A green production strategies for carbon-sensitive products with a carbon cap policy

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A B S T R A C T

This paper discusses the production strategies used by manufacturers of carbon-sensitive products that have a carbon cap policy under both deterministic demand and stochastic demand. In this study, we examine green manufacturing strategies for carbon-sensitive products under carbon cap policy regulations. We primarily consider the two scenarios of deterministic demand and stochastic demand. When the carbon cap policy regulation has no restriction to the production of the manufacturers, the higher the carbon sensitivity coefficient of the product, the lower the profit of the manufacturing enterprise. When carbon cap policy regulation of manufacturing enterprise production is a constraint, for the deterministic demand, with the higher carbon sensitive coefficient, manufacturing enterprise profit is higher; for stochastic demand, with the increasingly high carbon sensitive coefficient, manufacturing enterprise profit is low. Through the above research, the conclusion of this paper has reference value and guiding role to carbon-sensitive products' green production strategies with a carbon cap policy.

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Zelene proizvodne strategije za ogljično občutljive izdelke z načelom ogljične kapice

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POVZETEK

V pričujočem prispevku razpravljamo o proizvodnih strategijah, ki jih uporabljajo proizvajalci ogljično občutljivih izdelkov, ki so podvrženi determinističnim in stohastičnim zahtevam. V raziskavi smo preizkusili zelene proizvodne strategije za ogljično občutljive izdelke, ki se izdelujejo v skladu z ustreznimi predpisi. Predpostavili smo osnovna dva scenarija, in sicer deterministične ter stohastične zahteve. Ko politika ogljične kapice nima nobenih omejevalnih mehanizmov do proizvodnje v podjetjih se izkaže, da z naraščanjem koeficienta ogljične občutljivosti izdelka, pada tudi dobiček proizvodnim sistemov. Ko pa politika ogljične kapice (v primeru determinističnih zahtev) predstavlja za proizvajalce nekatere omejitve, je v primeru večjega koeficienta ogljične občutljivosti izdelka dobiček podjetij večji; pri stohastičnih zahtevah pa je v primeru visokega koeficienta ogljične občutljivosti izdelka dobiček podjetij nizek. Raziskava lahko služi kot vodilo za zelene proizvodne strategije pri izdelavi ogljično občutljivih izdelkov.