# NAVIGATING THE PATH TO A ZERO-CARBON CITY FOR BETTER TOMORROW

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**Category:** Opinions

Zero Carbon City is a concept where carbon emissions in all forms are reduced and replaced with renewable sources of energy. This concept helps in avoiding harm to the planet and combating the impacts of climate change. Metropolitan areas encompass only 3% of the Earth's landmass, yet they are responsible for over 70% of global carbon emissions. Currently, most of the world population resides in cities, which is around 54 percent, and this is expected to increase in the future. As per the United Nations' findings on climate change, cities utilize over two-thirds of the world's energy and contribute to more than 70% of global carbon dioxide emissions. The notion of achieving net zero carbon is essential for realizing our overarching objectives outlined in the Paris Agreement.

With the goal of countering climate change, more than 1000 cities have pledged to become carbon neutral in 2022. To achieve this goal, there should be transitions in urban planning in all aspects, including energy production, communication, transportation, food, construction materials, waste management, etc. Urbanization raises a variety of problems that tend to jeopardize the environmental sustainability of cities. Approaches should be more focused on green energy, smart energy, integrated renewable solutions, solar design, green structure, and environmentally beneficial policies and strategies. Encouraging the utilization of renewable energy sources such as solar energy, wind power, biomass, geothermal energy, hydropower, and tidal energy through subsidies is essential for their widespread adoption.

Zero carbon buildings are structures designed to minimize energy consumption and ensure

environmental sustainability by reducing fossil fuel emissions. They facilitate direct economic benefits by enhancing energy efficiency and productivity. India, as a developing country, is progressing towards decarbonising buildings through the latest energy conservation building codes, which requires investing more in renewable energy generation for new constructions such as incorporating solar panels in buildings, biobased building materials like concrete made from the wastes of the steel industry, implementing smart systems for energy management, etc. While initial construction costs pose a challenge, modifications in government policies can help overcome this barrier. Subsidies are provided by the government in the form of waivers of Inter State Transmission System (ISTS) charges for inter-state sales of solar and wind power projects, tax reductions for installing solar panels in houses for individual use, and reducing the cost of electric vehicles, electric stoves, smart electric systems, etc. to promote the widespread adaptation of renewable energy sources in building construction, transport, cooking, etc.

Removing the dependence on fossil fuel-based vehicles is another important characteristic of a zero-carbon city. Fossil-derived, petroleum-based products, which include petrol, diesel fuel, and kerosene, emit greenhouse gases. Advanced technologies like electric vehicles are a promising technology for mitigating the adverse effects of climate change in urban areas as well as achieving a sustainable transport sector in the future. Public transit should run more on renewable energy. Incorporating cycle lanes into road planning should be an essential aspect of city development. Paris serves as an example, as it aims to establish 650 kilometers (400 miles) of additional cycle paths with the goal of making the entire city accessible to cyclists by 2026. Inducing cultural change in people to ride bicycles instead of driving can take a long time. Policymakers should try to induce these kinds of behavioural changes. So, all developing countries should also incorporate a similar kind of idea during road planning; they should also allot separate cycle lanes, which encourages the public to make use of cycling. Without providing the necessary facilities, we cannot advocate for health-promoting behaviours. To change the behaviour of the public, first the government policies should change from the root.

We are dependent on fossil fuels for cooking. Globally, 4.6 gigatons of carbon dioxide are emitted from food production alone. In cities, people mainly use LPG gas, which is also derived from fossil fuels and releases carbon dioxide, contributing to indoor air pollution. Even though it releases less carbon dioxide compared to traditional methods using coal, charcoal, wood, etc., it still contributes to air pollution. These polluting cooking practices that release black carbon are the cause of environmental degradation and climate change. The solution to this problem is to transition into clean fuels consisting of gaseous fuels (natural gas, biogas), electricity, and solar energy. Transitioning to renewable-based induction electric stoves can help reduce greenhouse gases to a great extent.

The journey towards a more sustainable future should start in urban cities. We need to prioritize sustainability in built environments. Every nation should develop strategies and policies to decarbonize urban cities. Governments should invest in and promote more clean technologies and

renewable energy sources. Cities are central to the battle against climate change, with the concept of achieving net zero carbon cities representing a crucial part in achieving sustainable urban transitions. So, it's important that we all contribute solutions rather than problems.

COP28 has highlighted the need for transition in urban cities and the need for the world to focus on adaptation. All nations should try to maximize renewable energy capacity, develop strategies like the net zero methane emission strategy, and focus on providing more finance for poor countries to develop renewable energy strategies. We need to commit to new energy systems and make effective use of available science. Thus, to accelerate decarbonization, countries should invest more in clean technologies. Net-zero-carbon cities can make a huge impact in the shortest time frame.

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