

Networking to Promote Energy Efficient and Environmentally Sound Technologies in Small and Medium Scale Industries

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ABSTRACT

In Asia, small and medium scale industries (SMIs) account for over 85% of the total number of manufacturing establishments and contribute considerably to economic growth. Generally, they employ old and inefficient technologies leading to high energy consumption and pollution generation, and lack information on Energy Efficient and Environmentally Sound Technologies (E³ST). Though many institutional bodies promote E³ST in SMIs, there appears to be a lack of coordination and interaction among them. Thus, there is a need to mobilize these institutions to enhance their competence to promote E³ST. Such capacity mobilization can be facilitated by regional and national networks, which can easily facilitate sharing of knowledge, expertise, and information/database on energy consumption and environmental regulations that may be useful to other countries. A study to promote E³ST in five Asian countries (China, India, Philippines, Sri Lanka and Vietnam) in five SMI sectors (brick/ceramics, desiccated coconut, foundry, tea, and textile) is currently being carried out under a Regional Research Programme coordinated by the Asian Institute of Technology (AIT). A network of research institutions, industrial associations, industries, government and non-governmental organizations conduct research on energy and pollution related issues, and promote E³ST in the selected SMI sectors. This paper presents the various aspects concerning networking and the ways how regional and national networks could

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promote E³ST in SMI sector. Examples illustrating how network helps in creating awareness, providing capacity enhancement and leading to efficient resource utilization is also described.

INTRODUCTION

Small and Medium scale Industries (SMIs) in Asia play a crucial role in national development by contributing significantly towards Gross Domestic Product and creating employment (ASEAN, 2000). They also provide a seed bed for economic growth and stimulate indigenous entrepreneurship leading to the development of rural and semi urban areas. SMIs account for over 85% of the total number of manufacturing establishments and more than 60% of the total employment. For example, in China 468,000 industrial establishments (over 99%) are registered under the SMI category. In most Asian countries, SMIs account for up to 60 – 70% of the domestic industrial production. In India, the small-scale sector has grown phenomenally during the last three decades, to about 3.12 million units in 1998-99. The production value of small-scale units in 1998-99 was about 5,275 billion rupees (\simeq 117 billion US\$) and the employment in the sector stood at 17.2 million. In 1998-99, the export value of small-scale industries (SSI) was about 495 billion rupees (\simeq 11 billion US\$), which contributes to about 35 per cent of the country's total exports (Annual Report 1999-2000). In Indonesia, 88% of the total enterprises are small-scale businesses and they account for 32% of employment in the manufacturing sector (Jin, and Suh, 1992).

SMIs are mostly individually owned with limited borrowing from banks and usually adopt simple management structure and few administrative activities. The decision-making is usually made by an individual, usually the owner (APO, 1991). SMI definitions vary depending on different criteria such as capital investment, ownership, asset, number of employees, annual turnover/balance sheet, peak load demand, etc. In Thailand, the Industrial Finance Corporation of Thailand (IFCT), the Small Industry Finance Corporation (SIFC) and the Bank of Thailand define SMI which has fixed assets investment of less than 20 million Baht, and Office of the Board of Investment (BOI) define small scale industries with fixed asset less than 10 million Baht and medium scale industries with fixed asset 10-100 million Baht. In China, SMIs are defined according to investment and annual turnover, which should not exceed 5 billion Yuan (600 million US\$) for a medium scale industry. On the other hand, in Sri Lanka, SMIs are based on the investment as well