How to build a green infrastructure grid

Instead of investing only in metros and highways, spend on smart rail, green transport, climate-resilient water systems, and refurbishing existing infrastructure

After World War II, the United States (US) built a 70,000-kilometre interstate highway network over 30 years, at what now seems a modest cost, in today’s prices, of $500 billion. In China, the astonishing growth in the last decade of the high-speed rail network from zero to about 38,000 km (three times the length of the US network and in a fraction of the time) has had a larger impact on the economy and society. The US interstate highway network is now a network just a little longer than the US interstate system. To add to this, China built 8,000 km of urban metros in about 45 cities and increased hospital beds from 2.7 to 4.3 per thousand. All in this century (starting around when India began its national highway development) and accelerating after the global financial crisis to prop up the economy and achieve a smoother transition from double-digit growth to the current sedate 5% a year, which is still high, given China’s income level.

India’s emphasis on expressways and urban metro rail to underpin its Covid-19 recovery thus seems similar though limited — just tens of billions of dollars a year. But is it compatible with LIFE (lifestyle for environment) as articulated by Prime Minister Narendra Modi at the Glasgow climate meet? Does it take us along the pancharatna (India’s five promises at Glasgow) path — to a green energy-efficient economy?

The obsession with highways has to be passed, in a world moving to electric public transport. Even if it’s about roads clogged with cars powered by renewable electricity, new investments in the highway sector must focus on building fast-charging stations, rather than laying asphalt.

Mumbai airport to Delhi airport is five hours, door-to-door another two. Beijing to Shanghai is a similar distance but takes just over four hours by hi-speed rail. But, even without high-speed rail, there is much to invest in Indian Railways. However, it is not necessarily building new tracks. Instead, signalling must be improved to build smarter, higher-speed rail.

Such investments were not prioritised earlier because decisions were dominated by cadres who preferred to lay new track and electrify lines. Improved signalling will increase track capacity and using dedicated freight corridors and rationalising passenger trains, based on the pandemic experience, we must start time-tabled goods trains. This will remove a major impediment to world-class logistics and should be a priority for the PM Gati Shakti Plan. As a bonus, a 10-hour Mumbai-Delhi trip could attract air passengers back to rail.

In 2019-20, urban metro rail received as much central support as all other urban schemes such as Pradhan Mantri Awas Yojana, National Urban Livelihoods Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart city projects, and Swachh Bharat Mission combined. The recently inaugurated nine-km line in Kanpur, part of a ₹13,000 crore, 24-km project, is a good example of showpiece metros in cities without well-functioning bus services. The city barely has 100 standard public buses. The same investment could have provided a fully electric functional city bus system, supported by electric three-wheelers — to dramatically increase the use of public transport.

But, that needs imagination and ambition — while metros only need imitation.

The goal of an electric road-based public transport system at a cost and convenience that eliminates the desire to use personal transport needs large investment. In recent years, municipal infrastructure has been the largest component of infrastructure investment in China. An Indian technology mission that focuses on electric buses and charging infrastructure in all million-plus cities will boost domestic investment in such technologies, build a future-ready urban transport system and make India a global supplier. Nor are buses indispensable. Kolkata has had an effective network-based autorickshaw system for many years. Such intermediate public transport systems, if electrically powered, can be the backbone of green urban transport in cities. How to build a green infrastructure grid

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Partha Mukhopadhyay is a senior fellow, Centre for Policy Research

The views expressed are personal