

Allocation of Greenhouse Gas Emissions in Supply Chains

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Abstract: We formulate the greenhouse gas (GHG) emission responsibility problem as a cooperative game, referred to as the GREEN game, and suggest allocations of GHG responsibility among supply chain members. We prove that the GREEN game has a nonempty core and identify some allocations that are extreme core points and are used in practice. We derive an expression for the Shapley value of this game, which has a simple and intuitive interpretation, and provide its three distinct axiomatic characterizations.