ENERGY EFFICIENCY

When cities rise, emissions fall

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Cities have a critical role to play in all energy consumption and emissions reduction efforts. Policies devised at the international or national level are often implemented through urban projects. Now, Sangwon Suh and colleagues in the USA, Australia and South Africa estimate that greenhouse gas emissions can be reduced 17% below 2010 levels by 2050 through increased deployment of Bus Rapid Transit (BRT), energy-efficient buildings, district heating and strategic densification projects in cities.

The researchers looked at 84 cities from around the world and used an integrated hybrid lifecycle assessment model to quantify the impacts of aggressively deploying BRT, energy-efficient green buildings and district heating and cooling systems. The demands for these services were estimated based on projected income and population growth for three scenarios: baseline, resource-efficient growth, and resource-efficient growth with densification and decarbonization of electricity. The impact not just on greenhouse gas emissions but land, water and metal consumption was estimated. The researchers found that the deployment of energy-efficient technologies and densification can reduce environmental and resource impacts by 46–66% against the baseline scenario by 2050. This study further quantifies and confirms the significance of urban energy-efficiency projects towards reducing emissions. This shows that living in denser cities in energy-efficient buildings, commuting together and heating and cooling our cities at the district level can potentially help maintain or elevate quality of life in growing cities even as we as a civilization get accustomed to a leaner energy diet.

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