

# Environmental Activity Report

F.tech Group Environmental Report **2012**



F.tech Inc.

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## Editorial Policy

We have been issuing Environmental Report since 2010 as environmental education as well as to inform our employees about our environmental activities. For this issue we have focused on not only our employees, but stakeholders to provide the information in an understandable way. Also from the Corporate Social Responsibility point of view we have expanded information to corporate governance, compliance, environmental aspects and social aspects as well. Activities of Quality Assurance, Health & Safety and Community Activity are also disclosed in this report. Guideline was referred by "2007 Environmental Report Guideline" issued by Ministry of Environment.

F.tech Group described as F.tech or our group. F.tech Inc. is mentioned as the company.

## Reporting term

Results of FY2011 (04/2011 – 03/2012) and activities in previous terms

## Organization (Abbreviated names in brackets)

F.tech Group

◎Domestic company ● Consolidated subsidiaries ◇Affiliated company

F.tech Inc. (3 facilities)

◎Head office, Kuki Plant (Shobucho, Kuki, Saitama)

◎Haga Technical Centre (Hagacho, Tochigi)

◎Kameyama Plant (Kameyamashi, Mie)

Japanese subsidiaries, affiliated company

● Fukuda Engineering Co., Ltd. (FEG) - Kazoshi, Saitama

● Kyushu F.tech Inc. (QFT) – Yamagashi, Kumamoto

● Reterra Co., Ltd. – Chichibu, Saitama

◇Johnan Manufacturing – Uedashi, Nagano

Subsidiaries in overseas

● F & P Mfg., Inc. (F&P) – Ontario, Canada

● DYNA-MIG, A division of F&P Mfg., Inc. (DYNA-MIG) – Ontario, Canada

● F & P America Mfg., Inc. (F&PA) – Ohio, USA

● F.tech R & D North America Inc. (R&DNA) - Ohio, USA

● F & P Georgia, A division of F&P America Mfg., Inc. (F&PG) – Georgia, USA

● F.tech Zhongshan Inc. (FTZ) - Guangdong, China

● F.tech Wuhan (FTW) - Hubei, China

● F.tech Philippines Mfg., Inc. (FPMI) - Laguna, Philippines

● F.tech R & D Philippines Inc. (FR&DP) – Laguna, Philippines

● F.tech Mfg. (Thailand) Ltd. (FMTL) - Ayutthaya, Thailand

Group of companies in overseas

● F.E.G. DE QUERETARO S.A. DE C.V. – Queretaro, Mexico\*

● F & P MFG.DE.MEXICO S.A.DE C.V.

● FUTIAN MOULD TECHNOLOGY (YANTAI) CO., LTD\*

◇JOHNAN AMERICA, INC. – Kentucky, USA

◇JOHNAN F.TECH (THAILAND) LTD. – Saraburi, Thailand

◇JOHNAN DE MEXICO, S. A. DE C. V. – Guanajuat, Mexico

◇JOHNAN UK LTD. – Wiltshire, UK

◇PROGRESSIVE TOOLS & COMPONENTS(P) Ltd. - Uttar Pradesh, India

◇PT.JFD INDONESIA - Jawa Barat, Indonesia

◇JOHNAN WUHAN - Hubei, China

\*FUTIAN MOULD TECHNOLOGY (YANTAI) CO., LTD is not mass production factories and therefore, they do not make impact on the environment. F&P MFG. DE. MEXICO S.A.DE C.V. is just established the company and therefore, it is excluded in the report. F.E.G. DE QUERETARO S.A. DE C.V. is in preparation.

## References

Environmental Report Guideline 2007

## Forecasts, plans and goals in this report

Future forecasts for F.tech Group (13 affiliated companies) are shown in this report and those were made based on the information at the time of publication of the report. Therefore, the results may be different from the forecasts in the report.

## Energy crisis and environmental improvement

The year of 2011 was devastated by natural disasters as we had the Great East Japan Earthquake in March and the major flood in Thailand in October.

The Haga Technical Centre, damaged significantly by the earthquake, completed the restoration of the new building in March 2012. We also were able to supply our products to customer with support from all suppliers. We will continuously review our supply system to achieve stable delivery.

For the activity of power consumption reduction we changed working shifts to control power consumption at the peak hour; air conditioner was strictly controlled, and we participated in rolling blackouts in which the automobile industry was engaged proactively. As a result, we were able to achieve a reduction of more than 20% against the goal of 15% reduction at peak hour. Also, Kameyama Plant started preparations of obtaining ISO50001 certification for international standards in energy management system from the end of FY2011. Energy issues are expanding to not only global warming, but receiving energy as well. At F.tech we think energy improvement is social responsibility and are taking a proactive approach.

## Enhance All F.tech's efforts of environmental load reduction

Unfortunately, we had to cancel the Global Environmental Meeting scheduled in FY2011 due to the earthquake. However, we performed "All F.tech Environmental Visit" to 8 facilities globally instead. Also, we accelerated environmental load reduction by implementing Benchmarking Program and Visualization of Energy Consumption Program. Our efforts were evaluated and we received the first Environmental Award founded by Honda.

The Global Environmental Meeting was held in FY2012, and we shared know-how and effective ideas to improve ourselves as All F.tech.

Today, society and customers are asking for further reduction of life-cycle environmental load, including supply chain. We will be initiating environmental load reduction activities to our products and suppliers.

President & COO

水村 嗣夫

## Lightweight products and collision safety performance

We think developing environmental friendly products is as important as production activities.

In automotive development we are asked to consider not only fuel economy, but safety and vehicle comfort as well. Therefore, we need to balance the conflicting two needs; "Lightweight" and "Collision safety performance". You will see our activities in this report.

Our activities are not limited to environmental aspects. We will contribute to the local community through environmental activity, and following our company principles we will promote the areas of development, quality, health & safety.



Based on the company principle, “Challenging Sprit”, “Respecting People” and “Making profit”, we will pursue the No. 1 in customer satisfaction by supplying products that are met regulatory requirements stably. We will achieve global quality standard of the areas of design, development, and manufacturing of automotive parts.

## Outline of the company

### Company name

F.tech Inc.

### Head Office

19, Showanuma, Shobucho, Kuki, Saitama

### Established

July 1<sup>st</sup>, 1947

### Capital

2,677 million yen

### President & COO

Tsuguo Kimura

### Employees (Consolidated)

5,728 as of end of March, 2012

### Business Activity

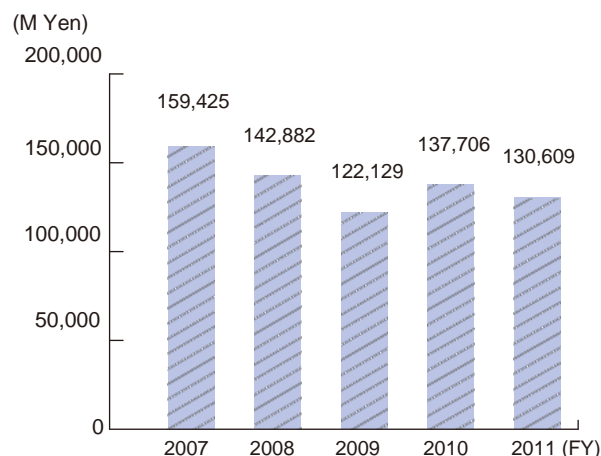
Development, manufacturing and sales of automotive parts and related dies, machinery and equipment

器具等の開発・製造・販売

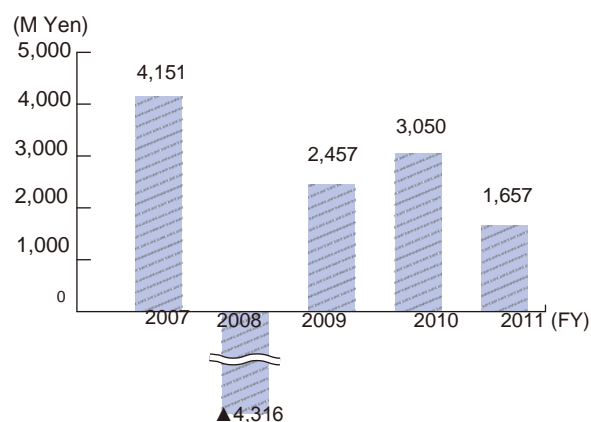
### Major customers

Honda Motor Co., Ltd., Nissan Motor Co., Ltd., Suzuki Motor Corp., General Motors Corp., Isuzu Motors Ltd., Toyota Motor Corp., Daihatsu Motor Co., Ltd., Mitsubishi Motors Corp.

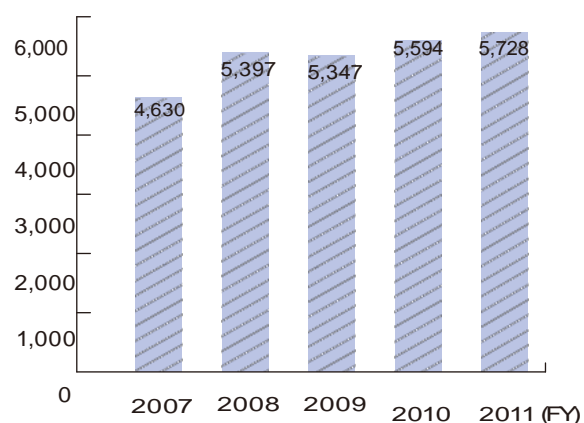
## Consolidated sales



## Consolidated net profit/loss



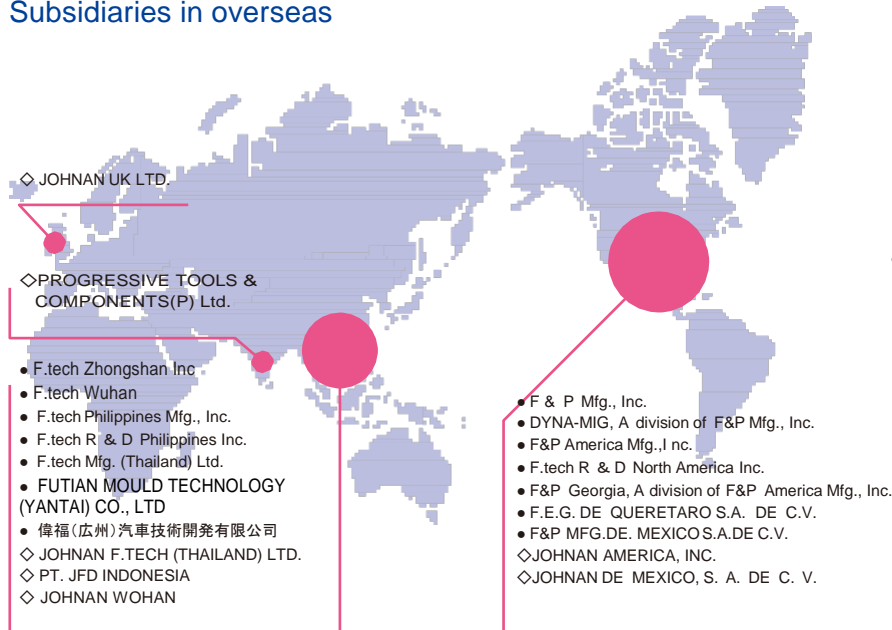
## Consolidated number of employees



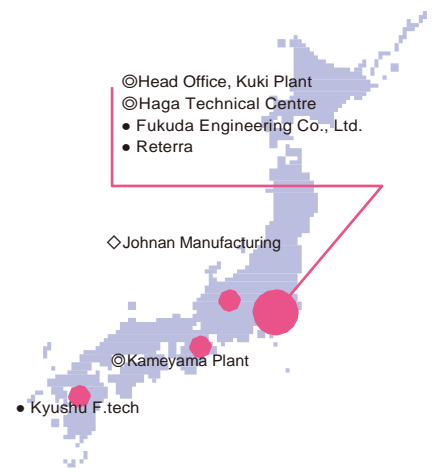
# We are expanding our network globally from North America to South America, China, Asia and Europe.

© Plant in Japan • Consolidated subsidiaries ◇ Affiliated company

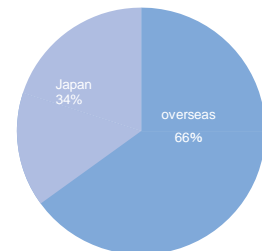
## Subsidiaries in overseas



## Companies in Japan



## Sales of Japan and overseas



# Developing and manufacturing critical safety suspension parts globally.

Speed, low cost, reliability, as well as responding to social needs such as safety and environmental performance means consistently working on planning, development and production.

## Major products

We manufacture critical safety automotive parts such as suspension, subframe and pedal with our unique integrated manufacturing system (from planning to development, fabrication of die/equipment, hydroforming process, welding, ED paint and assembly)



Hydroformed front subframe



Aluminum rear subframe



Rear suspension module



Front lower arm



Organ type axle pedal



Brake pedal

## Corporate Governance

F.tech has responsibilities to meet shareholder's expectations while focusing on employees, suppliers and the local communities.

Also, we must set long term goals for the company and maximize revenues for the shareholders as a principle of Corporate Governance, while organizing a business management structure (Board of Directors, Board of Auditors) and a global structure that can work at compliance and risk management.

In order to monitor our business operation in an objective manner we have created an Operating Officer system while external auditors, Board of Directors and Board of Auditors monitor and audit. The term of Board of Directors is one year to accommodate a volatile business environment.

The Board of Directors consists of 9 directors. They make decisions relating to critical business matters.

The Board of Auditors consists of 4 auditors (2 are external auditors) and each auditor attends Board of Directors Meetings, conducts investigation of financial activities, and controls business operations based on the auditing policies established by the Board of Auditors.

We have 7 Divisions and 2 Offices and each section has a director. The Management Meeting consists of 9 directors and a total of 9 members of Senior General Managers and General Managers. They are responsible for discussing business matters to be decided upon by the Board of Directors.

In addition, major domestic plants and overseas plants have an Operating Officer to judge critical matters in a speedy and efficient manner.

## Internal Control

A department in charge of internal control recognizes the risks that are related to its major operations, chooses a responsible person and holds meetings to prevent a loss from happening. Also there is an independent audit department which is under the direct control of the president. It has four internal auditors and they audit each department's operations.

As of March 31, 2011, we have issued "Internal Control Report" stating that our internal control related to financial report is valid.

## Corporate Ethics Committee

In October 2004 we established "Corporate Ethics Committee" (Chairman: Director & Senior Managing Operating Officer, also Compliance Officer) to confirm our compliance situation and develop policies. Also we established "Corporate Ethics Kaizen Window" to protect a whistle-blower and to be aware of corporate ethics.

In November 2004, we developed "Our Action Guideline", and "Rules & Regulations of Compliance" in June 2006 to improve corporate ethics. In 2010, we revised "Rules & Regulations of Compliance" for employees for ease of understanding and then distributed it to all employees.

## Risk Management

F.tech Group developed "Risk Management Standards" in June 2006. We have a system that if the following situations occurred the emergency headquarters headed by the president will be set up immediately when;

- Significant loss occurred to customer
- Serious labour accident occurred
- Extremely important information was leaked related to business operation
- Major supplier went bankrupt
- Significant loss caused to customer due to disrupted computer system
- Breach of law or received administration penalty
- Majority shares were cornered
- Significant damage caused by fire, earthquake, flood, etc
- Major event occurred and the company is unable to continue its business.

At any normal time we assign a Risk Management Officer in Corporate Ethics Committee to overview the company, and each division has a checklist to verify its activities periodically. The checklist is audited by internal auditors.

## Restoration of Haga Technical Centre

Haga Technical Centre received significant damaged to its building by the Great East Japan Earthquake which occurred in March 2011. Fortunately there were no major injuries, but minor injury to an employee.

The centre immediately built a temporary office and has been operating since April 1, 2011. In FY2011 a new building was built under the slogan of “Restoration is not just to revert to the original state, but build with future vision”

Through experience from this earthquake we reaffirm the forces of nature and the importance of energies which forced us to think about coexistence with nature. Therefore, with limited management resources, we installed LED and skylights to build “Environmental friendly building”. Please refer to page 20 “Each company’s activity”.

A new administration building that will be F.tech’s brain will be scheduled to be built in FY2012. We will make every effort to contribute to the creation of a future rich in nature.



New technical building restored in FY2011

## Supply chain and enhancing procurement network

Immediately after the earthquake the impact of disruption of supply chain was a concern we received with support from our suppliers. We’d like to express our appreciation to our suppliers.

We continuously experienced low volume production due to rolling blackouts, and we needed to review the production process due to limited electricity use in summer. With cooperation from suppliers we were able to deliver our products to customers.

We will improve our crisis management strategy to have stable parts supply by reviewing our sourcing network and multiple ordering system however necessary.

## Power consumption reduction in summer

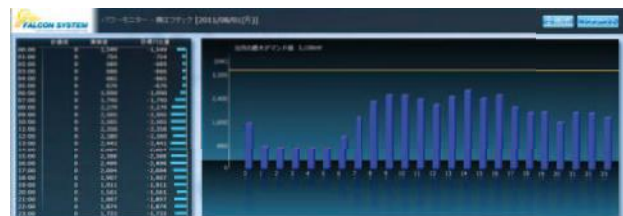
In the summer of 2011, Tokyo Electric Power Company (TEPCO) and Tohoku Electric Power Company experienced power shortages due to the Great East Japan Earthquake. Therefore, the government announced Electricity Business Act Article 27 to control power usage by -15%. Our Kuki Plant and Haga Technical Centre were within the TEPCO supply zone and as it is our corporate social responsibility we started to promote -15% power usage program.

We announced our strategy to associates gathered from Kuki Plant and Haga Technical Centre. At the meeting the Electricity Business Act Article 27 was explained, as were specific plans to achieve the -15% power usage. A poster was posted to improve the awareness of power conservation, and developed a power monitoring system that would issue emails when power consumption at peak hour exceeded more than the target.

As for the automobile industry we took turns suspending business on Thursdays and Fridays. At Kuki Plant we changed working shifts to avoid day-time peak hour. Through these activities we were able to reduce more than 20% in FY2011 compared to last year.



Awareness poster

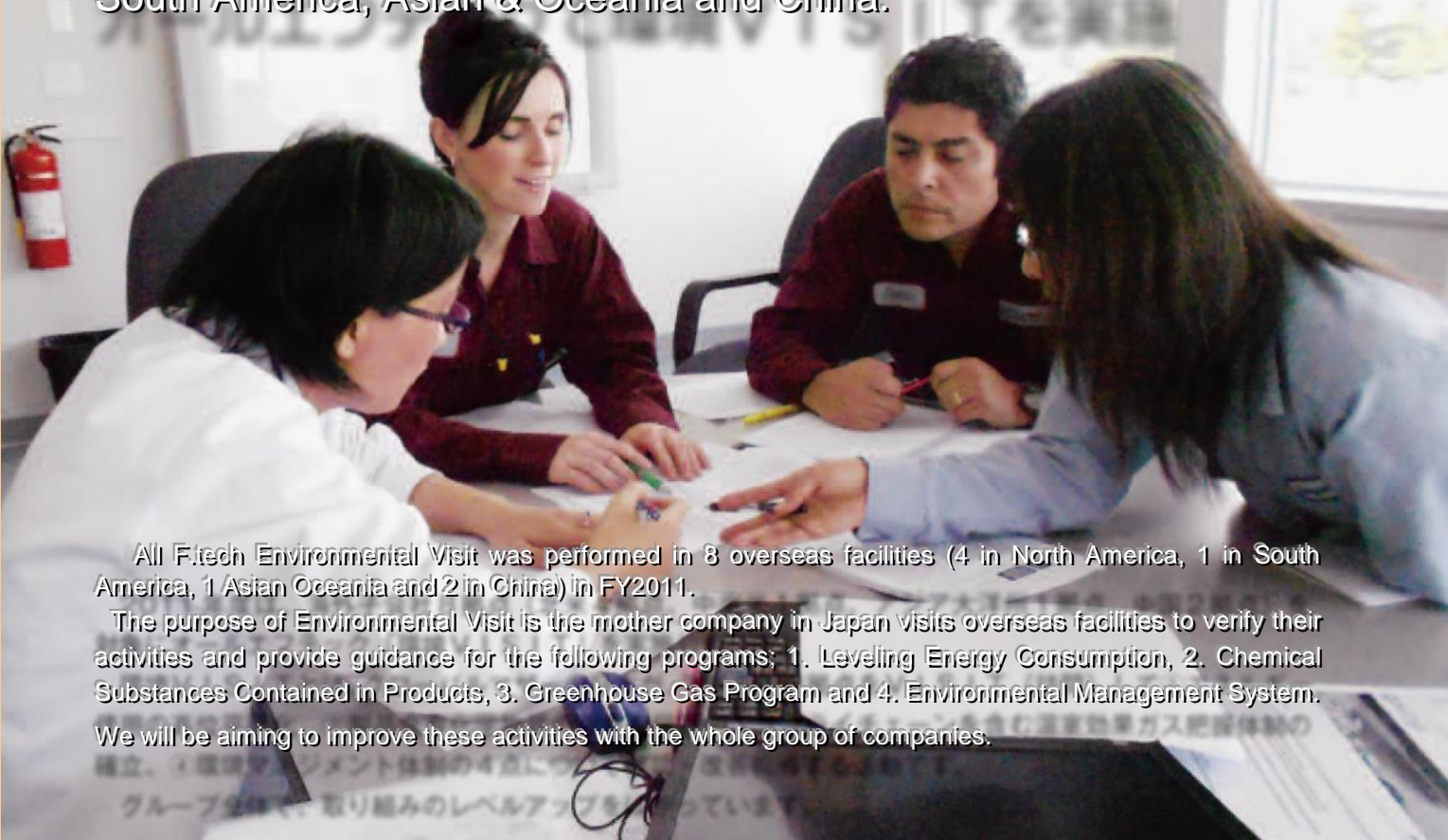


Power monitor system

## Flood in Thailand and its restoration

In October 2011 a major flood occurred in Thailand and F.tech Mfg. (Thailand) Ltd. was damaged as almost 2 m of water got inside the factory. The 45-day flood affected significantly not only the industrial park, but daily life as well. The road from Bangkok to Rojana Industrial Park was closed, but restoration was started at the end of November once the water had receded. In December, draining, cleaning and sanitizing were completed, and reconstruction of equipment was started together with F.tech and local staff in January 2012. By the middle of February the function of the factory was fully recovered and started full operation from the middle of March. Since then the delivery has been smooth to customer in Thailand.

Environmental Visit was performed in 8 facilities in North America, South America, Asian & Oceania and China.



All F.tech Environmental Visit was performed in 8 overseas facilities (4 in North America, 1 in South America, 1 Asian Oceania and 2 in China) in FY2011.

The purpose of Environmental Visit is the mother company in Japan visits overseas facilities to verify their activities and provide guidance for the following programs; 1. Leveling Energy Consumption, 2. Chemical Substances Contained in Products, 3. Greenhouse Gas Program and 4. Environmental Management System. We will be aiming to improve these activities with the whole group of companies.

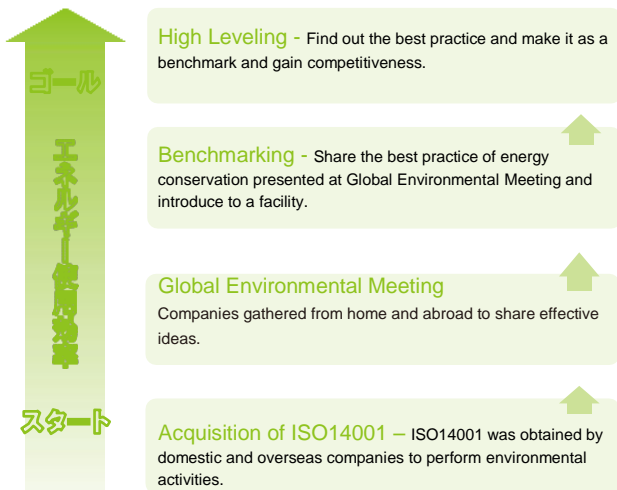
#### 44 Energy improvement ideas from 8 facilities

To improve all facilities' efficiency in the use of energy we used the benchmarking method in 8 overseas facilities. We found the best efficiency in the use of energy from each process and equipment by using the method, and standardized it for all facilities. Also, we brought a power measurement device from Japan to check if the process and the equipment were used efficiently.

For example, when welding exhaust fan's capacity (kw) was compared based on the number of robots,

we found that there were differences between facilities. We compared a facility with small fan capacity and another facility that has a large fan capacity. We found out that the facility that had the small fan capacity controlled the amount of fumes by damper and we adjusted the power of suction by using an inverter system. Also, a portable power measuring device was brought in from Japan to measure the equipment's power usage. By measuring actual power usage we discovered waste power consumption where the equipment was not being used for production, or equipment was running at maximum power when production volume was small.

By using such a device we were able to find more kaizen areas rather than just through interviewing people.





# Feedback of Environmental Visit



Manager, Paint & Environment Dept.  
F&P Mfg., Inc.

The F.tech Environmental Visit of F&P Mfg., Inc in 2011 was an informative learning experience. The audit was well organized and effectively incorporated the four major Environmental programs. F&P was impressed with F.tech personnel's knowledge of the Honda chemical IMDS\* system which included knowing the requirements for part markers and wrapping material to be included in the submission. It was a refreshing and educational insight into what the other F.tech companies are implementing to reduce energy consumption and GHG emissions. Areas F&P will be investigating which originated from the discussions will be the shutting down of electrical and compressed air supply to equipment during non-production, and to implement a compressed air leak program.

\*IMDS - International Material Data System, is a global data repository for product content used by the automotive industry and used to gather data for various reporting requirements.



Quality Dept. In charge of ISO  
F.tech Philippines Mfg., Inc.

There was enough time to ask questions about the 4 main Items and gain clear understanding. Asking question one by one to F.tech personnel helped us in our understanding.



Person in charge of ISO.  
F.tech Zhongshan Inc. (FTZ)

We were able to promote environmental activities through Environmental Visit and also improved in areas that were lacking. Before the Visit we weren't able to perform self-evaluation. Also, they suggested ideas that we could improve and explained project requirements. F.tech also provided detailed trainings, so our associate are now well trained and improved their skills. Through this Environmental Visit we gained deep understanding of GHG program, Chemical Substances Contained in Products program and effective utilization of resources.



Through these activities we suggested 44 ideas of energy improvement to 8 facilities. However, some of the ideas needed quality check, investment, technology and environmental concerns to the community. Recommendations that are challenging will be continuously supported by the Japanese facilities to realize them.

## Establish Greenhouse Gas Program including supply chain

This year is the last year of the commitment period (2008-2012) of Kyoto Protocol, and global warming has gained increased attention. Greenhouse gas (GHG) that is thought to be the cause of global warming should be reduced from the viewpoint of life cycle of products by customer.

From the viewpoint of the life cycle of products, our products are made by components from the supply chain. Understanding of GHG emission in each supplier indicates a reduction is needed on a global basis. We confirmed through Environmental Visit, that data collected from the supply chain is correct.

In cooperating with the supply chain, we felt that depending on the country or region they have different degrees of interest. Especially, the countries that have rich resources were difficult and hard to receive both cooperation and data. However, global warming is a critical issue and we will be continuously working with our supply chain to reduce carbon footprint.

To realize acquiring lightweight products and its safety by developing collision safety performance part called Rod Under Load Path.

Reduction of greenhouse gases such as CO<sub>2</sub> is accelerating and at the same time fuel economy is demanded. Therefore, developing “lightweight” products is essential, but it is not just the only thing. The demand of “collision safety performance” is increasing at the same time. At F.tech we strive to achieve the two conflicting needs of lightweight products and collision safety performance products in automotive parts.

### Concept of Honda N BOX

Honda Motor Co., Ltd. announced the sales of the N BOX, the first model of the new mini-vehicle N Series. This N BOX has F.tech's Front Subframe and Rod Under Load Pass.

N BOX is a mini-vehicle, developed under the Honda's M/M concept (man maximum/machine minimum). Honda's request was to make the largest cabin among all mini-vehicles in the market. That means we needed to shorten the size of the engine room by 70mm. It was very challenging as we needed to develop a product with the basic performance such as “drive, turn and stop” and collision safety performance within the limited layout space.

Downsizing the engine room was a focus during the development of N BOX. Small engine room means the engine, suspension and subframe are packed tightly together. In the event of a collision the engine room crashes and cannot absorb its energy, therefore, it cannot meet “secure passenger's safety space” and “reduce damage to the vehicle of other party”.

So we aimed to develop a product that has a pathway for the absorption of collision energy, while keeping the engine room compact and collision safety performance the same, or more than the traditional vehicle. In this way we jointly conducted the development of the Rod Under Load Path with Honda Motor.

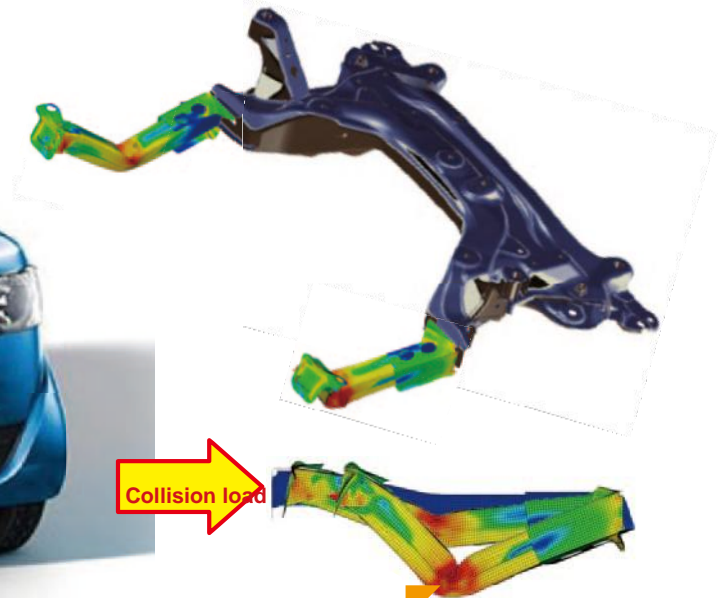
### Absorb collision energy with Rod Under Load Path

The Rod Under Load Path is like a tension rod that is located between body and subframe. At the time of collision it takes the load and absorbs the collision energy by crashing itself. Traditionally main frame and upper frame have the role, but by installing the Rod Under Load Path the collision load can be distributed to subframe. Therefore, it is possible to secure the collision safety performance with small engine room while retaining the weight of body.

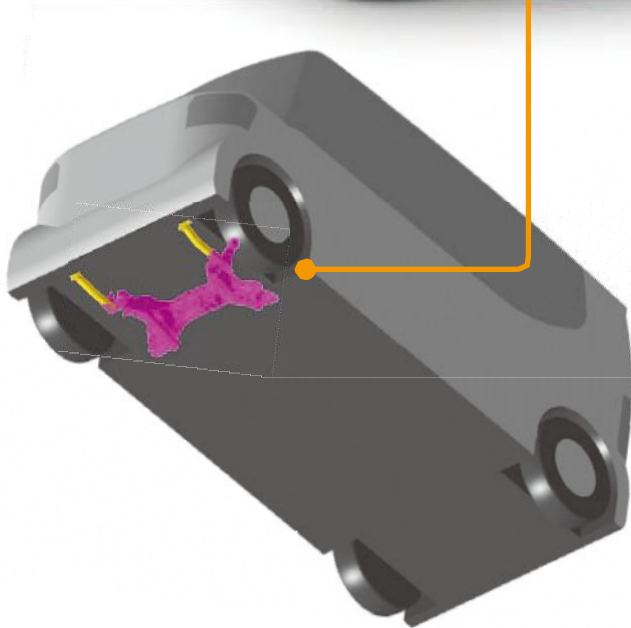
To evaluate endurance we used the liner analysis software because the products will be used in elastic deformation area. However, evaluation of plastic deformation in the event of collision such as “crash” or “bend”, we didn't have the knowledge. Therefore, we installed a non-liner analysis software to gain the know-how. The Rod Under Load Path, a collision energy absorption part, was the first time for F.tech to develop.



▼ Recreated the collision mode with non linear analysis simulation



Bend at the specified load and absorbed collision energy



- Front subframe
- Rod under load path

The front subframe is located in the lower engine room of monocoque body, and it is supporting major components such as suspension and engine.

Therefore, we created guidelines for analysis, examined optimum shape and processes from various perspectives.

As a result, we were able to reduce the weight of the subframe by 10%, more than any other company's product. We also achieved the collision safety performance of Rod Under Load Path at high level.

With this project of N BOX we gained confidence through developing the product that met the required performance within the limited space. We believe this experience will expand our ability to make parts for environmental friendly vehicles such as hybrid or electric vehicles.

Accumulating and enhancing knowledge and skills to contribute to "environmental conservation" and provide "safe and secure" products are our Development team's responsibility as well as pleasure.

## Achieved 50% lighter aluminum bracket for electric vehicle, LEAF



Comment from Development personnel

In 2010 Nissan Motor Co., Ltd. launched an electric vehicle, LEAF. Our aluminum die cast bracket is used in its brake pedal. This was to respond to their request of lightweight solutions to make it with aluminum.

However, it was first time for Nissan and for us to use aluminum bracket for brake pedal. We performed endurance tests, to analyze size and number of blowholes that were created during die-casting. We examined repeatedly the correlation of location and strength of blowholes and determined the standard. The more complicated the product's shape, the more difficult it was making dies, therefore needing more manufacturing technology. Therefore, we asked for support for developing dies from an aluminum die cast manufacturer to examine the optimum die structure. Also, we needed to think about "galvanic corrosion" which occurs when steel and aluminum are used together, and meet our customer's requirement.

As a result, we reduced the weight of the bracket by 50% and 2/3 for the brake pedal. We would like to utilize the know-how we gained from this project to other models.

# Goals and Results of 3 plants\*1 in Japan

○ : Achieved goal, △ : Achieved more than 70%>100%, × : Achieved less than 70%, - : N/A

|   | Item  | FY2011 Targets   | FY2011 Results   | FY2012 Targets   |
|---|---|--|--|--|
| Prevention of global warming                      | - Improvement of CO2 emission basic unit<br>Examinee: Head office, Kuki plant, Kameyama plant, Haga T/C (FY2012 only)   | Improved by 5% (FY2010)  | Improved by 2.9. (FY2010)<br>Evaluation: x<br>Amount of value added was decreased <sup>3</sup> due to the earth quake. | Improved by 7.5% (FY2010)  |
|   | - Reduced CO2 emission more than 1% by implementing countermeasure (compared with previous term) *2<br>Examinee: Head office, Kuki plant, Kameyama plant & Haga T/C (FY2012 only) | All of the facilities: 141t-CO2  | All of the facilities: 265t-CO2<br>Evaluation: O   | All of the facilities: more than 137.4t-CO2  |
|   |   | Kuki plant: 64t-CO2  | Kuki plant: 73t-CO2<br>Evaluation: O   | Kuki plant: more than 56.6t-CO2  |
|   |   | Kameyama plant: 77t-CO2<br>-   | Kameyama plant: 191t-CO2<br>Evaluation: O<br>-   | Kameyama plant: more than 70.2t-CO2<br>Haga T/C: more than 10.6t-CO2               |
|   | - Reduce CO2 by installing environmentally friendly infrastructure <sup>4</sup><br>Examinee: Haga T/C   | More than 5  | Completed 8<br>Evaluation: O   | -  |
| Resources recycling                               | - Reduced waste more than 1% by implementing countermeasure (compared with previous term) *2<br>Examinee: Head office, Kuki plant, Kameyama plant & Haga T/C                      | All of the facilities: 4.90t <sup>5</sup>  | All of the facilities: 24.42<br>Evaluation: O  | -  |
|   |   | Kuki plant: 1.99t  | Kuki plant: 2.28<br>Evaluation: O  | -  |
|   |   | Kameyama plant: 2.92t  | Kameyama plant: 22.14<br>Evaluation: O   | -  |
|   | Improvement of water usage<br>Examinee: Kuki plant  | -  | -  | Improved by 1% (FY2011)  |
|   | - Reduced water more than 1% by implementing countermeasure<br>Examinee: Kuki plant   | -  | -  | Kuki plant: more than 502m3  |
| Human resource development                        | Implementation of an energy conservation seminar  | Attendance rate: more than 70%   | Completion of document (Planned implementation : First half of FY2012)<br>Evaluation: △                                | -  |
| International Standard                            | - Optimize ISO 14001  | Reduce system documents by 30% by the end of 2012                                      | Reduced by 22% as of the end of 2012<br>Evaluation: O  | -  |
|   | - Preparation of ISO 50001 certificate<br>Examinee: Kameyama plant  | Kick-off completed   | Kick-off completed<br>Evaluation: O  | Completion of Management Review  |
| AI-F.tech Overall Management                      | Held Global Environmental Meeting   | Meeting was held overseas  | Cancelled meeting<br>Evaluation: X<br>Due to the earthquake  | Completed  |
|   | Enhance supply chain management   | Establish supply chain green house gas emission program: data collection more than 80% | Data collection more than 90%<br>Evaluation: O   | Implementation of Environmental Audit for domestic company: completed 10 companies |
|   | Completion of Environmental Visit   | Completed Environmental Visit  | Completed Environmental Visit<br>Evaluation: O   | -  |
| Chemical Substances Contained in Products Program | Enhance supplier control  | Standardization of Environmental Audit   | Completed standardization<br>Evaluation: O   | -  |
|   | Establish LCC <sup>6</sup> assurance system   | Completed  | Completed<br>Evaluation: O   | Completion of standardization of G-FQS <sup>7</sup>                                |

\*1 3 plants in Japan: Kuki Plant, Kameyama Plant and Haga Technical Centre

\*2 Reduction of CO2 emission by implementing countermeasures; Regardless of emission evaluation reduction is made based on the amount that could be reduced by countermeasures.

\*3 Value-added: Value-added = Sales - (Outsourcing + material + purchased parts)

\*4 Installation of environmentally friendly infrastructure: Building of Haga Technical Centre was damaged by the earthquake in March 2011. Therefore, they revised their goal of CO2 emission reduced by installing an environmentally friendly infrastructure, not by countermeasures.

\*5 Group goal will be unexpected waste deducted from the total amount of waste of FY2010.

\*6 LCC: Leading Competitive Countries - To procure parts and/or services from countries that have excellent competitiveness.

\*7 G-FQS: Global F.tech Quality Standard

Boost our ability to the next level

| Critical items                                    | Item  | Year   |                                      |                                     | Subject                                 |
|---|---|--|--------------------------------------|-------------------------------------|---|
|   |   | FY2011   | FY2012                               | FY2013                              |   |
| Prevention of global warming                      | Benchmarking  | Set benchmarks                                   | Improvement of efficiency            | High equalization                   | F.tech group of companies               |
|   | GHG program ( including supply chain)                                 | Data collection more than 80%                    | Data collection more than 90%        | Data collection more than 100%      | F.tech group of companies               |
|   | Improvement of energy basic unit                                      | Improve by 5% (compared with 2010)               | Improve by 7.5% (compared with 2010) | Improve by 10% (compared with 2010) | 3 facilities in Japan                   |
| International Standard                            | Obtain ISO 50001 <sup>*1</sup> certificate                            | Examined   | Establish a system                   | Obtain certificate                  | EMS Office<br>Kameyama plant            |
|   | Optimization of ISO 14001   | Review the system                                | Combined with ISO 50001              | Continue to be certified            | EMS Office                              |
| All-F.tech Overall Management                     | Completion of Environmental Visit <sup>*2</sup> to overseas companies | Overseas affiliates                              | FMTL                                 | Weak area                           | EMS Office<br>Overseas plants           |
|   | Establishment of Global Environmental Meeting                         | Held overseas<br>Cancelled due to the earthquake | Held in Japan                        | Held in Japan                       | EMS Office<br>F.tech group of companies |
| Chemical Substances Contained in Products Program | Standardized All F.tech Management System                             | Run the system                                   | Improvement                          | Continuance                         | EMS Office<br>F.tech group of companies |
|   | Establish LCC assurance system  | Standardized                                     | Run the system                       | Improvement                         | EMS Office<br>Purchasing Div.           |

We set a benchmark to prevent global warming and standardize energy efficiency. Also from the Life Cycle Assessment (LCA) point of view, we will start collecting the data of greenhouse gases not from our group of companies, but supply chain. The Global Environmental Conference was scheduled in 2011, however, we had to cancel it due to the earthquake in March 2011. We implemented, however, Environmental Visit instead of the conference to 8 overseas subsidiaries. It was scheduled to implement in FY2011 to FY2012, but we advanced it in 2011.

As for resource circulation, it is not categorized as critical item in the Mid Term Plan (FY2011 - FY2013). However, to utilize raw materials we will continue to work on reduction of material at development stage and reduction of waste at each facility.

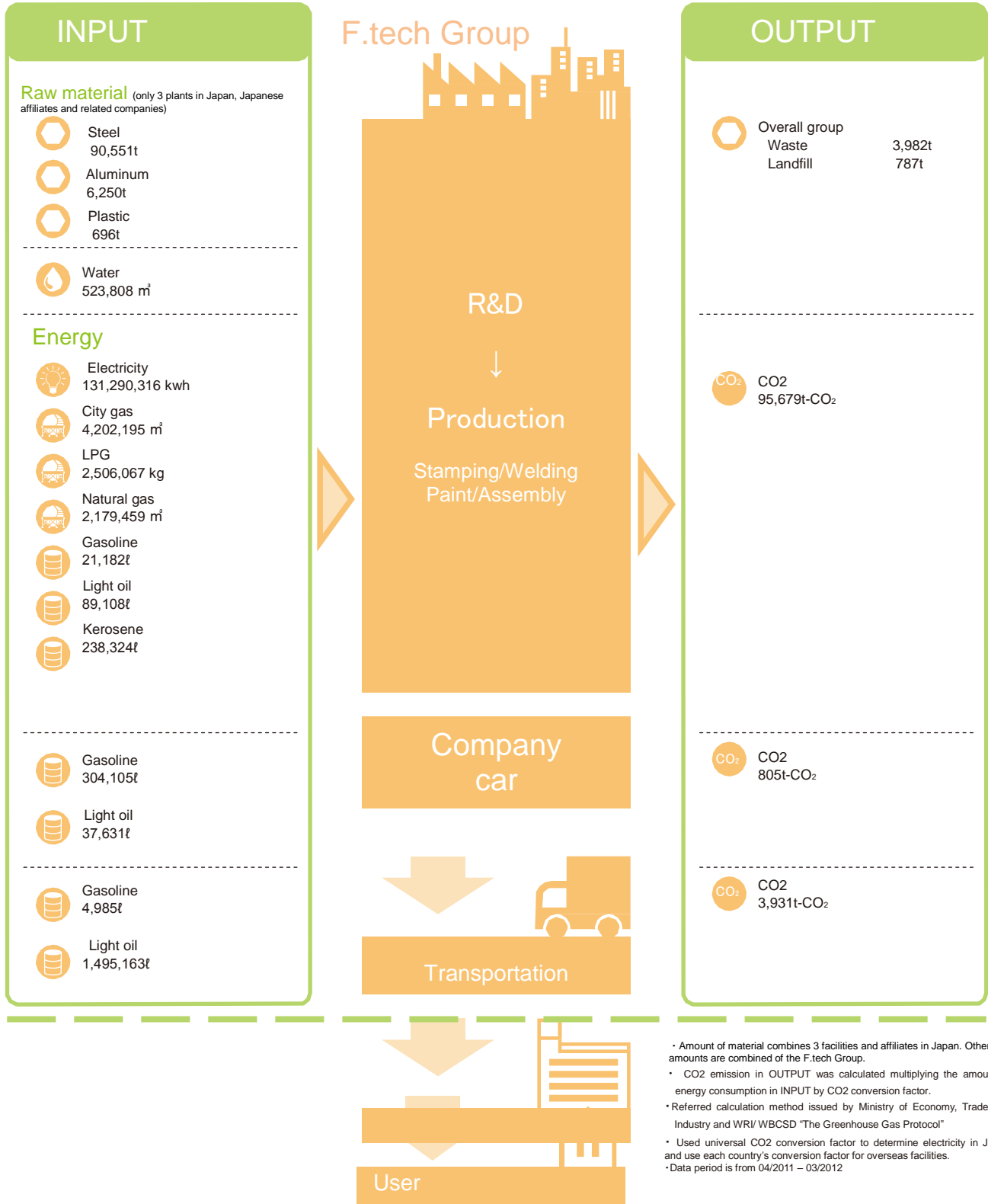
※ Development of environmentally friend products continues to be our critical item for the Mid Term Plan (FY2011-FY2013), however, from a confidentiality point of view we will not disclose the information.

\*1 ISO 50001: It is the international standard for organizations to integrate energy management into their overall efforts to improve quality and environmental management. It was released by ISO in June, 2011.

\*2 Environmental Visit: It is the environmental management system of F.tech Group. It is to evaluate compliance, ISO 14001 management status. It was performed to Japanese affiliates in FY2009 and FY2010. Scheduled to perform to overseas affiliates in Mid Term (FY2011-FY2013). Detailed information please see page 7 and 8.

All of our production facilities obtained ISO 14001 certification.

## Reducing carbon footprints from development to production





## Amount of CO2 emission

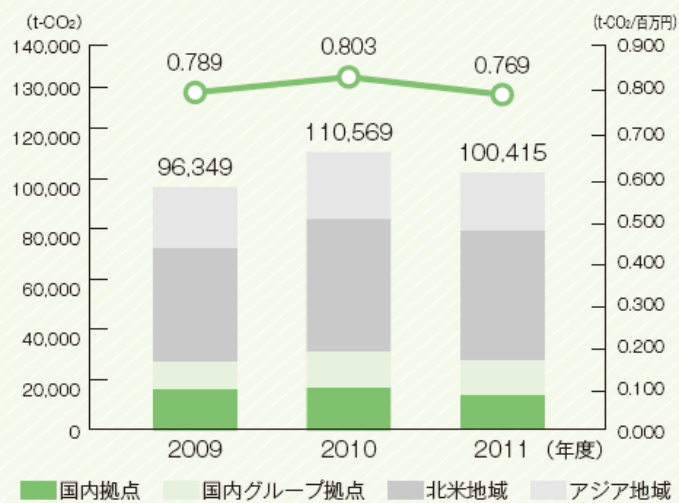
The group-wide total of CO2 emissions in FY2011 was reduced by 9% or 10,153t-CO2 from FY2010, and we achieved reduction at all facilities. One of the reasons is that production volume was reduced due to the earthquake in Japan.

However, the basic unit for energy consumption per sales was improved by 4%, especially in the Asian region. The main reason was that they had small impact on sales from the earthquake and continuously worked on reduction of CO2. Please see page 19 to 21 "TOPICS Global Activity" for activities of CO2 emission reduction.

By region, North America accounts for about 50% of CO2 emissions. CO2 emission was reduced by 7% and the basic unit for energy consumption was improved by 4%. For Asian region, CO2 emission was reduced by 16% and the basic unit for energy consumption was improved by 11%. However, the Asian region's basic unit for energy consumption tends to be higher than other regions. For 3 plants in Japan and domestic affiliates, CO2 emission was reduced by 7%, but the basic unit for energy consumption was worsen by 1%.

In 2011 we performed Environmental Visit to overseas facilities to level the rate of energy consumption by visualizing usage against the benchmark. We will continuously improve the basic unit of energy consumption as a group basis by examining suggested practices in FY2012.

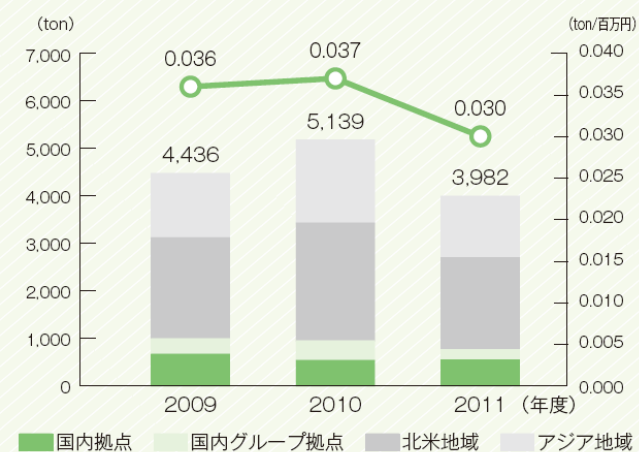
エフテックグループ CO<sub>2</sub> 排出量 / 売上高原単位推移



## Waste reduction

The group's total waste in FY2011 was reduced by 23% or 1,158t compared to the FY2010 and it was reduced at all facilities. The basic unit for energy consumption per sales was improved by 18% contributed by overseas facility's waste improvement. By region, North America reduced waste by 26% and the basic unit for energy consumption was improved by 24%; the Asian region reduced waste by 26% and the basic unit for energy consumption was improved by 21%. One of the facilities in China utilized the waste heat generated by paint processes to reduce sludge. For 3 plants in Japan and domestic affiliates reduced waste by 5%, but the basic unit for energy consumption was worse by 2%. However, the 3 plants in Japan achieved zero emission (zero landfill) in 2006. The overseas facilities are continuously working to improve the rate of recycling. Please see page 19-21 "TOPIC Global Activity" for waste reduction activities.

エフテックグループ 廃棄物排出量 / 売上高原単位推移



- Combined CO2 conversion factor for domestic electricity from this report.
- Group sales are used as denominator of basic unit for energy consumption.
- Presumption is used partially.



## Continuously working on the regulations for chemical substances

<Regulation for chemical substances in each country>



### Start of Supply Chain Environmental System Audit

At F.tech we think that the most important item is supply chain management in “Chemical Substances Contained in Products Program”. Therefore, we issued “F-tech Management Standard for Chemical Substances Contained in Products” for the supply chain to follow the standard and submission of parts information using IMDS.

IMDS is complicated and inadequate data is common. Therefore, we started Environmental System Audit\* to verify the received data and also as a place that the supply chain can address their concerns.

We performed the Environmental System Audit to 4 facilities in Japan as a trial in FY2011. As a result, we found some incorrect method of investigation, so we re-educated them and asked them to investigate again.

The Chemical Substances Contained in Products Program has not sunk in yet as there are some mistakes shown. One of the reasons is the lack of explanation of the program. So we will improve our method of explaining and we will ensure that we submit investigation data to our customers.

\*Environmental System Audit: the representatives from F.tech Quality Assurance Division and Purchasing Division visit suppliers and confirm their chemical investigation system.

### F.tech Global Standard

In order to observe regulations of “Chemical Substances Contained in Products” we established “F-tech Management Standard for Chemical Substances Contained in Products” at the end of 2010.

We visited other facilities to confirm how they are doing through interviews in FY2011 and re-educated them.

Overall most facilities were following the rules, but we found that there were some differences between facilities in North America and Asia.

For example, some facilities in North America started the IMDS under the initiative of OEM, so they run the system systematically by utilizing the database.

By contrast, facilities in Asia just started the system, so they are running the system while learning at the same time. Some of their suppliers were not able to use the IMDS system, so we need a mid-long term plan to run this program thoroughly.

We felt that each customer’s opinion and culture in each country could affect this program. It is difficult to create standards in a single uniform way.

### Future activity

From the results of supply chain environmental system audit and global standardization we think our challenge is “supply chain management”. Therefore, we will continuously be expanding our environmental system, provide seminars for supply chain, issuance of green purchasing guidelines, review of global standards and reflect on the results of environmental system audit to the global standard.

## Preventative measures for defects by practicing "Visualization"

### Establishment of Global F.tech Quality Standard

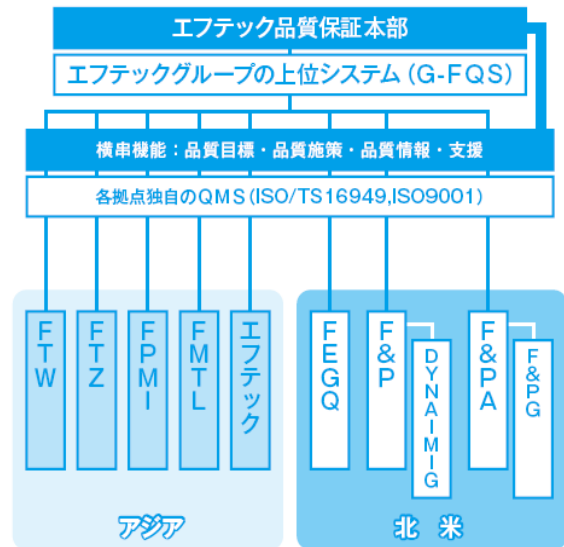
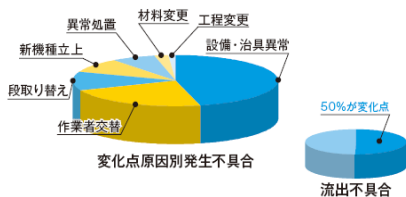
In order to realize "Global identical quality", "Global simultaneous supply", "Global optimized cost" and "Environmental conformity", we at F.tech Group started "G-FQS – Global F.tech Quality Standard"

To operate business globally the system that was established at each company became insufficient. Therefore, the company established "G-FQS" to set the same standards and rules for all group of companies to achieve their goals. We established the "F-tech Management Standard for Chemical Substances Contained in Products" in 2010 followed by "Conformity Certification Process Implementation Standard" to practice smooth purchasing activities from LCC (Leading Competitive Countries). This standard is to clarify the procedure for getting approval from customer when localized material is used for mass production. We were planning to issue "Supplier Quality Assurance Manual" and "Global Quality Evaluation Standard" in 2012.

### "Quality Assurance Visualization" overseas

We started "Visualization" to companies overseas which we have been practicing in Japan since 2009. 50 % of defects in the F.tech group occurred when there was a change and we think this is our weak area. Therefore, we will start developing "Strength Control", "Accuracy Control" and "Change Point Control" to companies overseas.

We will start with 4 facilities in Asia to prevent defects in FY2012.



G-FQS: Global F.tech Quality Standards

### Improvement of market quality system

At F.tech we think speedy action and prevention of reoccurrence and/or similar defects is the best action for customers and we act accordingly.

Therefore, we established Analysis Section in Quality Assurance Office separately from the quality section at each factory to collect all market claim data from the F.tech Group. We analyze the incident by using actual defective piece and computer simulated images, then the results are summarized to "Market Claim Analysis Report". The report is shared by the group of companies. We believe that by evaluating different perspectives enables us to make judgments in an objective way. Also we provide feedback to Production Section and Development Sections to prevent reoccurrence similar incidents.

For the future we will put more effort into analysis to prevent potential claims.

### 25th Global Joint Quality Conference

The memorable 25<sup>th</sup> Global Joint Quality Conference was held on November 3 & 4, 2011 at Kuki-Shobu Industrial Park Management Centre. Every year Japanese companies and overseas companies take turn to hold the conference, however, this particular conference was held in November due to the earthquake in March.

Sr. General Manager of Quality presented the keyword of "Improvement of consolidated quality" during the conference. At F.tech Group we develop each standard; "Quality Assurance System – G-FQS", "F-MQS for new model development and "Improvement of analysis performance" to improve consolidated quality.



## Ensure employee's health & safety based on our company principle, "Respecting People"

### Global Safety Inspection

At F.tech we set the goal of "Zero Lost Time" for the 11<sup>th</sup> Mid Term Business Plan (2011-2013). We performed Global Safety Inspection in FY2010 to 9 facilities (F&P, F&PA, DYNA-MIG, F&PG, FPMI, FEGQ, FTZ, FTW and FMTL) to see their safety activities.

In FY2011, based on the results of inspection we created "Safety Credibility Inspection Manual" to check if F.tech group of companies are running business based on the safety standard. Based on the manual, Production Planning Division performed inspections to 2 facilities in Japan (Kuki and Kameyama) and 8 facilities overseas (F&P, F&PA, DYNA-MIG, FPMI, FEGQ, FTZ, and FTW)

The following items were checked:

1. Preventive measures for accidents
2. Action plans for accident
3. Prevention of reoccurrence
4. Safety fence and device
5. 3S situation
6. Work environment and PPE
7. Secure safety when at irregular work
8. Fire safety
9. Fire extinguishing and evacuation
10. Environmental health
11. Traffic safety

There were 124 items in the small category as well. Evaluated each item and assessed it by five-point evaluation. The Mid Term's goal is 4 points (Good) to all facilities.

The results of 2011 showed that facilities in Japan and North America (except Mexico) scored more than 3 points in almost all items. Especially countries in North America have strict safety standards already, so we thought there was no major issue. For example, safety fences and devices were in place and there was a specific distant between equipment and worker. Also we found out that other developing countries have not organized safety rules, so risk remains. For example, there was an open area in the press that a worker could reach while the press was running. (See pictures) This was caused due to no specific rules, so we set safety fence standards for not only particular company, but all groups of companies.

Through this inspection we also clarified the roles of Headquarter and challenges at each facility. We also need to promote better understanding of "Safety & Health Management Rules" and educate associates who are maintaining equipment to be reliable associates who can install equipment to maintain the equipment.



Before: Operator could reach the feeder of press



After: the height of safety fence built up higher.  
(1800mm standard)

We will continuously enhance the safety at F.tech group of companies and achieve more than 4 points for the evaluation and zero lost time.

### Mental and physical health care

F.tech is also actively involved in employee's mental and physical health as a preventative measure.

As for mental health, we started to use an external company to provide EAP\* service since April 2010. This service can be used not only by employees, but by their immediate family as well. Employees can use this service for anything from simple questions to complex issues.

Also EAP provides "Stress Check" to all employees. This is a self-diagnosis system by answering questionnaire either online or paper. It is a good change to know your stress level of own. All of services are kept confidential, and even the employer won't know personal information.

We implement a health checkup for all employees regularly and we recommend a full check up for employees who are older than 35 years old as a proactive measure.

\*EAP: Employee Assistance Programs are employee benefit programs offered by many employers, typically in conjunction with a health insurance plan. EAPs are intended to help employees deal with personal problems that might adversely impact their work performance, health, and well-being.

## F.tech

### Environmental Award by Honda Motor Co., Ltd.

Honda Motor Co., Ltd. revised the Honda Green Purchasing Guidelines in January 2011. According to the guidelines we performed Environmental Visit, Benchmarking and environmental load reduction by Visualization globally. Also Kameyama Plant was proactive in energy reduction by utilizing the energy management system. Those programs and actions were evaluated highly at Honda and we were awarded the first Environmental Award which was established in 2012.



Award ceremony at Honda

### Kuki Plant

#### Energy conservation by introducing high efficiency inverter

Kuki Plant installed inverter air dryers to track energy consumed at midnight or weekends and were able to reduce electricity consumption by 102,000kWh annually. At Welding, they focused on the stand-by electricity generated by servo motors of 250 welding robots. As a result they were able to reduce 22,600kWh annually. At Paint, there are two 15kW pumps to circulate paint for 24 hours 7 days a week. However, to optimize the speed of pump we installed inverter units that were able to reduce electricity by 47,600kWh annually while maintaining quality. These activities contributed to reducing CO2 by 65t-CO2 annually.



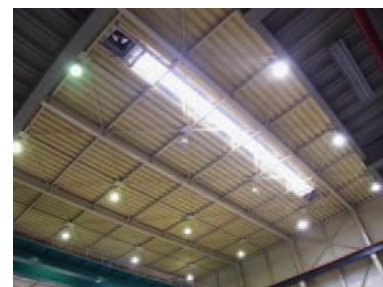
Inverter units for paint pump

### Kameyama Plant

#### Goal is to be # 1 in Energy conservation by using energy management system

Kameyama Plant proactively utilized the energy management system to “visualize” energy consumption and made a contribution to receiving the Honda Environmental Award. Specifically they focused on the stand-by power at non-production time. Activity in 2011 was lightings in stamping area. There was a skylight, but they found out thorough visualization that there was no proper lighting management. Therefore, isolated mercury lamps, a sensor and a timer, were installed to control lights-out automatically during daytime. They installed the same device to its warehouse and were able to reduce electricity by 50,500kWh annually. Wada plant focused on “no-load losses” that is generated when electricity is transformed. By combining 400V from 1 lineage to 3 lineages the “invisible loss” was reduced. As a result, 76,860kWh of electricity was reduced annually and also CO2 was reduced by 48t-CO2 annually.

Kameyama Plant will continuously be improving by utilizing “Energy Management System” and aiming # 1 in the group of companies.



Sensor & timer were installed by mercury lamps

### Haga Technical Centre

#### Environmentally friendly infrastructure to new building

Haga Technical Centre was damaged by the Great East Japan Earthquake. Haga TC took this occasion to rebuild a new safe, environmentally friendly building that can generate new ideas and technologies. The environmentally friendly equipment was installed and used LED lightings for outdoors, gates and guide lights. Stamping now has skylights and installed water-saving toilets and lighting sensor. We are anticipating reducing CO2 by 13t- CO2 and water by 60m<sup>3</sup> compared to the conventional products. We are continuously planning to introduce energy friendly equipment to the new building.



New skylight in the press area

## F.tech Philippines Mfg., Inc. (FPMI)

### Support typhoon victims

In December 2011, just 9 days before Christmas the tropical storm Sendon hit the Philippines, and caused a huge flood in Cagayan de Oro and Iligan, south Philippines. More than 1000 homes and schools were destroyed.

As one of CSR activities at FPMI, employees of FPMI thought what the victim's needs were. They put large boxes in their cafeteria to collect donations. As a result, 2 boxes of canned food, 16 boxes of used cloths and PHP 26,125 were donated. FPMI itself donated PHP 50,000, however, the money was generated by selling waste.



Collecting donations



Collected items and participants of FPMI

## F.tech Wuhan Inc. (FTW)

### Rationalized lighting hour in factory

At FTW, they worked on reducing electricity used for lighting by using sunlight. They installed large AC units in June 2010. The units came with dark coloured pipes and they made the factory darker. Therefore, the pipes were wrapped with silver coloured paper to reflect the sunlight better. Also, glasses were replaced with new one to improve brightness in the factory.

Moreover, they set rules of lighting hours in the factory. Posted lighting location maps in certain areas when lighting was on during sunny day. When it is sunny the illumination criteria can be met with only sunlight, so lights in the factory can be off except a certain area. With these activities FTW were able to reduce electricity by 38,610kwh annually and reduce CO2 by 39t-CO2.



Before: dark colour pipe



After: wrapped with light colored paper

## F.tech Zhongshan Inc. (FTZ)

### Started Clean Production Program with goals of “Energy conservation”, “Reduction of environmental load” and “Cost reduction”

FTZ started “Clean Production” program in July 2011 under the supervision of the Zhongshan Environmental Conservation Science Institute. “Clean Production” is with goals of “energy conservation”, “reduction of environmental load” and “cost reduction” to reduce environmental load from the source and effectively utilize resources by continuously improving product design, using environmentally friendly raw materials and utilizing advanced technology.

The Zhongshan Environmental Conservation Science Institute's evaluation was 87.64 points and FTZ met its criteria of Clean Production Company. Especially, Paint process received the highest evaluation in the areas of requirements of production process and equipment, raw material index, resources and energy consumption and environmental management index. FTZ will continuously perform Clean Production to contribute “Energy conservation”, “Reduction of environmental load” and “Cost reduction”.



Meeting at FTZ

### DYNA-MIG, A division of F&P Mfg., Inc. (DYNA-MIG)

#### DYNA–MIG, A Division of F&P Mfg., Inc. in collaboration with local scouts!

At DYNA-MIG, they collaborated with Stratford Scouts (boy scouts) to perform environmental activities. In 2011, DYNA-MIG purchased 27 needleleaf trees and deciduous trees from a local tree planting office and planted them at the side of a pond that DYNA-MIG owned.

Trees absorb CO2, and reduce erosion of the banks, providing home for birds. There are many nests of ducks and geese, so DYNA-MIG believes that tree planting is an important activity to protect wildlife's habitat. Also, DYNA-MIG made a donation to the scouts for their funding for jamboree. DYNA-MIG is committed to building close relationships with local communities to contribute to environmental conservation.



Associates of DYNA-MIG and boy scouts

### F&P Mfg., Inc. (F&P)

#### Reducing organic waste from cafeteria

As part of their annual environmental plan, F&P considers ways to further reduce their waste. Part of this process involves having an independent consulting company come in and conduct a waste audit. Each production team labels their garbage, and the consulting company weighs the garbage. They then compare what is going out in waste versus recycling and composting. Last year, they determined that organics was an area to focus on, so F&P developed a program to separate waste in the cafeteria so that organics in the cafeteria goes to compost. With this new program in place, we anticipated that 38 metric tonnes of organic waste was diverted from the landfill site this year.



New waste bin in cafeteria

### F&P Georgia, A division of F&P America Mfg., Inc. (F&PG)

#### Reduction of welding shielding gas and improvement of lightings

At F&PG, in order to reduce waste welding shielding gas installed flow valve at all welding lines. By installing the valve the waste gas that was generated by pressure change was reduced and corrected the amount of gas. As a result, the amount of shielding gas was reduced. The lines have solenoid valves as well, so the gas will stop automatically when at non production hour. As for improvement of lightings, F&PG changed all 500W mercury lamps to 350W florescent bulbs. By changing the lightings F&PG were able to save electricity by 150W per unit. Also F&PG introduced the gardening program that FPMI presented at Global Environmental Meeting to associates. The harvested vegetables were shared with employees and received good feedback.



Testing flow valves  
Left: with valve, Right: without valve

### F&P America Mfg., Inc. (F&PA)

#### Everyone's effort; reduced landfill by 22%

At F&PA, they achieved reduction at landfill by 22% in 2011.

When they looked for recycle method for the company they asked all associates to share ideas at the general meeting. As a result, large cardboard used be garbage, but F&PA negotiated with a waste disposal company to recycle regardless of the size. Disposed wooden pallet and other packaging materials also are now recycled. The waste management company now provides discount when purchasing new materials. These activities became possible because of everybody's efforts, including management.



Waste wooden pallets

# ECOLIFE DAY 2012 (Summer)

Saitama Prefecture Environmental Global Warming

To increase employee's awareness of the environment we participated with the Ecolife Day that was organized by Saitama Prefecture. Have an ecolife day by going through these items.

Have an ecological day by using this checklist.

1. Quickly closed the door of fridge. (6g – save 139 yen/year)
2. Turned off the TV when doing something else. (17g – saved 384 yen/ year)
3. Did not play video game. (34g – saved 768 yen/year)
4. Pulled the plug of home appliances. (58g – saved 1292 yen/year)
5. Turned off the lights when left the room. (27g – saved 601 yen/year)
6. Increased temperature of AC or did not use it. (101g – saved 691 yen/summer)
7. Replaced home appliances to energy saving type within a month. (86g – saved 1927 yen/year)
8. Changed brightness of TV. (28g – saved 620 yen/year)
9. Dried hair with towel and then used hairdryer. (31g – saved 695 yen/year)
10. Vacuumed after organized room. (6g - saved 125 yen/year)
11. Turned the faucet off. Didn't leave it running. (82g - saved 2630 yen/year)
12. Family member took the bath continuously before it gets cold. (81g - saved 1772 yen/year)
13. Appropriate amount of shampoo or dish soap is used. (72g)
14. Segregated garbage by following local community's rules. (glass, can, plastic) (114g)
15. Used environmentally friendly products or recycled products. (57g)
16. Ate everything on the place. (9g)
17. Bought local vegetable. (55g)
18. Did not get a plastic bag when shopping. (56g)
19. Took a water bottle. (38g)
20. Did not use car. Used bicycle/ bus/ train or walked. (316g - saved 3529 yen/year)

The number in brackets is the amount of CO2 that can be reduced per day.



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発行: 品質保証本部

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2012 年 9 月発行 次回発行: 2013 年 9 月予定