GOVERNMENT’S ROLES AND MEASURES NEEDED IN CHINA FOR PROMOTING BUILDING ENERGY EFFICIENCY (BEE)

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Abstract
This paper develops a framework to study the Chinese government’s roles in promoting Building Energy Efficiency (BEE). These roles are categorised into five aspects: strategic planner (SP), law & policy maker (PM), economic motivator (EM), fiscal hub (FH) and advocator (A). In terms of these five roles, an international comparative study on specific government BEE measures is performed between China and her developed counterparts; including the UK, Japan, Australia, Canada, and the US. The comparative results are buttressed with statistical analysis from a questionnaire survey undertaken with active building designers in China. To develop overall recommendations, triangulating strategy is used so that the questionnaire’s quantitative method adds to the primarily qualitative comparative study. The overall result shows economic incentives are important but currently lacking for BEE promotion in China. It also highlights that government active interventions, such as setting BEE as legal requirements, are necessary to create an economically viable and efficient situation for BEE promotion in China.

Keywords
Building Energy Efficiency (BEE), China, Government’s roles, measures, comparative study

INTRODUCTION

The building industry has a great influence on the use of resources and the environment (Chan and Lau, 2005; OECD, 2003; Qian et al, 2006; Zhang, 2004). Buildings in the United States account for 39% total energy use, 12% total water consumption, 68% total electricity consumption and 38% carbon dioxide emissions (EPA GB, 2004). While in China, due to its rapid industrialization and urbanization, energy consumption related to building accounts for 44.2% total energy use, the greatest amongst all industries (Tang, 2001, Wu and Liu, 2007), of which over 60% comes directly from fossil fuel combustion. Buildings are responsible for 17% of China’s CO2 emissions. Hence, improving the efficiency of energy use in buildings is recognised as being able to contribute to national objectives, such as improving security of energy supply, enhancing productivity and competitiveness, reducing greenhouse gases and environmental costs. At the international level, energy efficiency promotion is required to mitigate climate change, decrease global warming