

**STUDY ON SMALL AND MEDIUM SIZED ENTERPRISES (SMEs) IN ISO 14001
ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) IMPLEMENTATION**

**Final Study Report
Tasks 3 & 4**

Prepared for:



**Environmental Protection Department
(Tender Ref: UA 99-076)**

Prepared by:

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in association with

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1. INTRODUCTION

1.1 THE PURPOSE OF THIS REPORT

This *Final Study Report* describes how the Business Environment Council (BEC, formerly the Centre of Environmental Technology) in association with BMT Hong Kong (BMT) and GHK Hong Kong (GHK), hereafter called the Consultant, undertook the *Provision of Service for Study on Small and Medium Sized Enterprises (SMEs) in ISO 14001 Environmental Management Systems (EMS)* (Tender Ref. UA 99-076) for the Environmental Protection Department (EPD). This report highlights the findings of *Tasks 1* and *2* of the study, and describes the approach, methodology and findings for *Tasks 3* and *4*.

1.2 THE OBJECTIVES OF THE STUDY

International response to ISO14001 EMS has been strong, particularly by Asian and European countries such as Japan, Korea and Taiwan, Germany and the U.K. The uptake of ISO 14001 in some countries has been driven by perceived threats of loss of market share and the opportunity of improved competitiveness. However some issues concerning how SMEs in Hong Kong may be affected are not fully understood, such as the extent to which these threats and opportunities exist, and the barriers to the uptake of ISO14001.

EPD needs to have a clear understanding of industrial behaviour with respect to ISO14001 to enable the effective targeting of resources and selection of appropriate actions. It is necessary to understand the dynamics and behaviour of business in general, and in particular the factors that influence businesses' attitudes towards environmental improvement, both internally and externally.

The objective of the study, as stated in the *Special Conditions of Contract*, is to examine the potential threats and opportunities from the global trend in ISO14001 implementation to local SMEs and to identify the areas of support they will need to facilitate EMS implementation. The objective has been fulfilled by completion of the following tasks:

- *Task 1*: to conduct local and international research on the market threats and opportunities faced or likely to be faced by local SMEs as a result of the worldwide adoption of ISO14001, and investigate the present status of ISO14001 implementation amongst local SME's;
- *Task 2*: based on the findings of *Task 1* and accounting for social, economic and environmental parameters, to develop two priority lists of Major Industry Groups (MIGs) for in depth study (one for the manufacturing sector, the other for the service sector);
- *Task 3*: to carry out at least 10 case studies on each selected MIG to identify the barriers to implementing EMS, examine the gap between existing EMS and ISO14001 requirements, and estimate the indicative costs for implementing an ISO 14001EMS in a typical SME;
- *Task 4*: based on the findings of *Task 3*, to identify the areas of support needed and propose an ISO14001 EMS Support Action Plan for each selected or combination of selected MIGs.

1.3 RELATED STUDY REPORTS

1.3.1 Tasks 1 and 2 - Threats and Opportunities, and Selected MIGs

Tasks 1 and 2 were completed in May 2000 with their methodologies and findings described in *Technical Note No. 1 – ISO14001 Threats, Opportunities and Local Implementation Status (Task 1)* and *Technical Note No. 2 – Priority Lists of Major Industry Groups (Task 2)* respectively. The *Final Study Report (Tasks 1 and 2)* dated 1 September 2000 recommended that in-depth study be carried out in the manufacturing sector for the "Electronics and Related Products", "Textiles", "Printing" and "Wearing Apparel and Footwear" industries; and in the service sector for the "Construction" industry.

To address the concerns of stakeholders such as trade associations regarding the methodology, findings and conclusions of Tasks 1 and 2, a consultation forum was held in late July 2000. The *Report on Consultation Forum* dated 1 September 2000 concluded that, based upon these discussions, amendment to the *Final Study Report (Tasks 1 and 2)* was not required.

1.3.2 Tasks 3 and 4 – SME Case Studies and Support Action Plans

Based on the findings of Tasks 1 and 2, and in agreement the EPD, case studies were undertaken for the "Electronics and Related Products Sector" and "Construction Sector"¹ between mid-September 2000 and early October 2000, with the findings detailed in *Technical Note No. 3 – Case Studies Findings (Task 3)* dated 20 October 2000.

Further case studies for the "Textiles, Wearing Apparel and Footwear Industry" were carried out between November 2000 and mid-December 2000, with the findings detailed in *Technical Note No. 4 – Case Studies Findings (Task 3, the 3rd MIG)* dated 22 December 2000.

An ISO14001 EMS Support Action Plan was formulated during September 2000 to January 2001 for each of the three selected industries as described in this *Final Study Report (Tasks 3 and 4)*. Whilst the study was completed in March 2001, this report also includes later related developments in the *Provisional Construction Industry Coordination Board (PCICB)* and funding schemes administered by the Trade and Industry Department (TID).

Overall findings and tailor-designed support action plans for each selected industry are also summarised in three short *Executive Summaries* for the *Construction Sector*, *Electronics and related Products Sector*, and *Textiles / Wearing apparel / Footwear Sector*.

1.4 STRUCTURE OF THIS REPORT

The remainder of this report is structured as follows.

- Section 2 - Highlights of findings from Tasks 1 and 2
- Section 3 - Approach and Methodology for Task 3
- Section 4 - Findings of Task 3
- Section 5 - Approach and Methodology of Task 4
- Section 6 - Support needed by the Construction sector
- Section 7 - Support needed by the Electronics and Related Products sector
- Section 8 - Support needed by the Textiles/Wearing Apparel/Footwear sector
- Section 9 - Summary and Conclusion

¹ "Electronics and Related Products", "Textiles, Wearing Apparel and Footwear" and "Construction" are "unit names" of a group of combined MIGs with a similar nature and scope of activities, as detailed in Section 3.3E of *Final Study Report (for Tasks 1 and 2) – Volume 1*, dated 1 September 2000, and are summarized as follows.

- "Electronic and Related Products" refers to "Radio, Television and Communication Equipment & Apparatus", "Electronic Parts & Components", "Electrical Appliance & Housing & Electronic Toys", and "Machinery, Equipment, Apparatus, Parts & Components, not else where classified".
- "Textiles, Wearing Apparel and Footwear" refers to "Textiles", "Wearing Apparel except Footwear" and "Footwear except Rubber, Plastic & Wooden Footwear".
- "Construction" refers to "New Construction Works – Pre-Erection Works at Building & Construction Sites", "New Construction Works – Architectural & Civil Engineering Works at Building & Construction Sites", "New Construction Works – Miscellaneous New Construction Works", "Decoration, Repair and Maintenance", "Special Trades – Erection & General Finishing", "Special Trades – Electrical & Mechanical Fittings", "Special Trades – Gas & Water Fitting" and "Special Trades – Miscellaneous".

2. HIGHLIGHTS OF FINDINGS FROM TASKS 1 AND 2

2.1 POTENTIAL THREATS AND OPPORTUNITIES FROM GLOBAL ISO14001 IMPLEMENTATION

Task 1 of the Study included literature and questionnaire surveys of overseas large/international companies and local SMEs to appraise the market threats and opportunities faced or likely to be faced by local SMEs from worldwide ISO14001 adoption, and identify the overall ISO14001 implementation status among local SMEs. The approach to and methodology of Task 1 are detailed in Section 3 of *Final Study Report (for Tasks 1 and 2) – Volume 1*, dated 1 September 2000. The findings of Task 1 and Task 3 (the case studies) provide the information needed for the formulation of a support action plan for each of the three selected MIGs. This section highlights the major findings of Task 1 of the Study.

2.1.1 International Survey of ISO14001 Implementation

Around 10,000 ISO14001 certificates had been issued worldwide as of June 1999 with a significant increase in certification numbers (to 30,000)² anticipated by the end of 2000. SMEs in several countries have embraced ISO14001 and actively adopted an EMS conforming to the standard. However there is limited information in each country for the number of SMEs different sectors that have been certified to ISO14001. The sectors with the most ISO14001 certified companies include electrical machinery and electronics, industrial machinery, chemicals and chemical products, metals and metal products, precision instruments, petroleum products, transport, telecommunications, recycling, food and beverages sectors. Based on the available information, Japan, Germany and the U.K. are the countries with the most ISO14001 EMS certificates (more than 1400 by the end of November 2000).

The literature survey showed that SMEs are driven by various threats and opportunities to adopt EMS to secure business and realize competitive advantage. Legislation and enforcement ranked first as the most important driver in a majority of studies and surveys reviewed, followed by customers demand, contract requirements and long-term business security. It showed that supply chain pressure is one of the most important factors affecting the adoption of EMS by the SMEs. During the development of an EMS, lack of resources (i.e. human, financial and information), technical know how, sufficient driving forces and customer indifference were the major barriers. Despite these barriers, the benefits of EMS adoption were also perceived. These benefits included the improvement of the efficiency of the organization, cost savings and enhancement of competitiveness in the market. However, risks were also identified in EMS implementation. These risks included the demand on resources, high cost of the consultancy services, no immediate actions taken to rectify non-compliance preventing the materialization of benefits. Assistance in EMS adoption has been provided in a number of countries by government, semi-governmental bodies, international or local NGOs, universities and institutions. The support included finance, training and mentoring programmes. Mentoring programmes were generally considered the most successful means of support followed by financial assistance. This is because the inclination of SMEs to adopt an EMS very often stems from client pressure or the interest to establish a close commercial link with clients, who will act as mentors in a mentoring programme.

The results of the international survey show that many overseas companies have already established a policy on environmentally responsible procurement and/or adopted an EMS. Because of the policy and the EMS, these companies are often required to practise green procurement and to manage their suppliers and contractors. As such, many have imposed environmental requirements on suppliers and contractors, and some have formally requested suppliers and contractors to adopt an EMS. In general, companies are increasingly expecting suppliers and contractors to actively manage their environmental aspects and impacts. Since few questionnaires were collected from the large companies for each of the MIGs/sectors, it is not possible to conclude in which sectors of MIGs that SMEs are under supply chain pressure in EMS implementation. The survey also shows that the ISO14001 EMS has been more widely adopted by overseas companies than any other environmental management systems. As the ISO 14001 standard requires conforming companies to actively practise supplier management and monitor suppliers and contractors' environmental performance, it can be expected that suppliers and contractors in general

² As at November 2000 more than 21,000 companies were certified to ISO14001 (<http://www.ecology.or.jp/iso/world/english/analy14k.htm>).

would be increasingly subject to pressure in environmental management. This survey also shows that overseas companies would give priority to suppliers and contractors that have already adopted the ISO 14001 EMS in the award of contracts.

2.1.2 Local Survey of ISO14001 Implementation

As at June 2001, 136 companies/departments were known to be ISO14001 certified in Hong Kong, a large proportion being in (or related to) the construction and electrical / electronic sectors³. The majority of the ISO14001 certified companies are large companies rather than SMEs. There has been little study on the development of implementation of EMS by SMEs. Hong Kong Polytechnic University was undertaking research on the said aspect although interim results had not been released at the time of writing the Task 1 and 2 findings.

A study on six PCB manufacturing factories showed that the driving factors and concerns in EMS development are external pressures, social pressures and management attitudes (literature review). SMEs perceive benefits resulting from ensuring legal compliance, reducing waste and resource consumption, financial savings, enhancing staff awareness, setting a good example to others and improving the company image⁴.

The difficulties encountered by the SMEs in developing an EMS are similar to those of the overseas SMEs, including lack of information, experience, resources, awareness and technical know how⁵. Limited support is provided to SMEs in EMS development by the HKSAR Government, industrial support organizations and trade organizations. The means of support include funding outreach programmes (including seminars, publication, assistance in ISO 14001 development), providing publication on EMS implementation and setting up websites providing information on relevant environmental regulations, publications and organisations that could provide assistance.

As discussed in Section 2.1, the majority of the overseas ISO14001 / EMAS certified companies have required their suppliers and contractors to adopt EMS. However, this finding is not applicable to the local large companies and ISO14001 certified companies, the majority of which expressed that they would not require their suppliers and contractor to implement or be certified to ISO14001 (questionnaire survey). The findings of the questionnaire survey of local SMEs showed that:

- almost 70% of all respondents had never heard of ISO 14001 or EMS;
- more than 92% of the respondents expressed that they had never been required by clients/buyers to implement an EMS;
- more than 93% of all respondents have not been required by other organisations such as pressure groups to implement an EMS;
- only about 15% of all respondents perceive benefits in ISO 14001 implementation, about 27% did not perceive the benefits; and about 51% of all respondents expressed that they did not know if there were any benefits in ISO 14001 implementation.

In summary, SMEs in Hong Kong are not under supply chain or other pressures for ISO14001 implementation. The majority of the SMEs did not perceive the benefits of EMS as they did not have knowledge of EMS. Similar to the international questionnaire survey, only few questionnaires were collected from most of the MIGs. It was difficult to draw conclusions by MIG.

2.2 THE SELECTED MIGS FOR IN-DEPTH STUDY

Task 2 involved the definition of social, economic and environmental parameters against which Major

³ A large proportion are (or are related to) the construction sector (about 19%) and electrical/electronic sector (about 34%). Source: <http://www.epd.gov.hk/>.

⁴ Chin K. S. and Pun K. F. (1999), Factors Influencing ISO14001 Implementation in Printed Circuit Board Manufacturing Industry in Hong Kong, in *Journal of Environmental Planning and Management*, Vo. 42(1), pp. 123-134.

⁵ Hong Kong Productivity Council, ISO 14001 Environmental Management System Information Manual (in Chinese, date of publication is not specified).

Industry Groups (MIGs) could be evaluated and prioritised for in depth study. This evaluation, together with the findings of Task 1, resulted in the selection of the "Construction Industry" (in the service sector), and (in the manufacturing sector) the "Electronics and Related Products Industry" and the "Textiles, Wearing Apparel and Footwear Industry" for the reasons summarized below.

2.2.1 The Construction Industry

Hong Kong's construction sector is a major part of the economy and stands out on review of most socio-economic and environmental parameters. It is ranked second within the service grouping on number of SMEs (over 600 companies of 20 to 50 employees)⁶, second on value added economic output (11.7%)⁷, and first for chemical waste output (26.4%)⁸ and energy consumption (30.5%)⁹. A large number of sub-contractors and specialist operators (often using short-term labour) typically support lead contractors. Construction activities result in on-site and off-site environmental and amenity impacts (particularly noise, dust, water pollution and waste) that affect the local and wider community and have been subject to close legislative control. Despite this, the construction sector consistently attracts more prosecutions for environmental violation than any other. Amid tight deadlines and intense competition it seems that the sector as a whole has yet to embrace a culture of environmental compliance and continuous improvement.

Larger construction companies in Hong Kong have a strong culture of environmental compliance and many go beyond compliance to continually improve performance. Some major developers have also begun to use ISO 14001 implicitly as a tool to encourage improved environmental performance from contractors, by including clear EMS requirements (though not yet explicitly for ISO14001 certification) in their tenders. This has created a top down pressure on larger companies to become ISO14001 certified; pressure which in turn will begin to cascade down to their subcontractors, and ultimately local SMEs. To date these actions have been taken on a voluntary basis, however the *Construct for Excellence Report*¹⁰ of the *Construction Industry Review Committee* suggests that mandatory certification may be considered at a when the industry has acquired more expertise in tackling the environmental challenge. The overall message is clear, it is time for the construction industry to act on the environment and take corporate responsibility seriously.

2.2.2 The Electronic and Related Products Industry

Hong Kong's electronics and related products sector comprises companies manufacturing radios, televisions, communication equipment, computers, electronic parts, electrical appliances, electrical toys, machinery and equipment. Collectively the industry achieves significance on a range of both socio-economic and environmental parameters, being first in value-added economic output (18.82%)⁷, second in number of establishments (138 SMEs of 20 to 100 employees, or 14.02%)⁶ and employee compensation (14.83%)¹¹, and third in number of persons engaged (15.28%)¹² and contribution to external trade (21.35%)¹³. The electronics and related products industry also ranks first in chemical waste output⁸ and third in energy consumption⁹.

In the 1980s and 1990s manufacturers benefited from the low costs of the Pearl River Delta, with local operations now tending to involve administration, marketing and value added processes (assembly and manufacturing is are often conducted in Mainland factories). However as manufacturers move towards

⁶ As there were some 200,000 companies in Hong Kong at the time of study (the majority being SMEs), the selected size range takes into account the TID definition and the practicable size for this study.

⁷ The total value added of a Major Industry Group as a percentage of total value added in Hong Kong's service (or manufacturing) industry. Economic output, i.e. contribution to GDP, is the basic measure of economic significance (source: Report on 1997 Annual Survey of Industrial Production, pp. 35 – 44).

⁸ Source: Chemical Waste Treatment Centre

⁹ Source: Hong Kong Energy End-use Data (1986 – 1996)

¹⁰ Construct for Excellence – Report of the Construction Industry Review Committee (January 2001).

¹¹ The total compensation of employees of a MIG as a percentage of total compensation of employees in Hong Kong's manufacturing industry (source: Report on 1997 Annual Survey of Industrial Production, pp. 35 – 44).

¹² The total number of people employed in a particular MIG as a percentage of total number of people employed in Hong Kong's manufacturing industry (source: Report on 1997 Annual Survey of Industrial Production, pp. 35 – 44).

¹³ The domestic exports of a MIG in 1998 as a percentage of total domestic exports in Hong Kong's manufacturing industry (source: Annual Review of Hong Kong External Trade, pp. 66 – 71).

more technology intensive goods there has been a shift from low profit margin, mass-produced, labour intensive products to capital intensive, equipment intensive, high value added products. Since Government aims to develop Hong Kong into the regional hub for the high-tech industry, some production of high-tech electronics is expected to return. A particular strength of Hong Kong enterprises already lies in their production of electronic components for global *Original Equipment Manufacturers* (for which they have a major supplier share).

Given increasing levels of consumer awareness, Hong Kong's suppliers can expect to face increased competition from overseas where environmental considerations are visibly and independently recognised, e.g. ISO14001. Larger companies in Hong Kong already have a strong culture of compliance; those that seek to go further in improving their performance cite a general inability of local SMEs in meeting with their expectations. Foreign suppliers pose intensified competition to Hong Kong's electronics exports on these grounds. These considerations need to be addressed if Hong Kong is to develop into the regional hub for the high-tech industry.

2.2.3 The Textiles / Wearing Apparel / Footwear Industry

Over the past three decades, the textile / wearing apparel / footwear industry has been pivotal in driving the economic development of Hong Kong and still achieves significance on a range of both socio-economic and environmental parameters. On social-economic parameters, the textile industry is second in the number of SMEs (359)¹⁴, first in contribution to external trade (26.56%)¹⁵ and third in value added (11.64%)¹⁶. It also ranks high in environmental parameters, being first for manufacturing energy consumption¹⁷ and trade effluent surcharges. The wearing apparel and footwear industry also achieves significance on socio-economic first in the number of SMEs (475)¹⁴, second in contribution to external trade (22.76%)¹⁵ and number of persons engaged (17.74%)¹⁸. It also ranks high in environmental parameters, being third in terms of trade effluent surcharges.

Rising production costs and labour shortages have contributed to a shift of textile / wearing apparel / footwear production away from Hong Kong in many cases to Mainland China (with its huge consumer market and low-costs). This shift will continue in the near future as Hong Kong enters a new era in the global economy. Manufacturers will face substantial changes as textile quotas are abolished by 2004 (removing constraints on production), China gains accession to the World Trade Organisation, quotas under Agreement on Textiles and Clothing (ATC) are maintained, and foreign direct investment in textiles continues. Seizing Hong Kong's advantage as a global sourcing hub, Hong Kong textile companies will continue to shift towards higher value-added activities such as sales and marketing, quality control, design and sourcing of textile materials.

Overseas customer requirements however pose increasing concern, particularly in U.S.A and Europe where environmental expectations are being manifest through integrated policy objectives and eco-labels such as *Oeko-Tex 1000*. Whilst such green requirements may not yet directly affect Hong Kong manufacturers of 'final products' (unless international buyers apply ISO14001 standards), there is anecdotal evidence of procurement standards being applied. It will therefore be vital for local businesses to respond to these pressures to retain and increase their market share.

¹⁴ The total number of SMEs (20 to 100 staff) in a particular MIG (source: Census and Statistics Department). The selected size range takes into account the TID definition and the practicable size for this study.

¹⁵ The domestic exports of a MIG in 1998 as a percentage of total domestic exports of Hong Kong's manufacturing industry (source: Annual Review of Hong Kong External Trade, pp. 66 – 71).

¹⁶ The value added of a MIG as a percentage of total value added of Hong Kong's manufacturing industry. Economic output (i.e. contribution to GDP) is the basic measure of economic significance (source: Report on 1997 Annual Survey of Industrial Production, pp. 35 – 44).

¹⁷ Source: Hong Kong Energy End-use Data (1986 – 1996), Electrical and Mechanical Services Department.

¹⁸ The total number of people employed in a particular MIG as a percentage of the number employed in Hong Kong's manufacturing industry (source: Report on 1997 annual Survey of Industrial Production, pp 35 – 44, CSD)

3. APPROACH AND METHODOLOGY FOR TASK 3

3.1 APPROACH TO THE CASE STUDIES

The detailed approach to the case studies (Task 3) is given in *Technical Note No. 3* (Section 2 – for the “Construction” and “Electronics and Related Products” industries) and *Technical Note No. 4* (Section 2 – for the “Textiles, Wearing Apparel and Footwear” industry). This section provides a summary of the approach as follows.

3.1.1 Nature and EMS Status of SMEs Selected for Case Studies

An effective ISO14001 EMS Support Action Plan will need to respond to the difficulties experienced by SMEs at all stages during the development and implementation of an ISO14001 EMS. The case studies therefore targeted SMEs at different stages of EMS development (e.g. awareness, system development and implementation) to ensure that these difficulties are clearly understood. According to the EPD's *Special Conditions of Contract*, the study covered those SMEs with an employment size between 20 to 100 persons (if they belonged to the manufacturing sector) and between 20 to 50 persons (if they belonged to the service sector).

The search for suitable SMEs for the case studies revealed very few candidates in the manufacturing sectors with the required number of employees working solely in Hong Kong. To reflect this reality, companies which are SMEs in Hong Kong but with (generally large) operations on the Mainland were therefore considered for the case studies. Although several hundred potential candidates were approached only a few accepted to participate, including some with employment sizes marginally higher or lower than that of SMEs (although with similar natures in operation). The overall status of the selected MIGs is as follows.

- “Construction” industry: Hong Kong’s construction industry is characterised by its large number of sub-contractors. Some construction companies (especially those involve in pre-erection works and civil engineering work) are subsidiaries of a parent company or a group of companies that may have more than a few hundred members of staff. The large lead contractors, supported by numerous specialist sub-contractors, often use short-term labour.
- “Electronics and Related Products” and “Textiles, Wearing Apparel and Footwear” industries: There is little manufacturing process carried out in Hong Kong. Most of the companies operate a small office in Hong Kong (i.e. less than 100 members of staff) and a factory on the Mainland (i.e. more than 100 staff members). The local office is responsible for administration and/or value added activities.

Since very few ISO14001 certified SMEs exist in Hong Kong some large certified companies were also included in the case studies. These companies share some of same experience in implementing an EMS as many SMEs’ (e.g. difficulties in the identification of significant environmental aspects). In addition, the experience of the large companies in controlling the environmental performance of the suppliers and subcontractors (these suppliers and subcontractors could be SMEs) provided valuable information for the formulation of an ISO14001 support action plan.

3.1.2 Scope of the Case Studies

Based on the SME interviewees perceptions of clients environmental requirements, and their status of ISO14001 implementation, the SME case studies are classified into the following categories:

- a) ISO 14001 certified companies.
- b) Companies expressing that they are not under supply chain pressure to develop ISO 14001 EMS and with no intention to develop an EMS (despite clients requirements to implement an EMS or meet environmental requirements).
- c) Companies expressing that they had no supply chain pressure to implement ISO 14001 EMS and no intention to develop an EMS (they had not been required by the clients to meet environmental

- requirements or implement an EMS).
- d) Companies in which an ISO 14001 EMS is being developed or implemented (not yet certified to ISO 14001); the companies expressed that there was no supply chain pressure for ISO 14001 EMS implementation.
- e) Companies expressing that they had supply chain pressure for ISO 14001 EMS implementation but no intention to develop an EMS.
- f) Companies in which an ISO 14001 EMS is being developed or implemented (not yet certified to ISO 14001); the companies expressed that there was supply chain pressure for ISO 14001 EMS implementation.
- g) Companies expressing that they are under supply chain pressure for ISO 14001 implementation; with an EMS developed but no intention to seek certification.

The investigation of each SME included the following considerations, detailed in *Appendix 1*:

- *General Company Information and Supply Chain Pressure* – general company information; environmental requirements stipulated by participants’ clients.
- *EMS Status* – the participants’ ISO14001 EMS implementation status; driving force for ISO14001; justifications for not observing client environmental requirements or actions in responding to client requirements; client responses to the participants’ actions; resource requirements (costs, manpower and time) and business changes (administrative and operational) ISO14001 adoption; difficulties encountered during ISO14001 adoption, and how these were overcome; environmental requirements imposed by the participants on their suppliers and sub-contractors, difficulties in controlling their environmental performance, and assistance offered in meeting environmental commitments.
- *Views on Support Programmes for EMS Implementation* – any views on the nature of the supporting programmes for the SMEs to implement ISO14001.

Given the tight schedule of the managers representing the SMEs, face-to-face management interviews (lasting about one to two hours) and site visits were adopted to minimise their input. These methods also enabled a better understanding of the selected SME's operation and ISO14001 implementation status, and a more prompt clarification of the issues. In the event that the representative of the SMEs was under a tight schedule, a telephone interview was conducted rather than a face-to-face interview, with less extensive questioning (for example, excluding the “gap analyses”). For interviewees based on the Mainland with operation in Hong Kong, a questionnaire was used instead of a personal interview.

3.2 METHODOLOGY FOR THE CASE STUDIES

The detailed methodology of the case studies (Task 3) is given in *Technical Note No. 3* (Section 3 – for the “Construction” and “Electronics and Related Products” industries) and *Technical Note No. 4* (Section 3 – for the “Textiles, Wearing Apparel and Footwear” industry). This section provides a summary of the study methodology as follows.

3.2.1 Identification of SMEs within Each Selected MIG

The SMEs to be approached for the case studies were identified from several sources:

- Census and Statistics Department (C&SD) (listing SMEs with the required employment sizes);
- Directories published by trade associations and ISO14001 certification bodies;
- List of ISO 14001 certified companies published on the EPD’s web site;
- The BEC database; and
- Trade associations (those MIG specific and non-MIG specific trade associations stipulated in the *Report on Consultation Forum* dated 1 September 2000).

Phone calls were made to SMEs (for which telephone numbers could be identified from the Hong Kong Telecom website or literature) to confirm the business nature, number of staff, scale of operation outside of Hong Kong and the interest in participating in the interview. For the trade associations, a letter was sent requesting for referral of appropriate SMEs for case studies.

3.2.2 Execution of the Interview and Site Visit and Data Processing

As mentioned in Section 3.1.3, face-to-face management interviews (plus a site visit), telephone interviews or questionnaires were adopted for the case studies. In order to ensure cost effectiveness of the study, a protocol was developed prior to the interviews and site visits. Protocols specimens are given in *Technical Note No. 3* (Appendix 1 – for the “Construction” and “Electronics and Related Products” industries) and *Technical Note No. 4* (Appendix 1 – for the “Textiles, Wearing Apparel and Footwear” industry). The interviews were conducted from early September 2000 to mid-December 2000 as follows:

- *Face-to-face management interviews and site visits* – the interviewer asked the interviewee about the issues listed in the protocol in order (via open ended questions). In the event that the interviewee could not understand the question, the interviewer gave some examples to illustrate the question. The responses provided by the interviewee were recorded by the interviewer on the protocol. As the schedule of the interviewee was tight, the document review was reduced to the minimum. In other words, there was little verification of information provided by the interviewee. The site visit and face-to-face management review were conducted on the same day.
- *Telephone interviews* – the interviewer gave a brief introduction to the Study and the objectives of the case studies. The interviewer asked the interviewee about the issues listed in the protocol in order (via open ended questions). In the event that the interviewee could not understand the question, the interviewer gave some examples to illustrate the question. The responses provided by the interviewee were recorded by the interviewer on the protocol.
- *Information collection via requesting the interviewee to fill out a questionnaire* – the Consultant gave a brief introduction to the Study and the objectives of the case studies. A questionnaire was sent to the interviewee. The interviewee was requested to fill out the questionnaire and return the completed questionnaire to the Consultant.

Clarification of the responses was made during the interview. In the event that further clarification was required after the interview, it was followed up by telephone conversations.

3.3 LIMITATIONS OF FINDINGS AND INTERPRETATION OF RESULTS

Several hundred potential interviewees were identified from various sources mentioned in Section 3.2.1 and contacted by telephone to gauge their interest in participating in case studies. The majority of potential interviewees expressed no interest in participation, with only 10 to 12 companies from each selected MIG participating. Some interviewees were from large companies also with Mainland operations (especially electronics and related products companies). In summary, about 1%, 5% and 1% of the SMEs from the construction, electronics and related products, and textiles/wearing apparel/footwear sectors respectively participated in the case studies.

In view of the sample size (less than 5% or 12 no's of SMEs) and scale and operation status of the companies, the views of the interviewees may not be representative of all SMEs in the selected MIGs. In addition, quantitative information with statistical significance could not be provided (as a rule of thumb in statistics, a sample size of less than 20 is not statistically significant). Furthermore, some interviewees (especially those with Mainland operations) presented information on their local and Mainland offices generally without specifying the activities of each particular office. The views of the interviewees have therefore been interpreted with caution.

4. FINDINGS FROM TASK 3

The findings of Tasks 3 are detailed in *Technical Note No. 3* (Section 3 – for the “Construction” and “Electronics and Related Products “ industries) and *Technical Note No. 4* (Section 3 – for the “Textiles, Wearing Apparel and Footwear” industry). This section provides a summary of the findings.

4.1 CASE STUDY PARTICIPANTS

The EMS status of the 32 companies participating in the case studies are summarised in Table 4.1.

Table 4.1 EMS Status of the Companies Participating in the Case Studies

Category	EMS Status	Construction		Electronics & Related Products		Textiles, Wearing Apparel & Footwear	
		No.	%	No.	%	No.	%
With an ISO 14001 Certified EMS							
1	ISO 14001 Certified**.	3	30	4	40	1	8
The Interviewee Perceiving No Supply Chain Pressure for EMS Implementation							
2	Perceiving no supply chain pressure for EMS adoption (although requested by clients to meet environmental requirements), and no intention to develop an EMS.	4	40	2	20	7	58
3	Perceiving no supply chain pressure for EMS implementation, and no intention to develop an EMS.	1	10	3	30	3	25
4	Perceiving no supply chain pressure for EMS implementation, but an EMS is under development (the company had not been requested by clients to develop an EMS).	1	10	0	0	0	0
The Interviewee Perceiving Supply Chain Pressure for EMS Implementation							
5	Perceiving supply chain pressure for EMS implementation (requested by clients to show evidence on environmental performance and the company associated such requirement to ISO14001 adoption), and no intention to develop an EMS.	0	0	0	0	1	8
6	Perceiving supply chain pressure for EMS implementation, and EMS being developed.	0	0	1	10	0	0
7	Perceiving supply chain pressure for EMS implementation, with an EMS is being developed but has no intention to seek certification.	1	10	0	0	0	0
Total		10	100	10	100	12	100

** : Nature of the ISO 14001 certified companies participating in case studies -

- Construction (3 nos.): *Ivanho (an architect firm, with 12 staff members); Dickson (a construction company, with 50 staff members in the office, and about 150 site staff under contract basis; the company is a member of Dickson Group); DrilTech (a drilling company, with 20 staff, the company is a subsidiary of Kin Wing Construction with more than 200 staff).*
- Electronics and Related Products (4 nos.): *Philips Electronic (with 500 staff members); Carven Circuit (with 75 staff members); Casio Computer (with about 110 staff members, a member of Casio Group with several thousand staff members); HK Fujidenki (with 90 staff members and about 300 staff members on the Mainland).*
- Textiles, Wearing Apparel and Footwear (1 no.): *Kong Tai Shoes (the operation on the Mainland is certified to ISO 14001 (with more than 1000 staff members) whereas the operation in Hong Kong is not ISO 14001 certified (with 3 staff members)).*

The analysis given in Table 4.1 can be summarised as follows:

- The majority of the companies (70%, 60% and 92% of the respondents from the “Construction”, “Electronics and Related Products” and “Textiles, Wearing Apparel and Footwear” industries,

respectively are not certified to ISO 14001;

- Excluding the ISO 14001 certified company, most of the interviewees expressed that there was no perceived supply chain pressure for EMS implementation and had no intention to develop an EMS (50%, 50% and 83% of the respondents from the “Construction”, “Electronics and Related Products” and “Textiles, Wearing Apparel and Footwear” industries, respectively);
- Excluding the ISO 14001 certified companies, only few companies are developing an ISO 14001 EMS (2 from the “Construction” industry, 1 from the “Electronics and Related Products” industry, none from the “Textiles, Wearing Apparel & Footwear” industry).

4.2 THE CONSTRUCTION INDUSTRY

4.2.1 EMS Adoption in Larger Companies

At the time of the study around 30 construction or related companies in Hong Kong had achieved ISO14001 certification¹⁹. Two of these larger, certified companies participated in the case studies researched during this study. Key findings from these organisations were that:

- a) the strongest driving force for their EMS was *Supply Chain Pressure* from clients – two interviewees citing environmental requirements in Architectural Service Department (ArchSD) tender documents;
- b) ISO14001 had resulted in tangible benefits arising from performance improvement in legal compliance, improved quality (in staff and services provided), enhanced competitiveness and marketing edge, cost savings (from fewer environmental incidents and complaints), and the ability to respond to growing client expectations (e.g. in one case meeting the needs of building occupants after occupation);
- c) large Hong Kong construction companies are also adopting EMS and ISO14001 as part of a broader trend towards improved corporate governance in stakeholder and customer relations, quality, human resourcing, etc (one participant cited the Chief Executive’s 1999 Policy Address and complaints from the public on construction noise as key drivers);
- d) ISO14001 poses difficulties from low levels of awareness, technical know-how (e.g. in the control of environmental aspects), limited focus of industry resources (e.g. information, pollution control technology), internal resource constraints to develop and maintain the EMS (manpower, time and money), and space limitations environmental programmes²⁰;
- e) large companies encountered problems in finding SME suppliers and subcontractors that could meet their environmental expectations (SMEs were cited as lacking the knowledge and resources to implement their own environmental programmes and influence their own upstream suppliers). Most certified companies expressed that they did not require suppliers and contractors to adopt an EMS at this stage. Few expressed that they would impose such requirement in the future²¹.

4.2.2 EMS Adoption in SMEs

No evidence was found during the study to suggest a trend towards the uptake of EMS by Hong Kong’s SME construction companies. One SME architect had been certified, otherwise only a small number of other companies were developing EMS during the study period. Most had little or no awareness of the potential threats and opportunities arising from the implementation of ISO 14001. Key difficulties experienced by the participants be summarised as:

- For companies that had decided not to develop an EMS – a lack of driving force from the clients, expected demands on resources (finance, manpower and time), and lack of ISO14001 knowledge

¹⁹ As at June 2001 136 companies/departments in Hong Kong were certified to ISO14001 (<http://www.epd.gov.hk/>), a large proportion being in (or related to) the construction sector (about 20%).

²⁰ For example, appropriate recycling facilities have yet to be provided by the Government for construction materials. Limited space on small sites discourages the use of pollution control equipment or environmental practices (e.g. waste segregation).

²¹ Phone calls were made to eleven ISO14001 certified companies in October 2000 (China Overseas, Hip Hing, IP, Leighton, Maeda Kensetsu Kogyo Kabushiki Kaisha, Mak Hang Kei, Skanska, Shui On, ArchSD, Anderson and Kin Wing). Only the respondent from ArchSD replied that they requested their sub-contractors to be ISO14001 certified at this stage (no further details were disclosed to the Consultant). Four out of 11 respondents expressed that they would require their contractors to acquire ISO 14001 certification in the future.

(e.g. little appreciation of EMS benefits);

- For companies that had developed an EMS without seeking certification – expected demands on resources (finance, manpower and time), and Lack of information and service providers;
- For ISO14001 certified companies prior to certification – technical issues (defining the EMS scope, lack of pollution control equipment and technology, legal compliance, etc), staff education (to implement environmental practices), and lack of information and service providers.
- For ISO14001 certified companies after certification – continual improvement (knowledge and technology), and low awareness of subcontractors and clients in adopting environmental practices.

Overall perceptions from SMEs were that: ISO14001 is not needed²² as certification is not required by clients (environmental requirements sometimes included in tenders can be managed without an EMS); EMS adoption provides no tangible benefits; and EMS implementation requires significant capital investment, manpower and other resources such as equipment.

Two companies that participated in the case study were in the process of developing EMS in response to client pressure and an awareness of trends towards EMS implementation. These companies both recognised the benefits associated with EMS implementation, however only one company indicated that it might seek ISO 14001 certification. The environmental requirements of the Architectural Services Department and Mass Transit Railway Corporation for construction projects were cited as a strong driver for the development of an EMS.

Respondents in the broader surveys indicated that they would only establish EMS if they became subject to direct supply chain pressure or specific legislation. The majority of respondents also made the point that financial and technical support would be strongly required for EMS development. The gap between the EMS status of companies (excluding those three ISO14001 certified companies) and the requirements of ISO14001 is summarised as follows.

One company that had developed an EMS (with no intention to seek certification)

- Had established an Environmental Policy that is available to the public;
- Had been successfully implementing the EMS for around 6 months;
- Had not undertaken an internal EMS audit (which suggests that the EMS; was yet to meet all ISO14001 requirements). Without a site visit, the gap between the existing EMS and ISO 14001 could not be identified .

One company planning to develop an EMS

- Had yet to start an Initial Environmental Review.
- Had sent some staff member to attend awareness courses.
- Had implemented some environmental management programmes (controlling an estimated 10% of the environmental aspects)

Five other companies with no intention to develop an EMS

- Information obtained during management interviews suggests that the EMS status of each companies would satisfy no more than 10% of ISO14001, although most had implemented good office practices

4.2.3 Indicative Costs of ISO14001 for SMEs

Generally, it takes 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). Some participants were unwilling to disclose details on the implementation costs of their EMS. However, based on management interviews and market information it is estimated that the EMS development cost in a Hong Kong construction SME broadly ranges from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company (e.g. number of construction sites). Key cost factors include:

- EMS system development by internal staff or a consultant (with fees typically \$50,000 to

²² In one example, the client set no deadline for EMS adoption although it had been mentioned in tender documents.

\$200,000);

- management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000);
- first time certification (typically \$20,000 to \$50,000); and
- recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement.

These typical costs are indicative and of course depend upon the size and nature of the SME. Most operate to tight budgets and consider such costs prohibitive.

4.3 THE ELECTRONICS AND RELATED PRODUCTS INDUSTRY

4.3.1 EMS Adoption in Larger Companies

At the time of the study 36 (mostly large) electronic and related products companies had adopted ISO14001 in Hong Kong. Overall research and case studies revealed that:

- large electronics companies in Hong Kong recognise growing international environmental pressures (e.g. European Union requirements for packaging and eco-labelling), and respond to these with an environmental policy and EMS to protect or increase their market share;
- large Hong Kong electronics companies are also adopting EMS and ISO14001 as part of a broader trend towards improved corporate governance in stakeholder and customer relations, quality, human resourcing, etc;
- ISO14001 resulted in savings (from fewer environmental incidents and complaints), enhanced competitiveness, a marketing edge, improved quality, and the ability to respond to growing environmental pressures in the supply chain (from clients or headquarters);
- large companies are increasingly setting environmental requirements for suppliers and providing support (via a Suppliers Day and training, etc) to achieve those requirements. Some (e.g. Philips) have timetables for ISO14001 certification by their suppliers' (whether large or SME), whilst others indicated that this was being considered;
- ISO14001 adoption poses difficulties from low levels of awareness, technical know-how (e.g. in the control of environmental aspects), limited focus of industry resources (e.g. information, pollution control technology), and internal resource constraints (manpower, time and money);
- large companies encountered problems in finding SME suppliers and subcontractors that could meet their environmental expectations (SMEs were cited as lacking the knowledge and resources to implement their own environmental programmes and influence their own upstream suppliers).

4.3.2 EMS Adoption in SMEs

No evidence was found to suggest a trend towards EMS uptake by SMEs in the electronics and related products sector. Most had little or no awareness of the threats and opportunities arising from global ISO14001 adoption, and few had been certified. Only a small number were developing an EMS during the study period. Barriers to ISO14001 implementation are shown in *Appendix 2* and can be summarized as:

- For companies that had decided not to develop an EMS – a lack of driving force from the clients, and expected demands on resources (finance, manpower and time);
- For companies planning to develop an EMS – barriers had yet to be identified by the respondents at the time of the study since planning or development was in initial stages;
- For ISO 14001 certified companies prior to certification – technical issues (defining the EMS scope, lack of pollution control equipment and technology, legal compliance, etc), staff education (to implement environmental practices), and lack of information and service providers.
- For ISO 14001 certified companies after certification – continual improvement (knowledge and technology), and financial arrangements.

Overall perceptions from SMEs were that: ISO14001 is not needed²³ as certification is not required by clients (environmental requirements sometimes included in tenders can be managed without an EMS); EMS adoption provides no tangible benefits; and EMS implementation requires significant capital investment, manpower and other resources such as equipment.

One case study participant was in the process of developing an EMS in response to pressure from European and Japanese clients, but also recognised the benefits associated with EMS implementation. Respondents in the broader surveys indicated that their companies would only establish an EMS if they became subject to direct supply chain pressure. The majority of respondents also expressed that financial and technical support would be strongly required for EMS development.

The gap between the EMS status of companies (excluding those four ISO14001 certified companies) and the requirements of ISO14001 is summarised as follows.

- | | |
|---|--|
| <i>One company planning to develop an EMS</i> | <ul style="list-style-type: none">• Had yet to start an Initial Environmental Review.• Had sent some staff member to attend awareness courses.• Had implemented some environmental management programmes (controlling an estimated 15% of the environmental aspects) |
| <i>Five other companies with no intention to develop an EMS</i> | <ul style="list-style-type: none">• Information obtained during management interviews suggests that the EMS status of each companies would satisfy no more than 10% of ISO14001, although most had implemented good office practices |

4.3.3 Indicative Costs of ISO14001 for SMEs

Generally, it takes 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). Some participants were unwilling to disclose details on the implementation costs of their EMS, whilst others were unable to give a breakdown of costs from Hong Kong and Mainland operations. However, based on management interviews and market information it is estimated that the EMS development cost in a Hong Kong construction SME broadly ranges from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company. Key cost factors include:

- EMS system development by internal staff or a consultant (with fees typically \$50,000 to \$200,000);
- management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000);
- first time certification (typically \$20,000 to \$50,000); and
- recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement.

These typical costs are indicative and of course depend upon the size and nature of the SME. Most operate to tight budgets and consider such costs prohibitive.

4.4 THE TEXTILES / WEARING APPAREL / FOOTWEAR INDUSTRY

4.4.1 EMS Adoption in Larger Companies

At the time of the study, no large textiles / wearing apparel / footwear company with manufacturing operations in Hong Kong was known to be ISO14001 certified. One local footwear company with ISO14001 certified operations (of more than 1000 staff) on the Mainland was included in the twelve case studies, revealing that:

1. The driver for its EMS development was the imposition of environmental requirements by the

²³ In one example, the client set no deadline for EMS adoption although it had been mentioned in tender documents.

end client (in this case Reebok)

2. The company faced difficulties in ISO14001 adoption arising from low levels of awareness, technical know-how (e.g. in the control of environmental aspects), limited focus of industry resources (e.g. information, pollution control technology), and internal resource constraints (manpower, time and money). These could not have been overcome without the technical and financial assistance of a consultant and its headquarters respectively;
3. ISO14001 had improved quality, enhanced competitiveness and resulted in savings from fewer environmental incidents;
4. The company perceived that, since ISO14001 adoption within the footwear industry was rare at the time of study, it had gained a marketing edge from certification.

The major benefit from certification cited by the company is its ability to respond to growing supply chain pressure (from clients or headquarters) in environmental matters.

4.4.2 EMS Adoption in SMEs

No local SME in the textiles / wearing apparel / footwear sector was known to be developing an EMS or certified to ISO14001 or at the time of study, with no apparent trend towards EMS uptake revealed. Most SMEs have little or no awareness of the potential threats and opportunities arising from global ISO14001 implementation. This low awareness results in the following perceptions:

1. ISO14001 is unnecessary since clients do not require certification (local government requires legal compliance, overseas clients impose green measures on a piecemeal basis);
2. Implementation of EMS provides no tangible benefits (the major concerns are instead product quality, pricing and turnaround time);
3. EMS implementation requires significant capital investment, manpower and other resources such as pollution control equipment.

Respondents in the broader surveys indicated that they would only establish an EMS if subject to direct supply chain pressure. The majority also expressed that financial and technical support would be strongly required for EMS development, but that their mainland operations could benefit from such support. The gap between the EMS status of the companies (excluding those certified to ISO14001) and the requirements of ISO 14001 is summarised as follows:

<i>Eleven companies with no intention to develop an EMS</i>	<ul style="list-style-type: none">• None had established an Environmental Policy;• 6 out of 9 expressed that they met local environmental legislation, whilst the other 3 could not always do so;• 8 out of 9 expressed had implemented environmental management programmes related to pollution control and saving of energy, paper, water, etc
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This suggests that the EMS status of the 11 companies not yet certified to ISO14001 would not meet more than 20% of ISO14001 requirements, despite their implementation of some good office/factory practices.

4.4.3 Indicative Costs of ISO14001 for SMEs

Generally, it can take 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). The actual cost of EMS development for SMEs in the textiles / wearing apparel / footwear sector could not be acquired from case studies in this assignment since no local companies (small, medium or large) were known to be ISO14001 certified. However, the EMS development cost in a Hong Kong textile / wearing apparel / footwear SME are expected to be of the same order of those in other manufacturing sectors, broadly ranging from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company. Key cost factors include:

- EMS system development by internal staff or a consultant (with fees typically \$50,000 to

\$200,000);

- management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000);
- first time certification (typically \$20,000 to \$50,000); and
- recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement.

These typical costs are indicative and of course depend upon the size and nature of the SME. Most operate to tight budgets and consider such costs prohibitive.

4.5 SUMMARY AND CONCLUSIONS FOR THE CASE STUDIES

A large proportion of ISO14001 certified companies in Hong Kong are in the construction and electrical / electronics sectors. No local textiles / wearing apparel / footwear company was known to be ISO14001 certified in Hong Kong (although the Mainland operations of one local footwear company is certified). The majority of ISO14001 certified companies in Hong Kong are not SMEs.

ISO14001 certified case study participants in the construction and electronics and related products industries (mostly not SMEs) expressed that a major driving force for ISO14001 adoption was to meet their client's requirements and improve their environmental performance. In terms of their own environmental requirements, one of eleven participants from the construction industry (the ArchSD) had requested sub-contractors to be ISO14001 certified, whilst four others expressed that they would impose such requirements in the future. In the Electronics and related products industry, four participants had required their subcontractors / suppliers to be ISO14001 certified, whilst six others expressed that they would impose such requirement in the future.

Non-ISO14001 case study participants demonstrated very little awareness of supply chain pressure for ISO14001 and had no intention to develop an EMS. The barriers to ISO14001 adoption by the three selected MIGs are similar and include a lack of financial resources, technical support and perceived supply chain pressure from clients. The difficulties faced by SMEs during various stages of EMS development are similar to the experience shared by larger ISO14001 certified companies regardless of the sector:

- ISO14001 difficulties prior to certification: resources constraints (financial, human and time); technical know how (in pollution control, complying with environmental legislation, identification of environmental aspects, defining the scope of EMS, generally citing lack of access to information and advice) and staff awareness.
- ISO14001 difficulties after certification: a lack of acquired knowledge and techniques for the continual improvement of the EMS; the awareness and concern on clients and subcontractors; and the financial resources required for ongoing implementation.

These factors have been taken into account in the design of the support action plans as described in the following sections.

5. APPROACH AND METHODOLOGY FOR TASK 4

Task 4 identified the areas of support needed by the selected MIGs to design an appropriate ISO14001 EMS Support Action Plan. The main finding, a major influence on the approach to the Task, was the absence of any real drive for ISO14001 adoption by Hong Kong SMEs in the MIGs examined. Very few construction and electronics sector SMEs were certified or intended to seek certification. In the textiles/wearing apparel/footwear sector, it was found that there are no certified companies in Hong Kong, and none of the SMEs interviewed had any intention of developing ISO14001. The reasons cited for this were lack of supply chain pressure, no clear benefits, and a lack of financial and time resources.

5.1 FACTORS ENCOURAGING ISO14001 IMPLEMENTATION

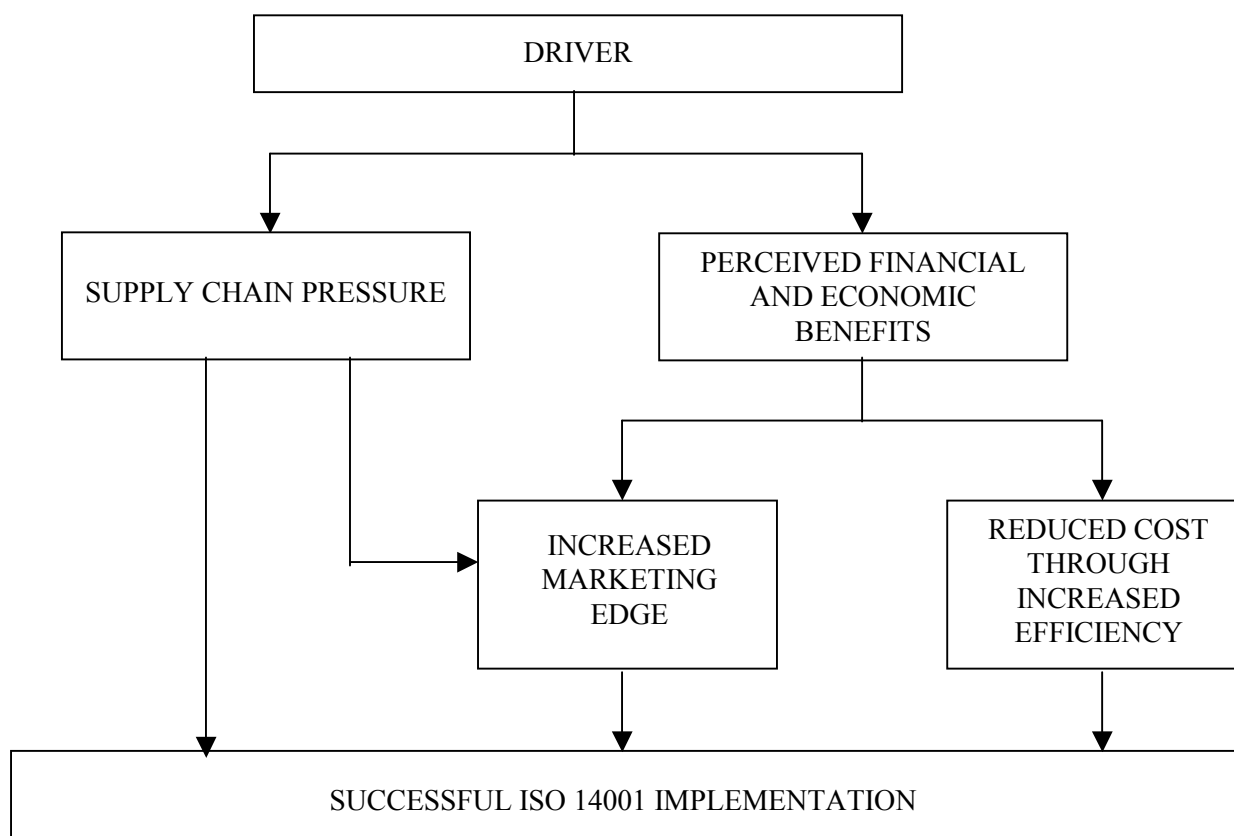
Several factors influence the take-up of ISO14001 by SMEs. They must perceive a need to implement ISO14001, in addition to understanding the full benefits that certification can bring. Firms may develop an EMS but choose not to become ISO14001 certified (with some examples in *Table 4.1*), in which case only parts of the ISO14001 requirements (and the associated environmental benefits) being implemented.

The perceived benefits of ISO14001 are an important aspect of the drive to encourage its adoption by SMEs, though are perhaps considered little understood by Hong Kong SMEs at present. The present market conditions do not encourage SMEs to take full advantage of the potential benefits of ISO14001 implementation. These benefits include:

- competitive advantage in a market where environmentally responsible companies are preferred;
- cost reduction through increased efficiency as a result of better resource use; and
- cost savings on fine payments as a result of compliance with environmental regulations (of particular relevance to the construction sector in Hong Kong).

Figure 5.1 summarizes the process by which ISO14001 certification by SMEs can be encouraged.

Figure 5.1 EMS Implementation Drivers



As shown in *Figure 5.1*, the following two drivers vital to encouraging EMS development:

- *Supply chain pressure:* The need for ISO14001 implementation can be created through government green procurement strategies, and/or requirements from large companies that their contractors/suppliers must be ISO 14001 certified.
- *Perceived financial and economic benefits:* SMEs in Hong Kong may not be aware of the possible benefits, such as reduced costs and increased efficiency, which ISO14001 can bring. An understanding of the advantages EMS could bring to their business would encourage SMEs to consider developing ISO 14001. Creating market conditions favourable to environmentally responsible companies would provide SMEs with further incentives to undergo ISO14001 certification. Mechanisms to achieve this include rewarding environmentally responsible SMEs, creating an understanding of how increased process efficiency leads to reduce operating costs, and raising awareness of the advantages of environmental best-practice.

5.2 STRATEGY FOR THE FORMULATION OF THE SUPPORT ACTION PLAN

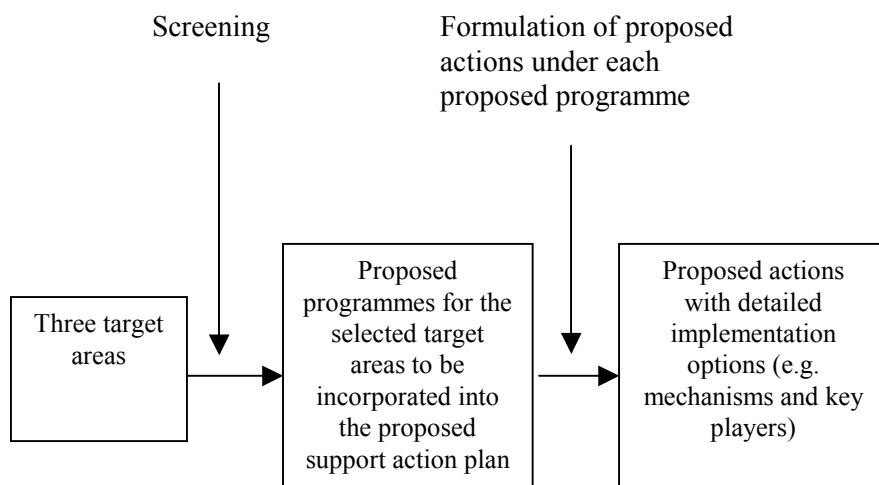
5.2.1 Key Items for Consideration

The strategy for the formulation of support action plans to promote and support ISO14001 implementation by Hong Kong SMEs in the selected sectors has been focused on the needs identified from the case studies, and as such has consisted of consideration of three key areas:

- creating supply chain pressure;
- providing financial support; and
- providing technical information and know-how.

The specific characteristics of the selected industry groups have been considered with a view to identifying the appropriate support action measures using the process illustrated in *Figure 5.2* with the results described in *Sections 5, 6 and 7* of this report.

Figure 5.2 Development of the Support Action Plan



The programmes outlined in the action plan range from requiring policy changes to low-key actions necessitating only the consolidation of existing resources. In general, the need for education, dissemination and acquiring of appropriate information was identified in the early stages as being one of the essential components of a strategy for ISO14001 support, whichever the MIG. This came hand in hand with increasing incentives for EMS implementation such as the provision of funding. Supply chain pressure is a major aspect of increasing EMS implementation by SMEs and thus, the creation of supply chain pressure (for the construction and electronics and related products sector particularly) is a key part of the strategy.

5.2.2 Potential Implementation Mechanisms and Key Players

The potential implementation mechanisms of the proposed programmes/actions require the involvement of the Government, private sector (e.g. trade associations, ISO 14001 certification bodies, commercial training courses providers) or a joint effort of the Government and private sector (e.g. to set up a Task Force to facilitate communication). For some of the programmes such as the provision of financial assistance, the Government is the only key player. In general, three options for running most of the programmes are identified and are given below.

- Relevant Government Bureaux/Departments run the programme (e.g. to develop and operate a Resource Centre).
- A Consultant is commissioned by the Government to organise the programme.
- A private sector body, an NGO or a semi-governmental body prepares a proposal on the programme and submits it to the relevant funding agencies for funds to run the programme.

The proposed *Support Action Plan* is designed specifically to address these three key concerns. Each element makes use of existing initiatives to maximise cost effectiveness and minimise set up times, and are based on overseas and local examples. All require high impact promotion to ensure that SMEs are aware of increasing supply pressures and the support available to them.

6. THE CONSTRUCTION INDUSTRY

6.1 BARRIERS TO ISO14001 IMPLEMENTATION

The research and case studies described in previous sections identify three interrelated factors that clearly influence EMS uptake by construction SMEs:

- a) *Low awareness of supply chain pressures being introduced by large clients.* SMEs focus on client requirements; failure to do so results in loss of business opportunities, termination of contracts or reduced milestone payments. Visible supply chain pressure for EMS adoption is however very limited in Hong Kong, and a vital missing driver for its uptake. As the major construction client in Hong Kong, Government can play a pivotal role in exercising market influence on their contractors (and their subcontractors), and supporting their progress in environmental protection. Although some government departments and developers impose environmental requirements on prime contractors (such as environmental management plans and green measures) with positive effect, this practice is neither widespread nor explicit in driving EMS adoption by construction SMEs lower down the subcontractor's chain.
- b) *Lack of financial resources.* Generally, it takes 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). Based on the findings of the study it is estimated that the EMS development cost in a Hong Kong construction SME broadly ranges from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company. Key cost factors include: EMS system development by internal staff or a consultant (with fees typically \$50,000 to \$200,000); management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000); and first time certification (typically \$20,000 to \$50,000). Indicative recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement. These typical costs are indicative and of course depend upon the size and nature of the SME. Most operate to tight budgets and consider such costs prohibitive.
- c) *Low awareness of the benefits of an EMS, lack of technical knowledge and know how.* Although awareness and information initiatives (including seminars and guidance materials) have been undertaken by various private, government and industry organisations, these have had little measurable impact. This may be due to the lack of other drivers for EMS uptake, or perhaps due to their targeting approach. The message of EMS needs strengthening to increase awareness and engage the commitment of SME management.

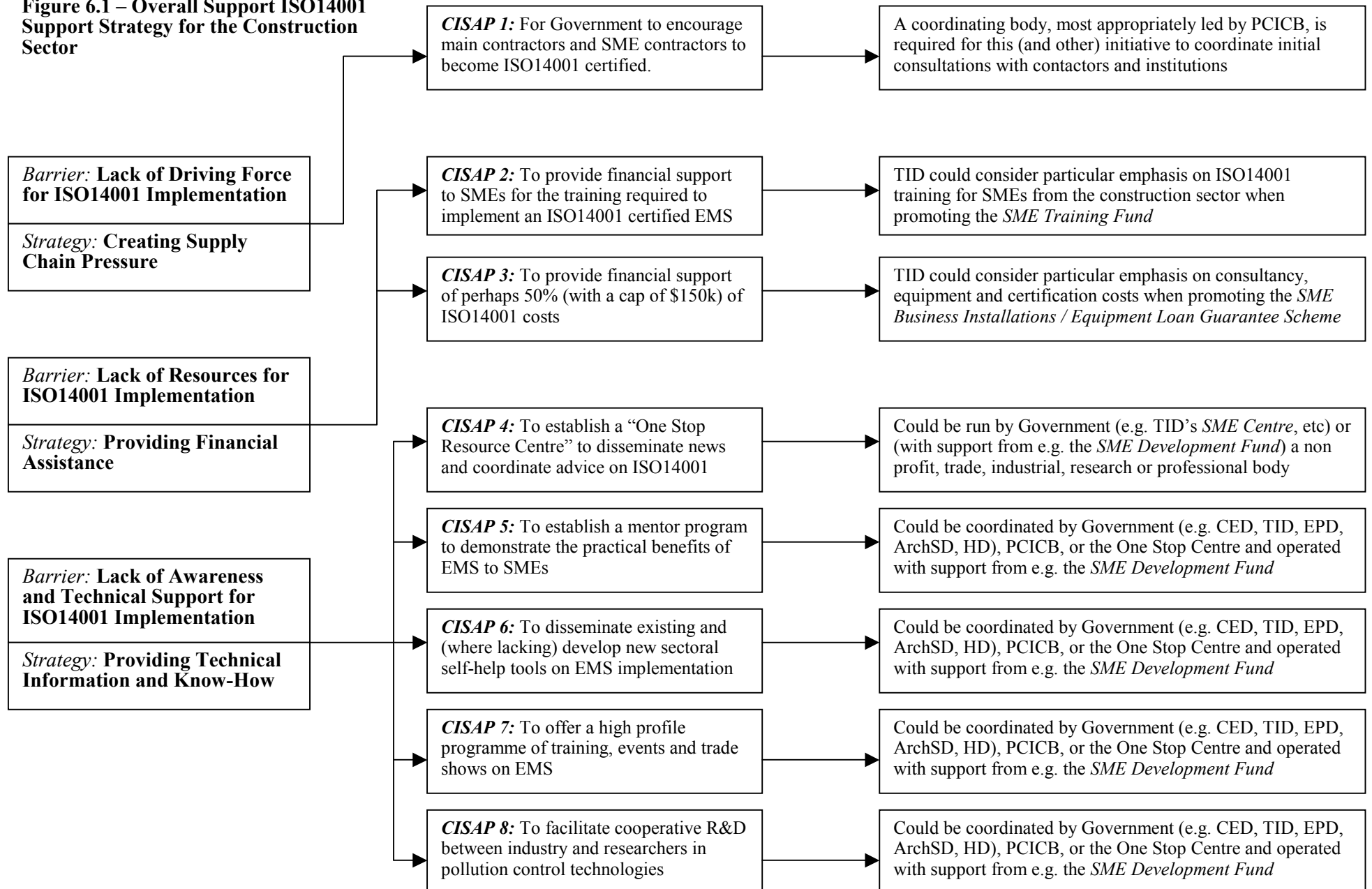
6.2 THE PROPOSED SUPPORT ACTION PLAN

The support strategy for the construction sector is designed to address the three core barriers identified by the study, as shown in *Figure 6.1* overleaf, through:

- a) *Creating Supply Chain Pressure* to provide a driver for EMS and ISO14001 adoption;
- b) *Providing Financial Assistance* to enable EMS and ISO14001 adoption; and
- c) *Providing Technical Information and Know How* for EMS and ISO14001 adoption.

The rationale of each recommended *Construction Sector Support Action Plans (CISAPs)* for each barrier is described below. *Appendix 3* includes a figure illustrating the overall plan, tabulated details of each element (proposed plan, existing mechanisms and resources, and potential key players), a listing of relevant information and contact details for possible participants.

Figure 6.1 – Overall Support ISO14001 Support Strategy for the Construction Sector



6.2.1 Creating Supply Chain Pressure

“CISAP 1: For larger customers (Government and ISO14001 certified construction companies) to encourage their SME contractors to become ISO14001 certified”.

Creating supply chain pressure is considered the single most effective action for Hong Kong and government, as a major client, is in a strong position to exert EMS influence²⁴. Main contractors should also pass on such requirements to their (SME) contractors, in doing so speeding up the adoption of environmental practices. It is anticipated that the players identified in *CISAP 1* could initiate preparations for supply chain programmes in the short term.

To initiate procurement influence it is recommended that EPD liaise with Works Bureau to study the feasibility of establishing a Task Force under the PCICB. This should include Government bureaus and departments related to construction activities (e.g. Works Bureau, works departments), trade associations, professional institutes (e.g. HKIE), major utilities (e.g. MTR, KCR) and academic institutes to review the feasibility of the proposed actions and establish an implementation programme.

The strategy recommends that government includes greater emphasis on the weighting of environmental scores in tender assessments, and environmental requirements in contracts. This establishes a level playing field where the cost of environmental management can be priced-in by contractors and, in turn, requirements be driven down to sub-contractors. Supply chain pressure can be applied through the incorporation of environmental and EMS requirements in government works tender pre-qualifications and further by encouraging large construction companies and developers to impose similar requirements for ISO 14001.

Although the procurement influence programme requires time to formulate (i.e. it needs change of Government policy, consultation and a change of culture in the construction industry), it is crucial to the support strategy. Without successful creation of supply chain pressure, the study finds that SMEs will not develop an EMS, even if financial assistance and technical support become available.

6.2.2 Providing Financial Assistance

“CISAP 2: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS”.

“CISAP 3: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS”.

Financial assistance (*CISAPs 2 and 3*) is seen as the second most effective action (though, having regard to the state of local economy, is vital to the success of the plan as a whole), enabling SMEs to respond to the increased supply chain pressures. Government established four funding schemes in early 2002 (after commencement of this study) with a total commitment of \$7.5 billion to help SMEs acquire business equipment, boost training and enhance competitiveness. Two of these (the *SME Business Installations and Equipment Loan Guarantee Scheme*, and the *SME Training Fund*) are considered most relevant in helping construction SMEs to obtain ISO14001 certification. Further exploration into the use of these funding schemes for financial assistance is recommended between the key players identified.

Pricing-in the cost of EMS development in the tender is one of the proposed strategies to be considered under creating supply chain pressure. If this can be achieved, it can be argued that financial assistance is not required. However, financial assistance will be required to encourage SMEs that do not work on Government projects, and also to drive a more rapid change in SME's further down the supply chain, that may be less influenced by top down pressure.

²⁴ In 2000, Government spent HK\$45.8 billion and HK\$23.0 billion in housing and infrastructure respectively; accounting for about 17% (the 2nd highest) and 9% (the 7th highest) of public expenditure. (Source: www.censtatd.gov.hk).

6.2.3 Providing Technical Information and Know-How

- “CISAP 4: To establish a “One Stop Resource Centre” to disseminate trade specific information and coordinate expert advice on ISO14001”.
- “CISAP 5: To establish a mentoring programme for ISO 14001 certified mentors to demonstrate the practical benefits of EMS to SMEs”.
- “CISAP 6: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation”.
- “CISAP 7: To offer a high profile programme of training, events and trade shows on EMS for construction SMEs”.
- “CISAP 8: To facilitate cooperative research and development (R&D) between industry and research sector in pollution control and cleaner production technologies”.

The provision of technical information and know how is considered a less effective driver for ISO14001 adoption by SMEs than supply chain pressure or financial support. Such support is however required to enable SMEs to respond to supply chain pressure and make the best use of their financial assistance.

The proposed “One Stop Resource Centre” (CISAP 4) will ensure that various existing technical support tools (e.g. training and publications) give coverage where needed, and that new ones (such as mentoring or expert advice) are based upon needs and avoid duplicity. Three support tools are identified (CISAPs 5 to 8), with possible support for their development from the *SME Development Fund*. The Centre would also provide SMEs with all up to date information on supply chain pressures and global ISO14001 adoption. It is envisaged that the Centre could be established in a short time if based on existing initiatives such as TID’s *SME Centre*.

It is anticipated that time will be needed to review government and industry practices, establish programmes for procurement influence and financial assistance. It is recommended that the task force to review these issues be established as soon as possible, as mentioned perhaps under the remit of the *PCICB*.

6.3 IMPLEMENTATION CONSIDERATIONS

As part of the overall strategy, three target areas and their eight elemental plans can be considered as unique initiatives to pinpoint and overcome specific barriers against the implementation of EMSs by SMEs in the local construction industry that were identified in earlier case studies. Given that there are several components of the strategy, their timing will require careful consideration to ensure that the overall strategy is feasible and successfully implemented. Programmes that are considered to be most effective (e.g. creating supply chain pressure) may require extensive preparation to initiate, while others may be less effective although implemented more quickly. The effectiveness of the various types of programmes may also change over time.

7. THE ELECTRONICS AND RELATED PRODUCTS INDUSTRY

7.1 BARRIERS TO EMS IMPLEMENTATION

Three interrelated factors clearly influence EMS uptake by electronics and related products SMEs:

- a) *Low awareness of supply chain pressures being introduced by large clients.* SMEs focus on client requirements; failure to do so results in loss of business. Visible supply chain pressure for EMS adoption is however very limited in Hong Kong, and a vital missing driver for its widespread uptake. Large electronics companies, local and international, can as overseas play a more pivotal role in exercising market influence on their SME suppliers, and supporting their progress.
- b) *Lack of financial resources.* Generally, it can take 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). Based on the findings of the study it is estimated that the EMS development cost in a Hong Kong electronics and related products SME broadly ranges from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company. Key cost factors include: EMS system development by internal staff or a consultant (with fees typically \$50,000 to \$200,000); management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000); and first time certification (typically \$20,000 to \$50,000). Indicative recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement. These typical costs are indicative and of course depend upon the size and nature of the SME. Most operate to tight budgets and consider such costs prohibitive.
- c) *Low awareness of the benefits of an EMS, lack of technical knowledge and know how.* Although awareness and information initiatives (including seminars and guidance materials) have been undertaken by various private, government and industry organisations, these have had little measurable impact on electronics and related product SMEs. This may be due to the lack of other drivers to encourage EMS uptake, or perhaps due to their targeting approach. The message of global trends in EMS needs strengthening to increase awareness and further engage the commitment of SME management.

7.2 THE PROPOSED SUPPORT ACTION PLAN

The support strategy for the electronics and related products sector is designed to address the three core barriers identified by the study, as shown in *Figure 7.1* overleaf, through:

- *Creating Supply Chain Pressure* to provide a driver for EMS and ISO14001 adoption;
- *Providing Financial Assistance* to enable EMS and ISO14001 adoption; and
- *Providing Technical Information and Know How* for EMS and ISO14001 adoption.

The rationale of each recommended *Electronic and Related Products Sector Support Action Plans (EISAPs)* is described below. *Appendix 4* includes a figure illustrating the overall plan, tabulated details of each element (proposed plan, existing mechanisms and resources, and potential key players), a listing of relevant information and contact details for possible participants.

7.2.1 Creating Supply Chain Pressure

“EISAP 1: For larger customers (ISO14001 certified electronics and related product companies) to encourage their SME contractors and suppliers to become ISO14001 certified”.

Supply chain pressure, an established practice overseas, is considered the most effective action for Hong

Kong given that most SMEs would adopt ISO14001 when required by their clients, regardless of the availability of financial and technical support. Some supply chain pressure does exist in Hong Kong between international electronics companies and their larger suppliers, although this has yet to filter down the supply chain through multi-layers of subcontractors and SMEs. Only those SMEs that are part of the supply chain of large international companies or corporations can at present expect to be subject to supply chain pressure. Since supply chain pressure is market-driven Government's role is limited beyond encouragement and coordination. It is however anticipated that the players identified in *EISAP 1* could initiate preparations for supply chain programmes in the short term. Participation may be more difficult to encourage in the absence of appropriate legislation, however such a strategy is still worth considering in the long term, particularly in the context of Hong Kong's aim to develop into the regional hub for the high-tech industry.

7.2.2 Providing Financial Assistance

"EISAP 2: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS".

"EISAP 3: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS".

Financial assistance (*EISAPs 2 and 3*) is seen as the second most effective action (though still vital to the success of the plan as a whole), enabling SMEs to respond to the growing supply chain pressures in Hong Kong and overseas. Government established four funding schemes in early 2002 (after commencement of this study) with a total commitment of \$7.5 billion to help SMEs acquire business equipment, boost training and enhance competitiveness. Two of these (the *SME Business Installations and Equipment Loan Guarantee Scheme*, and the *SME Training Fund*) are considered most relevant in helping electronics and related products SMEs to obtain ISO14001. Further exploration into the use of these schemes for is recommended for the key players identified.

7.2.3 Providing Technical Information and Know-How

"EISAP 4: To establish a "One Stop Resource Centre" to disseminate trade specific information and coordinate expert advice on ISO14001".

"EISAP 5: To establish a mentoring programme for ISO 14001 certified mentors to demonstrate the practical benefits of EMS to SMEs".

"EISAP 6: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation".

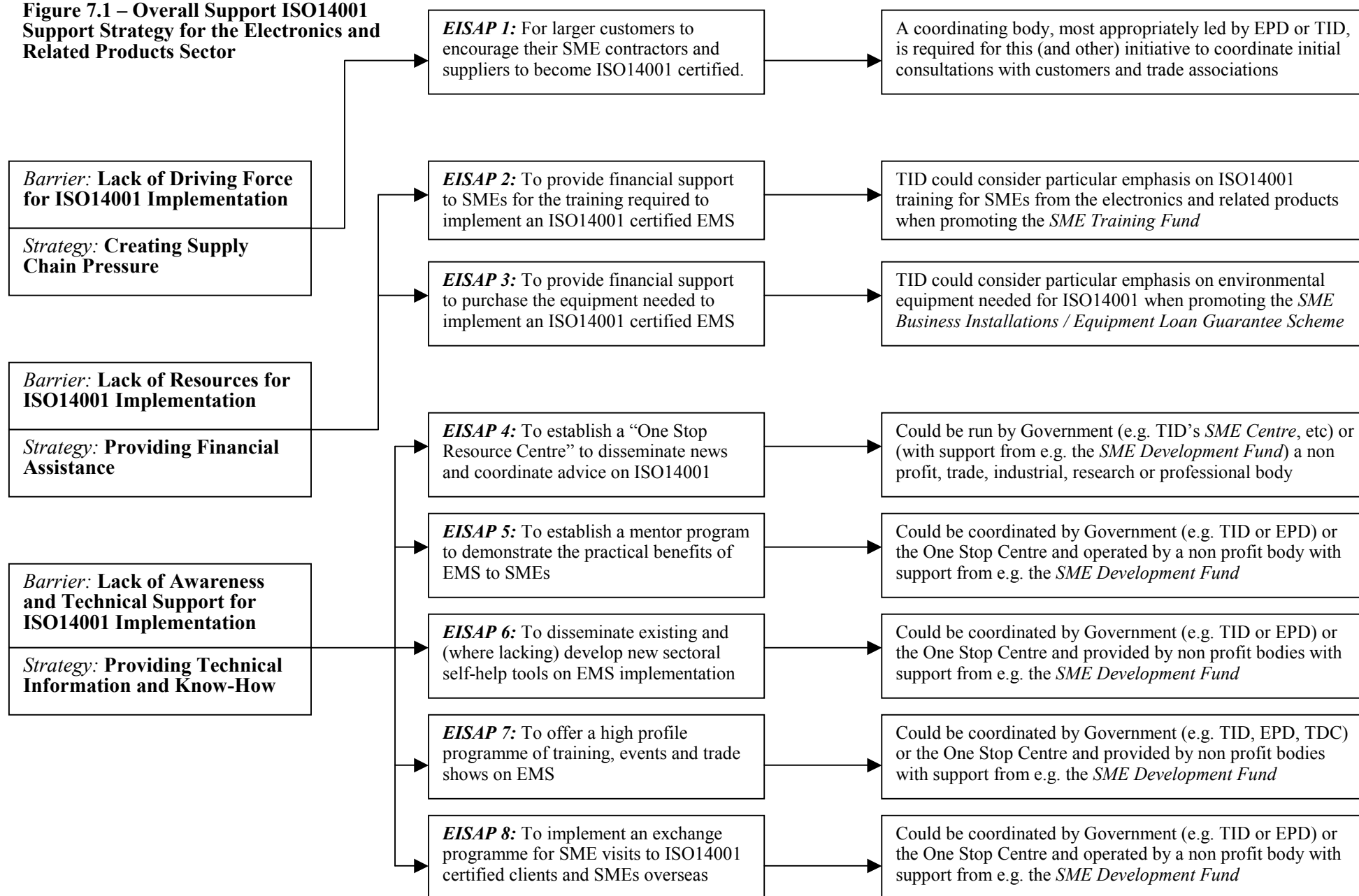
"EISAP 7: To offer a high profile programme of training, events and trade shows on EMS for electronic and related product SMEs".

"EISAP 8: To implement a professional exchange programme for SMEs to visit overseas ISO14001 certified electronic and related product clients and SMEs".

The provision of technical information and know how is considered a less effective driver for ISO14001 adoption by SMEs than supply chain pressure or financial support. Such support is however required to enable SMEs to respond to supply chain pressure and make the best use of their financial assistance.

The proposed "One Stop Resource Centre" (*EISAP 4*) will ensure that various existing technical support tools (e.g. publications and training) are needs based and that new ones (such as mentoring or expert advice) avoid duplicity. Four support tools are identified (*EISAPs 5 to 8*), with possible support for their development from the *SME Development Fund*. The Centre would also provide SMEs with up to date information on supply chain pressures and global ISO14001 adoption. It is envisaged that the Centre could be established in a short time if based on existing initiatives such as TID's *SME Centre*.

Figure 7.1 – Overall Support ISO14001 Support Strategy for the Electronics and Related Products Sector



Given that supply chain pressure is low at the local level but high internationally, programmes to help local SMEs understand potential overseas demands would be needed. Programmes that raise awareness, facilitate communication and provide technical information are the key areas that would provide a foundation for an increased drive for EMS adoption.

7.3 IMPLEMENTATION CONSIDERATIONS

Three target areas and their eight elemental plans can be considered as unique initiatives to pinpoint and overcome specific barriers against the implementation of EMSs by SMEs. As with the construction sector, their timing will require careful consideration to ensure that the overall strategy is feasible and successfully implemented. Programmes that are considered to be most effective (e.g. creating supply chain pressure) may require extensive preparation to initiate, while others may be less effective although implemented more quickly. The effectiveness of the various types of programmes may also change over time.

8. THE TEXTILES / WEARING APPAREL / FOOTWEAR INDUSTRY

8.1 BARRIERS TO ISO14001 IMPLEMENTATION

The research and case studies described in previous sections identify three interrelated factors that clearly influence EMS uptake by textile / wearing apparel / footwear SMEs:

- a) *Lack of financial resources.* Generally, it can take 12 to 18 months for a SME to develop an EMS complying with ISO14001 requirements, depending on the existing status of EMS and the amount of resource available (e.g. manpower and time). The actual cost of EMS development for SMEs in the textiles / wearing apparel / footwear sector could not be acquired from case studies in this assignment since no local companies (small, medium or large) were known to be ISO14001 certified. However, the EMS development cost in a Hong Kong textile / wearing apparel / footwear SME are expected to be of the same order of those in other manufacturing sectors, broadly ranging from HK\$120,000 to HK\$450,000 depending on the scale and activities of the company. Key cost factors include: EMS system development by internal staff or a consultant (with fees typically \$50,000 to \$200,000); management programme implementation (e.g. with capital investment for pollution control equipment and staff training to ensure compliance typically costing \$50,000 to \$200,000); and first time certification (typically \$20,000 to \$50,000). Indicative recurrent costs can amount to \$20,000 or \$50,000, including training for existing or new staff, surveillance visits (typically one to three man-days every six months), and adoption of new environmental programmes for continuous improvement. These typical costs are indicative and of course depend upon the size and nature of the SME. Again, most operate to tight budgets and consider such costs prohibitive.
- b) *Low awareness of the benefits of an EMS, lack of technical knowledge and know how.* Although awareness and information initiatives (including seminars and guidance materials) have been undertaken by various private, government and industry organisations, these have had little measurable impact on textiles / wearing apparel / footwear SMEs. This may be due to the lack of other drivers to encourage EMS uptake, or perhaps due to their targeting approach. The message of global trends in EMS needs strengthening to increase awareness and further engage the commitment of SME management.
- c) *Low awareness of supply chain pressures being introduced by large clients.* SMEs focus on client requirements; failure to do so results in loss of business. Visible supply chain pressure for EMS adoption is however very limited in Hong Kong because Government is not a significant consumer of textiles / wearing apparel / footwear; purchasing and merchandise companies focus on company standards (mainly relevant to the quality of the products) and manufacturing processes in the mainland, and local consumers exert little environmental influence on retailers. As a result creating supply chain pressure is not considered as an effective area of support for this sector.

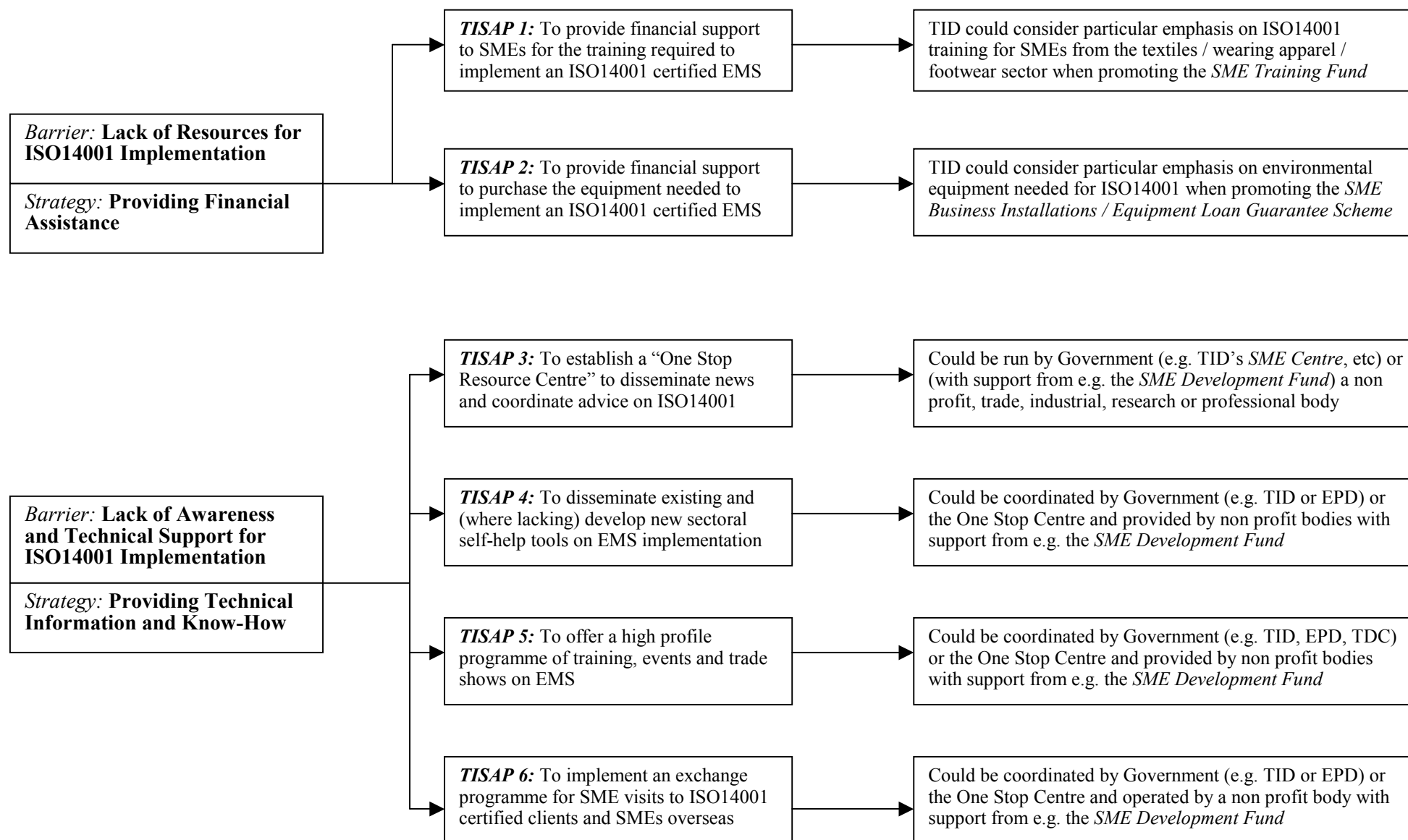
8.2 THE PROPOSED SUPPORT ACTION PLAN

The support strategy for the textiles / wearing apparel / footwear sector is designed to address the two core barriers identified by the study, as shown in *Figure 8.1*, through:

- a) *Providing Financial Assistance* to enable EMS and ISO14001 adoption; and
- b) *Providing Technical Information and Know How* for EMS and ISO14001 adoption.

The rationale of each recommended *Textiles / Wearing Apparel / Footwear Sector Support Action Plans (TISAPs)* is described below. *Appendix 4* includes a figure illustrating the overall plan, tabulated details of each element (proposed plan, existing mechanisms and resources, and potential key players), a listing of relevant information and contact details for possible participants.

**Figure 8.1 – Overall Support ISO14001
Support Strategy for the Textiles /
Wearing Apparel / Footwear Sector**



8.2.1 Providing Financial Assistance

“TISAP 1: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS”.

“TISAP 2: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS”.

Financial assistance (*TISAPs 1 and 2*) is seen as the most effective action, enabling SMEs to respond to the growing supply chain pressures from overseas. Government established four funding schemes in early 2002 (after commencement of this study) with a total commitment of \$7.5 billion to help SMEs acquire business equipment, boost training and enhance competitiveness. Two of these (the *SME Business Installations and Equipment Loan Guarantee Scheme*, and the *SME Training Fund*) are considered most relevant in helping textiles / wearing apparel / footwear SMEs to obtain ISO14001. Further exploration into the use of these funding schemes for financial assistance is recommended between the key players identified.

8.2.2 Providing Technical Information and Know-How

“TISAP 3: To establish a “One Stop Resource Centre” to disseminate trade specific information and coordinate expert advice on ISO14001”.

“TISAP 4: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation”.

“TISAP 5: To offer a high profile programme of training, events and trade shows on EMS for textiles / wearing apparel / footwear SMEs”.

“TISAP 6: To implement a professional exchange programme for SMEs to visit overseas ISO14001 certified textiles / wearing apparel / footwear clients and SMEs”.

The provision of technical information and know how is considered a less effective driver for ISO14001 adoption by SMEs financial support. Such support is however required to enable SMEs to respond to supply chain pressure and make the best use of their financial assistance.

The proposed “One Stop Resource Centre” (*EISAP 3*) will ensure that various existing technical support tools (e.g. publications and training) are needs based, and that new ones (such as mentoring or expert advice) avoid duplicity. Four technical support tools are identified (*TISAPs 4 to 6*), with possible support for their development from the *SME Development Fund*. The Centre would also provide SMEs with up to date information on supply chain pressures and global ISO14001 adoption. It is envisaged that the Centre could be established in a short time if based on existing initiatives such as TID’s *SME Centre*.

8.3 IMPLEMENTATION CONSIDERATIONS

In summary, there is no prevalent pressure of ISO14001 implementation and demand for EMS support action plans. To ensure the successful implementation of the Support Action Plan for the textiles/wearing apparel/footwear industry SMEs, proposed actions under each programme should be prioritised considering various factors such as implementation timing, demand, resources input and ease of implementation. To achieve successful implementation, proposed actions under the textiles/wearing apparel/footwear sector Support Action Plan are prioritised as shown in Table 8.1 and the overall

supporting strategy is summarised in Figure 8.2. It is recommended that relevant programme organiser(s) consider the prioritisation during the implementation of the Support Action Plan.

9. SUMMARY AND CONCLUSIONS

Over 30,000 companies worldwide have adopted ISO14001 since its launch in 1996, driven by perceived threats of loss in market share and the opportunity of improved competitiveness. Case studies on three MIGs namely, “Construction”, “Electronics and Related Products” and “Textiles/Wearing Apparel/Footwear”, were carried out between September 2000 and mid-December 2000 to identify the areas of support required to facilitate their response to this trend. Overall findings show that at present there is little market pressure for and awareness of the need for ISO14001 certification by SMEs. The experience of the ISO 14001 certified companies of the three MIGs (mainly the “large” companies) show that resource constraints (e.g. finance), acquiring technical know how and educating staff are the major barriers to ISO 14001 development and implementation.

Based on the case studies findings, three target areas are identified for the formulation of an ISO14001 support action plan for the *Construction Industry* and *Electronics and Related Products Industry*: first, and most effectively, to create and communicate supply chain pressure for EMS implementation; secondly, to provide financial support to facilitate ISO14001 adoption by SMEs in response to these pressures; and third, to provide technical information and know-how to support their EMS development and implementation. For the *Textiles / Wearing Apparel / Footwear Industry*, the creation of supply chain pressure is not considered feasible, since purchasing and merchandise companies focus on standards and manufacturing processes on the mainland, local consumers exert little environmental influence on retailers, and Government is not a significant consumer. Creating supply chain pressure to drive EMS is therefore not considered an effective area of support for this sector. Furthermore, SME mentoring programmes are not proposed due to the lack of client companies certified to ISO14001 in Hong Kong.

The work undertaken in the previous stages of the Study and within this report shows that a certain portion of the issues covered are generic. Generic support mechanisms would therefore be helpful (e.g. dissemination of information and provision of resources). There are, however, also some sector-specific issues to be addressed. The market structures of the MIGs are different and therefore respond to different types of programmes (for example, the construction sector presents a unique opportunity for government to create supply chain pressure). A variety of support programmes have been proposed for each MIG, the demand for various types of programmes may also change over time. For example, the provision of financial assistance would become useful once there is the demand to implement ISO14001. It is suggested that the support action plan shall be reviewed at regular time intervals to ensure the appropriateness of the programmes and actions. Potential benefits of ISO14001 adoption are common for the three industries and include:

- Competitive advantage in a market where environmentally responsible companies are preferred. It is of particular relevance to a) the electronics and related products industry as a global trend of EMS adoption among this industry had been identified; and b) the construction industry as the Construct for Excellence Report of the Construction Industry Review Committee suggested that mandatory ISO 14001 certification may be considered at a later stage when the construction industry has acquired more expertise in tackling the environmental challenge²⁵;
- Cost reduction through increased efficiency as a result of better resource use and implementation of environmental management programmes; and
- Cost savings on fine payments as a result of compliance with environmental legislation (of particular relevance to the construction industry).

All elements of the three recommended *Support Action Plans* are designed specifically to address the key

²⁵ Construct for Excellence – Report of the Construction Industry Review Committee (January 2001).

concerns of each sector and bring around the above benefits. Each makes use of existing initiatives as far as possible to maximise cost effectiveness and minimise set up times, and are based on overseas and local examples. All require high impact promotion to ensure that SMEs are aware of increasing supply pressures and the support available to them.

Appendix 1

Investigation Scopes of the Case studies

The issues being planned to raise in the case studies are given below.

a) ISO 14001 Certified Companies

- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).
- The observed operation and environmental management programme.
- The driving force for ISO 14001 development and implementation.
- How the system was developed (e.g. by in-house resources, an EMS consultant).
- The cost, resources and time spent, significant change of administration and operation systems in different stages of the ISO 14001 development and implementation
- The difficulties encountered during different stages of ISO 14001 development and implementation and after certification and how the difficulties were overcome.
- The benefits and risk resulting from ISO 14001 certification.
- The environmental requirements imposed on suppliers and sub-contractors.
- The difficulties in controlling the environmental performance of the suppliers and sub-contractors.
- The difficulties encountered by the suppliers and sub-contractors in meeting the environmental requirements.
- The assistance offered to suppliers and sub-contractors in meeting environmental requirements.
- Any views on the nature of the supporting programmes for the SMEs to implement an ISO 14001 EMS.

b) Companies in which an ISO 14001 EMS is being developed or implemented (not yet certified to ISO 14001); the companies may or may not face supply chain pressure for ISO 14001 EMS implementation

- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).
- The observed operation and environmental management programme implemented.
- Area of improvement identified by the interviewer.
- The driving force for developing and implementing an ISO 14001 EMS.
- How the system is being / will be developed (e.g. by in-house resources, assisted by a consultant)
- The status of ISO 14001 development
- The resources (including cost) and time deployed for different stages of developing, implementing, certification and post-certification of the ISO 14001 EMS.
- The gap between the company's existing EMS and ISO 14001 requirements.
- The major barriers to the different stages of developing, implementation and certifying the EMS and how the barriers were overcome.
- The anticipated difficulties in maintaining the system after ISO 14001 certification.
- The assistance needed at different stages of EMS development and implementation.

c) Companies expressing that they are not under supply chain pressure for ISO 14001 EMS development and with no intention to develop an EMS (despite clients requirements to implement an EMS or meet environmental requirements)

- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).

- The observed operation and environmental management programme implemented.
 - The environmental requirements stipulated by clients.
 - The justification for not meeting the client's environmental requirements (or some of the requirements).
 - The actions taken to meet the client's requirements (or some of the requirements).
 - The client's responses to the action taken by the interviewee's company.
 - The gap between the existing EMS status and ISO 14001 requirements.
 - The assistance required for developing an ISO 14001 EMS in the event that the company goes ahead with an EMS in the future.
- d) Companies expressing that they are under supply chain pressure for ISO 14001 implementation; with an EMS developed but no intention to seek certification
- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).
 - The operation and environmental management programme implemented.
 - The supply chain pressure for ISO 14001 being experienced.
 - How the EMS is developed (e.g. by in-house resource, assisted by a consultant).
 - The status of EMS development and implementation.
 - The resources (including cost) and time deployed for different stages of developing and implementing.
 - The major barriers to different stages of developing, implementation and certifying the EMS and how the barriers were overcome.
 - Compliance with local environmental legislations.
 - Reasons for not seeking certification.
 - The assistance needed at different stages of EMS development and implementation.
- e) Companies expressing that they had no supply chain pressure for ISO 14001 EMS implementation and no intention to develop an EMS
- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).
 - The supply chain requirements (to confirm if any).
 - Whether an Environmental Policy had been established.
 - The environmental management programme implemented.
 - The interviewee's evaluation of compliance with environmental legislation.
 - The assistance required in the event that the company goes ahead with an EMS in the future.
- f) Companies expressing that they had supply chain pressure for ISO 14001 EMS implementation but no intention to develop an EMS
- General company information (e.g. business nature, number of staff members employed in Hong Kong and outside of Hong Kong, contacts).
 - The supply chain requirements.
 - Whether an Environmental Policy had been established.
 - The environmental management programme implemented.
 - The interviewee's evaluation of compliance with environmental legislation.
 - The justification for not meeting the client's requirements.
 - The actions taken to response to the client's requirements and the responses of the clients.
 - The assistance required in the event that the company goes ahead with an EMS in the event that the company goes ahead with an EMS in the future.

Appendix 2

Barriers to ISO 14001 EMS Implementation

Major Barriers to ISO 14001 EMS Development Prior to Certification

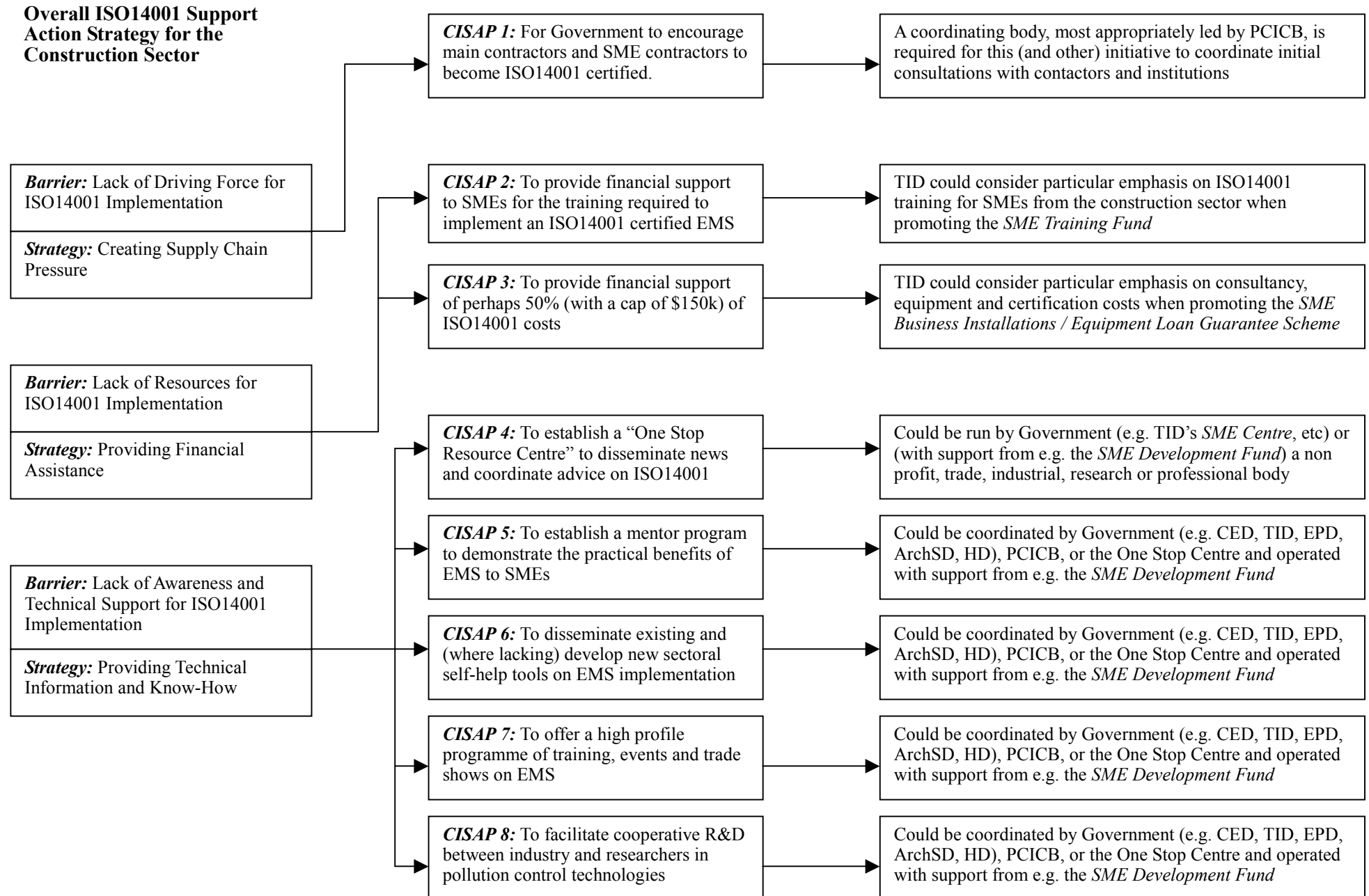
Barriers to Develop and Implement an EMS prior to Certification as Perceived by the Interviewees Participating in the Case Studies		Electronic and Related Products Industry	Construction Industry	Textile, Wearing Apparel & Footwear Industry
ISO 14001 Certified Companies				
<u>Technical</u>				
a	Identification and evaluating of significant environmental aspects.	Y	--	--
b	Define the scope of EMS (under resources constraints and the various status among the construction sites, it is not able to handle all environmental aspects at the same time and thus prioritisation or defining the scope of work is required).	--	Y	--
c	Lacking of pollution control equipment / advanced technologies in pollution control.	Y	Y	--
d	Complying with environmental legislation	Y	Y	--
<u>Staff Education</u>				
a	Enhance staff awareness / staff members do not think that they have the responsibility to implement the EMS.	Y	Y	--
<u>Availability of Information & Service Providers</u>				
a	Lack of information on ISO 14001 development.	Y	Y	--
b	Lack of consultation service provider.	Y	Y	--
Companies that is Developing / Planning to Develop / has Developed (not to seek certification) an EMS				
a	Barriers have yet to identify as the planning/development is in the initial stage.	Y	Y	--
<u>Availability of Information & Service Providers</u>				
a	Lack of detailed information and guidelines.	--	Y	--
b	Lack of service providers.	--	Y	--
<u>Resources Demanding</u>				
a	Lack of financial support.	--	Y	--
b	Too much manpower and time are needed.	--	Y	--
Companies that has Decided not to Develop an EMS				
<u>Driving Force from the Clients</u>				
a	Perceive the clients' requirement of implementing an EMS is not compulsory, or the clients do not drive hard.	Y	Y	Y
<u>Resources Demanding</u>				
a	Under financial constraint.	Y	Y	Y
b	Under manpower and time constraints.	Y	Y	Y
<u>Others</u>				
a	Lack of ISO 14001 knowledge.	--	Y	--
b	Not able to appreciate the benefits of an EMS	--	Y	--

Major Barriers to Maintain the ISO 14001 EMS after Certification

Barriers to Develop and Implement an EMS prior to Certification as Perceived by the Interviewees Participating in the Case Studies		Electronic and Related Products Industry	Construction Industry	Textile, Wearing Apparel & Footwear Industry
<u>Technical Issues & the Coping of Government Policy</u>				
a	Acquire knowledge of / identification of appropriate pollution control technology / identification of feasible technology in order to implement environmental improvement programme.	Y	Y	--
b	Some environmental management programmes require the favouring / encouragement of Government Policy (e.g. the recycling facilities for handling construction wastes shall be established by the Government)	--	Y	--
<u>Education</u>				
a	Education of clients and subcontractors to accept "environmentally friendly" practices.	--	Y	--
b	Staff education	--	Y	--
<u>Resources</u>				
a	Financial arrangement.	Y	--	--

Appendix 3

Proposed Action Plan for the Construction Sector



CREATING SUPPLY CHAIN PRESSURE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>CISAP 1: For larger customers (Government and ISO14001 certified construction companies) to encourage their SME contractors to become ISO14001 certified.</i></p> <p>EPD to liaise with Works Bureau to study the feasibility of establishing a Task Force under the Provisional Construction Industry Coordination Board to carry out the tasks shown below.</p> <ul style="list-style-type: none"> • consultations with larger customers to appraise the feasibility of requiring ISO 14001 certification by their contractors; • price-in the cost of EMS development / maintenance in the tender; • development and implementation of purchasing policies and requirements, if considered feasible, to require ISO 14001 certification by contractors. <p>Requirements for immediate certification to ISO 14001 may not be possible given the low number of SMEs currently certified. Large customers may therefore instead be encouraged to announce a date from which – say in two years time – they intend to purchase construction service only from ISO 14001 certified contractors.</p> <p>Alternatively, these customers may choose to include marks for evidence of good environmental practice in the evaluation of their tenders.</p> <p>As with all of the <i>CISAP</i> programmes, this initiative must be effectively promoted to raise awareness of the growing supply chain pressures facing construction sector SMEs.</p>	<p><i>In Hong Kong:</i></p> <p>Isolated cases:</p> <ul style="list-style-type: none"> • EPD requested the contractors who manage the EPD's waste facilities should acquire ISO 14001 certification within a specified period (18 to 24 months). If certification is not acquired within the specified period, part of the contract payment will be hold up until certification is acquired. • The Works Bureau requires the contractors for demolition work to submit a Waste Management Plan. • Some project proponents (e.g. KCRC, ArchSD) require their subcontractors to submit an Environmental Management Plan. • Overall, there is no market pressure for ISO 14001 certification in Hong Kong's construction sector SMEs. <p><i>Overseas Examples:</i></p> <p>Mentoring programmes (described in <i>CISAP 5</i>) have successfully been implemented in many countries over the years, through which large customers have exerted pressure on their suppliers to adopt ISO 14001.</p>	<p>EPD in conjunction with Works Bureau and/or the PCICB could initiate invitations to potential key players to discuss this recommendation, including:</p> <ul style="list-style-type: none"> • All government departments involved in construction works procurement such as Works Bureau, EPD, ArchSD, HA, CED, EMSD, DSD, WSD, HyD. • ISO 14001 certified companies in the commerce sector (e.g. Anderson Asphalt, Aoki, China Overseas, China State, Dickson, Downer, Dritech, Gammon, Hip Hing, Hsin Chong, I-P, Ivanho Architect, K A Kho Associates Architects & Consultants, Kin Wing, Kumagai Gumi, Leighton, Maeda Kensetsu Kogyo Kabushiki Kaisha, Mak Hang Kei, Paul Y, Quon Hing Concrete, Shui On, Sika, Skanska, Yau Nam Kee). • Trade Associations (e.g. Hong Kong Construction Association, The Association Consulting Engineers of Hong Kong, Environmental Contractors Management Association, Hong Kong and Kowloon Furniture and Shop Fittings Merchants Association, Hong Kong Electrical Contractors Association, The Hong Kong E & M Contractor's Association Ltd., The Society of Builders, Hong Kong). • Others: professional institutes (e.g. HKIE), academic institutes, major utilities (e.g. MTR, KCRC)

PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 2: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS.</p> <p>In today's competitive business environment, a knowledge of practical and cost effective solutions to environmental problems is essential. All individuals need to be well versed in their company's legal requirements, customer expectations, and commitment to sustainability.</p>	<p>In Hong Kong:</p> <p>The recently launched <i>SME Training Fund</i> (STF) provides grants for training to SMEs with a view to enhancing their capabilities and competitiveness. For successful applications, the STF covers 50% of the training expenses directly incurred or the balance of the cumulative grant available (\$5,000 for "Employers' Training", or \$10,000 for "Employees' Training") whichever is less.</p> <p>Overseas Examples:</p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Training Fund</i> on training for the development and implementation of an ISO14001 certified EMS in all sectors including the construction industry. An immediate start should show some results within 12 months. As with all of the <i>CISAP</i> programmes, this initiative must be effectively promoted to raise awareness of the growing supply chain pressures facing construction SMEs.</p>

PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 3: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS.</p> <p>Such grants may generally be required not for the development of an EMS (although pollution control equipment may be necessary to enable legal compliance), but more likely during the ongoing implementation of the EMS (to enable continuous performance improvement).</p>	<p>In Hong Kong:</p> <p>By the provision of Government guarantee, the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> aims to help SMEs secure loans from participating lending institutions (44 at the time of writing) to acquire the installations and equipment (including machinery, tools, computer software and hardware, transport facilities, communication systems, office equipment, etc) needed to enhance productivity and competitiveness. The maximum guarantee offered to each SME is \$1 million or 50% of the approved loan whichever is less.</p> <p>Overseas Examples:</p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> on the environmental protection installations and equipment needed for the implementation of an ISO14001 certified EMS in all sectors including the construction industry. The provision of grants to SMEs for perhaps 50% of the consultancy and certification costs of ISO14001 (as overseas) could also be investigated.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 4: To establish a “One Stop Resource Centre” to disseminate trade specific information and coordinate expert advice on ISO14001.</p> <p>A “One-Stop Resource Centre” is required to increase SME awareness in global ISO14001 trends, supply chain pressures, and case studies of ISO14001 implementation in the construction industry.</p> <p>Access to free expertise for advice and support to SMEs in EMS implementation would address one of their key concerns – constraints on management time.</p> <p>News Updates should include the environmental requirements imposed by government bureaux and departments, global and local trends in ISO 14001 certification in the construction industry, green construction and pollution control technologies.</p> <p>Access to guidance materials targeted at the construction would provide supplementary EMS information.</p> <p>Guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>As with all of the <i>CISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p>In Hong Kong:</p> <p>Local environmental literature is available in the TID SME library and website. The ISO 14001 Information Centre and Hot-line operated by HKPC was closed around October 2000. A list of ISO 14001 certified companies is available on EPD’s and HKQAA’s website. However, <i>EMS Manual for the Construction Industry</i> has yet to identify.</p> <p>At present there is no means by which construction sector SMEs can obtain free or low cost expert advice on ISO 14001.</p> <p>Overseas Examples: A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p>Government could provide the One-Stop Resource Centre directly (e.g. through rebranding and expanding TID’s <i>SME Centre</i> or EPD’s <i>Environmental Resource Centres</i>).</p> <p>Alternatively, non-profit-distributing, trade, industrial, research or professional bodies could pursue funding (e.g. from the <i>SME Development Fund</i>) to develop and operate the Centre. Free or subsidised expert advice would be provided by industry and environmental experts recognised by the subsidising body to ensure adequate service. Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 5: To establish a mentoring programme for ISO 14001 certified mentors to demonstrate the practical benefits of EMS to SMEs.</p> <p>Detailed planning of the programme would require:</p> <ul style="list-style-type: none"> a coordinator to establish and administer the programme; statement of the programme goals, the target participants and their eligibility and requirements of participation (i.e. to develop an ISO 14001 certified EMS on completion), and the duration (usually 18 months overseas); a database of companies (large mentors and participating SMEs) interested in the mentoring programme; sources of funding for the programme (possibly existing HKSARG funds such as TID's SME Support Fund or charitable organisations); programme implementation such that the SMEs (and mentors) obtain the intended benefits; a framework to obtain feedback and review the success and effectiveness of the programme; and a framework (e.g. advertising, seminars, etc) to promote the programme and its details, deliverables and successes. 	<p>In Hong Kong:</p> <p>No such mentoring programmes were identified in operation at the time of the study. However, NGOs & trade associations have run training on EMS development in the past. For example, HKPC, BEC and CMA had assisted 12 SMEs from manufacturing sector to conduct environmental reviews and running EMS at reasonable cost.</p> <p>Task 3 of this study (local survey results) provides preliminary data upon which a database of interested participants could be built.</p> <p>Overseas Examples:</p> <p>Mentoring programmes have successfully been implemented in many countries over the years. The <i>Guadalajara Environmental Management Pilot</i> programme, GEMP, (Mexico, 1996) was a two-year pilot in which large companies gave EMS mentoring to selected SME suppliers and contractors. SMEs received "step-by-step" training after which they would have 8 to 10 weeks to implement each EMS element. Key players of GEMP were the large mentor companies (providing both funding and supervision); the SMEs; two local universities (providing SME support); management consultants (delivering training); federal, state and local officials of the Mexican Government (as observers); and the World Bank (providing finance and observing programme implementation).</p>	<p>The One-Stop Resource Centre (CISAP 4) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort. Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme.</p> <p>Potential Mentors. Some ISO 14001 certified companies have indicated initial interest (Hip Hing, IP, Mak Hang Kei, Shanska, Shui On, Anderson Asphalt, Kin Wing). HKGCC has expressed interest in promoting the scheme and soliciting mentors.</p> <p>Existing HKSARG funds (e.g. TID's SME Support Fund) could be approached although these are earmarked for other areas (e.g. export marketing). Additional funds could be sought from HKSARG or charitable organisations (e.g. the Jockey Club and Woo Wheelock Green Fund). Sponsorship (perhaps "in-kind") could also be solicited from the mentors.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>CISAP 6: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation.</i></p> <p>Generic EMS Templates would ease the development of “high level” EMS documentation (such as the manual and management procedures) as well as operation-specific registers and instructions.</p> <p>Other guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>Case studies of success stories (e.g. cost and competitiveness benefits) would further help encourage ISO 14001 adoption by construction sector SMEs.</p> <p>As with all of the <i>CISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p><i>In Hong Kong:</i></p> <p>Local environmental literature is held in the TID SME library. Apart from the Industry Department <i>ISO14001 EMS Manual for the Electroplating Industry</i> (produced by HKPC in 2000), most of information is not sector specific. TID’s <i>SME Development Fund</i> (SDF) may be a possible source of funding to establish the materials considered particularly necessary. The following guidance is particularly necessary:</p> <ul style="list-style-type: none"> • generic EMS templates for the construction sector; • best practice case studies showing success stories (e.g. cost and competitiveness benefits) in the construction sector; • easy-to-use information on legislation, environmental aspects and codes of practice for the construction sector; • cleaner construction methods, pollution control equipment and good environmental practices for the construction sector SME; • directories on EMS consultants, pollution control services and equipment for the construction sector. <p><i>Overseas Examples:</i></p> <p>A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p><i>Potential Key Players:</i></p> <p>The One-Stop Resource Centre (<i>CISAP 4</i>) , Government (through WB, CED, TID, HD, ArchSD or EPD) or PCICB could coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort..</p> <p>Support tools (e.g. software application templates, publications, VCDs, CD-ROMS, directories, training materials, etc) would best be provided in partnership between environmental consultants and trade associations or industry groups.</p> <p>Each player could seek funds, e.g. from the SME Development Fund. Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 7: To offer a high profile programme of training, events and trade shows on EMS for construction SMEs.</p> <ul style="list-style-type: none"> relevant trade associations should be encouraged to partner with environmental training providers in providing more frequent free and low cost EMS awareness seminars to their members; trade shows, conferences and forums could be organized in conjunction with site visits to show best practice environmental management practices and protection technologies; existing training providers could revitalize and refocus parts of their programmes to focus specifically on construction sector SMEs, where possible recognized to industry schemes such as continued professional development. Contractors, engineers and consultants (on Government's construction work tender lists or tender winners) and government personnel s related to construction activities shall be required to attend the EMS courses. <p>As with all of the <i>CISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p>In Hong Kong:</p> <ul style="list-style-type: none"> A small proportion of trade associations occasionally organise EMS awareness seminars for their members. Numerous consultants, certification bodies, NGOs and academic institutions offer ISO14001 training although these are seldom focussed specifically at SMEs in the construction sector. These groups also organise international conferences related to environmental management, however these gain are seldom focussed specifically at SMEs in the construction sector. Some Government departments (e.g. EPD) deliver environmental seminars (e.g. environmental legislation, EIA, environmental reporting) to the construction industry in responding to the invitation of trade organisations and construction companies. Some government departments (e.g. ArchSD, HA) organize environmental courses (via recruiting a course provider or inviting other government departments to deliver the seminar) for construction site personnel (internal staff and external contractors) HKIE's <i>Scheme A</i> programme requires Graduate Engineers to receive minimum 3 CPD days training in "Other Technical Matters" (including the environment). Construction sector specific EMS training courses are provided. <p>Overseas Examples: Many countries, including the Philippines and Russia, offer large-scale training on ISO 14001 EMS and cleaner technologies to large firms and SMEs.</p>	<p>The One-Stop Resource Centre (<i>CISAP 4</i>) , Government (through WB, CED, TID, HD, ArchSD or EPD) or PCICB could coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort.</p> <p>Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme. Government (e.g. TDC, TID) could encourage and partner event organizers to provide more ISO14001 related conference / fora / trade shows, or include EMS in their existing ones.</p> <p>SMEs themselves should take advantage of the SME Training Fund (see <i>CISAP 3</i>).</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>CISAP 8: To facilitate cooperative research and development (R&D) between industry and research sector in pollution control and cleaner production technologies.</p> <p>Detailed planning of the programme would require:</p> <ul style="list-style-type: none"> a Committee to establish and administer the R&D activities; goals and roles of the Committee; identification of local R&D centers, institutes and universities interested in running cooperative R&D programmes with local SMEs in the construction sector; tracing the status of R&D projects for the construction sector, identifying potential R&D topics by seeking the views of the industry and identifying the needs of local SMEs; sources for funding; and a framework (e.g. advertising, seminars, workshop etc) to promote the successes of R&D findings, products and technologies in details. 	<p>In Hong Kong:</p> <p>No such R&D Committees were identified in operation at the time of the study. However, academic institute and Government sector are studying on cleaner construction methods. For example, the EPD has established a Waste Reduction Task Force for the Construction Industry to identify construction waste reduction initiatives of the government and private sector.</p> <p>Overseas Examples:</p> <p>Universities and research institutes are conducting R&D on cleaner construction methods. For example, CIRIA (a UK-based research association concerned with improving the performance of all involved in construction and the environment) has coordinated the efforts of industries and academic institutes to conduct research in green construction and published over 200 documents covering a wide range of issues concerning best practice guidance in the construction and related industries.</p>	<p>The One-Stop Resource Centre (<i>CISAP 4</i>) or Government (through the PCICB, CED, TID, EPD, ArchSD or HD) would coordinate the provision of the programme to ensure coverage in where needed and avoid duplication of effort. Non-profit-distributing, research, trade, industrial and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme.</p>

Item	Details
1	<p>References on environmental legislation relevant to the construction industry are available, e.g.:</p> <ul style="list-style-type: none"> ▪ “Environmental Legislation Relevant to the Construction Industry in Hong Kong” published by Hong Kong Construction Association ▪ “A Guide to Pollution Control Legislation Affecting Manufacturing Industries 2000”, published by TID ▪ Booklets on environmental legislations with relevancy to construction, published by the EPD, e.g. Cut Down Construction Dust, ProcPECC PNs are available on the EPD’s website ▪ Legislation is available in Justice Department’s website
2	<ul style="list-style-type: none"> • There are sector specific EMS guidance for the packaging and electronic sectors: <ul style="list-style-type: none"> ▪ Environmental Management System Implementation Manual for the Plastic Packaging Industry in Hong Kong (published by HKPC, funded by HKSAR Government) ▪ The ISO 14001 EMS Implementation Manual for the Electroplating Industry in Hong Kong (published by HKPC, funded by HKSAR Government) • There are guidance materials on the preparation of an EMS Manual, e.g. <ul style="list-style-type: none"> ▪ ISO 14001 EMS Information Handbook – for the Manufacturing Sector of SMEs (published by HKPC, funded by HKSAR Government) ▪ The Development and Implementation of an ISO 14001 Environmental Management System for Small and Medium Enterprises, with a CD-ROM (published by HKPC, funded by HKSAR Government)
3	<ul style="list-style-type: none"> • A “Guide to Environmental Technology and Services Available in Hong Kong 1995” (funded by Hong Kong Government Industry Department) was published by HKPC and CET in 1995 (non sector specific). • Trade associations, NGOs, professional institutions and commercial organizations also publish directories on the business scopes of their members and advertisers; e.g.: <ul style="list-style-type: none"> ▪ Directory of Hong Kong Industries ▪ Yellow Pages
4	<p>The courses could cover:</p> <ul style="list-style-type: none"> • ISO 14001 EMS (detailed elaboration of each ISO 14001 clause) and certification processes • Environmental legislation relevant to the construction industry • Identification, evaluating and controlling of environmental aspects • Environmental monitoring and auditing • Educating the suppliers and subcontractor in improving environmental performance
5	<p>The existing course providers offering EMS courses related to the construction industry are BEC and HKPC.</p> <p>Some course providers also invite the EPD and certification bodies to deliver some topics of the course, where appropriate.</p>
6	<p>Examples on the courses:</p> <ul style="list-style-type: none"> ▪ Environmental Requirements for Construction Site (ArchSD) ▪ EMS Implementation Training (HA) ▪ EMS Auditing Training (HA) ▪ Training Course on Environmental Law, Application to Planning, Design, Construction, Management and Maintenance of Public Housing (HA) ▪ Environmental Aspects of Civil Engineering Works (in house CPD course organized by CED for CEGs and EnvEGs)

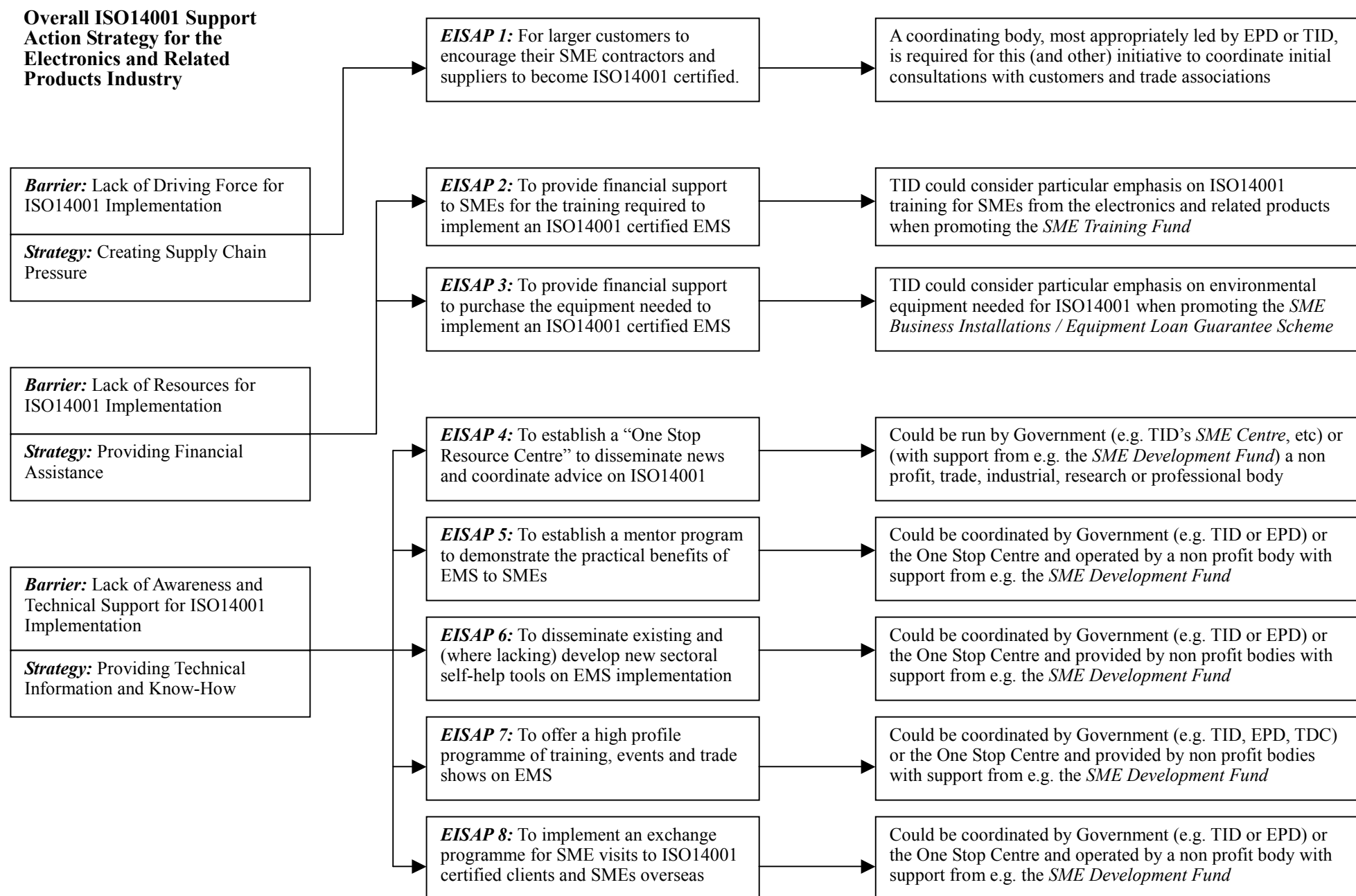
List of Contact: Consturction Sector

Name of Association	Contact Person	Title	Tel	Fax
General & Contruction Related Trade Associations				
The Hong Kong General Chamber of Commerce	Mr. Thinex Shek	Manager - Business Policy	2529 9229	2527 9843
Federation of Hong Kong Industries	The Hon. Henry Tang, JP	Chariman	2732 3188	2721 3494
Hong Kong Small and Medium Enterprises General Association	Mr Chan Shan-ho	Chariman	2390 0438	2789 4700
The Chinese Manufacturers' Association of Hong Kong	Mr Chan Wing-kee	Chariman	2545 6166	2541 4541
Construction Industry Training Authority	Mr. Chan Ka-kui	Chariman	2870 0183	2518 0347
Environmental Contractors Management Association	Mr. Roger. Walker	Chariman	2563 0661	2565 8336
Thr Hong Kong Construction Association Ltd.	Mr. Jimmy Tse	Chariman	2572 4414	2572 7104
The Hong Kong E & M Contractors' Association Ltd.	Mr. John Szeto	Chariman	2574 8646	2574 8633
Hong Kong Institute of Architects - Environmental subgroup	Mr. Ivan Ho	Chariman	2882 2677	2576 7196
ISO 14001 Certified Construction Companies				
China Overseas Building Construction Ltd./China Overseas Foundation Engineering Ltd./China State Construction Engineering Corporation	Mr. Samuel Tsui	/	2823 3634	/
Hip Hing Construction Company Ltd.	Mr. Winston Yeung	/	2525 9251	/
IP Foundation Ltd.	Mr. Mark Divers	QSE Manager	2836 3112	/
Leighton Contractors (Asia) Ltd.	Mr. K.L. Ng	/	2823 1111	/
Maeda Kensetsu Kogyo Kabushiki Kaisha	Mr. Winston Cheung	Quality and Environment	2369 9267	/
Mak Hang Kei (Hong Kong) Construction Ltd.	Mr. Shum	/	8108 4283	/
Skanska International Civil Engineering AB, Hong Kong Branch	Mr. Paul Jarvis	QEHS Deputy	2368 3141	/
Shui On Building Contractors Limited	Mr. Raymond Dai	/	2398 4888	/
Architectural Services Department (ASD)	Mr. Wu	/	2867 3628	/
Anderson Asphalt	Mr. Raymond Wong	/	2649 8222	/
Kin Wing Engineering Company Ltd.	Mr Anthony Cheung	/	2415 6509	/
NGOs				
Business Environment Council Ltd.	Ms. Yvette Chan	Executive Director	2784 3900	2784 6699
Hong Kong Productivity Council	Ms. Jessica Chan	Consultant	2788 6370	2788 5900
ISO 14001 Certified Bodies				
Bureau Veritas Quality International	Mr. Vincent Kong	Lead Assessor	2815 2092	2545 3287
Hong Kong Quality Assurance Agency	Ms. Angela Lock	Business Development Con	2202 9316	2202 9222
BSI Pacific Ltd.	Ms. Yeung	Marketing Officer	2742 5638	2743 8728
Det Norske Veritas	Ms. Kally Lau	Marketing Responsative	2528 9168	2529 5805
Llyod's Register Quality Assurance	Ms. Florence Wong	Public Relationship	2788 5333	2845 2616
TUV Rheinland Hong Kong Ltd.	Ms. Louisa Mak	Marketing Manager	2192 1912	2779 7079
UL International Ltd.	Mr. Ted W. Lee	Coporate Communications	2695 9599	2695 8196
Kema Registered Quality HK Agency	Mr. N. K. Lau		2669 5740	2676 0097
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752
Government				
Finance Bureau	Mr. KK Lam / Ms. Ester Leung	/	2810 2668	2530 5921
TID	Mr Fred Chu	/	2398 5141	2317 4852
TDC	Mr. O. Cheng	/	1830 668	/

Name of Association	Contact Person	Title	Tel	Fax
Consultancy Firms				
TQM Consultants Co Ltd	Mr. Aaron WK Tong	/	2569 2883	2569 0108
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752
Chambers of Commerce				
The Hong Kong Chamber of Small and Medium Business Ltd.	Mr Yung Chan-lung	Chariman	2325 9189	2329 3749
The Hong Kong General Chamber of Commerce	Mr C C Tung	Chariman	2529 9229	2527 9843
The Chninese General Chamber of Commerce	Dr Robin Chan, JP	Chariman	2525 6385	2845 2610
American Chamber of Commerce in HK			2526 0165	
Australian Chamber of Commerce in HK			2522 5054	
British Chamber of Commerce in HK			2824 2211	
Canadian Chamber of Commerce in HK			2110 8700	
Dutch Business Association			2525 6385	
French Chamber of Commerce and Industry in HK			2523 6818	
German Chamber of Commerce, HK				
Hong Kong Junior Chamber			2543 8913	
Indian Chamber of Commerce Hong Kong			2525 0138	
Korean Chamber of Commerce in Hong Kong			2544 1713	
Swedish Chamber of Commerce in Hong Kong			2525 0349	
Training Organizers				
HKIE	Ms. Grace Chan	Officer - Trianing	2895 4446	2577 7791
Scheme A training firm				
Hong Kong Polytechnic University, Civil Engineering Department	Dr. Li	Lecturer	2766 6041	2334 6389

Appendix 4

Proposed Action Plan for the Electronics and Related Products Sector



CREATING SUPPLY CHAIN PRESSURE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>EISAP 1: For larger customers (ISO14001 certified electronics and related product companies) to encourage their SME contractors and suppliers to become ISO14001 certified.</i></p> <p>EPD and TID could initially coordinate:</p> <ul style="list-style-type: none"> • consultations with larger customers to appraise the feasibility of requiring ISO 14001 certification by their suppliers and contractors; and • development and implementation of purchasing policies and requirements, if considered feasible, to require ISO 14001 certification by suppliers and contractors. <p>Requirements for immediate certification to ISO 14001 may not be possible given the low number of SMEs currently certified. Large customers may therefore instead be encouraged to announce a date from which – say in two years time – they intend to purchase electronics and related products only from ISO 14001 certified suppliers.</p> <p>Alternatively, these customers may choose to include marks for evidence of good environmental practice in the evaluation of their tenders.</p> <p>As with all of the <i>EISAP</i> programmes, this initiative must be effectively promoted to raise awareness of the growing supply chain pressures facing electrical and related product SMEs.</p>	<p><i>In Hong Kong:</i></p> <ul style="list-style-type: none"> • Overall, there is no market pressure for ISO 14001 certification in Hong Kong's SMEs in the electronics and related products sector. • In isolated cases, however, large ISO 14001 certified organisations (e.g. Philips) have requested their suppliers to acquire ISO14001 certification by a specified date. <p><i>Overseas Examples:</i></p> <p>Mentoring programmes (described in <i>EISAP56</i>) have successfully been implemented in many countries over the years, through which large customers have exerted pressure on their suppliers to adopt ISO14001.</p>	<p>EPD in conjunction with TID and GSD could initiate invitations to potential key players to discuss this recommendation. These key players include::</p> <ul style="list-style-type: none"> • Large ISO14001 electronics companies (e.g. Advanced Semiconductor Engineering, Betlon Industrial, Carven Circuits, Casio, Compass Technology, Elec & Eltek, Multilayer PCB, Fyrnetic, Group Sense, Hitachi Koki Asia, Hong Yuen, Kalex, Circuit Board, Matsushita Electronic Components, Matsushita Seiko Hong Kong, Multek, Philips, Possehl Besi, Sanyo Energy, Standard Success, Topsearch Printed Circuits, Uniden, Wong's Circuits) • Trade Associations (e.g. HK Electronics Industry Council, HK & Kln Electric Trade Association, HK Electronic Industries Association, HK & Kln Electro-plating Trade Merchants Association, HK Electronic Industry Council, HK Electrical Appliances Manufacturers Association, HK & Kln Electrical Appliances Merchants Association).

PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>EISAP 2: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS.</p> <p>In today's competitive business environment, a knowledge of practical and cost effective solutions to environmental problems is essential. All individuals need to be well versed in their company's legal requirements, customer expectations, and commitment to sustainability.</p>	<p>In Hong Kong:</p> <p>The recently launched <i>SME Training Fund</i> (STF) provides grants for training to SMEs with a view to enhancing their capabilities and competitiveness. For successful applications, the STF covers 50% of the training expenses directly incurred or the balance of the cumulative grant available (\$5,000 for "Employers' Training", or \$10,000 for "Employees' Training") whichever is less.</p> <p>Overseas Examples:</p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Training Fund</i> on training for the development and implementation of an ISO14001 certified EMS in all sectors including the electronics and related products industry. An immediate start should show some results within 12 months. As with all of the <i>EISAP</i> programmes, this initiative must be effectively promoted to raise awareness of the growing supply chain pressures facing electronic and related product SMEs.</p>

PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>EISAP 3: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS.</p> <p>Such grants may generally be required not for the development of an EMS (although pollution control equipment may be necessary to enable legal compliance), but more likely during the ongoing implementation of the EMS (to enable continuous performance improvement).</p>	<p>In Hong Kong:</p> <p>By the provision of Government guarantee, the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> aims to help SMEs secure loans from participating lending institutions (44 at the time of writing) to acquire the installations and equipment (including machinery, tools, computer software and hardware, transport facilities, communication systems, office equipment, etc) needed to enhance productivity and competitiveness. The maximum guarantee offered to each SME is \$1 million or 50% of the approved loan whichever is less.</p> <p>Overseas Examples:</p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> on the environmental protection installations and equipment needed for the implementation of an ISO14001 certified EMS in all sectors including the electronics and related products industry. The provision of grants to SMEs for perhaps 50% of the consultancy and certification costs of ISO14001 (as overseas) could also be investigated.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>EISAP 4: To establish a “One Stop Resource Centre” to disseminate trade specific information and coordinate expert advice on ISO14001.</p> <p>A “One-Stop Resource Centre” is required to increase SME awareness in global ISO14001 trends, supply chain pressures, and case studies of ISO14001 implementation in the electronic and related products industry.</p> <p>Access to free expertise for advice and support to SMEs in EMS implementation would address one of their key concerns – constraints on management time.</p> <p>News Updates should include the environmental requirements imposed by government bureaux and departments, global and local trends in ISO 14001 certification in the electronic and related products industry, pollution control technologies, etc.</p> <p>Access to guidance materials targeted at electronics and related products would provide supplementary EMS information. Guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>As with all of the <i>TISAP</i> programmes, this initiative must be effectively promoted to raise awareness among electronic and related product SMEs.</p>	<p>In Hong Kong:</p> <p>Local environmental literature is available in the TID SME library and website. The ISO 14001 Information Centre and Hot-line operated by HKPC was closed around October 2000. A list of ISO 14001 certified companies is available on EPD’s and HKQAA’s website. However an <i>EMS Manual for the Electronic and Related Products Industry</i> has yet to be identified.</p> <p>At present there is no means by which electronic and related product SMEs can obtain free or low cost expert advice on ISO 14001.</p> <p>Overseas Examples:</p> <p>A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p>Government could provide the One-Stop Resource Centre directly (e.g. through rebranding and expanding TID’s <i>SME Centre</i> or EPD’s <i>Environmental Resource Centres</i>).</p> <p>Alternatively, non-profit-distributing, trade, industrial, research or professional bodies could pursue funding (e.g. from the <i>SME Development Fund</i>) to develop and operate the Centre. Free or subsidised expert advice would be provided by industry and environmental experts recognised by the subsidising body to ensure adequate service. Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>EISAP 5: To establish a mentoring programme for ISO 14001 certified mentors to demonstrate the practical benefits of EMS to SMEs.</p> <p>Detailed planning of the programme would require:</p> <ul style="list-style-type: none"> a coordinator to establish and administer the programme; statement of the programme goals, the target participants and their eligibility and requirements of participation (i.e. to develop an ISO 14001 certified EMS on completion), and the duration (usually 18 months overseas); a database of companies (large mentors and participating SMEs) interested in the mentoring programme; sources of funding for the programme (possibly existing HKSARG funds such as TID's SME Support Fund or charitable organisations); programme implementation such that the SMEs (and mentors) obtain the intended benefits; a framework to obtain feedback and review the success and effectiveness of the programme; and a framework (e.g. advertising, seminars, etc) to promote the programme and its details, deliverables and successes. 	<p>In Hong Kong:</p> <p>No such mentoring programmes were identified in operation at the time of the study. However, NGOs & trade associations have run training on EMS development in the past. For example, HKPC, BEC and CMA had assisted 12 SMEs from manufacturing sector to conduct environmental reviews and running EMS at reasonable cost.</p> <p>Task 3 of this study (local survey results) provides preliminary data upon which a database of interested participants could be built.</p> <p>Overseas Examples:</p> <p>Mentoring programmes have successfully been implemented in many countries over the years. The <i>Guadalajara Environmental Management Pilot</i> programme, <i>GEMP</i>, (Mexico, 1996) was a two-year pilot in which large companies gave EMS mentoring to selected SME suppliers and contractors. SMEs received "step-by-step" training after which they would have 8 to 10 weeks to implement each EMS element. Key players of GEMP were the large mentor companies (providing both funding and supervision); the SMEs; two local universities (providing SME support); management consultants (delivering training); federal, state and local officials of the Mexican Government (as observers); and the World Bank (providing finance and observing programme implementation).</p>	<p>The One-Stop Resource Centre (<i>EISAP 4</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort. Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme.</p> <p>Potential Mentors. Some ISO14001 certified companies have indicated initial interest (Philips, Elec & Eltek, Carven Circuits, Group Sense, Sanyo, Uniden & Epson). Chambers of commerce and trade associations could provide overseas contacts. HKGCC has expressed interest in promoting the scheme and soliciting mentors. Sponsorship could also be solicited (perhaps "in-kind") from mentors.</p> <p>Existing HKSARG funds (e.g. TID's SME Support Fund) could be approached although these are earmarked for other areas (e.g. export marketing). Additional funds could be sought from HKSARG or charitable organisations (e.g. the Jockey Club and Woo Wheelock Green Fund). Sponsorship (perhaps "in-kind") could also be solicited from the mentors.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>EISAP 6: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation.</p> <p>Generic EMS Templates would ease the development of “high level” EMS documentation (such as the manual and management procedures) as well as operation-specific registers and instructions.</p> <p>Other guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>Case studies of success stories (e.g. cost and competitiveness benefits) would further help encourage ISO 14001 adoption by construction sector SMEs.</p> <p>As with all of the EISAP programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p>In Hong Kong:</p> <p>Local environmental literature is held in the TID SME library. Apart from the Industry Department <i>ISO14001 EMS Manual for the Electroplating Industry</i> (produced by HKPC in 2000), most of information is not sector specific. TID’s <i>SME Development Fund</i> (SDF) may be a possible source of funding to establish the materials considered particularly necessary. The following guidance is particularly necessary:</p> <ul style="list-style-type: none"> • generic EMS templates for the electronic and related products sector; • best practice case studies showing success stories, e.g. with cost and competitiveness benefits; • easy-to-use information on relevant legislation, environmental aspects and codes of practice; • cleaner production methods, pollution control equipment and good environmental practices for electronic and related products SME; • directories on EMS consultants, pollution control services and equipment. <p>Overseas Examples:</p> <p>A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p>Potential Key Players:</p> <p>The One-Stop Resource Centre (<i>EISAP 4</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort.</p> <p>Support tools (e.g. software application templates, publications, VCDs, CD-ROMS, directories, training materials, etc) would best be provided in partnership between environmental consultants and trade associations or industry groups.</p> <p>Each player could seek funds, e.g. from the SME Development Fund. Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>EISAP 7: To offer a high profile programme of training, events and trade shows on EMS for electronics SMEs.</i></p> <ul style="list-style-type: none"> relevant trade associations should be encouraged to partner with environmental training providers in providing more frequent free and low cost EMS awareness seminars to their members; trade shows, conferences and forums could be organized in conjunction with site visits to show best practice environmental management practices and protection technologies; existing training providers could revitalize and refocus parts of their programmes to focus specifically on construction sector SMEs, where possible recognized to industry schemes such as continued professional development. <p>As with all of the <i>EISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p><i>In Hong Kong:</i></p> <ul style="list-style-type: none"> A small proportion of trade associations occasionally organise EMS awareness seminars for their members. Numerous consultants, certification bodies, NGOs and academic institutions offer ISO14001 training although these are seldom focussed specifically at SMEs in the electronic and related products sector. These groups also organise international conferences related to environmental management, however these gain are seldom focussed specifically at SMEs in the electronic and related products sector. HKIE's <i>Scheme A</i> programme requires Graduate Engineers to receive minimum 3 CPD days training in "Other Technical Matters" (including the environment). Construction sector specific EMS training courses are provided. <p><i>Overseas Examples:</i></p> <p>Many countries, including the Philippines and Russia, offer large-scale training on ISO 14001 EMS and cleaner technologies to large firms and SMEs.</p>	<p>The One-Stop Resource Centre (<i>EISAP 4</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort.</p> <p>Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme. Government (e.g. TDC, TID) could encourage and partner event organizers to provide more ISO14001 related conference / fora / trade shows, or include EMS in their existing ones.</p> <p>SMEs themselves should take advantage of the SME Training Fund (see <i>CISAP 3</i>).</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>EISAP 8: To implement a professional exchange programme for SMEs to visit overseas ISO14001 certified electronic sector clients and SMEs.</i></p> <p>This would enable Hong Kong's SMEs to acquire hands-on experience of the benefits of EMS implementation overseas, and share experience and on cleaner production and continual performance improvement. Detailed planning would require:</p> <ul style="list-style-type: none"> a coordinator to establish and administer the programme; statement of the programme goals, the target participants and their eligibility and requirements of participation (i.e. to develop an ISO14001 certified EMS on completion), and the duration (usually 18 months overseas); a database of companies (overseas case studies and participating SMEs) interested in the exchange programme; sources of funding for the programme (possibly existing HKSARG funds such as TID's SME Support Fund or charitable organisations); programme implementation such that the SMEs obtain the intended benefits; a framework to obtain feedback and review the success and effectiveness of the programme; and a framework (e.g. advertising, seminars, etc) to promote the programme and its details, deliverables and successes. 	<p><i>In Hong Kong:</i></p> <p>No such exchange programmes were identified in operation at the time of the study. However, trade associations and NGOs have run similar programmes in the past (e.g. on pollution control in manufacturing). <i>Task 3</i> of this study (local survey results) provides preliminary data upon which a database of interested participants could be built. TID's <i>SME Development Fund</i> (SDF) may be a possible source of funding for a non-profit-distributing, trade, industrial, professional or research organisation to establish such a programme.</p> <p><i>Overseas Examples:</i></p> <p>Numerous examples include regional training workshops on <i>Cost Effective Strategies for Cleaner Production in the Electronics and Computer Industry</i> conducted by the Asia Pacific Economic Cooperation, National Science and technology Board (Taipei), Environmental Technology Institute (Singapore), United States Environmental Training Institute and the United States Environmental Protection Agency. These workshops assembled companies from around Asia to learn about EMS and see its first hand implementation by local manufacturers (in Singapore, Taipei, etc).</p>	<p>The One-Stop Resource Centre (<i>EISAP 4</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage in where needed and avoid duplication of effort. Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme.</p> <p>Collaboration with chambers of commerce and trade associations will be vital in providing the necessary contacts with overseas counterparts. Some (e.g. HKGCC) have expressed interest in promoting the scheme to their members. Sponsorship could also be solicited from overseas (e.g. APEC, the EU) where support for exchanges is keen.</p>

List of Contact: Electronics and Related Products Sector

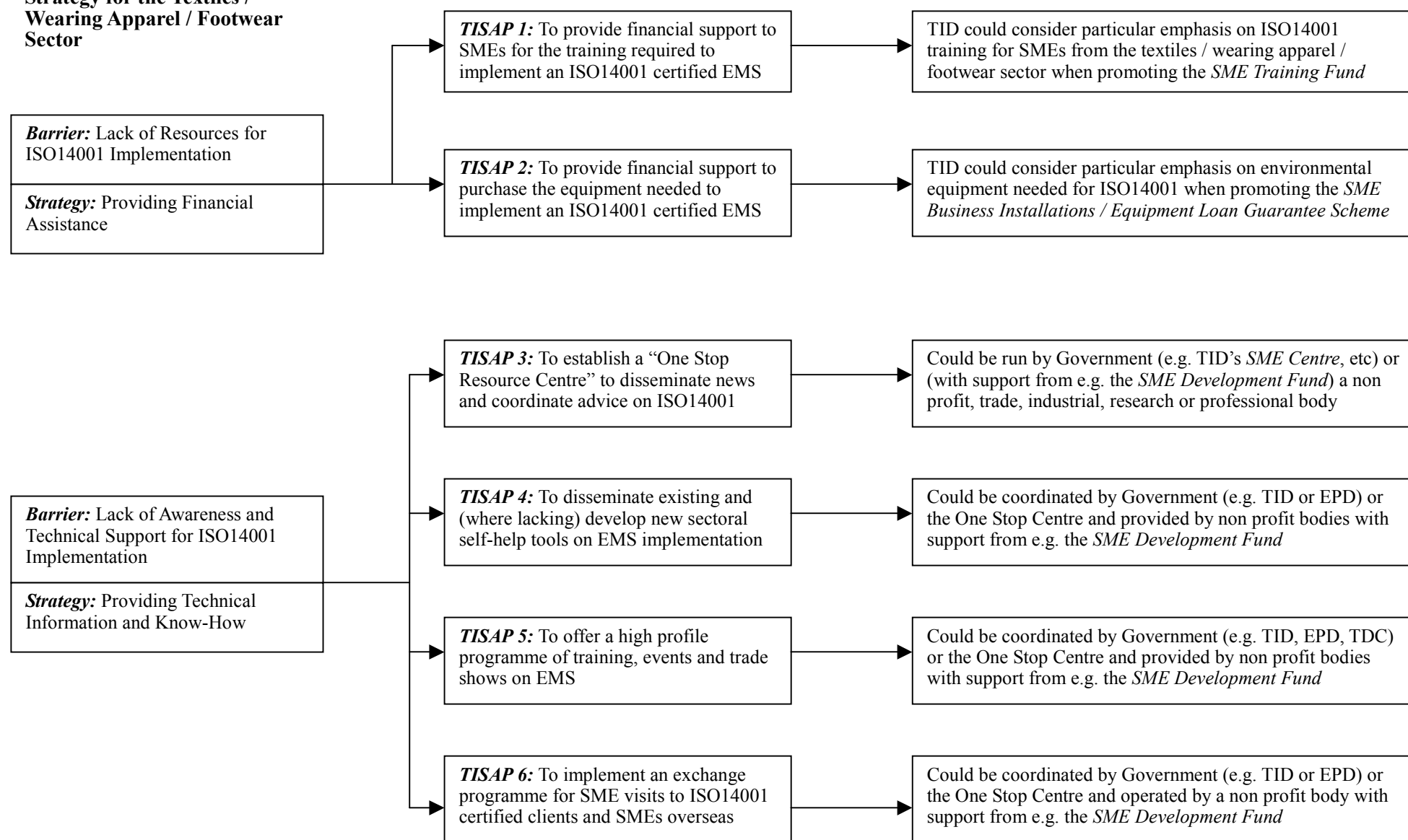
Name of Association	Contact Person	Title	Tel	Fax
Electronics Related Trade Associations				
The Hong Kong General Chamber of Commerce	Mr. Thinex Shek	Manager - Business Policy	2529 9229	2527 9843
Federation of Hong Kong Industries	The Hon. Henry Tang, JP	Chariman	2732 3188	2721 3494
Hong Kong Small and Medium Enterprises General Association	Mr Chan Shan-ho	Chariman	2390 0438	2789 4700
The Chinese Manufacturers' Association of Hong Kong	Mr Chan Wing-kee	Chariman	2545 6166	2541 4541
Hong Kong Electrical Appliances Manufacturers Association Ltd.	Mr. Roy Chung	Chariman	2788 5058	2788 5543
Hong Kong Electronics Industry Council	Mr. Victor. Lo	Chariman	2732 3188	2721 3494
Hong Kong Plastic Machinery Association Ltd.	Mr. Lau Hon Kwong	Chariman	2788 5544	2788 5543
Hong Kong Sewing Machine Association Ltd.	Mr. Cheng Wing-hing	Chariman	2393 3396	2397 2825
Hong Kong Watch & Clock Council	Mr. Eddie Leung	Chairman	2732 3188	2721 3494
The Hong Kong Electronic Industries Association	Mr. Samson Tam	Chariman	27788328	27782200
ISO 14001 Certified Electronic Companies				
Elec & Eltek Company Ltd.	Mr. Alvin Tang	/	2765 3871	/
Matsushita Electronic Components (Hong Kong) Company Limited	Mr. Cheung	/	2462 5222	/
Antonio Precise Products Manufactory Ltd./Sun Fat Electronics & Plastics Factory/Sun Fat Industrial	Mr. Nixon Leung	/	2952 7641	/
Carven Circuits Ltd.	Mr. Thomas Lau	/	2790 3023	/
Group Sense (International) Ltd.	Mr. Eva Chan	/	2832 8216	/
Hitachi Koki Asia Company Ltd.	Mr. K.C. Yiu	Environmental Management Rep	2437 9896	/
Hong Yuen Electronics Ltd.	Ms. Melinda Chan	/	2363 9241	/
Possehl Besi Electronics Hong Kong Ltd.	Ms. Connie Lau	/	2412 0778	/
Sanyo Energy (Hong Kong) Company Ltd.	Mr. M. Choi	/	2943 5511	/
Uniden Hong Kong Ltd.	Ms. Oscar Li	/	2315 0113	/
Epson Precision (Hong Kong) Ltd./Seiko Epson Corporation (Hong Kong) Branch	Mr. William M.P. Tsang	Admin&Personnel (EMS rep)	2489 4382	/
DB Products Ltd.	Mr. Jeffrey Hui	/	2116 3393	/
NGOs				
Business Environment Council Ltd.	Ms. Yvette Chan	Executive Director	2784 3900	2784 6699
Hong Kong Productivity Council	Ms. Jessica Chan	Consultant	2788 6370	2788 5900
ISO 14001 Certified Bodies				
Bureau Veritas Quality International	Mr. Vincent Kong	Lead Assessor	2815 2092	2545 3287
Hong Kong Quality Assurance Agency	Ms. Angela Lock	Business Development Controller	2202 9316	2202 9222
BSI Pacific Ltd.	Ms. Yeung	Marketing Officer	2742 5638	2743 8728
Det Norske Veritas	Ms. Kally Lau	Marketing Responsative	2528 9168	2529 5805
Llyod's Register Quality Assurance	Ms. Florence Wong	Public Relationship	2788 5333	2845 2616
TUV Rheinland Hong Kong Ltd.	Ms. Louisa Mak	Marketing Manager	2192 1912	2779 7079
UL International Ltd.	Mr. Ted W. Lee	Coporate Communications Manager	2695 9599	2695 8196
Kema Registered Quality HK Agency	Mr. N. K. Lau	/	2669 5740	2676 0097
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752

Name of Association	Contact Person	Title	Tel	Fax
Government				
Finance Bureau	Mr. KK Lam / Ms. Ester Leung	/	2810 2668	2530 5921
TID	Mr Fred Chu	/	2398 5141	2317 4852
TDC	Mr. O. Cheng	/	1830 668	/
EPD				
Consultancy Firms				
TQM Consultants Co Ltd	Mr. Aaron WK Tong	/	2569 2883	2569 0108
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752
Chambers of Commerce				
The Hong Kong Chamber of Small and Medium Business Ltd.	Mr Yung Chan-lung	Chariman	2325 9189	2329 3749
The Hong Kong General Chamber of Commerce	Mr C C Tung	Chariman	2529 9229	2527 9843
The Chinese General Chamber of Commerce	Dr Robin Chan, JP	Chariman	2525 6385	2845 2610
American Chamber of Commerce in HK			2526 0165	
Australian Chamber of Commerce in HK			2522 5054	
British Chamber of Commerce in HK			2824 2211	
Canadian Chamber of Commerce in HK			2110 8700	
Dutch Business Association			2525 6385	
French Chamber of Commerce and Industry in HK			2523 6818	
German Chamber of Commerce, HK				
Hong Kong Junior Chamber			2543 8913	
Indian Chamber of Commerce Hong Kong			2525 0138	
Korean Chamber of Commerce in Hong Kong			2544 1713	
Swedish Chamber of Commerce in Hong Kong			2525 0349	
Training Organizers / Providers				
HKIE	Ms. Grace Chan	Officer - Trianing	2895 4446	2577 7791

Appendix 5

Proposed Action Plan for the Textiles/Wearing Apparel/Footwear Sector

**Overall ISO14001 Support
Strategy for the Textiles /
Wearing Apparel / Footwear
Sector**



PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>TISAP 1: To provide financial support to SMEs for the training required to develop and implement an ISO14001 certified EMS.</i></p> <p>In today's competitive business environment, a knowledge of practical and cost effective solutions to environmental problems is essential. All individuals need to be well versed in their company's legal requirements, customer expectations, and commitment to sustainability.</p>	<p><i>In Hong Kong:</i></p> <p>The recently launched <i>SME Training Fund</i> (STF) provides grants for training to SMEs with a view to enhancing their capabilities and competitiveness. For successful applications, the STF covers 50% of the training expenses directly incurred or the balance of the cumulative grant available (\$5,000 for "Employers' Training", or \$10,000 for "Employees' Training") whichever is less.</p> <p><i>Overseas Examples:</i></p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Training Fund</i> on training for the development and implementation of an ISO14001 certified EMS in all sectors including the textiles / wearing apparel / footwear industry. An immediate start should show some results within 12 months. As with all of the <i>TISAP</i> programmes, this initiative must be effectively promoted to raise awareness of the growing supply chain pressures facing textiles / wearing apparel / footwear SMEs.</p>

PROVIDING FINANCIAL ASSISTANCE		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>TISAP 2: To provide financial support to SMEs for the purchase of the equipment needed for the implementation of an ISO14001 certified EMS.</i></p> <p>Such grants may generally be required not for the development of an EMS (although pollution control equipment may be necessary to enable legal compliance), but more likely during the ongoing implementation of the EMS (to enable continuous performance improvement).</p>	<p><i>In Hong Kong:</i></p> <p>By the provision of Government guarantee, the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> aims to help SMEs secure loans from participating lending institutions (44 at the time of writing) to acquire the installations and equipment (including machinery, tools, computer software and hardware, transport facilities, communication systems, office equipment, etc) needed to enhance productivity and competitiveness. The maximum guarantee offered to each SME is \$1 million or 50% of the approved loan whichever is less.</p> <p><i>Overseas Examples:</i></p> <p>Japan, Belgium, Singapore, Pakistan, Ireland and others reimburse 50 to 70% of ISO14001 consultant and certification costs to SMEs (see http://www.inem.org)</p>	<p>TID could consider placing particular emphasis of the <i>SME Business Installations & Equipment Loan Guarantee Scheme</i> on the environmental protection installations and equipment needed for the implementation of an ISO14001 certified EMS in all sectors including the textiles / wearing apparel / footwear industry. The provision of grants to SMEs for perhaps 50% of the consultancy and certification costs of ISO14001 (as overseas) could also be investigated.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>TISAP 3: To establish a “One Stop Resource Centre” to disseminate trade specific information and coordinate expert advice on ISO14001.</i></p> <p>A “One-Stop Resource Centre” is required to increase SME awareness in global ISO14001 trends, supply chain pressures, and case studies of ISO14001 implementation in the textiles / wearing apparel / footwear industry.</p> <p>Access to free expertise for advice and support to SMEs in EMS implementation would address one of their key concerns – constraints on management time.</p> <p>News Updates should include the environmental requirements imposed by government bureaux and departments, global and local trends in ISO 14001 certification in the textiles / wearing apparel / footwear industry, pollution control technologies, etc.</p> <p>Access to guidance materials targeted at electronics and related products would provide supplementary EMS information. Guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>As with all of the <i>TISAP</i> programmes, this initiative must be effectively promoted to raise awareness among electronic and related product SMEs.</p>	<p><i>In Hong Kong:</i></p> <p>Local environmental literature is available in the TID SME library and website. The ISO 14001 Information Centre and Hot-line operated by HKPC was closed around October 2000. A list of ISO 14001 certified companies is available on EPD’s and HKQAA’s website. However an <i>EMS Manual for the Electronic and Related Products Industry</i> has yet to be identified.</p> <p>At present there is no means by which textiles / wearing apparel / footwear SMEs can obtain free or low cost expert advice on ISO 14001.</p> <p><i>Overseas Examples:</i></p> <p>A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p>Government could provide the One-Stop Resource Centre directly (e.g. through rebranding and expanding TID’s <i>SME Centre</i> or EPD’s <i>Environmental Resource Centres</i>).</p> <p>Alternatively, non-profit-distributing, trade, industrial, research or professional bodies could pursue funding (e.g. from the <i>SME Development Fund</i>) to develop and operate the Centre.</p> <p>Free or subsidised expert advice would be provided by industry and environmental experts recognised by the subsidising body to ensure adequate service.</p> <p>Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p><i>TISAP 4: To disseminate existing and (where lacking) develop sector-specific self-help tools on EMS implementation.</i></p> <p>Generic EMS Templates would ease the development of “high level” EMS documentation (such as the manual and management procedures) as well as operation-specific registers and instructions.</p> <p>Other guidance and advice media could include guidebooks, CD-ROM, video, website, database, directory, email and telephone enquiry and site visits.</p> <p>Case studies of success stories (e.g. cost and competitiveness benefits) would further help encourage ISO 14001 adoption by textile / wearing apparel / footwear sector SMEs.</p> <p>As with all of the <i>TISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p><i>In Hong Kong:</i></p> <p>Local environmental literature is held in the TID SME library. Apart from the Industry Department <i>ISO14001 EMS Manual for the Electroplating Industry</i> (produced by HKPC in 2000), most of information is not sector specific. TID’s <i>SME Development Fund</i> (SDF) may be a possible source of funding to establish the materials. The following guidance is particularly necessary:</p> <ul style="list-style-type: none"> • generic EMS templates for the textile / wearing apparel / footwear sector; • best practice case studies showing success stories, e.g. with cost and competitiveness benefits; • easy-to-use information on relevant legislation, environmental aspects and codes of practice; • cleaner production methods, pollution control equipment and good environmental practices for textile / wearing apparel / footwear SME; • directories on EMS consultants, pollution control services and equipment. <p><i>Overseas Examples:</i></p> <p>A network called “Asian ISO 14001 Information Network” is formed to facilitate the exchange of information in Asia. A national Coordinating Committee on ISO 14000 was established in 1996 in Singapore to promote ISO 14001 among local companies and to encourage them to implement EMS and apply for certification.</p>	<p><i>Potential Key Players:</i></p> <p>The One-Stop Resource Centre (<i>TISAP 3</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort.</p> <p>Support tools (e.g. software application templates, publications, VCDs, CD-ROMS, directories, training materials, etc) would best be provided in partnership between environmental consultants and trade associations or industry groups.</p> <p>Each player could seek funds, e.g. from the SME Development Fund. Alternatively, funding could be provided through the One-Stop Resource Centre.</p>

PROVIDING TECHNICAL INFORMATION AND KNOW-HOW		
Proposed Support Action	Existing Mechanisms / Resources	Potential Key Player(s) & Level of Involvement
<p>TISAP 5: To offer a high profile programme of training, events and trade shows on EMS for textiles / wearing apparel / footwear SMEs.</p> <ul style="list-style-type: none"> relevant trade associations should be encouraged to partner with environmental training providers in providing more frequent free and low cost EMS awareness seminars to their members; trade shows, conferences and forums could be organized in conjunction with site visits to show best practice environmental management practices and protection technologies; existing training providers could revitalize and refocus parts of their programmes to focus specifically on construction sector SMEs, where possible recognized to industry schemes such as continued professional development. <p>As with all of the <i>TISAP</i> programmes, this initiative must be effectively promoted to raise awareness among construction sector SMEs.</p>	<p>In Hong Kong:</p> <ul style="list-style-type: none"> A small proportion of trade associations occasionally organise EMS awareness seminars for their members. Numerous consultants, certification bodies, NGOs and academic institutions offer ISO14001 training although these are seldom focussed specifically at SMEs in the the textile / wearing apparel / footwear sector. These groups also organise international conferences related to environmental management, however these gain are seldom focussed specifically at SMEs in the the textile / wearing apparel / footwear sector. <p>Overseas Examples:</p> <p>Many countries, including the Philippines and Russia, offer large-scale training on ISO 14001 EMS and cleaner technologies to large firms and SMEs.</p>	<p>The One-Stop Resource Centre (<i>TISAP 4</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage where needed and avoid duplication of effort.</p> <p>Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme. Government (e.g. TDC, TID) could encourage and partner event organizers to provide more ISO14001 related conference / fora / trade shows, or include EMS in their existing ones.</p> <p>SMEs themselves should take advantage of the SME Training Fund (see <i>TISAPI</i>).</p>

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<p>TISAP 6: To implement a professional exchange programme for SMEs to visit overseas ISO14001 certified textiles / wearing apparel / footwear sector clients and SMEs.</p> <p>This would enable Hong Kong's SMEs to acquire hands-on experience of the benefits of EMS implementation overseas, and share experience and on cleaner production and continual performance improvement. Detailed planning would require:</p> <ul style="list-style-type: none"> a coordinator to establish and administer the programme; statement of the programme goals, the target participants and their eligibility and requirements of participation (i.e. to develop an ISO14001 certified EMS on completion), and the duration (usually 18 months overseas); a database of companies (overseas case studies and participating SMEs) interested in the exchange programme; sources of funding for the programme (possibly existing HKSARG funds such as TID's SME Support Fund or charitable organisations); programme implementation such that the SMEs obtain the intended benefits; a framework to obtain feedback and review the success and effectiveness of the programme; and a framework (e.g. advertising, seminars, etc) to promote the programme and its details, deliverables and successes. 	<p>In Hong Kong:</p> <p>No such exchange programmes were identified in operation at the time of the study. However, trade associations and NGOs have run similar programmes in the past (e.g. on pollution control in manufacturing). Task 3 of this study (local survey results) provides preliminary data upon which a database of interested participants could be built. TID's <i>SME Development Fund</i> (SDF) may be a possible source of funding for a non-profit-distributing, trade, industrial, professional or research organisation to establish such a programme.</p> <p>Overseas Examples:</p> <p>Numerous examples include regional training workshops on <i>Cost Effective Strategies for Cleaner Production in the Electronics and Computer Industry</i> conducted by the Asia Pacific Economic Cooperation, National Science and technology Board (Taipei), Environmental Technology Institute (Singapore), United States Environmental Training Institute and the United States Environmental Protection Agency. These workshops assembled companies from around Asia to learn about EMS and see its first hand implementation by local manufacturers (in Singapore, Taipei, etc).</p>	<p>The One-Stop Resource Centre (<i>TISAP 3</i>) or Government (through TID or EPD) would coordinate the provision of the programme to ensure coverage in where needed and avoid duplication of effort. Non-profit-distributing, trade, industrial, research and professional organisations could pursue funding (e.g. from the <i>SME Development Fund</i>) to establish the programme.</p> <p>Collaboration with chambers of commerce and trade associations will be vital in providing the necessary contacts with overseas counterparts. Some (e.g. HKGCC) have expressed interest in promoting the scheme to their members. Sponsorship could also be solicited from overseas (e.g. APEC, the EU) where support for exchanges is keen.</p>

List of Contact: Textiles, Wearing Apparel and Footwear Sector

Name of Association	Contact Person	Title	Tel	Fax
Textiles Related Trade Associations				
The Hong Kong General Chamber of Commerce	Mr. Thinex Shek	Manager - Business Policy	2529 9229	2527 9843
Federation of Hong Kong Industries	The Hon. Henry Tang, JP	Chariman	2732 3188	2721 3494
Hong Kong Small and Medium Enterprises General Association	Mr Chan Shan-ho	Chariman	2390 0438	2789 4700
The Chinese Manufacturers' Association of Hong Kong	Mr Chan Wing-kee	Chariman	2545 6166	2541 4541
Clothing Industry Training Authority	Dr. K. K. Wang	Chariman	2754 4802	2795 0452
Hong Kong Garment Manufacturers Association Ltd.	Dr. Harry Lee	Chariman	2305 2893	2305 2493
Hong Kong Hat Manufacturers Association Ltd.	Mr. Shek Kwok-nam	Chariman	2545 2487	2513 8062
Hong Kong Fur Federation	Mr. Tony Tang	Chariman	2367 4646	2739 0799
The Federation of Hong Kong Garment Manufacturers	Mr. Choi Hin-to	Chariman	27211383	23111062
The Hong Kong General Chamber of Textiles Ltd.	Mr. Yeung Chiu	Chariman	2357 9978	2191 7271
Textile Council of Hong Kong Ltd.	Mr. Chan Wing-Kee	Chariman	2305 2893	2305 2493
The Federation of Hong Kong Cotton Weavers	Mr. Chen Tong-sang	Chariman	2376 2383	2376 2233
The Hong Kong Weaving Mills Association	Mr. Sin Hon-pun	Chariman	2380 2321	2397 4720
Hong Kong Knitwear Exporters & Manufacturers Association Ltd.	Mr. Willy Lin	Chariman	2755 2621	2756 5672
Hong Kong Woollen & Synthetic Knitting Manufacturers' Association Ltd.	Mr. Michael Chan	Chariman	2368 2091	2369 1720
Hong Kong Printers & Dyers Association Ltd.	Mr. Hwang Jen	Chariman	2388 2372	2385 7184
The Hong Kong Association of Textile Bleachers, Dyers, Printers and Finishers Ltd.	Mr. Kwan Kon-wah	Chariman	2305 2893	2305 2493
The Hong Kong Cotton Made-up Goods Manufacturers Association Ltd.	Mr. Sin Hon-pun	Chariman	2390 4648	2397 4720
Hong Kong Chinese Textile Mills Association	Mr. Lee Chung-chiu	Chariman	2777 8236	2788 1836
Textile Council of Hong Kong Ltd.	Mr. John Yung	Executive Director	2305 2893	2305 2493
NGOs				
Business Environment Council Ltd.	Ms. Yvette Chan	Executive Director	2784 3900	2784 6699
Hong Kong Productivity Council	Ms. Jessica Chan	Consultant	2788 6370	2788 5900
ISO 14001 Certified Bodies				
Bureau Veritas Quality International	Mr. Vincent Kong	Lead Assessor	2815 2092	2545 3287
Hong Kong Quality Assurance Agency	Ms. Angela Lock	Business Development Controller	2202 9316	2202 9222
BSI Pacific Ltd.	Ms. Yeung	Marketing Officer	2742 5638	2743 8728
Det Norske Veritas	Ms. Kally Lau	Marketing Responsative	2528 9168	2529 5805
Llyod's Register Quality Assurance	Ms. Florence Wong	Public Relationship	2788 5333	2845 2616
TUV Rheinland Hong Kong Ltd.	Ms. Louisa Mak	Marketing Manager	2192 1912	2779 7079
UL International Ltd.	Mr. Ted W. Lee	Coporate Communications Manager	2695 9599	2695 8196
Kema Registered Quality HK Agency	Mr. N. K. Lau	/	2669 5740	2676 0097
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752
Government				
Finance Bureau	Mr. KK Lam / Ms. Ester Leung	/	2810 2668	2530 5921
TID	Mr Fred Chu	/	2398 5141	2317 4852
TDC	Mr. O. Cheng	/	1830 668	/
Consultancy Firms				
TQM Consultants Co Ltd	Mr. Aaron WK Tong	/	2569 2883	2569 0108
SGS Hong Kong Ltd.	Ms. Pauline Cheung	Marketing Manager	2765 3591	2334 8752
Chambers of Commerce				
The Hong Kong Chamber of Small and Medium Business Ltd.	Mr Yung Chan-lung	Chariman	2325 9189	2329 3749
The Hong Kong General Chamber of Commerce	Mr C C Tung	Chariman	2529 9229	2527 9843
The Chninese General Chamber of Commerce	Dr Robin Chan, JP	Chariman	2525 6385	2845 2610