

Subaru's Capabilities

Technologies to make dreams come true (Subaru Automotive Business)

Clean energy vehicle Birth of the SUBARU "R1e"

Subaru believes that it is important for us as automaker not only to develop attractive cars but also to contribute to the environment and society by utilizing our accumulated technologies. Introducing the SUBARU "R1e", a next generation EV*1, which we are developing with Tokyo Electric Power Co., Inc., is to realize an era in which environmentally friendly cars are commonplace.

[Electric Vehicle for Business Use Jointly Developed with Tokyo Electric Power Co., Inc.] The SUBARU "R1e"

Subaru's New Proposal — The SUBARU "R1e" Electric Vehicle —

In June 2006, we completed a prototype of the electric vehicle which we have been developing jointly with Tokyo Electric Power Co., Inc. (TEPCO) since the fall of 2005, and introduced this vehicle to serve for business use at TEPCO. This vehicle, with a top speed of 100 km/h, has improved on the R1, utilizing thin, high-performance lithium-ion batteries capable of running approximately 80 km on a single charge. We designed and manufactured the vehicle and TEPCO developed a high-speed charger.



Diagram of the internal mechanism of the Electric Vehicle R1e

Realizing the Era of Clean Energy Vehicles — Development of Secondary Batteries (Chargeable Batteries)

It is now possible to produce electric power from renewable energy sources with less environmental impact, such as solar, wind, water and geothermal power, but the challenge is how to store the electricity. If electricity could be stored, the uses of electricity will greatly change, for example, night time electricity could be effectively utilized and electricity could be stored onboard vehicles. Based on this idea, we have worked on the development of secondary batteries which store electricity.

In May 2002, FHI established NEC Lamilion Energy, Ltd. (NLE)*2, jointly with NEC Corporation (NEC) as a planning and development company for automotive manganese lithium-ion battery packs. At NLE, we worked on the development of secondary batteries for hybrid vehicles, electric vehicles, and fuel cell electric vehicles, with the result that we successfully developed long-life batteries, based on the high-

performance fuel cells developed for hybrid vehicles and electric vehicles, good for ten years or approximately 240,000 km. This type is called the NLE lithium-ion battery.

Superior characteristics of the NLE lithium-ion battery developed using the technology to laminated manganese lithium-ion battery packs

- ① High-power
- ② Superior mountability
- ③ Quick charging
- ④ Long life and high safety
- ⑤ Low cost



NLE lithium-ion battery mounted on the "R1e."

* 1 : EV: Electric Vehicle

* 2 : In March 2006, we terminated our joint venture at NLE following the successful development of the prototype.



Never Give Up on Dreams — Kazumasa Arai

The most remarkable feature of our SUBARU R1e is its newly developed NLE lithium-ion long life batteries, which last approximately 10 years and can be quickly charged (15 minutes).

In addition, when these batteries are used in electric vehicles, the motor can generate the necessary torque on starting up to accelerate from a stop as quickly as a gasoline-powered vehicle, achieving a delightful Subaru-like driving performance.

We advanced the development of the "R1e" based on the "R1", a mini car already available in the market, in order to keep costs as low as possible.

There are still many challenges to be met such as finding an ideal way to mount the batteries, necessary to distribute and reduce the car's weight, as well as setting the price. However, we will first work to popularize this car for business use aiming to release it to the market at a reasonable price in the near future.

Kazumasa Arai
Manager, Core Technology R&D Group,
SUBARU Technical Research Center

Characteristics of the SUBARU "R1e"

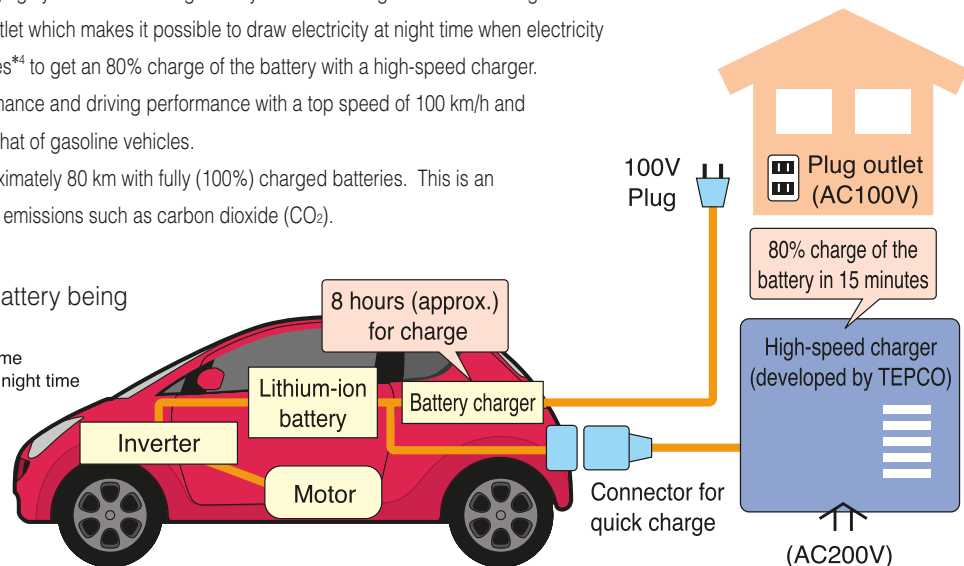
The Subaru "R1e" has an ideal charging system because it generally takes about eight hours*³ to charge and can be charged from a household power outlet which makes it possible to draw electricity at night time when electricity prices are lower. It takes only 15 minutes*⁴ to get an 80% charge of the battery with a high-speed charger.

The R1e offers both practical performance and driving performance with a top speed of 100 km/h and acceleration and braking equivalent to that of gasoline vehicles.

Moreover, cruising distance is approximately 80 km with fully (100%) charged batteries. This is an environmentally friendly car with no gas emissions such as carbon dioxide (CO₂).

Image of an NLE lithium ion battery being charged on the Subaru "R1e"

For battery charge recourses, we assume AC100V household power outlet using night time electricity and AC200V power outlet of high-speed charger.



Column

Exhibited at the 39th Tokyo Motor Show 2005 — Passenger Cars and Motor Cycles

The "R1e", an R1-based electric vehicle, was placed in the Clean Energy Test Ride event at the 39th Tokyo Motor Show, which was held at the Makuhari Messe from October 19 through November 6, 2005, and more than 500 visitors in total experienced Subaru's latest technology.



At the Test Ride course. "The driving noise is considerably less than gasoline-powered vehicles and acceleration is superior."



Visitors looking over the mechanism and features of the car.

* 3 : When fully (100%) charging the battery using the onboard charger (single-phase 100 V).

* 4 : When the battery is 80% charged using a stationary power supply (three-phase 200 V)

Things That Subaru Can Do

Let Us Bring Clean Energy to Your Town (Eco Technologies Company)

Prototype of a Large-Scale Wind Turbine System, "SUBARU 80/2.0," Completed

Large-Scale Wind Turbine System, "SUBARU 80/2.0"

On December 25, 2005, the prototype "SUBARU 80/2.0," a 2000-kW class, large-scale wind turbine system, developed in three years by Eco Technologies Company, was erected and began demonstration testing, in Hasaki, Kamisu City, Ibaraki Prefecture. This three-bladed wind turbine system, which has a 2000 kW rated power output, has variable pitch controls and is 62 meters in height from the ground to the center of the rotor. The rotor, which has a diameter of 80 meters, can generate electricity from a wind velocity as low as three meters per second. The generator was developed by Hitachi, Ltd., our joint development partner.

View of the 80 meter diameter rotors being assembled from the top of the 60 meter high tower

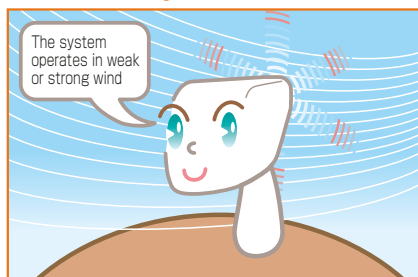


Superior Characteristics of the SUBARU 80/2.0

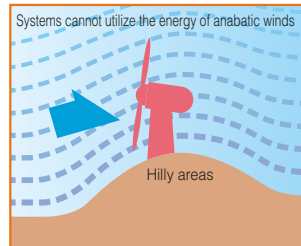
- 1. Downwind-type turbine with high power generation capacity**
 The main feature of this wind turbine system is its downwind-type turbine with the rotor placed on the leeward of the tower in order to fully utilize the energy of wind blowing up from mountains and hilly areas. Also this design is safe and strong because the load placed on the main mechanism by typhoons and turbulent wind is reduced by weather cock stability characteristics.
- 2. Designed to withstand large typhoons and thunderstorms**
 As a countermeasure against the extremely strong winter thunderstorms which occur in the areas along the Sea of Japan, this system was built to lightning-resistance specifications stricter than international standards.
- 3. Easier installation is possible by transporting disassembled parts partially**
 Because the large and heavy parts can be disassembled into smaller components, the system can be introduced in areas where it used to be difficult to install 2000-kW class systems, further contributing to the popularization of wind turbine generator systems.



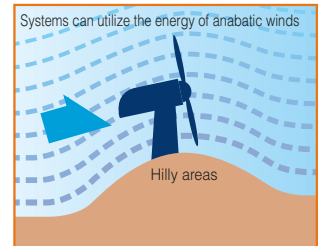
Downwind system



Upwind system (traditional wind systems)



Downwind system (Subaru 80/2.0)





Please Watch for Subaru's Wind Turbine System — Toru Nagao

In response to increasing market demands for large-scale wind energy, we developed the wind turbine system by integrating our top technologies. When I first saw the huge, 80 meter diameter turbine slowly start to rotate in the wind, I was deeply impressed.

This system will be commercialized in the near future following verification testing of the prototype. Please watch for Subaru's wind turbine system.



Toru Nagao
Project General Manager,
Wind Turbine Project,
Eco-Technologies Company



Wind Noise Has Been Minimized — Hiroshi Kato

We have directly tackled the challenges of a large-scale wind turbine system, including how to improve durability in Japan's unique weather conditions which include typhoons and thunder storms, and how to transport and install parts easily at low cost. We were able to make the wind noise of the downwind-type system, which was a concern, quieter than that of the upwind-type system by utilizing the results of our many years of research.

Hiroshi Kato
Project Manager,
Wind Turbine Project,
Eco-Technologies Company

Unique and Outstanding Subaru Design — Yoshinobu Noborisaka

Subaru's small-scale wind turbine system, now on the market, has been favorably evaluated by customers for its superior design allowing it to blend in with the landscape. Similarly, the design of the recently developed large-scale wind turbine system will be yet more sophisticated by the time of its release.

Wind energy generation can easily convey an image of environmental friendliness, but we still think it is of the utmost importance to consider the environmental effects of manufacturing and transporting the system and to gain the trust and understanding of local residents where the system is installed, before proceeding with development.



Yoshinobu Noborisaka
Manager, Wind Turbine Project,
Eco-Technologies Company

Column

Up Until Subaru 80/2.0 Was Completed

- ①The inside of the nacelle
- ②The completed nacelle
- ③The 62-m-high tower being constructed
- ④Assembly of the blades and the hub
- ⑤The nacelle being lifted to the tower
- ⑥The rotor is lifted using a 500-ton crane, a rare sight in Japan
- ⑦Employees take part in the installation
- ⑧Then President Takenaka visiting the site and taking commemorative photos. He said, "Not many company presidents get to climb up such a tall wind power generator (laughing)."

Brief Development History of Subaru Wind Turbine System

1996

The development of wind turbine systems at Subaru began when some young aerospace engineers, who were interested in environmental issues, got together and started research in their free time motivated by the questions, "What can we leave for our children?" and "Is there any new business we can initiate by utilizing aerospace technologies?" We conducted joint research with the Mechanical Engineering Laboratory, the Agency of Industrial Science and Technology (currently the National Institute of Advanced Industrial Science and Technology, an independent administrative agency) to study blades for new wind power generation systems and control, establishing new basic technologies in the process.

1999

We were delegated by NEDO*1 to conduct research and development for the national project, "Development of Advanced Wind Turbine Systems for Remote Islands." For this project, we developed a superior wind turbine system (100 kW) with world leading performance and functions. This system is now available on the market as the SUBARU 22/100.

2000

In November, we announced the "Subaru Small- Wind Turbine System" (Subaru 15/14 (40 kW)). This effective wind generation system, which has a beautiful Subaru style design and quietness suitable for cities and parks, has been employed for private use and university research and has been favorably received by many customers as a symbol of environmentally friendly energy.

2005

In December, we installed Subaru 80/2.0, a large-scale wind turbine system (2000 kW) in Kamisu City, Ibaraki Prefecture and began demonstration operations.



Subaru 15/40 Tochigi Science Museum

Subaru Small Wind Turbine System

The Subaru 15/40 received 2001 and 2002 Good Design Prizes and fiscal 2001 NEF Prize (Agency of Natural Resources and Energy Director-General Prize).

* 1 : NEDO: New Energy and Industrial Technology Development Organization

Things That

Subaru Eco Class Delivery Service: "Let's Protect Our Valuable Earth!" (Gunma Manufacturing Division)

We Can Do

As members of society, we at Fuji Heavy Industries enjoy carrying out our responsibilities through Subaru's unique social action programs. We will continue to make efforts as a manufacturer to support the healthy and continuous development of society by actively conducting activities such as providing products, cultivating human resources to take charge of next generation manufacturing, contributing to the areas surrounding our plants and assisting all employees' social participation. Here we introduce the Subaru Eco Class Delivery Service, an environmental education program for local elementary school students, which Gunma Manufacturing Division has been conducting since fiscal 2004.

The Subaru Visitor Center, opened in 2003



Eco Class Delivery Service

Subaru Eco Class Delivery Service for Elementary School Students

The Subaru Eco Class Delivery Service is a community-based environmental education program, which Gunma Manufacturing Division has been conducting since fiscal 2004. The main characteristic of this program is the combination of educational visits (Subaru plant tours) with eco classes by FHI staff visiting schools (Subaru Environmental Exchange Circle).

We Would Like to Provide More Opportunities for Children to Learn About Our Environmental Efforts

The Recycling Lab where we introduce Subaru's environmental activities was established at the Subaru Visitor Center which opened in July 2003 at the Yajima Plant of the Gunma Manufacturing Division. This Lab is open to visitors for plant tours and shows the processes involved in manufacturing automobiles. Approximately 92,385 people, mainly elementary school students, visited this lab in fiscal 2005.

Based on our wish to provide opportunities to elementary school students who visit the plant to learn more about our environmental activities and increase their awareness of environmental issues, we offer the Eco Class Delivery Service (16 schools in fiscal 2004 and 22 schools in fiscal 2005) in collaboration with Ota City, our local municipality, and the local board of education, both of which are advancing the ISO*1 process for schools.



Subaru's environmental efforts being exhibited at the Recycling Lab



Children are very interested in experiment results



Questionnaire surveys returned from elementary school students and teachers

The Theme of the Eco Class Delivery Service is "Let's Protect Our Valuable Earth!"

With the theme "Let's Protect Our Valuable Earth!", we achieve our educational goal of developing children's environmental awareness using a film screening, an experiment simulating global warming using a flask and carbon dioxide, and a quiz in the Eco classes so that students think about what they can and have to do to protect the environment now and in the future and then take action. Each class takes 45 minutes. The children's environmental awareness is always very high and our classes are always favorably received.

* 1 : ISO stands for International Organization for Standardization. ISO issues a variety of international certifications including the ISO14001 for environmental management systems and the ISO9001 for company quality control systems.

Subaru and Local Communities Should Tackle Environmental Issues Together —Our wish and the opportunity were granted— Kazuyo Tsuchiya

This activity came about when we started thinking about what we could do to contribute to the local community. We would like to express our appreciation to Ota City, which gave us the opportunity to develop our ideas by listening to us and helping us. At the Ota City Board of Education, we learned that local schools have conducted "School ISO" activities.

Subaru Eco Class Delivery Service was born from our wish to visit and help local residents in return for their frequent visits to our Visitor Center, and our desire to help children understand the importance of the global environment. We have only one opportunity to meet each school student and for only 45 minutes at that. However, the children listened with interest to our enthusiastic discussion of the environment. I am always thankful that we started this activity.

Learning about the environmental activities conducted at schools through the Eco Class Delivery Service was helpful for us. Subaru and local communities should tackle environmental issues together. We would like to actively continue environmentally friendly business activities by exploring the ways we can take care of the future global environment with the children who will lead our future.

We Want to Improve the Educational Content — Toshiyuki Kawano

Regrettably, we could not complete our discussion during classes due to time constraints. We would like to review the contents and make the key points clearer.

We Want to Communicate Our Activities Related to Automobiles and Environmental Issues — Seiji Mogi

I think it is important for us to understand more about the impact of automobiles on the environment and our own environmental activities, and to communicate these to children who love automobiles.

We Want to Train More Instructors — Katsuhiko Hori

I feel that our relationship with local residents is becoming much better as a result of the Subaru Eco Class Delivery Service. Because we are facing some problems such as a shortage of instructors for the increasing number of schools we visit, we plan to focus on training more instructors.

We Want Our Eco Class Delivery Service to Become a Grass-Roots Activity — Kiyoshi Hoshino

In order to enhance the contents of our education program, we have to understand more about school programs and actual school situations. It is important for us to have a clear idea of what we really want to communicate to children. Also, I think our challenge is to improve the program so that we can combine the Subaru Plant Tours and the Eco Classes more effectively. Subaru Eco Class Delivery Service began in fiscal 2004 thanks to the cooperation of Ota City and the people involved. We will expand this service outside the city hoping that it spreads and becomes a grass-roots activity in neighboring communities.



Kazuyo Tsuchiya
Environment & Safety Policy Planning Dept.
Gunma Manufacturing Division



Toshiyuki Kawano
Environment & Safety Policy Planning Dept.



Seiji Mogi
Environment & Safety Policy Planning Dept.



Katsuhiko Hori
Secretariat of Subaru Environmental Exchange Circle,
General Administration Dept.



Kiyoshi Hoshino,
Environment & Safety Policy Planning Dept.

Achievements of Subaru Eco Class Delivery Service in fiscal 2005

Elementary school (22)	Date	Attendees
Komagata	June 7	54
Niragawanishi	June 28	65
Torinogo	July 8	42
Niragawa	Sept. 2	66
Housenminami	Sept. 5	20
Asahi	Sept. 8	114
Josai	Sept. 22	97
Chuo	Sept. 27	64
Kuai	Sept. 30	94
Hosen	Oct. 4	97
Otahigashi	Oct. 5	44
Ikushina	Oct. 6	149
Kyuhaku	Oct. 13	119
Sawano	Oct. 18	84
Minami	Oct. 21	85
Godō	Oct. 26	107
Sawanocho	Oct. 31	69
Serada	Nov. 4	47
Ojima	Nov. 8	109
Morita	Nov. 11	91
Hosenhigashi	Nov. 15	79
Ota	Nov. 21	75
TOTAL		1,771

Column

Subaru Environmental Exchange Circle Received the 15th Energy Publicity Activities and Facilities Award

On March 25, 2006, Subaru Environmental Exchange Circle received the Information Center for Energy and Environment Education Chairman Incentive Award at the Energy Education Fair 2006 held at the Science Museum (Tokyo) as a superior example of an activity conducted in cooperation with the local community.



At the awards ceremony, Staff of the Subaru Environmental Exchange Circle; Hori, Hoshino and Tsuchiya (from left to right)



Our educational materials on display



Coexistence of Nature, Cars and People To become a company friendly to people and the environment, we have started with what we can do.*1

Fuji Heavy Industries has been conducting environmental activities together with Subaru dealerships*2 to build environmentally friendly dealerships. Here we introduce Niigata Subaru, Co. Ltd*3 which acquired ISO14001 certification (Environmental Management System) in June 2005 and has been actively pursuing environmental activities.



Location Headquarter: 2307 Yamada, Niigata City
 Established Established October 16, 1958
 Paid-in capital 150 million yen
 Employees 362 (as of July 1, 2005)
 Description of business : Sales and maintenance service of all models of Subaru vehicles and Industrial Products

- Head Office
- Head Office, Kurosaki Branch
- Service Center
- Niigata Ebigase branch
- Shibata branch
- Toyosaka Vehicle Center
- Toyosaka Sheet Metal Painting Center
- Toyosaka Parts Center
- Environmental Department, Industrial Vehicle Section



Aiming for Coexistence of Nature, Cars and People

Although automobiles are very useful for everyday life, they have significantly impacted the environment. Niigata Prefecture, where Niigata Subaru, Co. Ltd. is located, is a productive land with bountiful nature, but at the same time, the society is automobile oriented and the highway network is well developed. Treating the environment with the utmost respect, all of us at Niigata Subaru with the support of local residents have been conducting activities based on ISO14001 (Environmental Management System: EMS) starting with the things within our capabilities.



Tsutomu Suzuki
Part-Time Auditor

Advancing Activities with Realistic Goals by Involving All Employees

Since the kickoff of ISO14001 in the summer of 2004 until the present day, our activities have not necessarily gone smoothly. We visited the Subaru Teams, companies with advanced programs, government offices, audit institutes and other related organizations many times to learn about EMS. Then, we set a policy under which we could first conduct activities with realistic goals.

In addition to working on EMS, which is a matter of course for achieving corporate social responsibility, we set this as our primary goal at the same time aiming to cultivate human resources by carefully managing our targets in order to establish a firm foundation for our activities.

Achievement of EMS (Environmental Management System)··· Effects of Internal Audit

We established the audit team with board members and executive officers as the core. This team of auditors has been able to understand in detail the activities of other divisions and gain a broader vision of in-house organization.



Masao Naito, Director, Sales & Marketing Division, conducting internal audit



A cut-off valve based on an employee's idea placed on the oily water separating tank



Satoru Saito
Director, General Manager, Sales & Marketing Division

* 1 : This catch phrase was selected from among employee suggestions in the EMS establishment process of specifying business activities causing environmental impact.

* 2 : Subaru dealerships: There are 48 member companies in the Japan Subaru Automobile Sales Association (as of July 2006).

* 3 : The environmental activities of Niigata Subaru, Co. Ltd. are also disclosed on the Web site: <http://www.niigata-SUBARU.co.jp/env/environment.html>

Things We Can Do... Activities of Other Departments

We are advancing green procurement activities by placing importance on communication with our business partners.
(Kaoru Touma, Human Resources and General Affairs Section)

We are serious about organizing our workshops. We check our customers' vehicles at orderly, organized workshops.
(Naoki Watanabe, Assistant Manager, Service Center, Kurosaki Dealership, Head Office)

As sales personnel, we are actively communicating our environmental activities to customers.
(Takeshi Nakagawa, Assistant Manager, Sales Division, Kurosaki Dealership, Head Office)

Progress

We have been able to increase mutual trust across divisions by understanding other departments' problems and efforts through the internal audit.
(Satoru Yokoyama, Sales Support Manager)

Because we have made the standards clear, we are able to expand the activities to all other dealerships in the prefecture.
(Muneo Tanabe, Manager, Service Department)

Important Points for Advancing EMS Activities

In order to advance the activities as a whole, we are trying to reduce the number of rules so they can be easily understood by everyone.
(Naoki Tanaka, Manager, CSR Promotion Section)

**We Are Also Actively Conducting Social Action Programs**

We are also conducting cleaning activities around the dealerships and supporting reconstruction activities in the wake of the Niigata Chuetsu Earthquake.



Cleaning activities conducted once a month around the dealership.



On November 19, we received a letter of appreciation from the district afflicted by the Niigata Chuetsu Earthquake.

Since the immediate aftermath of the earthquake, Niigata Subaru has lent two Sambaer trucks to the Nippon Foundation (volunteer organization) which has been assisting in the afflicted area. These trucks have been fully utilized for transport in the district by volunteers from across Japan.

Japan's First Organic Show Room Constructed With No Harmful Atopy-Inducing Building Materials — Shibata Dealership

Recently, illnesses such as atopy have been linked to harmful VOC substances*1 contained in building materials. The Shibata Dealership is Japan's first organic show room for automobiles constructed with materials that have no harmful substances. Maintaining the dealership is very difficult because there

are restrictions such as no smoking and no waxing. However, the dealership received favorable evaluation from our customers as "a store friendly to people and the environment," resulting in an increase in the number of shop visitors of more than 20%. Please feel free to visit the Shibata Dealership.



Shibata Dealership: Acquired ISO14001 certification by a registrar in June 2006.



Show room: The surroundings are redolent with nature.



Kid's room: Everything is made from natural materials



Masuo Ikarashi
Shibata Dealership:
Store Manager

Column**Interview with President Ikeda**

Shuichi Ikeda
President

We are keenly aware of the strong need to incorporate environmental factors such as resource conservation, low pollution and recycling into all stages of our business in addition to providing the level of driving performance and safety which Subaru is known for.

We will advance our activities based on the conviction that engaging in environmentally friendly activities is fundamentally linked to the successful expansion of our business and essential to becoming a company which moves and delights people and which is moved and delighted in return.

As a Subaru dealership that serves all regions in the prefecture, Niigata Subaru's responsibility is to become "a general hospital for the customers' life with Subaru cars while holding the network of local residents in high regard and cultivating good relationships with customers through the provision of automotive products.

We will utilize EMS as a tool to realize our goals. Please watch for our future activities.

* 1 : VOC stands for Volatile Organic Compounds.