

## TOYOTA MOTOR VIETNAM ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM

### PURPOSE

This case study examines the benefits to industry of adopting voluntary environmental protection measures such as environmental management systems (EMS). Emphasis is given to the potential internal and external benefits which may have influenced Toyota Motor Vietnam's (TMV) decision to seek ISO 14001 certification for their automobile manufacturing plant in Hanoi, Vietnam. Internally, feedback provided by an EMS provides assurance to a company's management that their operations are conforming to environmental standards. Externally, ISO accreditation provides assurances to the local community and to customers, particularly in export markets, that the company operates in an environmentally friendly manner. In this way, accreditation may increase the company's stature in the community as a good corporate citizen while making it more competitive from a market perspective. Particular attention is given to the steps taken by TMV in putting in place an EMS which allows them to closely monitor and control all aspects of their manufacturing operations which may adversely impact on environmental health. Attention is also given to the effectiveness of TMV's EMS in preventing pollution; satisfying compliance monitoring requirements as identified in the environmental impact assessment (EIA) completed prior to construction of the plant.

### ETP1 COURSE TOPIC COVERAGE:

- ▶ ENVIRONMENTAL MANAGEMENT SYSTEMS (EMS)
- ▶ ISO 14001 GENERAL REQUIREMENTS
- ▶ ISO 14001 ENVIRONMENTAL POLICY
- ▶ ISO 14001 ENVIRONMENTAL MANAGEMENT PROGRAMS
- ▶ ISO 14001 STRUCTURE AND RESPONSIBILITY
- ▶ ISO 14001 TRAINING, AWARENESS, AND COMPETENCE
- ▶ ISO 14001 CHECKING AND CORRECTIVE ACTIONS
- ▶ ISO 14001 MANAGEMENT REVIEW

### ISSUES

Specific issues highlighted in this case study are:

1. Necessary procedures to document, implement, maintain effectively and improve plant operations from an environmental perspective to demonstrate conformance of an EMS to the ISO 14001 standard
2. The possibility that a company will voluntarily adopt an EMS to ensure close internal environmental monitoring of their operations but not actually seek formal ISO 14001 accreditation (e.g., not necessary from a marketing perspective or regarded as too costly)

3. The role of EMS as a cornerstone in a company's overall cradle-to-grave environmental protection efforts
4. Attitudes, behaviors, and organizational culture changes needed to implement and maintain an EMS

### **LEARNING OBJECTIVES**

On completion of this case study, participants will be able to:

- Assess the TMV's Environmental Policy in relation to ISO 14001 specifications
- Identify the significant environmental aspects and impacts at the plant
- Develop their own environmental objectives and targets and environmental management programs for the major operations at the plant, and constructively critique the company's objectives and targets
- Comment, with examples, on the effectiveness of the organizational structure and key personnel roles and responsibilities in the EMS, with particular focus on the environmental management representative
- Assess the adequacy of resources to implement and maintain the EMS
- Identify training needs, and areas of awareness and competence which could be improved
- Identify who are the interested parties to the TMV manufacturing operations, and draw up a list of questions for an interested parties survey
- Review and critique selected Standard Operating Procedures from the plant, including the Emergency Response Plan
- Identify potential environmental emergency situations at the plant
- Assess regulatory compliance performance at the TMV plant
- Develop a monitoring programme for emissions to air and water, and for solid wastes, including sampling frequencies, locations, and variables to be measured
- Identify monitoring instruments which must be calibrated regularly
- List non-conformances based on information received and observations made
- Comment on corrective and preventive actions taken at the TMV plant to address non-conformances and, where necessary, prepare additional corrective and preventive action plans
- Draft a schedule of internal audits, including areas requiring priority attention
- Evaluate the effectiveness of the plant's Management Review process

In fulfilling the above-listed learning objectives, participants will complete a detailed review of the following ISO 14001 EMS topics:

1. Environmental Policy
2. Planning the EMS
  - environmental aspects and impacts
  - legal and other requirements
  - objectives and targets
  - environmental management programs
3. Implementation and Operation of the EMS
  - organizational structure and responsibility
  - training, awareness, and competence
  - internal and external communication
  - documentation and document control
  - operational control
  - emergency preparedness and response
4. Checking and Corrective Action
  - monitoring and measurement, including calibration
  - non-conformance, corrective and preventive action
  - record keeping
  - EMS audits
5. Management Review and Action Plan

## **PROJECT SUMMARY**

### ***Introduction and Background***

Since its introduction in 1996, the ISO 14001 International Standard, which specifies requirements for environmental management systems, has been adopted by National Standards bodies in more than 130 member countries of the International Organization for Standardization.

ISO 14001 is viewed by many governments, businesses, and non government organizations (NGO) as one of the best hopes for attaining worldwide sustainable development and continual improvement in environmental management and environmental performance through self-regulation and self-monitoring. Because of its global reach, ISO 14001 is becoming a passport to international trade, as companies registered to the Standard can claim to have demonstrated to independent registrars that they have implemented basic management principles and practices which integrate environmental considerations into business decision-making and operational controls.

### ***Toyota Motor Vietnam's Environmental Management System***

Toyota Motor Vietnam Co. Ltd. (TMV) was established in September 1995 as a joint venture between Toyota Motor Corporation (TMC) of Japan, the Vietnam Engine and Agricultural Machinery Corporation (VEAM) and KUO (Asia) Pte. Ltd. TMV

commenced manufacturing and assembly of automobiles in August 1996. The main TMV plant is located in Phuc Thang commune, Me Linh district, Vinh Phuc province with two sales and service branches being located in Hanoi and Ho Chi Minh City. TMV has also established partnerships with dealers and suppliers throughout Vietnam. From the start of operations, TMV has emphasised environmental protection, and legal compliance.

A primary focus of Toyota in building their presence in Vietnam has been human resource development. TMV have established a training centre where every year they train between 500 and 600 technicians in a wide range of advanced automotive skills. Additional technical training is provided in Japan as required. This emphasis on training and manufacture of high-quality vehicles is considered to be important in providing the foundation for the plant's ongoing environmental protection efforts and their ability to put in place an effective EMS at the plant.

TMV has identified the following benefits from implementing and maintaining an EMS:

- Marketing advantages, by demonstrating to customers, regulators, investors, local communities, and employees that the company is committed to effective environmental management at a level that meets the requirements of the ISO 14001 standard
- Reduced risk of international non-tariff trade barriers
- Stakeholder confidence in the company's ability to meet new environmental objectives and targets, and achieve continual improvement
- Systematic management of environmental impacts
- Unbiased, professional assessment of the effectiveness of the EMS

In May 1999, after 9 months' effort developing and implementing their environmental management system, TMV was assessed and registered against the requirements of BS EN ISO 14001 1996 by QUACERT and AJA EQS certification bodies. TMV is the first company in the automotive field in Vietnam to receive the ISO 14001 certificate, which shows that the TMV plant has the highest-grade environmental policy.

### ***TMV Manufacturing Operations***

The TMV plant consists of the following departments and operating areas:

- Parts receiving and storage (warehouse)
- Vehicle assembly line
- Welding shop
- Paint shop
- Maintenance shop
- Administrative offices, canteen

## TOYOTA MOTOR VIETNAM ENVIRONMENTAL POLICY

1. Scope: The scope of environmental policy relates to all Environmental System activities. It contains not only Toyota Motor Vietnam (TMV) but also depending on the needs, all contractors and any suppliers whose business relationship/activities have something to do with TMV environmental preservation and/or improvement policies.
2. Purpose: The purpose of this is to outline Toyota Motor Vietnam's policies and practices regarding the environment.
3. Policy: It is Toyota Motor Vietnam's policy to promote and support environmental awareness. Toyota Motor Vietnam will strive to meet all the regulatory, legislative requirements and internal standards and to assess the environment impact of its automobile manufacturing process for the continual improvement of the environmental performance and prevention of pollution.
  - TMV will strive to comply with all applicable regional, provincial and national laws and regulations relating to the environmental.
  - The continual improvement of environmental performance and prevention of pollution will be achieved by: (a) aiming to minimize environmental effects of new materials and processes, through prior assessment of their environmental impact; and (b) seeking ways to minimize the consumption of resources and energy, to eliminate or reduce the products released to the environment, and to minimize the quantity of waste requiring disposal.
  - TMV will regularly re-assess its environmental objectives and targets in order to ensure the condition of proactive environmental procedures or practice.
  - TMV engages in the continual development and strengthening of the understanding of all company members on the best environmental operating and management practices.
  - TMV will cultivate community awareness of MTV's policy to the environment, continue to support and participate in environmental activities ancillary to automobile manufacturing.
  - This policy will be available upon request to all interested parties.

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Approved by: Mr. TAKASHI HASEGAWA - TMV President

## **SITE VISIT METHODOLOGY**

Course participants will complete a two day site visit to the Toyota Motor Vietnam plant to review the company's strategies and procedures in the planning, implementation, and maintenance of their ISO 14001 EMS. The visit will not be an audit because: (i) the ISO 14001 EMS course does not include the skills and practices of environmental auditing; and (ii) permission has not been requested from TMV to conduct an EMS audit. For these reasons, participants should not attempt to audit the facility during the visit. Discussion of observations, document review, and meetings with site management and operating personnel will take place off-site on the evening of the first day of the visit, and on our return to the classroom following the visit.

Participants will be organized into small groups for the site visit with each group being allocated specific areas of the EMS, in which they will be expected to acquire information and draw conclusions before, during, and after the site visit. Group areas of responsibility are summarized in the following table.

SUBJECT	FOCUS
Raw materials and parts receiving, warehousing, and finished product storage and shipping	Environmental aspects and impacts Objectives and targets Environmental management programs Roles and responsibilities of managers and workers Training, awareness, and competence Communication with external interested parties Operational controls Emergency preparedness and response Monitoring and measurement Corrective and preventive actions
Vehicle assembly line(s)	Environmental aspects and impacts Objectives and targets Environmental management programs Structure and responsibilities of managers and workers Training, awareness, and competence Internal communication Operational controls Emergency preparedness and response Corrective and preventive actions
Welding and maintenance shops	Environmental aspects and impacts Objectives and targets Environmental management programs Training, awareness, and competence Operational controls Emergency preparedness and response Monitoring and measurement Non-conformance Corrective and preventive actions
Paint shop; energy supply and conservation	Environmental aspects and impacts Objectives and targets Environmental management programs Training, awareness, and competence Operational controls Emergency preparedness and response Monitoring and measurement Corrective and preventive actions
Environment department, EMS administration	Development of Environmental Policy Organizational structure and responsibilities for entire plant Training programs, needs assessment and competence Internal and external communications Document control procedures Operational control (emission controls, waste water treatment) Emergency preparedness and response Monitoring and measurement for air, effluent, and solid wastes Regulatory compliance monitoring and performance Non-conformance – roles and responsibilities EMS record keeping Internal environmental audits Management review

On completion of the site visit, small groups will be asked to present their findings to the class with emphasis on practical lessons learned by participants which reinforce EMS theory and ISO 14001 practices taught in the course.

## TAKE HOME MESSAGES

Anticipated lessons learned by course participants in completing the case study and site visit might include:

1. Full commitment by top management to environmental protection is fundamental to the successful implementation of an EMS. Unless management are committed to adopting good operating practices and seeking continued improvement in achieving environmental objectives and targets then the long-term benefits of adopting an EMS in terms of improved environmental quality will not be realized.
2. Because the concept and the application of EMS is a new subject in Vietnam, especially for workers, provision of skills training and awareness building is a necessary aspects of an organization's EMS. For EMS to work, everybody in an organization needs to understand the importance of their day-to-day actions in potentially causing environmental impacts and must have the necessary knowledge and skills to avoid or minimize such impacts.
3. Implementation of an EMS can represent a significant financial investment by an organization. Companies should consider the necessary expenditures (e.g., training, monitoring, consultants, legal fees) before deciding whether they wish to pursue full accreditation. Some organizations may decide to implement an EMS but not to seek ISO 14001 accreditation depending on their analysis of the respective benefits and costs.
4. Prevention (rather than correction) is the philosophy of choice with regard to environmental management.

## REFERENCE READING

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