Site Report

This chapter shows the outline and environmental protection activities of manufacturing plants of FDK Group.

Started operation in June 1963         Address       2281, Washizu, Kosai City, Shizuo         Tel       053-576-2151         Production items       DC-DC converter, microwave comp	ka Prefecture 431-0495 ponents, power inductors, HF multi-layer chips and toners	Employees556Site area45,878m²
<ul> <li>Situated on the western part of Shizuoka Prefecture, Kosai Plant is a center of research, development and administration of the FDK Group. In the vicinity of the plant are beautiful Lake Hamana and Enshunada Beach, famous for egglaying of sea turtles. The plant is surrounded by beautiful nature. The environment-related activity of the plant includes setting up and proposal of the FDK Group Environmental Policy and Action Plan, designation of rules for the FDK Group as a whole and promotion of actions. In other words, Kosai Plant is the leading entity of other plants to put various activities into practice.</li> <li>1. The plant has been involved in developing products free of hazardous substances in order to comply with EU's RoHS Directive, and other rules. More recently, it is committed to developing super-green products which have top-environmental characteristics.</li> <li>2. The plant planned and disseminated measures and action plans for reduction of carbon dioxide emission and wastes into the Group companies.</li> </ul>	<ul> <li>In order to comply with ISO14001 (2004 version), the plant hosted in-house seminars to update the information and explain points to note to the employees. At the same time, the plant disseminates education and awareness regarding environmental protection and amendment of rules, laws and regulations through its intranet.</li> <li>The plant is determined to integrate the efforts of all employees for global environmental protection activities, aiming at realizing the sustainable society.</li> <li>Masaji Tamakoshi Environmental Technology Section Environmental Technology Center</li> </ul>	Activity Data FY 2002 Values of wastes Volume of wastes recycled (t) (%) 268 268 100 Energy Consumption Electricity City Gas CO2 eq. Purchased (MWh) City Gas CO2 eq. 19,889 320 9,131 CO2 emission Factor CO2 emission Factor (CO2/production) 10,000 6,000 2,000 0,000 2,000 0,000 2,000 0,000
Started operation in January 1970         Address       5-Ku, Honmachi, Sanyo-Onoda City         Tel       0836-72-1311         Production items       Inverter modules and piezoceramic	/, Yamaguchi Prefecture, 757-8585	Employees 150 Site area 152,449m <sup>2</sup>

\*Note: The CO2 emission factors in the above graphs are calculated based on the achievement of FY 2002 as 1.

# Started operation in April 2002 (by merging former Iwaki Electronics which was established in December 1966.) Employees 426

Site area 107,008m<sup>2</sup>

Situated to the southwest corner of Fukuin production volume after switching to energyshima Prefecture and faced with the Pacific saving type air conditioners to its production Activity Data Ocean to the east, Iwaki Plant is blessed line and employment of highly efficient light-Wastes with mild climate throughout the year. It ing equipment. never snows in the area. As a mass produc-3. Minimization of Wastes /olume of wastes Volume of wastes tion plant of inverter modules and VCOs, From the onset of mass production of inverter generated (t) recycled (t) the plant proactively promotes environmenmodules, the plant has been using returnable 180 containers to trans-Energy Consumption 1. Development of Eco-Friendly Products port parts from Electricity Bunker A Kerosene The plant conducts environmental assessbusiness partners to (MWh) (Kl) (Kl) the plant. This has ment to all products at their design and planning stage, based on the FDK's contributed to reduce 10,128 187 scheme for controlling products containgeneration of card-CO2 emission CO2 Emission Factor (CO2/production) CO2 ing chemical substances. They are delivboard box wastes. Takeshi Shio (t-CO<sub>2</sub>) ered to customers after implementing the Iwaki Plant Administration Section 10.000 Environmental Technology Cente assessment and verification. Possibilities 8.000 of halogen free production are examined in the plant for responding to the future 6,000 requirements, and research and develop-4.000 ment relating to it are conducted. 2,000 The plant successfully minimized increase 0 2002 2003 2004 2005 (FY)

Cherry blossom trees at the gate of the plant

## FDK Engineering Co., Ltd.

Business lines Design, manufacture and sales of various manufacturing facilities

of energy consumption due to increase

Iwaki Plant

Tel

tal management activities.

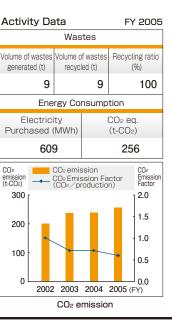
2. Energy-Saving Measures

0246-43-4161

Production items Hybrid modules, VCOs and timing controller board

Started operation in September 1990 (by separation of machinery business function of FDK; Former Hosoe Plant started operation in November 1963) Employees 64 281, Hirooka, Hosoe-Cho, Hamamatsu City, Shizuoka Prefecture 431-1302 Address

Address 1, Kamanomae, Joban-kamiyunagaya-machi, Iwaki City, Fukushima Prefecture 972-8322



FY 2005

Recycling ratio

(%)

100

CO2 ea

(t-CO<sub>2</sub>)

4,899

Emissior Factor

2.0

1.5

1.0

0.5

0.0

180

9

LPG

(t)

31

#### As a manufacturer of production facilities for companies, FDK Engineering Co., Ltd. delivers more than 90% of its products to auto makers. Many of them are occupied by production facilities for improving fuel efficiency or reliability. Its customers are highly environmental-conscious. The com-

053-522-5280

pany's activities are mainly consisting of the followings:-

- 1. Eco-friendly design of facilities To miniaturize the facility to save materi-
- als and power consumption as much as possible
- 2. Reduction of greenhouse-effect gasses To reduce power consumption
- 3. Zero emission

Tel

Business partners are requested to deliver products without packages. If this is not possible, they are requested to take the packages back to them after delivering products. All drawings are shredded

for recycled use after they are used.

The company is actively involved in friendship activities with the local community.

- a. Cleaning campaigns in cooperation with local residents (once a year)
- b. Participation to the 'Himesama Dochu' event (Every year four

employees or so are participated in the event.)



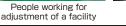
In-house environmental

education

Keigo Yamaoka Equipment Development Dept







CO2 emission

Site area 15,957m<sup>2</sup>



#### FDK Energy Co., Ltd.

 Started operation in August 2002 (by separating battery function of FDK. The former Washizu Plant started its operation in February 1950.)
 Employees
 167

 Address
 614, Washizu, Kosai City, Shizuoka Prefecture 431-0431
 Site area
 39,395m²

 Tel
 053-576-2111
 Site area
 39,395m²

Business lines Manufacturing and sales of alkaline batteries and lithium batteries

Situated in Kosei City along the west bank of the beautiful Lake Hamana, FDK Energy Co., Ltd. is surrounded with nature and is a center of technical development and manufacturing of alkali batteries and lithium batteries.

The company was involved in mainly reducing energy consumption and wastes as its environmental activities throughout FY2005 while in the circumstances of increasing production volume year by year. For the former, packaging processes were integrated to one place under its production innovation activities and energy consumption was successfully reduced. Though the increase of production came to 6%, the increase of energy consumption was retained to just 2%. For the latter, residual sludge was successfully reduced thanks to an improved performance of biological treatment facility. Decreased in-process defect ratio contributed to reduced waste batteries. In FY2005, the volume of waste was reduced by 32 ton over the target. As to its efforts for eco-friendly products, an inspection and confirmation was made to each

supplier of raw materials in order to respond to the requirements of FDK Group' s criteria for controlling products containing chemical substances.

In FY2006, Digital Alkali Battery D-Series will be released in addition to the conventional Wide Range Alkali Battery G-Series. The D-Series batteries are developed for digital equipment use and the power is

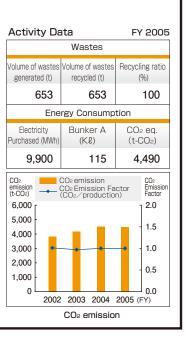
larger by 40% than the conventional G-Series batteries. This has enabled increased replacement cycle of batteries and resource saving can be promoted further.



Trees in front of the main gate







### FDK Mechatronics Co., Ltd.

Started operation in November 1989

Address2281, Washizu, Kosai City, Shizuoka Prefecture 431-0431Site areaIncluded in Kosai PlantTel053-575-3011Business linesManufacturing and sales of stepper motors

FDK Mechatronics designs and manufactures stepper motors, doing businesses to make a plant a mass production plant and promoting and controlling motor businesses in general.

Its environmental management activities mainly include eco-friendly product design and actions for preventing global warming. 1. Product Environmental Measures

In order to totally eliminate hazardous substances designated by the Fujitsu Group, actions have been directed to switch to parts that don't contain lead and hexavalent chromium, two substances typically used for manufacturing motors. As a result, as of the end of March 2006, these two chemical substances were totally eliminated from all parts designated by customers.

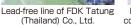
2. Prevention of Global Warming In order to reduce energy consumption and CO<sub>2</sub> emission, volume of inventory assets was reduced to save storage space and minimize dead stocks. In the process, energy saving was sought from manufacturing to control.

As a result, as of the end of March 2006, the inventory assets in the world was successfully reduced by approx. 10% over the previous quarter.



Engineering Support Dept







Regular meeting for products containing chemical substances



Employees 49

Volumes of waste, energy consumption and CO<sub>2</sub> emission are included in the data of Kosai Plant.

FDK Lifetec Corporation						
Started operation in May 1971		Employees	63			
Address 2281, Washizu, Kosai City, Shizuok	a Prefecture 431-0431	Site area	Included in Kosai Plant			
Tel 053-576-3121						
Business lines Sales of foods, maintenance of gardens, assembly and processing of electric communication equipment, printing of business card, etc., operation and management of canteens, cafeterias and kiosks, food dispensing services, nonlife insurance and life insurance agent						
Established in May 1971 as an outsourcing com- unique method and provided as 'Run-Run Sabo pany of welfare function of Fuji Denki Kagaku, series.' Activity Data						
the former company of FDK Corporation, FDK Lifetec has expanded its business to sales of products developed for internal use. It has three offices, Sanyo Branch Office and Iwaki Branch in addition to the head office in Kosai City. Its environmental protection activity includes environmental management system operations complying with ISO14001 as one of the plant of	In the future, the company will thrive itself to contribute to healthier life of people and to the soci- ety as a provider of health, welfare, environmental management and culture. At the same time, it will also integrate the efforts of the entire company to improve welfare of employees of the FDK	wastes, en CO <sub>2</sub> emiss Sanyo Bra Branch are Kosai Pla	ting to reduction of ergy consumption and ion in the head office, unch Office and Iwaki e included in those for nt, Sanyo Plant and t respectively.			

FDK Corporation. More precisely it is involved in recycling of leftover food generated by its canteen into fertilizer using a leftover food processing machine and carbon dioxide reduction activities by reducing power consumption, in addition to raising awareness of the employees for social contribution and environmental improvement. As there has been observed a growing demand of Japanese tea due to the growing health trend of people, tea leaves produced in Shizuoka Prefecture are powderized using a

Group.

Leftover food processor



Tetsuta Aono **Business Promotion Dept** 





Recycle box

📕 Fuchi Electronics Co., Ltd. (Taiwan)

#### Started operation in January 1981

No. 355, Section 2, Nankan Road, Rutsu Shan, Tao Yuan, Taiwan Address +886-3-322-2124 Tel Business lines Manufacturing and sales of hybrid module and inverter unit

Started operation in 1981, Fuchi Electronics successfully obtained an ISO14001 certification in January 1990 and continues its efforts for maintenance and improvement of the environmental management system. Under the condition of growing demand from its customers for green products for preserving the global environment, the company has been involved in development and production of lead-free green products since 1991. In 1992, it established a green product supply system with business partners and has been working for obtaining customer satisfactions by continuously improving and strictly implementing the system. Fuchi Electronics will continue its efforts for further improving the system operations.

In FY2005, CO2 emission was increased due to an increase in production volume, compared to FY2004, however, the efforts for improving its production processes were successful in reducing basic unit of it. Fuchi Electronics will continue its efforts for 'business innovation'

while trying to reduce energy consumption and wastes. Fuchi's philosophy of 'To adore the nature' is the foundation of the company for sustainable development. Fuchi Electronics believes that consideration to the nature and to respond to the demand of the society are the basics for development of the company.

We will continue our efforts in providing products that respond to the change of the society and protecting the global environment as a corporate and global citizen.

Emergency drill

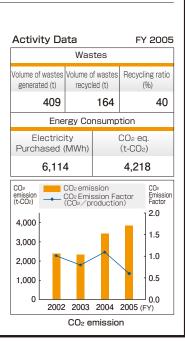


Lin Wen Hua Quality Assurance Dept.



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ety nod				







### PT FDK Indonesia (Indonesia)

Business lines Manufacturing and sales of alkaline batteries and lithium batteries

Started operation in August 1989

Address Kawasan Industri MM2100, Blok MM-1 Jatiwangi Cikarang Barat, Bekasi 17520 Jawa Barat , Indonesia Tel +62-21-89982111

Employees 955 Site area 40,000m<sup>2</sup>

Volume of wastes Volume of wastes

Wastes

recycled (t)

Energy Consumption

Electricity Bunker A Kerosene Light oil CO2 eq.

\*

FY 2005

Recycling ratio

(%)

\*

Activity Data

generated (t)

407

After obtaining a certification of ISO14001 (1996 version) in June 2003, PT FDK Indonesia completed upgrading the certification to ISO14001 (2004 version) in April 2006. The company is thriving for various environmental protection activities to reduce loads that impact on the

environment The activities include elimination of hazardous chemical substances, waste water treatment. energy-saving (mainly electricity consumption), reduction and separation of wastes, monitoring and measurement of waste gasses released to air and tree planting activities. As to the reduction of power consumption and waste, reduction targets are set in it environmental management plan which is promoted under a regular monitoring. In FY2005, the increased production of lithium batteries caused an increase of CO2 emission. Wastes are collected by a consigned waste processing company for uplifting the recycling ratio. On the other hand, effluents are treated by a waste treatment facility installed in

the company and monitored and measured every month. The result of the measurements is reported to other companies in the same industrial complex as well as the Indonesian Government periodically. For new recruits, environmental management system educations are provided.

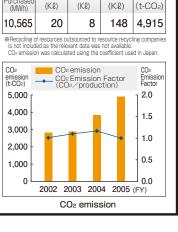
The company is determined to continue observing environmental laws and regulations as well as requirements to reduce environmental loads by integrating the efforts of the entire employees.





Djatmlko Tanuwidjojo Personnel & GA Dept.





2002 2003 2004 2005 (FY)

CO<sub>2</sub> emission

### 📕 FDK Lanka (PVT) Ltd. (Sri Lanka)

#### Started operation in November 1990

taken place in the past 3 years. So the company

Employees 2,461 Address Ring Road 3. Phase II E.P.Z. Katunavake. Sri Lanka Site area 50.000m<sup>2</sup> Tel +94-11-225-3492 Business lines Manufacturing and sales of optical devices, magnet heads for FDD and rotary transformers Started operation in 1990, FDK Lanka (PVT) made its activity one step forward to exploring reuse Ltd. successfully obtained a certification of of garbage and reduction of inputting raw material Activity Data FY 2005 ISO14001 (1996 version) in 2003, which was volume. In order to curtail consumption of hazard-Wastes upgraded to ISO14001 (2004 version) in Februous chemical substances, the company is working for ary 2006. The company sets the following items complying with EU's RoHS Directive. Volume of wastes Volume of wastes Recycling ratio generated (t) Under the slogan of 'FDK recycled (t) (%) as its environmental targets from FY2005 to Group Loves the Nature for FY2008 and tries to achieve them within the 455 214 47 periods the Future of the Earth,' we Energy Consumption 1. To reduce emission of carbon dioxide per unit are committed to continue Electricity LPG Light oil CO2 eq. of production machine by 15% our environmental protec-Purchased (MWh) (t) (Kl) (t-CO<sub>2</sub>) 2. To reduce wastes generated per unit of tion activities for handing production machine by 5% over beautiful Sri Lanka to 11,023 109 146 3,445 3. To reduce consumption of chemical substances the next generation and for COa CO<sub>2</sub> emission per unit of production machine by 30% the prosperity of FDK Emission emissior (t-CO2) CO2 Emission Factor (CO2/production) 4. To reduce noise level at the boundary of the Lanka. U.C. Mallikarachichi 6,000 2.0 FINANCIAL Dept factory 5,000 Its energy saving activities in FY2005 included 1.5 4,000 use of a highly efficient power stabilizer, re-3.000 1.0 designing of process layouts to reduce use of air 2.000 conditioners and lighting equipment. As to 0.5 1.000 waste, the volume of it has been significantly 0.0 0 reduced due to its garbage reduction activities

37

Ferrite sludge waste water treatment system



Noise prevention of power generators

Started operation in	March 1994		Er	mployees	1,753	
Address	No. 16, Malong Road, Huli District, Xiamen, Fujian, China			Site area	26,538m <sup>2</sup>	
Tel	+86-592-603-0576					
Business lines	Manufacturing and sales of switching	ng power supplies, transformers, hybrid modules, st	tepper motors	and VCC	Ds	
After its successful acquisition of a certificate of ISO14001 in January 1999, Xiamen FDK completed the second round of renewal examination in March 2005. During the period, under the environmental policy of 'to observe laws and regulations, to reduce environmental loads through pursuing green		<ol> <li>Social contribution activity: Every year voluntary activities are held at least once with the participation of employees. This year, guidance on traffic rules and strengthening the sense of protecting environment was given.</li> <li>Awards: Since FY2001, the company has been given</li> </ol>		Activity Data Wastes		FY 2005
	to continue improving environ-	the award of 'garden company' award from X	liamen ge	nerated (t)	recycled (t)	(%)
	re employees have been committed vironmental loads. In FY2005, the	City every year. This year, the company w award from the green-	von an	681	467	69
	npany was committed to the following activities. Gnergy-saving: Power consumption volume was			Energy Consumption		ition
successfully year.	reduced by 10.7% over the previous volume of wastes was successfully	planting activities. Xiamen FDK is determined to continue its activities	PL	Electrici Irchased (		CO2 eq. (t-CO2)
reduced by 29 3. Hazardous ch	9% over the previous year. emical substances: In order to elimi-	based on its environmental policy with the integrated		7,53		7,069
manufacturin formed and u tion data am	nazardous chemical substances in ng products, a control manual was sed. In order to share the examina- ong all employees, the company is dring for making a database	efforts of all the employ- ees. Department Mana of Adminstration D		ision D₂) 000	CO₂ emission CO₂ Emission Fa (CO₂ ∕ productio	actor ph) CO2 Emission Factor 2.0 1.5
currently working for making a database. 4. Environmental education: A booklet on ISO14001 was given to all new recruits to provide basic knowledge on it. For existing employees, various environmental educations were provided to enhance their knowledge on it. The company	States	4,0	000 - • 000 - 000 -	++	1.0	
designates every April a month of 'reinforcing our environmental activity.' This year, various environment-related events were held.		Voluntary activities Green activity award from the greenery committee of Huli		0 0 0.0 2002 2003 2004 2005 (FY) CO₂ emission		
Shang	ghai FDK Corporati	on(China)				
Started operation in	August 1995		F	mployees	3,683	

Address499 Dong Qu Road, Songjiang Industrial Zone, Shanghai, ChinaTel+86-21-5774-2028

Business lines Manufacturing and sales of hybrid modules and coil devices

Xiamen FDK Corporation (China)

Established in 1995 in Songjiang Industrial Zone in Shanghai, Shanghai FDK Corporation manufactures electronic parts. After successful acquisition of a certification of ISO14001 in December 2000, it upgraded the certification to ISO14001 (2004 version) in September 2005. The activities of the company during FY2005 includes of the followings.

- Environmental management education to the employees was strengthened. For new recruits, especially, the environmental protection education was included in their general education to raise their understanding of the importance of it.
- 2. As to energy saving, energy reduction plans were communicated to all employees by displaying it on the company bulletin board and other means. At the same time, each employee was encouraged to set and implement his/her own themes. As a result, the energy consumption reduction target was successfully achieved. Due to a shift of ferrite production to Nangjing FDK in October 2004, CO<sub>2</sub> emission volume from the company was

significantly reduced.

- 3. As a part of its green planting activities, maintenance and growing of trees were done regularly in the plant premises.
- 4. Recycled use of packaging materials was promoted which was successful in reducing the volume of wastes.
- 5. In order to further strengthen green procurement, a green partnership

was concluded with the business partners. Shanghai FDK is determined to integrate the efforts of the entire company to promote environmental improvement activities.





General Administration Dept



Employees 3,683 Site area 60,309m<sup>2</sup> Activity Data FY 2005

Wastes /olume of wastes Volume of wastes Recycling ratio generated (t) recycled (t) (%) 124 \* \* Energy Consumption Electricity Light oil CO2 eq. Purchased (MWh) (t-CO2) (Kl) 4,430 60 4,372 CO2 CO<sub>2</sub> emission Emissior Factor CO2 Emission Factor (CO2/production) (t-CO2) 15,000 2.0 12,000 1.5 9,000 1.0 6,000 0.5 3,000 0.0 0 2002 2003 2004 2005 (FY) CO<sub>2</sub> emission

## Site Report

### Suzhou FDK Co., Ltd. (China)

Started operation in June 2001

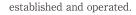
 Address
 43 Building Fenggiao Industrial Park 158-88 Huashan Road, Suzhou New District Jiangsu, China
 Site area
 12,500m<sup>2</sup>

 Tel
 +86-512-66619392

Business lines Manufacturing and sales of hybrid modules

Suzhou FDK started the activities of the environmental management system ISO 14001 in the beginning of 2004 and successfully obtained its certification in December the same year. This is due to the efforts of the entire employees, the company believes. In FY2005, the company was committed to the following activities.

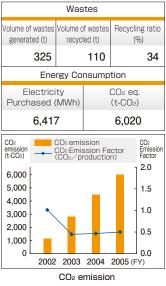
- 1. Environmental education was provided to all employees to raise awareness of the environmental protection.
- 2. Energy saving targets were set and addressed enthusiastically.
- Separation of wastes was strictly promoted to raise the recycling ratio.
- 4. Hazardous substances were strictly separated and controlled.
- 5. Measures were taken to reduce noises.
- 6. Education and evacuation drills on safety and fire prevention were provided.
- 7. Hazardous substances control system was



In FY2005, due to an increased production volume, CO<sub>2</sub> emission was significantly increased. In FY2006, the company will address reduction of energy consumption and improvement and upgrading of hazardous substance control system as the priority

issues.





FY 2005

Employees 1,559

Activity Data

Employees 553

### FDK (Thailand) Co., Ltd. (Thailand)

#### Started operation in December 2001

 Address
 60/118 Navanakom Industrial Estate Zone 3] Moo 19, Phaholyothin Road, Tambon Klongnung, Amphur Klongluang,Pathumthani 12120, Thailand
 Site area
 25,180m²

 Tel
 +66-2529-4930

 Business lines
 Manufacturing and sales of stepper motors

FDK Tatung (Thailand) Ltd. manufactures stepper motors for office automation equipment and automobiles. The company celebrates the 5th anniversary in December 2006 and has been in business for 17 years including the history of its former company, Fujitsu Thailand. The followings are the environmental policy of FDK Tatung (Thailand).

- We shall observe rules, laws and regulations on environment of the Kingdom of Thailand and of our business partners.
- We shall continue improvement of the environmental management system, prevent pollutions due to our corporate activities, and reduce impacts on water, soil and air by effectively utilizing wastes.
- We shall commit ourselves in maximum use of resources and promotion of energy conservation as well as energy saving.
- 4. We shall raise understanding of the entire employees on environmental protection.

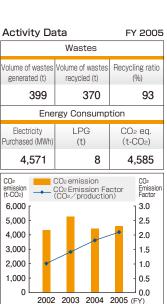
The company successfully acquired a certification of ISO14001 (1996 version) in June 2003, and completed upgrading of it to ISO14001 (2004 version) in June 2006. It further continues its efforts for environmental improvement of the Kingdom of Thailand. The priority environmental action items for FY2005 were 'reduction of wastes by uplifting the recycling ratio' and 'compliance to environmentrelated laws and regulations such as EU's RoHS Directive.' Thorough separation of garbage contributed us to achieve waste reduction by 25%. As to the RoHS compliance, a series of efforts were directed to set up internal rules and regulations, guidance to business partners and identification and strict control of inventories by the time the Directive was officially applied in July 2006. FDK Tatung (Thailand) is committed to improving the

environment continuously by integrating the entire efforts of the employees, and will make a leap forward for a success while keeping harmonious existence with the environment.



#### Peerawit Tapabud SM & PARTS ENG Dept.





CO<sub>2</sub> emission

Environmental chemicals seminar to business partners