Environmental Engineering and Management Journal

September 2020, Vol. 19, No. 9, 1631-1644
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

"Gheorghe Asachi" Technical University of Iasi, Romania

CARBON REDUCTION STRATEGIES FOR THE EXPLOSIVE TAKEOFF STAGE OF URBANIZATION IN CHINA

Jiajia Li[1], Hongyun Si[2], Yangyue Su[2*], Xueyan Xu[1]

[1]Hospitality Management School, Shanghai Business School, Shanghai 201400, China
[2]School of Economics and Management, Tongji University, Shanghai 200092, China

Abstract

Focusing on 199 Chinese cities at or above prefectural level, this paper mainly explores the interaction mechanism between urbanization and carbon emissions in China from 2003 to 2016, and evaluates the benefit and cost of different carbon reduction measures. Specifically, an econometric model was established based on simultaneous equations, and estimated by the generalized method of moments (GMM). The results show that: every 1% increase in the urban percentage of population boosts the gross domestic product (GDP) by 0.332%, while elevating the carbon intensity by 0.175%; the key to resolve the contradiction between urbanization and carbon reduction lies in effective control of the economic cost of carbon reduction; the measures like promoting tertiary industry and reducing the proportion of secondary industry should be adopted cautiously; the carbon reduction cost will surge up, if the proportion of secondary industry reduces or that of clean energy rises too fast; in the future, the carbon reduction strategies should focus on the low-carbon development and the transform of economic growth mode.

Keywords: carbon emissions, carbon reduction, simultaneous equations, urbanization

Received: January 2020; Revised final: June, 2020; Accepted: July, 2020; Published in final edited form: September, 2020

[*]Author to whom all correspondence should be addressed: e-mail: 1710260@tongji.edu.cn