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Impacts of land use changes from the Hanoi Master Plan 2030 on urban heat islands: Part 2.

Influence of global warming

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Highlights

- We assess urban temperature increase in Hanoi by the 2030s under the influence of global warming.
- The urban temperature is projected to increase along with global warming.
- Global warming will contribute, at most, 71% of the temperature increase in existing urban areas in the 2030s.
- The temperature increase will likely offset cooling effect from any of UHI mitigation measures.

Abstract: Hanoi City, Vietnam, presented the Hanoi Master Plan 2030 in 2011 to cope with rapid population growth and urbanisation. The main objective of this two-part study was to investigate the impacts of land use changes brought by the master plan on urban heat islands in Hanoi by 2030. This paper analyses the contributions of land use changes and global warming to the future increase in urban temperatures in Hanoi by the 2030s. Firstly, numerical simulations using Weather Research and Forecasting (WRF) were conducted for the present land use as well as the land use condition of the master plan under the same weather conditions to detect only the impact of land use changes. Secondly, WRF simulations were conducted for the land use condition of the master plan under the influence of global

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