



## OUR VIEW



## Who is afraid of India's relations with Russia?

*India's ties with Moscow needn't worry the West, given the role New Delhi can play in pursuit of peace. Indian strategic autonomy, however, would be better assured by economic success*

Barely a year after US President Joe Biden hosted Indian Prime Minister Narendra Modi at the White House to much fanfare, it's the Kremlin now that is courting India's leader in much the same way. US efforts to woo India to its side—or the West—in a world riven by geopolitics may seem to have failed, as both Modi and Russian President Vladimir Putin sang paeans to the two nations' enduring friendship on Tuesday. Sure, misgivings have emerged in the West and Ukraine's leader has expressed concerns. But New Delhi's parallel ties with Moscow aren't something that should make the Western bloc uneasy. With China and Russia in a "no-limits" pact, India can plausibly act as a channel of communication with Russia in an attempt to settle the conflict in Ukraine. New Delhi's geopolitical neutrality could grant it the role of an intermediary trusted by both sides. Although its peace-securing exertions are yet to come good, attempts by other countries' leaders having fallen flat means the West may need to depend on India. Notably, White House spokesperson Karine Jean-Pierre alluded to such an eventuality: "We believe India's longstanding relationship with Russia gives it the ability to urge President Putin to end his brutal war, an unprovoked war in Ukraine." This is an opportunity for a global legacy that India must not let pass, even if it is difficult to pull off.

That said, it's bilateral economic ties that took centre-stage during Modi's Moscow visit. Among the agreements struck, the most prominent is a plan to boost bilateral trade to \$100 billion by 2030. Trade has already leapt up from the \$10 billion level a few years ago. Western sanctions imposed on Russia after its 2022 invasion of Ukraine resulted in Russian oil being

shipped in large volumes at a discount to Indian ports. Turned away by Western buyers, Russia found an eager consumer of its exports in India, which was glad to find an oil-shock absorber that could help keep local inflationary pressures in check. These imports have also helped soften the impact on global oil prices of the war in Europe by reducing Indian demand in the global full-price market. The deal's effect is visible in our trade data. Taken together, our exports to Russia and imports from there jumped to \$65.6 billion in 2023-24, more than six times the pre-pandemic figure. While this makes the target of \$100 billion by 2030 look achievable, there lies a problem in its composition, with the balance of trade tilted heavily in Russia's favour. We ran up a whopping \$57 billion trade deficit with Russia last year. In other words, what we exported was only a small fraction of what we imported. Unless this skew is corrected, scaling up bilateral trade may not prove sustainable. With Russia denied access to global dollar payment systems, this concern assumes even more importance. Rupee or rouble settlements will work only if trade is better balanced. Russia would resist being saddled with a stash of rupees if there's little it can buy with it. Hence, like China, we must ship vast volumes of our products to Russia. For this, India must emerge as a global manufacturing hub.

India's global heft would also be easier to exercise if large markets grow reliant on supplies from here. Economic success arguably makes more space for strategic autonomy than a game of equidistance from geopolitical adversaries. As for the West, it need not worry about India joining an anti-West bloc, given our distrust of China. But a neutral India could yet be its best bet to keep the world order stable.

## THEIR VIEW

## India's response to urban floods needs an indepth study of causes

*Complex water-table interactions under heavy rainfall suggest we need a much broader approach*



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Every monsoon, social media is flooded with video footage of floods all over the National Capital Region (NCR), but the past few days had particularly alarming images. While corruption in public works and climate change have amplified the damage, the underlying problem is more basic.

Some eight years ago, I had argued on these pages that flash floods have long been a feature of life on the Indo-Gangetic floodplains. Archival sources on south Bihar dating back to the 1860s, when India was primarily an agricultural economy, showed that sudden floods during the rainy season were the norm, as the Gangetic riverine network overflowed its banks. These floods, however, receded within days, causing little damage and leaving a layer of fine silt that replenished the soil and enhanced farm productivity. Drought and monsoon failure, rather than floods, were the main worries then.

The origins of waterlogging on the floodplain can be traced to early public developmental works under British rule, such as canals, all-weather roads and railways, that involved construction of embankments that often blocked lines of natural drainage. The problem has been compounded since with large-scale urbanization. The NCR, located on this floodplain, needs just three hours of heavy rainfall to be flooded, and isolated pools of floodwater can stagnate for

days, harming infrastructure, private property and even life. Mumbai, Chennai, Thiruvananthapuram and other Indian cities suffer similarly.

Eight years ago, I was of the view that better drainage could resolve the problem. On further reflection, since, it has dawned on me that it's so complex that flash floods in NCR cannot be prevented, only mitigated and managed.

If NCR were situated on a coast, excess water could drain into the sea. Delhi, however, is on the inland Indo-Gangetic floodplain that's one of the flattest places on earth. Normal rainfall water goes into water harvesting structures that recharge the phreatic/surface water table (natural bodies like rivers, ponds, open-raw wells and other artificial structures). But under incessant and excessive rainfall, this phreatic table gets fully recharged and rises to ground level. This water table differs from the intricate web of deep sub-surface aquifers, from which tube wells draw water and where water has accumulated over millennia. The two tables are linked, but we don't know exactly how.

Once the phreatic water table is fully charged where can the excess water go, especially since river levels are rising and overflowing their banks?

In coastal cities, the answer is clear, as sea-drainage guards against floods provided an adequate drainage system is in place and in good repair under routine maintenance. In floodplains, however, drainage to the sea can only occur over an extended period, since rivers have to cover a long distance to reach their outlet. Flash floods take place on account of this time difference. Once heavy rains cease, the waters subside and recede back into the original river bed.

What then are the possible long-term solutions, assuming drainage systems are well designed, adequate and kept in good repair?

First, more upstream reservoirs (including hydroelectric projects) in the hills, from where the rivers flow down to the floodplain. There are associated

environmental, technical and flooding concerns that need to be addressed, though, while designing these. Reservoirs have indeed been increasing over time, but might be inadequate to prevent flooding downstream as monsoon rains cover the entire Indo-Gangetic plain, and much of the flow into rivers at this time is downstream.

Second, desilt, deepen, revive and increase the area under ponds, wells, lakes and other water harvesting structures where excess water can flow during the monsoon season. These water storage devices would also increase water availability during the long dry season that follows the monsoon and during which there is extensive water shortage, both for drinking purposes and agriculture.

Third, minimize the built-up area under concrete, asphalt, etc. in urban areas so as to increase the recharge of sub-surface water. We need more parks, playgrounds, uncovered sidewalks by roadsides, buildings, etc.

Fourth, the blocked natural lines of drainage need to be de-obstructed while designing and reworking drainage systems so that excess water can flow towards the Yamuna and not accumulate in low-lying areas. Underpasses in particular should be avoided. It is far better to have elevated overpasses.

Fifth, needless to say, drainage systems need to be well maintained and kept in good repair so that they are not clogged with dirt, waste material, plastic, etc. that obstruct the flow of water.

My broad sense is that while such measures would mitigate the problem during monsoon rains, ultimately there is no preventing the water table from rising in the floodplains during the rainy season, as historical evidence cited in the article indicates, and consequential flash floods. Large and dense urban agglomerations like the NCR are fundamentally unsuited to such a vast flat floodplain that is so far from the sea. Urban planners and architects need to take seasonal flooding into account.

## 10 YEARS AGO



## JUST A THOUGHT

Like air pollution, flood risk is a threat that government should be protecting us against.

BARRY GARDINER

## THEIR VIEW

## Relieve solar panels of tariffs and see them proliferate

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Most people would now agree, given the recent heat wave in India and around the world, that climate control is high on every country's agenda. Though it was hardly raised in India's recent elections, this probably indicates that there are no serious political differences on this issue. In fact, India announced its commitment to achieve net-zero emissions by 2070 at CoP-26 in November 2021. Additionally, India aims to reduce its emission-intensity by 45% below 2005 levels and increase non-fossil power capacity to 50% by 2030, as part of its August 2022 Nationally Determined Contribution (NDC) update. As the same government continues in India, it is likely that these commitments will continue to occupy prominence in policy pronouncements. While tackling climate change (to reduce greenhouse gases and carbon intensity) involves a host of measures that include reduced vehicular emissions, less use of fossil fuels, etc. one area in need of greater policy attention is rooftop solar power as an

alternative to traditional sources of power. In India, most power is from fossil fuels.

To meet emission reduction targets, increasing rooftop solar capacity is crucial. However, India's installation of solar panels lags the national target of achieving 40 gigawatts (GW) of it by 2022, with only 7.3GW achieved by 30 November 2022 (official data). Recognizing the vital role that rooftop panels play, Prime Minister Narendra Modi launched the PM Suryaodaya Yojana on 22 January this year to support rooftop solar panel installations for households consuming less than 300 units of electricity per month.

The PM highlighted India's significant rooftop potential in the context of the 2070 net-zero goal. As the green-energy sector continues to grow, Modi has expressed his belief that both investors and industry will benefit. In the past, Union budgets have often been used to provide incentives for climate-control measures. However, the Budget for 2024-25 is expected to go further on India's climate commitments. Thankfully, there is a way to boost the adoption of rooftop solar power without major financial commitments or loss of government revenues. This is because it can help households lower their power bills.

**Cheaper rooftop solar panel installations:** Apart from a battery, solar panels require lithium wafers (almost solely made by China), solar cells and the final element, solar modules. Solar cells and modules are crucial components. However, since April 2022, India has imposed a 40% customs duty on solar modules and a 25% duty on solar cells (with some country/firm specific exemptions), despite the country's limited domestic production capacity.

The social (and private) benefits of eliminating customs duties on solar panel inputs like cells and modules can be calculated. To calculate its benefit in terms of saving on electricity usage expenditure by households (the consumer surplus), we first identified the levelized cost of electricity (LCOE) for rooftop solar power. The 'levelized cost' is calculated assuming tariff-free imports of solar cells and modules, and is found to range between ₹3 per kilo Watt hour (kWh) and ₹5 per kWh, based on research findings. Next, we obtained the average electricity

tariff rates from the Niti Aayog's India Climate and Energy Dashboard. These rates were ₹6.74 per kWh nationally and ₹9.36 per kWh in Delhi. We then calculated the electricity-bill expenditure savings for households by subtracting the LCOE of rooftop systems from the average electricity tariffs.

This difference represents the financial benefit per kWh of electricity generated by rooftop solar installations.

We obtained India's total consumer surplus by multiplying this difference with the projected total solar energy generation capacity. Our calculations show a consumer surplus of ₹96,000 crore if the 2026 target of 40GW is achieved. If India's full residential rooftop solar potential of 637GW (according to CEEW 2022) is achieved, it would result in a far larger consumer surplus of ₹15.2 trillion nationally and ₹75,000 crore in Delhi alone. This assumes that the consumer pays the full cost of installing and maintaining rooftop solar panels. So these savings could be even

higher if the government subsidizes installation costs, as is the current practice.

In 2022-23, the government collected ₹2,160 crore in duty charges on imported solar modules meant for 2.6GW of power capacity. If India were to import solar modules for 637GW of capacity to fulfil its entire residential rooftop potential, the duty collected would still amount to just ₹5.2 trillion. This is far less than the aggregate energy cost benefit of ₹15.2 trillion. Even if we assume that only 25% of the full potential will be fulfilled, the realizable gains would be large enough to justify ending import duties on key inputs for solar installations.

Given that sunlight, the planet's ultimate power source, is free, what consumers could save from rooftop panels (even as they contribute to carbon-exhaust reduction) far outweighs the loss from reduced import duties on solar modules. Reducing duties on solar modules and cells would lower costs for domestic assemblers and decrease the final price of solar panels in India, thereby encouraging wider adoption of solar energy. At the very least, the forthcoming budget should start phasing out duties on imported cells and modules over the next few years to better enable everyone to work towards India's climate commitments.