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ESSO Singapore And The Environment

By

C K Lee
ESSO SINGAPORE AND THE ENVIRONMENT

At Esso Singapore, care for the environment is a very real concern because the petroleum business can be potentially hazardous to the environment as well the health and safety of employees, customers and the community.

As an environmentally-responsible company, we contribute towards a cleaner and greener Singapore by developing and implementing programs within the organisation to ensure that our operations have minimum negative impact on the environment as well as by supporting and sponsoring programs to promote the national green effort.

1. Pioneer and Continuing Leadership

1.1 Long before environmental conservation talk became fashionable in Singapore, Esso had taken a leadership and cooperative role in protecting the environment.

1.2 Even before our refinery started operations in 1970, Esso commissioned the then University of Singapore and Nanyang University to do an eight-month environmental impact study on the air and waters around the island of Pulau Ayer Chawan. Data was collected 4 months before and 4 months after the Refinery started up. The results happily indicated that the refinery did not adversely affect marine life and the quality of the surrounding air and water. Air and water quality in and around the refinery continue to be monitored regularly.

1.3 Apart from environment protection facilities and procedures which were included in the basic design of the refinery, Esso continues to invest substantially in facilities, equipment and training to ensure that our operations do not have an adverse impact on the environment. Since 1972, we have invested about $240M in this area. (See 3 for examples)

1.4 Over the years, Esso has also supported and participated in various studies, seminars and public education projects to raise environmental awareness within the community.

1.5 Esso continues to take its leadership role seriously today. See attached Amex Corporate World, Dec 1990.

2. Corporate Philosophy and Commitment

2.1 Esso and its employees are committed to ensuring that our operations and products are compatible with the environmental, social and economic aspirations and needs of the people in Singapore.

2.2 This includes developing effective partnerships with Governments, our customers and people who reside and work near our operations. We at Esso want to do more than protect the environment, we want to continuously improve it!
2.3 We work very closely with the Government, industry and other agencies towards environmental standards and regulations. We want to identify and apply available technology to improve the environment in a cost effective fashion.

2.4 Esso’s commitment is important enough to be spelt out in a formal corporate policy statement on protecting the environment and to continuously improve environmental performance throughout its operations. The policy also encourages concern and respect for the environment, emphasises every employee’s responsibility in environmental performance and ensures appropriate operating practices and training.

2.5 Environmental awareness among employees is maintained through various communication programs. As an example, Esso’s employee bimonthly magazine ENERGY carried 32 features on environment-related topics over the past four years. ENERGY is also distributed fairly widely in the community and press.

2.6 Esso also has a full-time environmental section with a staff of three to monitor environmental issues as well as develop and implement its environmental protection program.

3. Examples of Investments and Programs

3.1 Desulphurisation of diesel oil and motor gasoline and a sulphur-recovery facility extract sulphur which would otherwise in the condensation process be released to the atmosphere while a flare gas recovery system recycles energy which would have been lost to the atmosphere.

3.2 Esso uses floating roofs on petroleum storage tanks. These roofs move up and down as the tanks fill or empty, eliminating vapor space and thereby reducing evaporation which prevents the escape of volatile hydrocarbon compounds to the atmosphere.

3.3 Esso has also successfully reduced air pollution at the flare stacks caused by incomplete burning of gases which can result in smoke. To eliminate this, steam is injected into the flame at the top of the stack to increase combustion efficiency.

3.4 In much the same way, an oxygen optimisation program for all our major furnaces and boilers ensures complete combustion to safeguard against air pollution and save energy at the same time.

3.5 Esso also seeks to reduce the amount of waste generated. Wastewater, for example, is settled and treated in an oxidation lagoon where biological degradation takes place. All wastewater effluent is passed through interceptors to ensure that discharges to the sea are oil-free.
3.6 Esso insists on a proactive inspection and maintenance program to ensure that its plant and equipment are in tip-top condition. Flaws in equipment are detected, unsafe acts or conditions are remedied and faulty parts are replaced. Employees are well-trained and are familiar with operating procedures and safety considerations. These translate into a high degree of operational reliability which minimises the chances of accidents.

3.7 Pacesetters in Environmental Technology

Not only do we adhere to all environmental regulations, we are constantly on the lookout for ways to enhance our environmental performance.

One area in which we have exceeded the requirements set by the Government is in the use of environmentally superior alternatives for Esso’s underground piping and tankage at service stations.

In our retail modernization program, we have been applying new technology which will better safeguard the environment.

We found much environmental merit in switching from the single-wall threaded galvanized piping to a flexible, non-corrosive, double-wall piping called Enviroflex which also features a leak detection system.

Enviroflex can be installed easily as the pipes are laid like a cable and there are no joints, couplings or elbows (as with conventional piping), all of which are potential sources of leaks. Its leak detection system also ensures that, in the event of a leak, fuel is contained within sumps.

Likewise, we will be using a double-wall corrosion resistant jacketed under-ground storage tank to replace the current single-wall steel tank encased in a concrete vault.

The system, which also allows for the installation of leak detection sensors, reduces the risk of the leakage of fuels into the environment.

More Esso service stations will be equipped with these new systems. This is a significant step forward in environmentally-compatible service station technology and we are extremely proud to be the pacesetters not only in Singapore but in the region.

The Environment Ministry has been encouraging all the other oil companies to consider these alternatives and we have been sharing the information with the industry.

4. Introduction of Environmentally Friendly Products/Services

4.1 In 1990, Esso introduced two unique environmentally friendly automotive products, Esso Pace and Esso Superdiesel.

Esso Pace is a motorcycle oil which virtually eliminates smoke from motorcycle exhausts.
Esso Superdiesel is a specially scented product which removes odour from the diesel, smoke and particles from vehicle exhausts.

4.2 Esso introduced unleaded petrol in 1991. In anticipation of car-owners’ concern of unleaded petrols damaging their car engines, Esso introduced a unique warranty to allay such fears. This, once again, demonstrates Esso’s strong support for the Government’s move to encourage Singaporeans to use unleaded petrol which will contribute to a cleaner and healthier environment.

4.3 A $70 million retail modernisation program which began in 1990 to upgrade Esso service stations to standards comparable to the best in the world. A special feature of these new stations is the replacement of lube/repair bays with convenience stores. This has enhanced the appearance and cleanliness of service stations.

5. Operational Excellence and Safety

5.1 Operational excellence and safety are key to environmental protection. At Esso, we believe that safety must be a way of life with every employee before we can even begin to talk of environmental protection.

5.2 Esso strives to conduct its business in a manner that protects the safety of employees, others involved in its operations, customers and the public.

There is a total commitment to safety both in the design and operations of its facilities. An enthusiastic program stressing both on and off the job safety reaches each and every employee. There are seven safety committees. Safety training competitions, workshops, talks and audit training ensure that safety consciousness is second nature to all employees.

5.3 Working with our contractors and suppliers we make certain that they understand our operations and impact that their services and products will have on Esso operations. We try to make sure we have teamwork via lots of communication in this area.

5.4 The intensity, rigour and enthusiasm with which safety is pursued won for Esso Singapore recently, three coveted safety awards in competition among Exxon affiliates in Singapore, Europe, Asia and Australia. Esso Singapore beat a tough field of 24 nominees from 14 affiliates worldwide to win the 1989 ECI President’s Award for Affiliate Safety and Marine Safety. (ECI is Exxon Company International which is responsible for Exxon’s oil and gas operations outside of North America). This is no mean achievement and reflects the unrelenting dedication that Esso Singapore has towards safety.

5.5 Yet another enviable record was the 10 million man-hours worked without a lost-time accident by our Marine function for which it received the ECI Honour Gold Award (1990).

5.6 Hand in hand with safety programs is our Drug and Alcohol Policy which seeks to reduce the risk of incidents arising out of drug or alcohol abuse.
The existence of this policy does not imply that we have a specific problem. Rather, it demonstrates Esso's genuine commitment to safety and protection for the environment.

5.7 When the policy was implemented in 1990, it was met with much resistance and scepticism from the marine industry worldwide. Despite this and the potential of inconvenience and higher operating costs, the policy was implemented and enforced. This is another example of how far Esso is prepared to go for safety and environmental protection.

6. Emergency Response Capability

6.1 Despite our best efforts to prevent them, Esso recognises that accidents can still occur. These can potentially lead to injuries and environmental damage.

6.2 Therefore, central to our safety and environmental programs is the ability to handle emergencies effectively. Response equipment, facilities and plans are periodically revived and enhanced to ensure their effectiveness. A great deal of time, money and effort is invested to develop, test and continually improve on the plans.

6.3 Employees are trained in fire fighting and oil spill response and participate in simulation exercises and emergency drills periodically.

6.4 In the case of oil spill response, a core team of employees are trained and put through unannounced simulation exercises regularly.

The effectiveness of the Esso plan arises from an organised approach which includes planning, personnel training, state-of-the-art equipment, a readiness to tap professional expertise and the willingness to commit the necessary funds.

6.5 On an industry level, Esso spearheaded the formation of an industry cooperative, which is a collective oil spill response capability. The cooperative, TARC was formed in 1985.

6.6 And again last year, Esso led the industry in a major effort to restructure and upgrade the cooperative into a more powerful and efficient oil spill response capability.

6.7 Esso currently chairs the Oil Industry Liaison Group which reviews and discusses technical and safety issues related to marine oil pollution. This group works closely with the Government to ensure a safe, clean and efficient port.

7. Public Education and Community Programs: Spreading the Green Message

7.1 Over the past 20 years, Esso has also supported and participated in various seminars and public education projects to raise environmental awareness in Singapore.
7.2 A notable example is the sponsorship of a $100,000 project in 1975 by the then University of Singapore to develop a mathematical prediction model for assessing ground level concentration of sulphur dioxide.

7.3 In 1980, Esso contributed $100K for the Education Centre at the Singapore Zoological Gardens. The Centre conducts programs aimed to interest and encourage environment awareness among young Singaporeans.

7.4 In 1990, Esso contributed $30,000 towards Singapore’s first Clean and Green Week activities including an exhibition to encourage the public to do its part in keeping Singapore clean and green. In our selection of a corporate Christmas card from the Community Chest catalogue, we chose one made from recycled paper, again in a modest show of support of environmental conservation.

A major advertising and promotion campaign to encourage the use of unleaded petrol also serves to increase public awareness for environmental conservation.

For the 1991 Clean and Green Week, Esso sponsored the setting up of ecology corners in school.

7.5 Poster on "Our Heritage Under the Sea"
In 1991, Esso sponsored a public education program on coral reefs in Singapore and their conservation as part of a Reef Survey and conservation project under the leadership of Prof Chou Loke Ming of the NUS.

Also in conjunction with the Sunday Times’ article on marine life in Singapore waters, we sponsored the production of 10,000 posters on "Our Heritage Under the Sea".

An attractive pictorial spread of marine life, the poster essentially carries a "Save our Corals" message.

It serves to surprise Singaporeans that some really beautiful marine life can and does exist in Singapore waters, threatened however, by pollution and illegal harvesting.

8. Award
In April 1991, Esso won a Certificate of Merit for the Preserve Planet Earth Awards, jointly organised by the Rotary Club, Business Times, The New Paper and Hong Kong Bank, to recognise individuals and organisations for their contributions towards environmental protection. The Malayan Nature Society was the winner of the award for the organisation category.

Don’t do to win awards, but nice to be recognised.

9. Conclusion:
Esso’s Environmental Vision: Effective Partnership

Environmental protection will remain a deep and abiding objective and a top priority in Esso’s business operations.
This means looking for new ways to operate and offer more environmentally friendly products.

Comprehensive standards, operating practices and managing systems are in place, and are being continuously improved to safeguard the air, water and land we use in the production and distribution of our products.

We also spend a great deal of time, money and effort to develop, exercise and improve on our ability to respond to operational upsets that could negatively impact the environment.

Esso will continue to contribute knowledge and expertise to meet a wide range of environmental challenges by continuing to work with industry, Government, business, scientists and interest groups and the community towards a cleaner and greener Singapore.

We also spend a great deal of time, money and effort to develop, exercise and improve on our ability to respond to operational upsets that could negatively impact the environment.

However, improving the environment is everyone's responsibility and we must all work together.

A key element is the teamwork between industry and Government. In Singapore, we believe we have a highly trained and excellent industry and Government team that is ready to act.

But, after all is said and done, it is the consumer, you and I who must exercise choice in buying the products and supporting the effort. To do so, they need to know and be persuaded. The media provides the link. It is a vital role.