

Chapter 4: Other Cases

Companies are carrying out various other kinds of environment protection activities in addition to preventing pollution and reducing the environmental burden of manufacturing processes. This chapter introduces other cases where companies have considered the environment and contributed to society through their products.

Case 6: An Environmental Measure by Group Companies in Concert

1) Profile of the company

| | |
|---|---|
| Company F | |
| Business activities: | Manufacture and sale of automobiles |
| Number of employees: | Approximately 1,600 |
| Start of operation: | 1992 |
| Location: | An industrial park in the Laguna district |
| Ownership ratio of headquarters in Japan: | 70 percent |

2) Background

Automobile manufacturer Company F drew up a policy that attached great importance to environmental problems partly because it entered the Philippines after 1990, later than other automobile manufacturers. As a result, Company F installed an excellent waste water treatment facility with both chemical and biological treatment. In 1995, this automobile manufacturer received an award for outstanding service from the President of the Philippines for excellence in its equipment and daily management operations.

3) Contents

In addition to the above efforts, Company F focused on supporting affiliated companies, such as small- to medium-sized parts suppliers which were set up in the Philippines along with Company F, to tackle environmental problems.

Company F, which is a large company and well-experienced in environmental problems, took the lead to solve environmental problems together with its affiliated small- and medium-sized companies which find it difficult to address environmental problems by themselves. Periodic meetings for exchanging information are held by Company F; these provide a forum where companies already doing business in the Philippines share their own experiences in order to improve the quality of environmental measures.

Participants in these periodic meetings exchange information not only about environmental problems but also other problems in all fields including labor. Both meetings of Japanese executives and of Filipinos are held monthly, and members visit each company if needed. Initial participants included 9 companies but now 15 companies join the meetings as the number of affiliated companies has increased.

A survey of the present status of environmental problems has been conducted since June 1997. In the first stage, the situation of each company is determined based on how the administration deals with the criteria and controls waste water, how it processes solid waste (sludge) and industrial waste, and through questions about the environment in general. Environment conservation measures have been improved by the 15 companies, by reviewing environmental criteria and taking concerted action.

4) Results

The same problems can be swiftly solved and prevented by sharing information with other group companies. Small- and medium-sized companies, which are increasing in the Philippines, find it difficult to allocate money and human resources to environmental problems. However, those companies can utilize correct information based on the local situation by working together with experienced companies that came to the Philippines earlier.

5) Issues for the future

Company F hopes to solve problems swiftly through the meetings and further information exchanges, and to apply the results throughout the Philippines.

Case 7: A Company which Built a Waste Product Incinerator by Taking Advantage of a New Factory Construction

1) Profile of the company

| | |
|---|---|
| Company G | |
| Business activities: | Manufacture and sale of automobiles |
| Number of employees: | Approximately 970 |
| Start of operation: | 1983 (a factory in Metropolitan Manila), 1997 (a factory in a suburb of Manila) |
| Location: | One factory is in Metropolitan Manila, the other is in a suburb of Manila |
| Ownership ratio of headquarters in Japan: | 40 percent |

2) Background

Company G has manufactured automobiles in a factory located in Metropolitan Manila for more than ten years since 1983. Because many houses have been built around the factory and its facilities have become obsolete, the company decided to move its location to a suburb of Manila and build a new factory to increase its production capacity.

The new factory was built in a rural district, a suburb of Manila, where the company purchased farmland, leveled it and developed it itself. The new factory is surrounded by nature and farmland. However, many industrial parks are being developed by major developers around the new factory and Laguna Lake, so countermeasures against water pollution are urgently required.

When planning the construction of the new factory, Company G intends to discharge no various environmental pollutants from the factory. As a part of the plan, a high-performance incinerator will be established on site to burn industrial waste which the previous factory in Metropolitan Manila had buried under ground through subcontracting. Incinerator residue is to be stored in the factory until a reliable waste management system is established. Furthermore, the company is planning to establish the latest waste water treatment facility based on the same concept.

3) Contents

The newly built incinerator was designed and constructed by a Japanese manufacturer mainly for the purpose of burning inflammable solid waste, domestic waste and sludge discharged mainly from paint processing. Features of the incinerator include minimizing smoke and bad odors by adding a third combustion stage to the usual two stages. Its capacity is 360 kg/h and it cost 10 million pesos. This is the first case for this kind of incinerator to be used in a factory in the area around Laguna Lake.

When carrying out this kind of project, it must be noted that even contractors selling environmental equipment such as incinerators do not always understand the environmental standards. There are very few reliable local contractors so equipment and systems depend on imports from Japan, the U.S. and Europe; sufficient lead time

must therefore be allowed when planning to introduce equipment designed to protect the environment.

However, construction work inevitably must be done by local constructors, though there are very few that are capable of putting together a whole system. Company G thus requested Japanese plant manufacturers to integrate the whole system.

Case 8: A Middle-sized Company Tackling Environmental Problems in Various Ways with the Lowest Possible Cost

1) Profile of the company

| | |
|---|--|
| Company H | |
| Business activities: | Manufacture of automobile components and plated products |
| Number of employees: | Approximately 160 |
| Start of operation: | 1994 |
| Location: | An industrial park in the Laguna area |
| Ownership ratio of headquarters in Japan: | 100 percent |

2) Background

Company H started into business in the Philippines in 1994 by employing a large and highly-educated workforce recommended by a major automobile manufacturer that was its main customer. In 1996, its headquarters in Japan drew up an environmental policy and action guidelines, and Company H is now preparing to deal efficiently with environmental problems and is constructing an environmental action plan. It is also trying to prevent pollution and reduce the burden on the environment in every manufacturing process. Company H is a middle-sized enterprise that cannot afford environmental measures, therefore a wide variety of measures such as waste water treatment, waste reduction and noise prevention are being taken at as low cost as possible.

3) Contents

The main projects of Company H's on-going environmental measures are as follows:

- Storage and treatment of gilt sludge

At present, sludge generated from gilding processes is not taken out of the factory, but instead is stored in drums due to ambiguities in legal standards concerning waste management. It is planning to halve the sludge amount by dehydration.

- Measures to prevent leakage of agents used in gilding processes

To protect against agents leaking in a gilding process, drainage ways have been built around the gilding facility so that liquids flow into the waste water treatment facility, thus preventing soil contamination. Gilding baths are strictly monitored to prevent leakage of liquid.

- Readjustment of waste material storage

Company H carefully separates various kinds of waste, scrap steel materials and so on that are generated in the factory. In order to prevent rainwater from mixing with waste materials in storage and flowing out, outside storage of open waste materials was discontinued and a garage was built.

- Countermeasures against noise in the power generating room

In order to reduce the noise of diesel engines during the operation of generators, silencers were improved to decrease the noise level by 10 decibels. To protect surrounding plants from hot exhaust from the generators, the angle of exhaust ducts was designed appropriately.

- Recycling treated water

Treated waste water discharged from the gilding process is reused to water plants in the factory. This has reduced water service by five percent. The company is also considering reusing treated waste water in the gilding process.

4) Issues for the future

Company H intends to help employees better understand environmental problems and voluntarily do what they can by informing all employees of the activities that the Environmental Committee has established, and to tackle environmental problems in the company. Individual projects now being carried out will be reviewed and improved upon in the future.

Case 9: Development and Sales of Non-CFC Refrigerators

1) Profile of the company

| | |
|---|--|
| Company I | |
| Business activities: | Manufacture and sale of various kinds of electrical consumer goods |
| Number of employees: | Approximately 4,000 |
| Start of operation: | 1967 |
| Location: | Two factories in a suburb of Manila |
| Ownership ratio of headquarters in Japan: | 80 percent |

2) Background

In 1991, the company participated in a seminar concerning the Montreal Protocol that was hosted by the Department of Environment and Natural Resources (DENR) and the United Nations Development Program (UNDP). This seminar made the company reconfirm the urgent need for developing and marketing refrigerators that do not use chloro- or fluorocarbon (CFC) gas as refrigerant. In 1992, it received information on environmental activities and plans for conversion to non-CFC refrigerants for refrigerators from the head office in Japan .

To come to grips with this issue, the company applied to the World Bank for multilateral funding under the Montreal Protocol agreement. However, this application was turned down because Company I was not recognized as a developing-country nationality due to the composition of ownership of its stock (80 percent by the Japanese side and 20 percent by the Philippine side).

Its management made a decision to address the problem squarely even if financial aid had not been extended. In 1993 the Company began preparing a three-year plan for conversion to non-CFC refrigerant. In 1994, it made another application for financial aid in the form of United Nations Office for Project Services (UNOPS) through the Montreal Protocol office of the DENR. At the same time, it established an organization to be in charge of environmental preservation activities.

In November 1995, its application for financial assistance was finally accepted by the UNOPS, and it was decided to extend the company support from the Department of Science and Technology (DOST) of the Philippine government in the form of a favored tax and duty scheme for import of machinery and equipment.

The company brought out the first non-CFC refrigerator in the Philippines in April 1996 and signed the Montreal Protocol agreement with the DENR and UNDP in September .

In 1997, the company completely phased out CFC model sales by making the conversion to non-CFC refrigerant for all models, including OEM (Original Equipment Manufacturers) ones. It also concluded the Memorandum of Agreement (MOA) with the DENR concerning support for the campaign for environmental awareness related to destruction of the ozone layer, to be conducted jointly with the government. The

company's approach to development of non-CFC refrigerators was motivated by a variety of factors, including recognition of the need for environmental preservation, the international schedule for phasing out CFC-12/CFC-11 and the prospects for assistance from government bodies and other international bodies.

There were also some negative opinions within the company about the approach. These included the prospects of a rise in price due to the rise in material costs and investment, increased consumption of electricity by the motor in order to attain the same refrigerating performance, disadvantage in price competition, and the lack of movement toward the conversion among competitors. Some even voiced apprehensions about a reduction of the company's sales volume and shrinkage of its market share as a result. Naturally, there was also worry that consumers were not very interested in the new technology.

3) Contents

The schedule of the three-year conversion plan is as follows:

- Step 1: Market survey
Determine how to design the new refrigerator with new technology in order to satisfy market needs and use by the consumer by conducting research into voltage fluctuation, climatic conditions, etc.
- Step 2: Personnel training
Training for design of refrigerators to meet local market requirements and acquisition of know-how about the new technology.
- Step 3: Design of products, systems, and facilities
Several engineers were dispatched to Japan for training to ensure that products meeting consumer requirements are manufactured at minimum cost.
- Step 4: Production of prototypes
Working units utilizing prototype mechanical parts were produced for the purpose of evaluation, testing, and experiment in actual conditions using a chamber with controlled temperature.
- Step 5: Evaluation, testing, and simulation
Products were evaluated to ensure that production meets the standards of the parent company in Japan, local standards and consumers.
- Step 6: Unit testing
Various tests were carried out continuously for a period equivalent to the life of ordinary refrigerators by simulating actual usage.
- Step 7: Life test
The company asked monitors to use prototypes in normal conditions and submit reports periodically.
- Step 8: Market test
500 - 1,000 units were produced and sold within specified areas, and feedback from consumers was received after a certain period of usage.
- Step 9: Collection and analysis of market feedback
Feedback was collected from the life test and market test, followed by evaluation and analysis to improve product quality and formulate necessary measures.
- Step 10: Completion and approval

A report was submitted to management for approval after reconfirming points to be revised in the previous steps.

Step 11: Preparation for facilities

Preparation for manufacturing facilities started before the assembly of prototypes for market testing and was completed after revisions and adjustments were made.

Step 12: Mass production

Full-scale mass production started after management decided that all conditions were satisfied.

Step 13: Product launch (from announcement to sales promotion)

Sales and marketing departments promoted products into the market.

Step 14: Shipment

Products were shipped upon management approval after receiving "shipping certificate" duly signed by the "Quality Assurance Center."

4) Results

The major reasons for acceptance of the product in the market were as follows: 1) rise in refrigerating efficiency by an average of 7 percent, 2) lower consumption of electricity per day, and 3) growing recognition of international technology and environmental problems among the domestic consumers.

As a result, the company achieved a rise in both its sales volume and share of the domestic market. These developments proved acceptance of the new technology by consumers.

Noteworthy points in its approach is that surveying market needs required a lot of time and expense. In evaluation and testing activities, it was difficult to respond to all of the various market needs, such as tests concerning conditions of usage, voltage fluctuation, humidity ratios, and ambient temperature. Furthermore, promotion of the conversion to non-CFC models while producing the conventional models during the transition period had an adverse effect on production efficiency and productivity, and also required an immense investment.

The rise in sales volume and market share provided solid evidence of acceptance in the market. In the second place, the approach enabled a reduction of the environmental impact during manufacture, because the production of non-CFC refrigerators improved the working conditions. In addition, the rise in sales volume and share enabled the results of activities to be quantified.

The increase in the sales volume likewise meant a need for more workers, which enabled the company to achieve its goal of making a contribution to society. Although the conversion also entailed a sharp increase in the amount of input materials consumed, the company was able to offer the non-CFC models to dealers at an average price increase of only 200 pesos, thanks to the improved productivity. However, the profit margin falls far below the target of Company I.

Case 10: A Company that Donated Wells to Local Villages Suffering from Water Shortage

1) Profile of the company

| | |
|---|--|
| Company J (same as Company D in Case 4) | |
| Business activities: | Manufacture and sale of automobile parts (transmissions, uniform-speed joints, etc.) |
| Number of employees: | Approximately 430 |
| Start of operation: | 1992 |
| Location: | An industrial park in the Laguna area |
| Ownership ratio of headquarters in Japan: | 95 percent |

2) Background

About 80 percent of the Barangay (the smallest unit of local administration in the Philippines) people suffered from a shortage of water in the villages surrounding Company J's factory due to the large amount of water consumption by nearby industrial facilities. Therefore Company J decided to donate wells. When the president of Company J met the chief of the Barangay, the issue of the water shortage was raised and the president of Company J offered to donate wells. The donation was discussed and determined between the president and the chief of the Barangay.

Company J has had a policy from the outset to offer all kinds of resources (personnel and materials) in order to maintain good relations with and satisfy the needs of the local community.

Wells were donated to two Barangays at a party held in celebration of the shipment of the 500th transmission unit in 1996.

3) Contents

Underground excavation and casing started on March 26, 1996. Excavation was conducted by using a total of six steel pipes, two inches in diameter. On April 3, strengthening of the well foundation with cement started and the well became useable on April 22. The amount of water flow was between 10 and 20 l/minute.

4) Cost

The project cost 20,000 Philippine pesos including labor costs and raw materials.

5) Results

Fresh water became available to almost all residents around this well. The water shortage was not eliminated but mitigated.