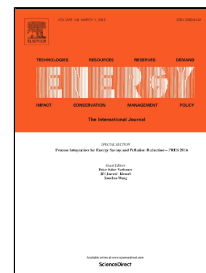


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Defining corporate energy policy and strategy to achieve carbon Emissions reduction Targets via energy MANAGEMENT in non-energy intensive multi-site manufacturing organisations



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DEFINING CORPORATE ENERGY POLICY AND STRATEGY TO ACHIEVE CARBON EMISSIONS REDUCTION TARGETS VIA ENERGY MANAGEMENT IN NON-ENERGY INTENSIVE MULTI-SITE MANUFACTURING ORGANISATIONS

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Abstract

Research on the characteristics of long-term energy policy and associated strategies in multi-site manufacturing organisations is limited. Non-energy intensive multinationals do not face the environmental regulations required by their energy intensive counterparts, leading to missed opportunities and further widening the energy efficiency gap. This work investigates the development of a **long-term energy policy and supporting strategy** to close the energy efficiency gap focused on the inherent barriers found for non-energy intensive multi-site organisations. A systematic literature review identifies the essential components and the associated barriers/drivers to energy management. Highlights include (i) a review of energy policy guidelines and standards, (ii) an analysis of the decision-making practices, (iii) the influence of the non-energy benefits of energy-related investments and (iv) a study of six leading sustainable global organisations to identify best energy management practices. Subsequently, this work proposes a methodology to formulate a ‘corporate energy policy and an associated strategy’ in support of non-energy intensive multi-national manufacturing organisations by focusing on their specific characteristics and barriers. A case study is presented with findings on initial deployment in a Fortune 500 multinational corporation. Finally, conclusions are drawn and future work is proposed.

Keywords: energy policy, energy strategy, energy management, non-energy intensive, multinational, multi-site industry, corporation, carbon emissions, reduction, global energy management system

1 INTRODUCTION

1.1 Carbon emissions and energy management in industry

Carbon emissions reduction are primarily achieved either when imposed by a regulatory framework because of environmental concerns (Almutairi and Elhedhli, 2014), or when the economic and financial benefits associated with reduced emissions are clearly presented and understood by decision makers (Cooremans, 2012; Ouyang and Shen, 2017). Garrone et al. (2017) point out how stakeholders’ and public’s opinion can better relate to the positive effects of carbon emission reductions as opposed to an equivalent impact from resource efficiency. In any case, the most effective way for industry to achieve carbon emissions reduction, is through the implementation of energy efficiency measures, energy management and energy management systems (Costa-Campi, García-Quevedo and Segarra, 2015). In literature, these terms are sometimes used interchangeably, thus a clear definition is provided as follows

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