

美和科技大學

九十九年度教師產學合作計畫

結案報告書

計畫名稱：ISO 14001 國際環境認證輔導於家電業之應用

計畫編號：99-MN-DIM-IAC-001

計畫期間：99.1.1 - 100.03.31

計畫主持人：林筱增

共同主持人：苑梅俊

研究助理：陳桂美、曾郁惠、李鈴媛

經費總額： 100,000 元

經費來源：群宏國際企業股份有限公司

一、 題目：ISO 14001 國際環境認證輔導於家電業之應用

Assistance for the application of ISO 140001 Environmental Management Systems to an Electrical Appliances Company

二、 中文摘要：

ISO 14001 是目前全球廣泛應用的環境管理系統的國際標準。在英國有超過六千家以上組織或企業取得 ISO 14001 驗證，在全球 138 個國家和地區估計有十一萬家以上的組織或企業獲得此一驗證。ISO 14001 是建立並保持環境管理系統具體要求的重要管理系統標準。ISO 14001 可以作為一項工具來使用，用來集中控制企業對環境因素、控制與環境相互作用的產品/服務活動的途徑，如對空氣、土地、或是水源的污染排放控制。企業必須表明他們的組織目標，堅持實施他們所規定的方式，並記錄他們在遵守和改進環境方面所作出的努力。經由設立環境管理目標、指標，並實施計劃表來改進環境績效，進而獲取長遠持續的經濟效益。企業需要確定適用的法律、法規和相關的要求。確定法律對組織的影響尤為重要，只有這樣，才能採取符合性的措施，並定期進行評估以確保員工能正確理解並得到有效執行。此認證也許無法為企業立即贏得新客戶，但尚未取得認證的廠商肯定輸在起跑點上。

本研究計畫主要先藉由檢視該公司現有環境管理系統文件及作業程序書，並針對 ISO14001 環境管理認證系統之要求進行修正或增加，此外亦透過教育訓練，提升該企業員工對 ISO14001 環境管理認證系統認證之了解，最後則以現場的檢視與討論的方式，期望能協助該公司解決實務上之生產作業流程等相關問題。

(**關鍵詞**：ISO 國際標準、環境管理系統)

三、 前言：

ISO 14000 是目前全球廣泛應用的環境管理系統的國際標準。在英國有超過六千家以上組織或企業取得 ISO 14001 驗證，在全球 138 個國家和地區估計有十一萬家以上的組織或企業獲得此一驗證。ISO 14001 是建立並保持環境管理系統具體要求的重要管理系統標準，其在環境政策中有三項基本要求，分別是：

- 防止污染
- 遵守國家相關環境保護等法律法規
- 持續改進企業之環境管理系統

這些承諾能促進企業對整體環境績效的改進。ISO 14001 可以作為一項工具來使用，用來集中控制企業對環境因素、控制與環境相互作用的產品/服務活動的途徑，如對空氣、土地、或是水源的污染排放控制。企業必須表明他們的組織目標，堅持實施他們所規定的方式，並記錄他們在遵守和改進環境方面所作出的努力。經由設立環境管理目標、指標，並實施計劃表來改進環境績效，進而獲取長遠持續的經濟效益。企業需要確定適用的法律、法規和相關的要求。確定法律對組織的影響尤為重要，只有這樣，才能採取符合性的措施，並定期進行評估以確保員工能正確理解並得到有效執行。

本產學合作計畫之主要目的在於與委託單位—群宏國際股份有限公司，共同協助台商於越南投資的某國際家電廠商，建立並確認其環境管理系統相關文件及程序書等資料皆能符合新版 ISO14001 環境管理認證之標準，以通過 ISO 國際組織的環境管理系統，此外更針對該公司的菲籍員工進行 ISO14001 環境管理系統之相關教育訓練，並實地訪查該公司，以協助其解決實務上之環境管理系統改善等問題，有效提升該公司之產品品質與企業之競爭力，使其能永續經營。

四、 研究方法與步驟：

本研究計畫主要先藉由檢視該公司現有環境管理系統文件及作業程序書，並針對 ISO14001 環境管理認證系統之要求進行修正或增加，此外亦透過教育訓練，提升該企業員工對 ISO14001 環境管理認證系統認證之了解，最後則以現場的檢視與討論的方式，期望能協助該公司解決實務上之生產作業流程等相關問題。

當所有環境管理文件與程序書皆完成後，將再與該企業目前的作業狀況進行最後的交叉比對驗證，輔導該企業能順利取得 ISO14001 的國際環境管理認證，最後將所有的資料綜整成結案報告。

本計劃執行時程表：

| 項目 \ 月 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| 公司品質文件及程序書研讀、建立與修正 | | | | | | | | | | | | |
| ISO14001 環境管理系統教育訓練 | | | | | | | | | | | | |
| 現地流程檢視與建議 | | | | | | | | | | | | |
| ISO14001 相關文件整理 | | | | | | | | | | | | |
| 整理計畫相關結果 | | | | | | | | | | | | |
| 撰寫結案報告 | | | | | | | | | | | | |

五、 計畫完成之工作項目及成果：

1. 協助企業建立完整之 ISO14001 國際環境管理認證文件。
2. 協助企業順利完成 ISO14001 國際環境管理認證。
3. 協助企業進行員工相關之環境管理教育訓練。
4. 協助企業改進環境管理相關流程，有效提升產品品質與企業之競爭力。
5. 完成結案報告乙份。



圖 1 台灣日立蘇比克灣分公司生產線

| CODE | SUPPLIER | MONTH | JAN | FEB | MAR | APR | MAY | JUN | JUL |
|-------|--------------|-------|-----|-----|-----|-----|-----|-----|-----|
| 20004 | Chia Hung | | ● | ● | ● | | | | |
| 20005 | Fang Chen | | ● | ● | ● | | | | |
| 20001 | Firm | | ● | ● | ● | | | | |
| 20009 | Hain Key | | ● | ● | ● | | | | |
| 20002 | Hwah Sheng | | ● | ● | ● | | | | |
| 20007 | Lee Ming | | ● | ● | ● | | | | |
| 20006 | Lin Gee | | ● | ● | ● | | | | |
| 20008 | Ouplus | | ● | ● | ● | | | | |
| 20003 | Shiang Young | | ● | ● | ● | | | | |
| 20010 | Vaiiant | | ● | ● | ● | | | | |

圖 2 台灣日立蘇比克灣分公司相關之台灣協力廠商



圖 3: ISO 14001 教育訓練時況



圖 4: ISO 14001 教育訓練時況



圖 5: ISO 14001 教育訓練之學員成果發表與分享



圖 6: ISO 14001 教育訓練之學員成果發表與分享



圖 7: 與台灣日立蘇比克灣分公司品保部陳經理及受訓學員合影



圖 8: 與參與受訓之樺計公司學員合影

六、 結論：

本產學計畫順利完成原先所規劃諸項重要工作，諸如 ISO 14001 之教育訓練（訓練教材詳如附件一）、台灣日立蘇比克公司（TAIWAN HITACHI (SUBIC) CORP.）環境政策與環境目標之訂定（附件二）、環境手冊（ENVIRONMENT MANAGEMENT MANUAL）之訂定（附件三）等，然而因為許多資料均涉及該公司之商業機密，故僅在附件三中擇部分列出。而該公司也於 99 年年底順利取得 ISO 14001 之國際認證。

七、 參考文獻

1. 郭仁惠、劉宏，ISO 14001:2004-環境管理體系建立與實施，化學工業出版社。
2. Ken Whitelaw, ISO 14001 Environmental Systems Handbook, Second Edition (2004), Butterworth-Heinemann.
3. Joe Kausek, Environmental Management Quick and Easy: Creating an Effective ISO 14001 EMS in Half the Time (2007), American Society for Quality Control (ASQC).
4. A J Edwards, ISO 14001 Environmental Certification Step by Step: Revised Edition (2004), Butterworth-Heinemann.
5. Piper, L., Continual Improvement With Iso 14000. (2003), IOS Press.
6. 網路資訊，網址：http://www.tw.sgs.com/zh_tw/iso_14001_2004.htm?serviceId=10957&lobId=27209。
7. 維基百科，網址：http://en.wikipedia.org/wiki/ISO_14000。
8. 網路資訊，網址：http://www.iso.org/iso/iso_14000_essentials。

附件一：ISO 14001 教育訓練教材內容

附件二：台灣日立蘇比克分公司環境政策與環境目標

TAIWAN HITACHI (SUBIC) CORP.

※ Environment Policy ※

- ✓ Conforms to environmental protection laws /regulations, and community responsibilities
- ✓ Commit to pollution prevention and environment continual improvement
- ✓ Promote energy conservation, resource recycle and regeneration, and develop green products
- ✓ Implement environment protection education for employees, suppliers, and sub-contractors

※ Environment Objectives ※

- ✓ Follows relevant environmental protection laws and regulations
- ✓ Demonstrates Manufacture Process Effectiveness and Promote Quality for Recourses Recycling and Reuse
- ✓ Implementation Waste Reduction, Prevention Pollution, Investigate and Improve Technology for Reuse
- ✓ Use Technology to Reduce Generation for Source of pollution

附件三：台灣日立蘇比克分公司環境手冊（摘錄）

TAIWAN HITACHI (SUBIC) CORP.

| | | | |
|-------|-------------------------------|--------|-------|
| TITLE | ENVIRONMENT MANAGEMENT MANUAL | NUMBER | EM-01 |
|-------|-------------------------------|--------|-------|

CHAPTER ZERO INTRODUCTION

1. COMPANY PROFILE

1.1

- (1). Established date : September 12 1997
- (2). Land area : 65,500 m²
- (3). Employee : Total 133 / TAIWAN 7 (Management level)
Philippines 126 (Full time: 86, Part time 40)
- (4). Manufacturing & Marketing / Business Scopes
 - Air Conditioners
 - Air-Cooled Water Chillers
 - Water/Air-Cooled Packaged Air Conditioner
 - Room Air Conditioner
 - System Conditioners
 - Other relevant products

1.2 The ISO 9002 and 14001 standards are introduced to our company through systematic management. We hope that all these efforts will bring us quality assurance, environmental protection and a company of high reputation.

1.3 Organization and Management Authority (Organization – Table)of TAIWAN HITACHI (SUBIC)

(1) Responsibility

※ **President**

- ✓ Following the decision of Board for the business
- ✓ Making / executing Company's strategic policies
- ✓ Planning Company development & revenue/profit target
- ✓ Making the decision / indication for crucial issues

※ **Factory Manager**

- ✓ Following President's direction
- ✓ In charge of monitoring essential all dept.
- ✓ In charge of Company's sales business and operation structure
- ✓ Making Quality Policies
- ✓ Following Company's operation

※ **General Affairs Dept.**

- ✓ In charge of human resource management issues
- ✓ In charge of accounting issues
- ✓ In charge of employee training / education issues
- ✓ Management of Information System
- ✓ Management of Factory Affairs

2. OPERATION AND MANAGEMENT PRINCIPLE:

The operation principle for us are : to satisfy customers' requirement by distinguished service ; to share the

best product quality with employee and customers ; to invent perpetual business by management technology innovation. Through the implementation of internal continuous standardized efforts, more reasonable profit can be achieved which will enable TAIWAN HITACHI (SUBIC) for continuous development and running.

3. Production process of the main product : unprocessed electrical wire material → cutting process → assembly → testing → delivery

4. General requirements :

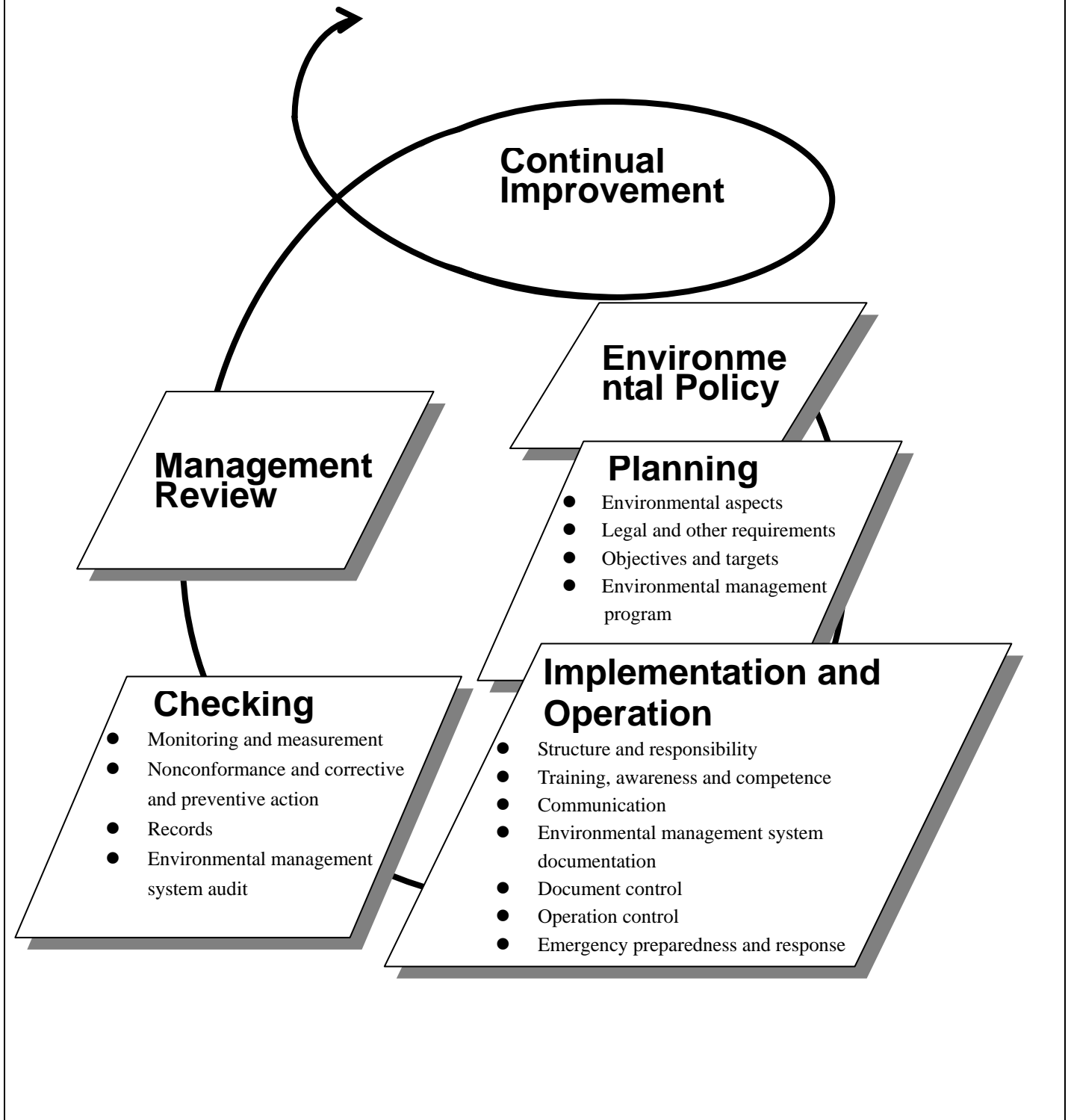
4.1 Based on the latest version of international standard ISO 14001, 2004 version (identical with CNS 14001), TAIWAN HITACHI (SUBIC) has established this ENVIRONMENT MANAGEMENT MANUAL. By means of the dynamic circulation of 「 Plan, Do, Check, Action 」 as shown in 4.2, the environment management system of TAIWAN HITACHI (SUBIC) is established and maintained.

4.2 The standard environment management system model diagram

TAIWAN HITACHI (SUBIC) CORP.

| | | | |
|-------|----------------------------------|--------|-------|
| TITLE | ENVIRONMENT MANAGEMENT MANUAL | NUMBER | EM-01 |
|-------|----------------------------------|--------|-------|

ENVIRONMENT MANAGEMENT SYSTEM MODEL



TAIWAN HITACHI (SUBIC) CORP.

| | | | |
|-------|----------------------------------|--------|-------|
| TITLE | ENVIRONMENT MANAGEMENT MANUAL | NUMBER | EM-01 |
|-------|----------------------------------|--------|-------|

4.3 TAIWAN HITACHI (SUBIC) shall proceed following works according to this manual, which is based on environmental management system requirements.

4.3.1 Establish the environmental policy tailored to TAIWAN HITACHI (SUBIC) .

4.3.2 To identify the environment aspects arising from the organization's past, existing and planning activities, products or services, to determine the environmental impacts of significance.

4.3.3 To identify the relevant legislative and regulatory requirements.

4.3.4 To identify priorities and set appropriate environmental objectives and targets.

4.3.5 Establish a structure and (a) program(s) to implement the policy and achieve objectives and targets.

4.3.6 Implement planning, control, monitoring, corrective action, auditing and review activities to ensure that the environmental policy requirements are satisfied and the environmental management system remains appropriate.

4.3.7 Be capable of adapting to changing circumstances and information.

5. Description of the environmental management manual

5.1 This environmental management manual is established and revised by Administrative Department based on the 「 Document and Records Control Procedure 」 . After this manual is reviewed by management representative and approved by the president, document control personnel of the Administrative Department will process the relevant distribution, recycling and replacement of document.

5.2 After approval, this manual has to be revised appropriately in accord with the conclusion of the management review. Even there is no concern about this manual, in order to check the correlation between the practical operation and the specification of this manual, it still has to be revised and collated annually.

5.3 Process of the edition control and document number for this manual are based on the 「 Document and Records Control Procedure 」 of TAIWAN HITACHI (SUBIC) .

TAIWAN HITACHI (SUBIC) CORP.

| | | | |
|-------|----------------------------------|--------|-------|
| TITLE | ENVIRONMENT MANAGEMENT MANUAL | NUMBER | EM-01 |
|-------|----------------------------------|--------|-------|

CHAPTER ONE ENVIRONMENTAL POLICY

1. PURPOSE

To establish direction of organization environmental management, this will be the foundation of the organization's operation and environmental activities in the future.

2. SCOPE

It will be applied to the establishment, review and approval of organization's environmental policy.

3. RESPONSIBILITY AND AUTHORITY

3.1 Establishment and review of environmental policy : the promotion team

3.2 Approval of environmental policy : president

4. KEY POINTS OF MANAGEMENT

4.1 The promotion team shall perform environment review beforehand and ensure that it is based on the operation principle, all activities, products and significant environmental aspects of the organization. All these shall be demonstrated in the environmental policy.

4.2 This policy shall consider the views of interested parties and commit to follow relevant legal requirements of the government.

4.3 This policy shall commit to continual improvement and preventive action of pollution.

4.4 Environmental policy shall be announced by appropriate way. All employees shall be educated to ensure the fully understanding and practicing of this policy.

4.5 Environmental policy shall be reviewed about its adequacy at the right time.

4.6 Environmental policy shall be announced after approval by president.

4.7 Environmental policy of TAIWAN HITACHI (SUBIC) : As is shown in chapter 1.

5. RELEVANT DOCUMENT

5.1 Environmental communication procedure..... (EP-04)

5.2 Environmental objectives, targets and environmental management program(s) procedure..... (EP-03)

5.3 Document and records control procedure..... (QP-04)

TAIWAN HITACHI (SUBIC) CORP.

| | | | |
|-------|----------------------------------|--------|-------|
| TITLE | ENVIRONMENT MANAGEMENT MANUAL | NUMBER | EM-01 |
|-------|----------------------------------|--------|-------|

CHAPTER TWO ENVIRONMENTAL ASPECTS

1. PURPOSE

Analyze, identify and record environmental aspects of company to assist the practice of environmental management.

2. SCOPE

It will be applied to the identification of all relevant aspects of organization's activities, products and services.

3. RESPONSIBILITY AND AUTHORITY

3.1 Identification and record of environmental aspects : all departments

3.2 Review of significant environmental aspects : management representative

3.3 Approval of significant environmental aspects : president

4. KEY POINTS OF MANAGEMENT

4.1 All departments shall record and evaluate the possible environmental impact based on the purchase and manufacture within their activities, products manufacture procedure.

4.2 Evaluate the environmental impact caused by environmental aspects. In order to evaluate their significance, the potential impact should be quantified where practicable.

4.3 When evaluate the impact of environment aspects, not only the normal operating conditions should be considered but also the realistic reasonably foreseeable or emergency situation.

4.4 Regulate the management procedure of the environmental influence caused by the supplier's manufacture, activities, products and services. This can be used as a guide to evaluate the supplier and control the significant environmental influence of the supplier.

4.5 To maintain the adequacy, the impact of environmental aspects shall be reevaluated at some proper time.

5. RELEVANT DOCUMENT

5.1 Environmental aspects identification procedure..... (EP-01)