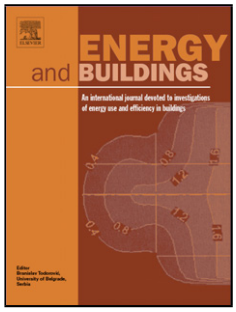

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Highlights

Wind profile ranging from 0 to 1000 m is explored by WRF model.

Performance of WRF model is validated by near-surface data and radiosonde data.

Directional wind power around thousand-meter scale megatall building is assessed.

Electric power of BIWT is corrected due to the air density variation with height.

Annual electric power yield is estimated for thousand-meter scale megatall building.