering, and services centered on fluid power technology.

#### Robot Business

A robot manufacturer that will establish its top position to provide quality and total solutions in automotive, semiconductor and general manufacturing fields. And also blaze a trial in the new field with automation needs.

#### **Product Topics**

#### Various Pumps, Valves, and Motors

Kawasaki hydraulic equipment and systems are used in construction machinery and industrial machinery where great power and certain control are required, including a wide variety of applications in various kinds of construction and other machinery.

Small and Medium-size R Series Robots

Kawasaki robots are active in various kinds of factories. They are key elements

of hardware in saving energy and raising production efficiency



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