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## Editorial

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The Intergovernmental Panel on Climate Change (IPCC) reported that global warming is the main cause of growing environmental disasters, and global warming is very likely caused by increasing greenhouse gas (GHG) emissions. With increasing public awareness, low-carbon development has become the national development strategy in many countries. They have adopted different carbon emissions regulation policies such as strict carbon caps, carbon tax, carbon emissions trade, and carbon offsets. Therefore, nowadays firms especially manufacturing firms have to incorporate these policies into their strategic and operational decisions.

As we know, the carbon emissions from transportation and logistics are very large. According to the International Energy Agency (IEA), transportation accounts for about 25% of total carbon emissions. Therefore, to investigate how to reduce carbon emissions in logistics and transportation is a committed step to achieving low-carbon development.

This special issue aims at collecting recent original works related to low-carbon transportation and logistics. We have selected six papers from more than 250 papers presented at the 2012 International Conference on Low-carbon Transportation and Logistics, and Green Buildings, and other submissions.

The first paper is 'A hybrid genetic algorithm for battery swap stations location and inventory problem' by Yang and Sun. They examine the joint electric vehicles battery swap station location and inventory problem. Integer program models and modified genetic algorithms are proposed to determine the location and battery inventory of battery swap stations with deterministic traffic flow and stochastic traffic flow, respectively. They also conduct numerical experimentation and apply their model to a practical network, which indicate their model and algorithm perform well.

The second paper entitled 'Decision support optimisation models for design of sustainable automated warehouses' by Meneghetti, Borgo and Monti proposes a new decision support tool for designing automated storage and retrieval systems, which relies on a more realistic description of the rack structure in terms of bay configurations and components. The energy consumption of crane movements and its costs and carbon emissions are incorporated into their mathematical models.

Chen and Hu in their paper 'A decision-making mechanism considering carbon footprint and cost to fulfil orders for multi-site global companies' optimise order fulfilment for global companies with multiple manufacturing sites to minimise the carbon footprint and cost. A two-phase decision-making mechanism is proposed to find solutions and a variety of experiments based on real data show that it can obtain feasible solutions effectively and efficiently.

The fourth paper titled 'Determinants of container terminal operation from a green port perspective' by Yang applies the analytic hierarchy process (AHP) and grey relational analysis (GRA) to determine the degree of importance of green container terminal assessment criteria and identify the ranking order of six main commercial ports in Far East, respectively. They find that the ranking order in terms of compliance with the assessment criteria is Singapore > Hong Kong > Tokyo > Shanghai > Busan > Kaohsiung.

Liu, Xie and Qiu in their paper titled 'The impact of carbon emission cap and carbon trade mechanism on the order decision with stochastic demand' examine firms' order

decisions with stochastic demand under the cap-and-trade mechanism. They derive the optimal order decision and compare it with the conventional order quantity. The impacts of the cap-and-trade mechanism on order quantity, total cost, and total revenue, and carbon emissions are also investigated.

In the last paper 'The price-dependent newsvendor models with carbon constraints', Liu, Guan and Zhang incorporate carbon emissions constraints into price-dependent newsvendor models. They determine the newsvendor's optimal order quantity and the optimal selling price simultaneously with carbon emissions tax and the cap-and-trade mechanism, respectively. They also examine the impact of carbon emissions tax, carbon price, and carbon emissions quota on price and inventory decisions, carbon emissions, and profit.