# Green Crossover Project: Joint Pilot Project on Low Carbon Transportation System Using Clean Energy

"Green energy" is generated from natural energy sources such as solar power, which has a low impact on the global environment. In May 2010, we launched a joint pilot project called the Green Crossover Project together with Tsukuba City in Ibaraki Prefecture. The project adopts a crossover approach in realizing a low-carbon society through the development of advanced applications for green energy and lithium-ion batteries.

# Committed to achieving a low carbon society by leveraging the combined strengths of the ITOCHU Group

## Project overview

We launched Japan's first pilot project on low-carbon transportation system, integrating solar power and electric vehicles (EVs) in Tsukuba City. Three MAZDA DEMIOs were converted to EVs, and deployed as the official vehicle for Tsukuba City, company vehicle for FamilyMart convenience store, and vehicle for car sharing to the Tsukuba residents.

In line with the project's goal for EVs with zero CO<sub>2</sub> emissions, photovoltaic power generation systems, stationary storage batteries, and quick chargers have been installed at FamilyMart "Tsukuba Science City Store" and ITOCHU ENEX "Tsukuba Science City East Avenue CS" to charge EVs using solar-generated electric power.

## ITOCHU Group in cooperation with leading companies from various industries

As a first step in developing a competitive, environmental business model, ITOCHU is promoting the secondary use of the lithiumion car batteries for grid storage, and is conducting a comprehensive analysis of the battery degradation as well as the operational data. The ITOCHU Group, together with leading companies from various industries, will be deploying advanced technologies such as integrated energy management systems using Information and Communication Technology (ICT), car sharing, and billing system for quick charging.

By leveraging ITOCHU Corporation's unique strengths of having convenience stores and gas stations as group companies, Green Crossover Project is the first step toward realizing our goal for a low carbon society as well as smart grid and smart cities.



MAZDA DEMIOs converted to EVs







# Vision for a low carbon society

In the medium-term management plan, Frontier<sup>e</sup> 2010, ITOCHU has designated solar power generation, energy storage devices, and water resources as key focus areas in the Environment & New Energy business area. The Green Crossover Project is an innovative low carbon transportation initiative that integrates solar power generation and energy storage devices. As a trading company, we believe that ITOCHU's role in achieving a low-carbon transportation society is to create a bold vision and strategic plan for a new society (system). This pilot project envisions laying down the foundation for a low-carbon transportation society, combining a wide range of environmental technologies and devices, including solar power generation, electric vehicles, quick chargers, energy storage batteries, and ICT. Our goal is to promote the creation of new environmental and value-added business models, based on this vision for a new society.





Green Crossover Project http://www.green-crover.jp/



List of

cooperating

compa

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Provision of base vehicles, modification support, and assembled vehicle performance evaluation

FamilyMart Co., Ltd. Provision of convenience store pilot site (store)

**ITOCHU ENEX CO., LTD.** Provision of gas station pilot site (store)

ITOCHU Techno-Solutions Corporation Provision of ICT technology and data center

Orient Corporation Contactless IC card, credit card settlement function

Century Tokyo Leasing Corporation Provision of financing function for store facilities

NIPPON CAR SOLUTIONS CO., LTD. Provision of leasing function for vehicles

Tokyo R&D Co., Ltd. Conversion to EVs

EnerDel Inc (US) Provision of lithium-ion batteries for vehicles and grid storage

Th!nk (Norway) Provision of vehicle parts

**KYUKI CORPORATION** Provision of quick charger

Seiko Electric CO., LTD. Provision of grid storage system

Ecosystem Japan Co., Ltd. Provision of photovoltaic power generation system

ITOCHU ELECTRONICS CORP. Planning and operation of Green Crossover Project portal site

Windcar, Inc.

Provision of car-sharing operation function

## Towards a low carbon future

While it is extremely vital for industry to make a commitment to reducing  $CO_2$  emissions, commitments from the consumer and the transportation sectors will also be critical if we are to aim for

a low-carbon society. Through this pilot project, we are aiming to create a new low-carbon transportation system, and actively market our model globally.

General Manager, Corporate Development Office

Kazuhiko Sunada,



# Highlight 2

# **Documentary Report Project on Supply Chains**

# Vol. 2) Coffee from Central America

ITOCHU Corporation believes that it is important, as a trading company, to tell consumers where things come from. With this in mind, we have launched the Documentary Report Project on Supply Chains in 2009. This project aims to report the overall picture of supply chains by tracing each product we handle from downstream to upstream. Following our first report on cotton, we focus on coffee this time. Coffee is believed to originate in East Africa, in such countries as Ethiopia. Starting around the 16th century, coffee became increasingly popular in Spain and other wealthy nations, and it came to be cultivated in then colonies in tropical regions, including Central and South America.

Coffee is a focus of attention in terms of CSR, because it is grown in developing countries in the tropics, and consumed in industrialized countries.

# Vol.2 Coffee from Central America

ITOCHU Corporation handles coffee produced around the world. In this documentary report, we traced the supply chain for coffee grown in El Salvador and Guatemala, from plantation to consumer.

## Growing







The tall trees are shade trees: the short ones are

## **El Salvador** Las Lajas Agricultural Cooperative



Guatemala Alotenango Agricultural **Cooperative collection point** 



Mr. Juan Francisco Urias, Unex (Guatemala), S.A. (right end in photo)

We support 18 agricultural cooperatives nationwide, including Alotenango. Agricultural improvement programs like the C.A.F.E. Practices have many requirements, and it is difficult for small-scale farmers to meet all of them. But they are improving every year, and getting higher assessments from inspectors. The most difficult thing is convincing famers that they'll be OK even if they stop using the pesticides and herbicides that they have always used."

#### Mr. German Humberto Manager (back right of photo)

ajas is an agricultural cooperative of 213 small-scale farmers. About 70% of 213 small-scale farmers. About 70% of the roughly 900 hectares of farmland are devoted to coffee cultivation. We use the certification standards for coffee farmers set by the NGO Rainforest Alliance to improve our farming, the particul ourignment and our lines in natural environment, and our lives in general. We are proud that we are practicing completely organic agriculture beyond the certification standards."

## Mr. Juan Cojolon Chuy

**Cooperative Manage** (second from right in photo)

"We were referred to the coffee buying guidelines, or C.A.F.E Practices, in our dealings with Starbucks Coffee Company, and all of us in the cooperative decided to join the program. We are also working to eliminate the use of agricultural chemicals from our farms, with the help of Francisco from Unex (Guatemala), S.A."



## Guatemala **Carolina Agricultural** Cooperative



#### Mr. Rene Sanchez Lopez Cooperative Manager

"We are a cooperative of 70 farms. Before, we were tenant farmers on a huge plantation. We lived like slaves: for example, we did not have the right to negotiate prices. But we all got together and borrowed enough money to buy our own land, and started farming for ourselves Coffee farms are noor ourselves. Coffee farms are poor, and it is hard to make ends meet but I would not trade the autonomy we have won together for anything.



Members of the Carolina Cooperative

### **Overview and challenges of coffee farming**

Coffee is grown in tropical regions, in highlands at altitudes of 1,000 to 2,000 meters. Immediately after the coffee cherries are picked, they begin to ferment and lose their flavor, so the pulp of the cherries is removed within a few hours of harvest, and the drying process is started.

#### Economic aspects

For many countries in the tropics, coffee farming is a valuable industry for obtaining foreign currency. Various countries have focused on coffee cultivation, and increased their production. In contrast, however, growth in coffee consumption has been relatively slow. As a result, producer prices\*, which are determined by demand, are sometimes lower than the labor, fertilizer, and other costs required to grow the crop. This is one of the factors locking farmers into chronic poverty. As farmers' debts pile up and they are unable to turn a profit, more of them are giving up coffee farming, and migrating to industrialized countries to work.

Standard selling prices for coffee beans are determined by demand in New York, London, and other markets. Local selling prices are then determined by factoring quality and the like into these standard prices.

#### Labor aspects

It is difficult to mechanize coffee farming, because coffee is grown on mountain slopes at altitudes of above 1,000 meters. As a result, most of the growing, harvesting, and carrying of coffee is done by hand.

#### Environmental aspects

Coffee farming uses mountainsides in tropical forests. Since coffee trees shun strong sunlight and evaporation, they require shade trees to protect them from the sun. When a natural forest is converted into a coffee plantation, existing trees are kept as shade trees (see photo (e), and the coffee trees are grown in their shade. One of the distinctive features of coffee farming is this ability to maintain diverse plant life and ecosystems.

The challenges are to avoid the excessive use of chemical fertilizers and agricultural chemicals, and to prevent the runoff of agricultural chemicals and other pollutants into the water system.



## Activities of ITOCHU Corporation and UNEX, S.A.— Agriculture that balances society, the environment, and economy

UNEX, S.A. is founded on the principle of coexistence with small- and medium-scale farmers and support for their autonomy. It provides guidance to small and medium-scale farmers in many regions on compliance with such standards as the certification standards for coffee farmers set by the Rainforest Alliance and Starbucks' C.A.F.E. Practices\*. UNEX, S.A. also conducts businesses to achieve agriculture that balances social, environmental, and economic factors, by purchasing at a premium beans that have met these standards through farmers' efforts. \* Starbucks' socially and environmentally responsible coffee

starbucks' socially and environmentally responsible coffee buying guidelines



An organic farming training center opened on the grounds of the processing plant in Guatemala (April 2010)

#### UNEX, S.A., El Salvador

Conducts coffee processing and exporting in El Salvador. Handles a substantial 20% of the coffee exports in this country.

**Unex (Guatemala), S.A.** Conducts coffee processing and exporting in Guatemala. Handles 10% of the coffee exports in this country.

# Processing

## Processing plant, Unex (Guatemala), S.A

Coffee cherries collected from farmers are soaked in water, and then their pulp is removed.



The pulp and seeds (beans) have been separated. When the yellow seeds are dried and roasted, they become coffee beans.

#### Processing plant, UNEX, S.A. El Salvador

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### Mr. Leopoldo Muyshondt (bottom right of right photo)

"We have started receiving a large number of CSR requirements from Starbucks and other coffee companies, and now there is a broader awareness at our company that we need to focus more on the environment and society."

#### Unex (Guatemala), S.A.

Toshiyuki Hayashi, President (until June 2010) "Our job at Unex (Guatemala) is to build good relations with farmers, and offer high-quality coffee to our customers. One of our jobs is to provide support to enable farmers to be autonomous."



### **Overview and challenges of processing**

Processing plants are located close to the farm land. After harvest, coffee cherries are quickly stripped of their pulp and dried. As large amounts of water are used for processing, it is necessary to filter and treat the soiled water from processing. Due to lack of budget for water-treatment facilities, however, many processing plants still dump their wastewater into the soil and rivers without treatment.



# Roasting

After the beans have been processed and dried, they are exported to the points of consumption. They are then roasted and blended by coffee manufacturers and retailers, and offered to consumers.

# **Marketing & sales**

### UCC Ueshima Coffee Co., Ltd.

UCC is continually increasing its imports of environmentally and socially conscious coffee, including Rainforest Alliance certified coffee. Spurred by customer demand, we expect to increase imports of these types of sustainable coffee even further in the future.

# Reflections on the inspection visits

Mr. Tomohiko Yamaguchi from The CSR Institute, Inc. made inspection visits to production sites.

#### 1) Coffee supply chain

In general, agriculture is the central challenge in the supply chain, both in terms of society and the environment. In order to reach a fundamental solution to the issue of producer prices, controlling balance between worldwide supply and demand is considered necessary. However, during my visit, I have learned another angle to solving this issue. There is a movement where consumers, coffee manufacturers, farmers, and NGOs and other certification bodies are rationally working together, and some schemes (business models) are now rolling out individually which will comprehensively solve issues of farmer poverty, conservation of biodiversity, etc.

#### 2) Activities of ITOCHU Corporation and UNEX, S.A.

What left the greatest impression on me this time was the words of Mr. Hayashi, at Unex (Guatemala): "The most important thing for farmers is to have their own farm land and become autonomous." I saw their efforts directed toward both attaining autonomy for farmers and producing high-quality coffee, by combining several methods, such as providing guidance on farming methods and supports for certification acquisition, purchasing at appropriate prices, distributing organic fertilizers and the like. I think this approach is excellent and can be applied to other fields as well.



Consume

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Mr. Tomohiko Yamaguchi CSR Consultant The CSR Institute, Inc.

# Social Contribution Program to Commemorate the 150th Anniversary In 2008, ITOCHU Corporation marked its 150th

In 2008, ITOCHU Corporation marked its 150th anniversary. In 2009, we commemorated this event by launching two programs to contribute to society: "Activities to restore the tropical rainforests and conserve Borneo's ecosystem," and "ITOCHU Scholarship Fund." These two programs were selected from the fields of reforestation/habitat preservation and support for education, which were the most popular among our Japanese and international employees.

Kota Kinaba

BORNEO ISLAND

INDONESIA

# Activities to restore the tropical rainforests and conserve Borneo's ecosystem

# Project overview

The purpose of this program is threefold: to plant trees in order to restore rainforest that has been damaged by logging and other factors, and which cannot be expected to recover naturally; to secure habitat for animals, including endangered species like orang-utans; and to restore and preserve biodiversity in the forest as a whole. Together with its group companies, ITOCHU Corporation is supporting the Heart of Borneo, a project to restore and preserve a total of 220,000 km<sup>2</sup> of forest that is being advanced by WWF on the island of Borneo. Starting in the fiscal 2009, ITOCHU Corporation and its group companies would donate ¥250 million over a five-year period to WWF Japan. The support provided by the ITOCHU Group covers 967 hectares, which is one of the largest-scale reforestation support provided by a single enterprise.

Reforestation area	North Ulu Segama, Sabah, Malaysia
Total area covered	967 hectares
Activities	Planting trees in target areas, subsequent management of seedlings, and monitoring of status of orang-utan habitat

## Group companies participating in the program in fiscal 2010

In fiscal 2010, we are advancing this program with the collaboration of the 16 group companies below.

- ITC NETWORKS CORPORATION ITOCHU ENEX CO., LTD.
- ITOCHU CHEMICAL FRONTIER Corporation ITOCHU-SHOKUHIN Co., Ltd.
- ITOCHU SUGAR CO., LTD. ITOCHU Techno-Solutions Corporation
- ITOCHU PROPERTY DEVELOPMENT, LTD. ITOCHU PLASTICS INC.
- ITOCHU LOGISTICS CORP. CONVERSE JAPAN CO.,LTD.
- C. I. Kasei Company, Limited Century Medical, Inc.
- DAIKEN CORPORATION
   ONIPPON ACCESS, INC.
- FamilyMart Co., Ltd. FUJI OIL CO., LTD.
  - (order of the Japanese syllabary)

# • Current status of reforestation

In October 2009, the memorandum of understanding concerning forest restoration was signed by the Sabah Forestry Department and WWF Malaysia, and the operation was officially begun. As of end-May 2010, 126 hectares have been prepared, and young trees have been planted on 75 hectares of that area.



ITOCHU Group

North Ulu Segama

# First tree planting tour



On 19 November 2009, we conducted our first tree-planting tour to Borneo. A total of 16 volunteers of varying ages and job descriptions went on the 4-night, 5-day tour, including employees of our overseas bloc employees and group-company employees. This was the first time visiting Borneo for almost all of the participants.

The tour group arrived at the tree-planting site after a trip that included transferring to a small aircraft, and subsequently travelling overland via four-wheel drive. Under the guidance of local WWF and Sabah Forestry Department staff, the group donned anti-leech socks, and everyone started the hot and sweaty work of planting trees in Borneo's sweltering heat. That was effectively the first day of the ITOCHU Group's rainforest restoration project, and everyone in the group was overwhelmed with emotion. After trying their hand at planting trees, the tour group went on a trip in small boats to observe the region's precious wildlife. In addition to orangutan, the group saw crocodiles and the extremely rare Borneo Pygmy Elephants. This experience gave the participants a renewed awareness of the importance of habitat preservation.

2010 has been designated by the United Nations as the International Year of Biodiversity, and we believe that this will deepen awareness of the importance of biodiversity. Moving forward, we plan to hold tree-planting tours once or twice a year, in order to deepen the understanding of our employees.

wee Tree planting tour
terms http://www.itochu.co.jp/en/csr/150\_anniversary/borneo/01/



### **Comments from tour participant**

# With the support of my tour mates

Planting seedlings under the merciless glare of the equatorial sun, on a steep slope following the natural contours of the land, was even more brutal than I had imagined. This was my first time both coming to such a



Yutaka Ichinose (front row in photo) Planning & Administration Department ICT, Aerospace & Electronics Company

jungle and planting trees, but I was very happy that the local Forestry Department and WWF staff accepted us as colleagues working together on the project, rather than treating us as guests from Japan.

I had come to Borneo on business before, and I was deeply moved to be able to get involved with forest restoration on the island. I will continue to watch over the growth of the trees we planted with my comrades.

## **Comments from WWF**

## Returning biodiversity to the forest

While everyone is gazing on, the first seedling was carefully planted. This was the moment that started the new stage of the ITOCHU Group's forest restoration project. In the future, the entire 967-hectare of degraded ground will be reborn as a rich forest home once again for orang-utans in this area.



Ms. Yumiko Kawamura Director, Fundraising & Marketing Communications. WWF Japan

It actually took a great deal of work to make this day possible: WWF Malaysia conducted a series of surveys on plants and

animal ecology while negotiating with a variety of local stakeholders. While there are many levels of reforestation, the WWF's aim is to achieve high-quality forest restoration projects to restore the forest to its original nature state, using the latest science with cooperation of the local communities.

# **Establishing the ITOCHU Scholarship Fund** Assisting non-Japanese students to lead the next generation

# Overview of ITOCHU Scholarship Fund and progress report

This program was started in 2008, with the goal of providing an environment that would allow foreign exchange students in Japan to concentrate on their studies, by reducing their economic burdens. The program provides scholarships of ¥1.5 million per student to 50 foreign exchange students in their third and fourth year of study (the scholarship is provided for two years to each recipient). Scholarship students also participate in presentations on our business and volunteer activities, in order to help them know more about ITOCHU Corporation.

By supporting the exchange students who will lead the next generation of society in the future, ITOCHU hopes

to contribute to the international society, and to support these students' contributions to the development of Japan and their home countries, and the establishment of a stronger relationship between them, after their graduation.



Scholarship seminar

#### Comments from ITOCHU scholarship student

# Expressing my gratitude for being awarded the ITOCHU scholarship

I had been interested in the Japanese language since I was in high school in China, but as I took classes as an elective, I became even more interested, and decided to study abroad in a Japanese university. I am studying a wide range of subjects in the faculty of law of my university, with a focus on corporate law and international trade. The scholarship has enabled me to increase my knowledge, by purchasing books on laws and economics.



Ms. Wang Fang Shu School of Law. Osaka University

After graduation, I plan to go on to graduate school in Japan. In the future, I hope to find a job where I can use the knowledge and language skills that I have learned at university, and contribute to international exchange in the areas of economics and culture.