

**COOLING THE METROPOLIS: AN ECONOMIC ANALYSIS TO
ALLEVIATE URBAN HEAT ISLAND**

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ABSTRACT. This paper shows the necessary conditions to efficiently produce nongaseous *Gorman-Lancasterian characteristics* embodied in goods, and to optimally emit heat, and trace gases as *gaseous attributes* are combined in the urban atmosphere. Sen's capability approach is used to define personal well-being, since the impacts of urban warming upon each resident affect his/her functionings *à la* Sen. Any inhabitant consumes goods and emits heat and gases in the urban air. It is demonstrated that any inhabitant maximizes his/her *happiness function* by consuming goods and emitting heat and gases in the ambient urban air. This paper introduces heat island integral to represent the magnitude of heat island and an urban warming function. Also, producers and landscape gardeners in the metropolis provide goods or plant trees in metropolitan residents' gardens. A tax-subsidy scheme is proposed to cope with urban heat island, which aims to optimally adjust heat in the urban atmosphere.

Key Words: goods as a complex of Gorman-Lancasterian gaseous and nongaseous attributes, heat as an intangible attribute, heat island integral, urban heat island tax and subsidy scheme, Sen's functionings and happiness function