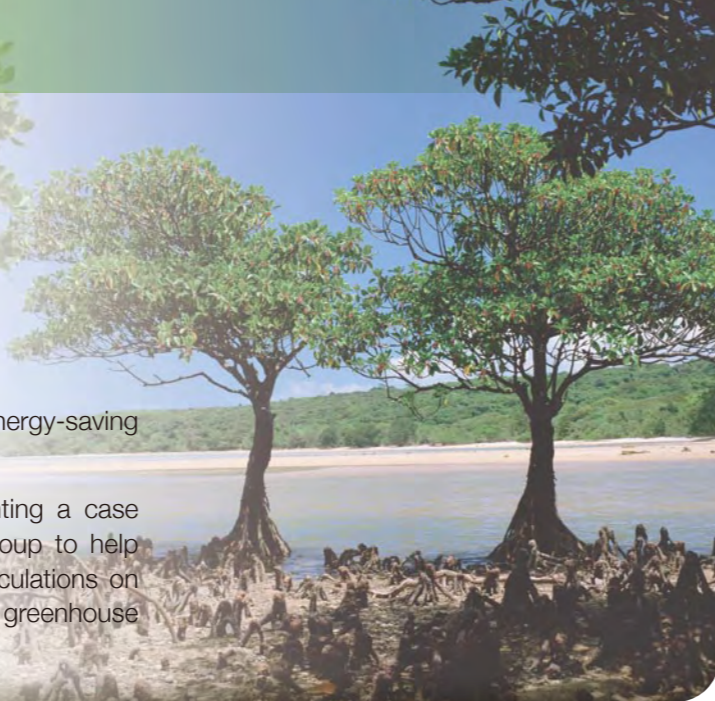


Cover Story

Creative Manufacturing That Helps Slow Down Global Warming

The "Eco Products" section has regularly reported the energy-saving features of products of our Group.

In this issue, however, we take one step further: presenting a case study of certain customers using the products of our Group to help make their businesses more efficient, and adding trial calculations on how much our products help slow down the emissions of greenhouse gases.



We Help Reduce CO₂ emissions by using the "Vehicle dispatch control system based on digital mobile radio equipment (GPS-AVM)."

Wireless Communications and Information Systems

Kokusai Motorcars Co., Ltd. introduced the "vehicle dispatch control system based on digital mobile radio equipment (GPS-AVM)" as early as 2003. The system increases vehicle dispatch efficiency, thereby shortening the travel distance and helping vehicles to reach customers soon, while at the same time reducing CO₂ emissions.

The System Has Made Us More Efficient.

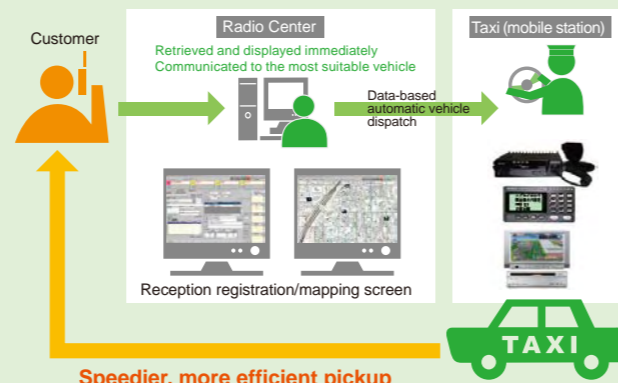
Kokusai Motorcars Co., Ltd. is the largest taxi company in Tokyo, owning 1,614 taxis, and operating as many as 2,591 vehicles when including those of its group companies. In the vehicle dispatch control system that we delivered, location information via GPS mounted in the taxis is displayed on maps at the vehicle dispatch center over a digital mobile radio line. This allows the system to automatically select the most appropriate vehicle and instruct the driver to meet a specific customer at the location from where the order was placed. At that company, this system is consequently called the "efficient vehicle dispatch system."

Since the company introduced the system, vehicle dispatch frequency has rapidly risen by as much as 25% from the vehicle dispatch frequency immediately prior to system introduction. The new system also shortens the time between order reception and vehicle dispatch, and has therefore earned a reputation for satisfaction among customers.

In line with that increased frequency, drivers are relieved of having to drive around without customers, resulting in less wasteful travel and significantly reducing CO₂ emissions.

When you use a taxi to travel a distance of 10-km and ride in one provided by a company with 25% higher vehicle dispatch efficiency, you will have chosen a vehicle with less wasteful travel in picking you up or looking for you. In such case, you are helping to reduce CO₂ emissions by 625 g.

Efficient Vehicle Dispatch System



Speedier, more efficient pickup

Wasteful travel reduced by 2.5 km → CO₂ emissions reduced by 0.6 kg



Radio center at Kokusai Motorcars Co., Ltd.

VOICE

A comment by a salesperson

Mr. I, Communication System Sales

"We had a very hard time in creative manufacturing relative to increasing the operability of operators and drivers. As the result, however, the system has successfully achieved a great increase in vehicle dispatch frequency and also played a role in reducing CO₂ emissions. Consequently, our customers are very satisfied."

Glossary ※1: GPS: Global Positioning System
※2: AVM: Automatic Vehicle Monitoring System

We Help Reduce CO₂ Emissions by Reducing Lighting Power

increasing the sensitivity of super-high-speed color cameras that "take pictures of the moment"

Broadcasting and Video Systems

Super-high-speed color cameras are made more sensitive, thereby reducing the lighting power supply, and in so doing reduce CO₂ emissions and help slow down global warming. Moreover, they take pictures at an instant (one millionth of a second) of such images as fuel injection, thus helping to devise new eco-friendly products.

We Contribute to New "Environmental Measures" by Using Photographic Technology That Allows You to See The Moment.

This super-high-speed color camera is actively used in "taking pictures of the moment," such as in super-slow-motion videos employed in the relay broadcasting of sporting events and vehicle collision testing.

In conventional practice, taking photos of the moment required a very intense light applied to the object.

Given its enhanced sensitivity performance, the new camera model takes pictures under a light intensity about 60% of what was required conventionally. By inhibiting the lighting used when taking pictures, the product reduces the power consumption required, and therefore helps reduce CO₂ emissions.

Moreover, image analyses of the moment of fuel injection, explosion, liquid outflow and other phenomena photographed with this latest camera model are used in implementing disaster prevention measures against earthquakes, tsunami and other natural disasters, and in the development and research of new eco-friendly products geared toward slowing down global warming.



Super-high-speed Color Camera



Instantaneous picture of impact by a golf club

With a conventional camera, a customer required annual electrical energy of 10,000 kWh on average for photographic lighting. With our new camera model, however, the customer only needs annual electrical energy of 6,000 kWh. This means a decline from 3.6 t to 2.2 t (down 1.4 t) in equivalents of CO₂ emissions.

Lighting power requirement down 40%

CO₂ emissions reduced by 1,400 kg in one company per year from the conventional model

VOICE

A comment by a developer

Mr. N, Camera System Design Engineering

"The 'images of the moment' not visible to the human eye always provide a surprise. This is a rewarding job if it helps improve the environment and contributes to society through TV relay broadcasting, or image analysis and research."

We Help Reduce CO₂ Emissions of Semiconductor Production Sites

with our semiconductor manufacturing equipment corresponding to state-of-the-art technology.

Semiconductor Manufacturing Systems

Production technology to meet semiconductor demand is directly linked to energy-saving measures and also contributes to the environment by enhancing semiconductors.

Consumption Energy Reduction of Semiconductor Manufacturing Equipment

Among all semiconductor manufacturing systems, our thermal processing equipment consumes energy including a high percentage of it wasted by thermal exhaust and cooling water. It is therefore important to take energy-saving measures for the equipment. Meanwhile, the market cycle of semiconductors is so quick that actions are constantly being taken to increase production efficiency. Such actions include the improvement of throughput, reduction of tact time and shortening the idle time of production lots between production stages (between systems). These measures are not originally designed to save energy, but an improvement of semiconductor competitiveness (i.e., shorter lead times, lower costs) eventually helps reduce the energy requirement per unit. Semiconductor advancement helps spread and advance electronics, and also contributes to environmental measures.



Semiconductor manufacturing equipment

High-speed and mass-productive semiconductor manufacturing equipment Our equipment allows the same number of semiconductor chips with less electric power.

Throughput 25% higher

CO₂ emissions reduced by 120 kg per million chips

Larger wafers 200mm → 300mm

CO₂ emissions reduced by 450 kg (by half) per million chips

VOICE

A comment by a customer

A Production Engineer, A Corporation

"There are various kinds of semiconductor manufacturing systems in a semiconductor production line including thermal processing equipment. The continuous efforts made through energy-saving measures for each unit will lead to overall energy-savings. Energy-saving measures for equipment will not work without the cooperation of equipment suppliers. We therefore request your continued proactive cooperation."

Glossary ※3: Throughput: Number of wafers processed per hour
※4: Tact time: Time required for one process of the equipment