TAKSHASHILA INSTITUTION

Geopolitics of Bengaluru's Yellow Metro Line

Tannmay Kumarr Baid, Pranay Kotasthane

Takshashila Discussion Document 2025-18.
Version 1.0, September 2025.

Recommended Citation:
Tannmay Kumarr Baid, Pranay Kotasthane, ``Geopolitics of Bengaluru's Yellow Metro Line'', Takshashila Discussion Document 2025-18., Version 1.0, September 2025., The Takshashila Institution

Contents

1 Executive Summary

Even after its inauguration, Bengaluru's long-awaited Yellow Line faces lengthy wait-times and overcrowding due to an acute shortage of train-sets. Despite the full completion of civil works, the line is operating at only one-fifth of its capacity with just three of the planned fifteen train sets. The reason for this hampered launch stems from a series of policy decisions and geopolitical tensions.

The contract for the train sets was awarded to a Chinese state-owned firm, CRRC, in 2019 as it was the lowest bidder. However, the Galwan clash in 2020 led the Union government to impose strict regulations on Chinese companies. These regulations effectively stalled the project, preventing CRRC from setting up its local manufacturing plant and securing necessary clearances for imported parts and personnel. The resulting delay caused CRRC to enter a new joint-venture with an Indian partner. In the end, the project's timeline was extended by over four years, leading to a cost increase of 32%, or approximately ₹1,866 crore. This far exceeded the initial savings of ₹410 crore from choosing the Chinese bidder.

This experience showcases the pitfalls of an inconsistent procurement policy. Selecting a Chinese supplier for cost savings, followed by a mid-course reversal due to geopolitical factors ultimately hurt Indian commuters and finances. Future infrastructure projects should either commit fully to a chosen supplier, managing geopolitical risks proactively, or adopt a modified Quality-cum-Cost Based Selection (QCBS) that explicitly accounts for long-term strategic and geopolitical factors beyond just the lowest bid.

The authors are researchers working with the High-Tech Geopolitics Programme at the Takshashila Institution.

The authors would like to express their sincere gratitude to Amit Kumar and Shambhavi Naik for reviewing this paper.

2 Introduction

Bengaluru, India's famed IT hub, is currently the world's fastest developing city and has seen explosive population growth over the past two decades.[1] Today, the city is home to more than fourteen million residents and has recently overtaken Delhi to become the city with the highest number of private vehicles (2.3 million).[2] All these factors have given Bengaluru a reputation for chronic traffic congestion. This has made the need for an efficient, large-scale public transportation system more pressing than ever. Anticipating these mobility challenges, the state government and the Union Ministry of Housing and Urban Affairs launched Namma Metro in 2006 with the aim of making it the backbone of mass transit for the city.[3]

Bengaluru loses about ₹20,000 crore annually due to traffic congestion, due to delays and lost productivity.

The metro became operational in 2011 with the launch of the east-west Purple Line, followed in 2015 by the north-south Green Line. Together, these two corridors now stretch over forty kilometres of elevated track and carry on average 750,000 riders everyday.[4] Despite this, large parts of the rapidly growing city remain out of the network's reach.

To remedy this, Phase 2 of Namma Metro was approved in 2014.

This phase planned to extend the existing corridors and add three new ones: Yellow, Pink and Blue. The Yellow Line is the first of these new corridors to become operational. Running 19 kilometres from RV Road in the central city to Bommasandra (an industrial zone), the line links several major employment clusters, including the Electronic City SEZ, and offers an interchange with the Green Line at RV Road. Once the full fleet of fifteen six-coach train sets is available, planners expect the Yellow Line to shift more than two hundred thousand daily trips off Hosur Road, which is among the most congested urban highways in India.

Civil construction for the Yellow Line began in mid-2017 and progressed without major setbacks. By late 2023 the viaducts, stations, tracks, power supply and signalling systems were complete. Rolling stock, however, remained unavailable. The train contract, awarded in December 2019, became entangled in national-security restrictions and pandemic disruptions, delaying manufacturing and delivery. When the line finally opened to the public in August 2025 it did so with only three train sets, one-fifth of the planned fleet. Trains arrive every twenty-five minutes instead of the intended five, limiting daily ridership to roughly thirty thousand and leaving stations overcrowded.

The Yellow Line thus illustrates how an otherwise well-executed infrastructure project can falter when procurement choices are misaligned with broader geopolitical realities. The following sections trace the origins of the delay, quantify its financial and social costs, and draw lessons for future metro projects in Bengaluru and other Indian cities.

3 Timeline of Development

3.1 2019 – Chinese bid wins on cost

In December 2019, BMRCL awarded a ₹1,578 crore contract to CRRC Nanjing Puzhen, a Chinese state-owned rolling stock manufacturer. The contract was for 36 train sets (216 coaches total). As per a MoneyControl report, BMRCL followed the government's standard L1 procurement policy, which awards contracts to the lowest bidder that meets basic criteria.[5]

CRRC is the world's largest rolling stock manufacturer. It supplies over 80% of China's domestic high-speed trains, and exports to over 100 countries.

The 36 train sets would be split between lines. Fifteen sets would go to the new Yellow Line. The remaining 21 sets would serve the operational Green and Purple lines, as there were planned extensions to these Phase 1 lines.

CRRC's bid was the cheapest at ₹7.3 crore per coach. This undercut Indian competitor BEML by ₹400 crore total (about ₹2 crore per coach), as BEML had quoted ₹9.2 crore per coach. Other non-Chinese bidders were also expensive: Bombardier at ₹8.3 crore per coach and Alstom at ₹9.5 crore per coach. This was also significantly lower than the price BMRCL had paid a few years ago for purchasing Phase 1 (Green and Purple Line) trains, which had

come out to approximately ₹10 crore per train.

It is interesting to note that similar pricing gaps have appeared in other infrastructure procurements as well. Chinese firms have consistently shown a pattern of bidding significantly lower than their competition. For instance, in June 2020 Shanghai Tunnel Engineering Company (STEC) won the contract for the 5.6-km underground stretch of the Delhi–Meerut Regional Rapid Transit System by quoting ₹1,126 crore, about ₹44 crore (roughly 4 percent) less than Larsen & Toubro's offer.[6] In the same year, a joint venture led by China's CRRC submitted the lowest bid for propulsion equipment for 44 Vande Bharat trainsets.[7] Similarly, outside railway procurement, in July 2020 two subsidiaries of Jiangxi Construction Engineering Corporation came in as the lowest bidders for two packages of the Delhi–Mumbai Expressway.[8]

Along with the cost effectiveness, CRRC also promised an advancement in terms of the technology used in the trainsets. The new trainsets were to have advanced driverless-ready trains with modern electronics, as compared to the partially manual coaches that the Phase-1 lines had used. A contract was signed in February 2020, with CRRC committing to deliver all 216 coaches within 173 weeks (just over three years) and the first train set in 87 weeks. Moreover, a key condition explicitly stated within the contract was "Make in India." At least 75% of the manufacturing was to happen locally, and in line with this, CRRC started planning to manufacture 204 out of the 216 total coaches in India, well above the requirement. To do this, CRRC even acquired 50 acres in Sri City, Andhra Pradesh, to build an Indian factory. [9] The plan for the Yellow Line was to import 12 coaches (2 trainsets) from China and produce the remaining 204 locally (34 trainsets).

3.2 2020 – Geopolitics upend the plan

Just months later, the landscape shifted significantly. In May 2020, a deadly clash between Indian and infiltrating Chinese troops in the Galwan Valley in Ladakh led to a breakdown in India-China relations. One part of the Indian response was strict curbs on Chinese companies. These curbs ranged from banning apps like TikTok to tightening investment and contracting norms for Chinese firms.[10] New Union government orders mandated that fresh security clearances and permissions were required from the union cabinet for any FDI from a firm from a neighboring country.[11] Additionally, a new procurement order by the Ministry of Finance inserted a new Rule 144(xi) in the General Financial Rules on July 23, 2020.[12] This rule stated that bidders from land-border countries must (i) register with a DPIIT committee and (ii) secure both Home and External Affairs security clearances before a contract can be awarded or continued. Ongoing tenders could be cancelled and re-bid if clearances were missing.

Both these orders were applicable retroactively, and therefore CRRC had to face increased regulatory scrutiny to get the permissions required from the Union cabinet to proceed with setting

up their manufacturing in India. They also faced difficulty in obtaining security clearances for components that they were importing from China. These orders put a halt in the land acquisition process for the Sri City factory.[13] The overall political climate also led to their personnel being denied visas to enter India.

By August 2020, the broader signaling was clear when Indian Railways scrapped a tender for forty-four Vande Bharat train sets despite a Chinese-led joint venture being the lowest bidder.[14] Though this cancellation didn't directly affect the Yellow Line contract, it showcased an increasingly unfriendly climate for Chinese firms in Indian infrastructure projects.

The cumulative effect of these restrictions, inability to secure land clearances, visa denials for technical staff and deteriorating political climate made it virtually impossible for CRRC to fulfill its contractual obligations. Additionally, amidst all this came COVID-19, and the fallout from that only compounded problems for CRRC.

3.3 2021 – Contract in limbo

By mid-2021 CRRC had missed every contractual milestone, including the start of its Sri City factory and the shipment of the first twelve China-built trains, so in December 2021 BMRCL issued a formal termination notice citing "persistent default" as their reason. Concurrently, BMRCL moved to encash two performance guarantees together worth ₹372 crore to limit further loss.[15]

CRRC responded by invoking the contract's arbitration clause and filing parallel petitions in the Karnataka and Delhi High Courts to block BMRCL from encashing the ₹372-crore performance guarantees, arguing that COVID-19 restrictions and the new security curbs were force-majeure events. The Karnataka High Court, which had primary jurisdiction because the project is based in Bengaluru, granted an interim stay on the encashment, combined BMRCL's termination notice with the case, and directed both parties to proceed to arbitration while it considered its jurisdiction. A second petition was filed in Delhi because one of the guarantees was payable through a bank branch there; the Delhi bench reserved its order and stated it would rule only after the Karnataka proceedings clarified jurisdiction and the status of arbitration. This legal tussle froze progress for months. By the end of 2021, not a single coach had been delivered, even as the Yellow Line's civil construction was nearing completion.

3.4 2022 - A new workaround

In April 2022 the Karnataka High Court let the contract stand and granted CRRC extra time, while instructing BMRCL to find a new workaround for the production plan. To comply with the Union government's July 2020 Rule 144(xi), which now required registration plus Home and External Affairs security clearance for any supplier

from a land-border country, officials (Gov't and BMRCL) silently pushed CRRC to rope in an Indian partner.

As a result of this, to keep the contract alive, CRRC entered a joint venture with Kolkata-based Titagarh Rail Systems Ltd (TRSL), an Indian rail coach manufacturer, by May 2022. TRSL is a privately owned firm that builds metro coaches and freight wagons for Indian Railways and exports rolling stock to some European countries, like Italy.[16] The idea was to reroute the project through an Indian entity to comply with the tightened rules. Under the revised plan, the 34 trainsets that were initially meant to be manufactured in India by CRRC at its own plant, would now be manufactured at the TRSL plant.

However, this fix brought new challenges. Setting up a production line at TRSL and transferring technology from CRRC was an arduous task. This was because firstly, TRSL had to create a dedicated CBTC-train line (Communications based train control, a technology that TRSL had not previously worked with), qualify new welds and submit fresh drawings for Railway Design & Standards Organisation approval. Secondly, every CRRC-sourced component now needed separate Home and Finance Ministry clearances at Indian ports. This slowed the arrival of critical parts that had to be imported from China, specifically parts for traction inverters, CBTC antennas, etc.

The revised opening goal, commercial service by December 2022, passed with no coach delivered and no prototype cleared for trials. BMRCL conceded that civil works were 95 per cent complete but rolling-stock delays would push operations into 2023.

3.5 2023 – Bottlenecks slowly clear

In early 2023, progress remained slow. Some more crucial train components, such as the Train Control and Management System (TCMS) software from a Japanese supplier, remained stuck in customs awaiting special clearance.[17] These approvals did not come through until late 2023. Additionally, visas for around 15 Chinese engineers were pending for over a year. Without CRRC experts on-site, assembly and testing of the new trains in India were effectively stalled. It was only in December 2023 that the Ministry of Foreign Affairs granted visas to CRRC's technical staff, allowing them to travel to Bengaluru and help get things on track.

By then, all civil works, stations, tracks, electrical systems were complete. The Yellow Line had, at this point, fully ready stations simply waiting for trains. BMRCL explored stopgap ideas like borrowing trains from the older Purple or Green lines, but this was not feasible as the Yellow Line's communications-based CBTC signaling is incompatible with the older trains.

2023 saw little visible progress in operations, though work resumed at Titagarh's factories once foreign engineers and delayed parts started arriving toward year-end. The project had at this point stretched to 8 years since construction began, and nearly 4 years since the train contract was signed.

During this whole period, visas for Chinese engineers and technicians in general as well plummeted quite significantly. It fell from 200,000 approved visas in 2019, to only 2,000 by 2024. Therefore, the visa bottleneck was not endemic to the Yellow Line but also affected over 20 PLI-scheme manufacturing projects, delaying tech transfers and assembly lines by an average of 18 months.

3.6 2024 – First prototype arrives

The first tangible progress came on 14 February 2024, when CRRC's six-coach prototype arrived at the Hebbagodi depot, from Shanghai. Post the arrival of this prototype, BMRCL engineers began a standard 37-item static test programme, which includes car-body checks, traction trials, brake load tests, etc. BMRCL estimated that this testing process would take at least four months before the train could roll onto the main line.

By early July, the depot tests were complete and BMRCL started dynamic signalling trials on the elevated main line. The two-and-a-half-month test script covered CBTC integration, multiple-train simulations and system-stability runs, with managers still publicly aiming for a December 2024 launch if everything stayed on schedule.

In September the Research Design and Standards Organisation began oscillation and emergency-brake trials, a mandatory step before the Railway Board can clear a new train for passenger use. These trials ran smoothly, but full clearance could not be given as without a second train, multi-train tests could not proceed beyond limited scenarios. These multi-train tests were essential to ensure proper functioning at regular traffic on the track, and this could not happen until a second prototype arrived.

3.7 2025 – A partial opening

On January 6, 2025, Titagarh rolled out the first India-assembled train set, which was dispatched to Bengaluru's Hebbagodi depot. A second train set followed, arriving in Bengaluru on February 9, 2025. By May 2025, parts for a third train set (the remaining coaches required to make it a full six-car train) were delivered, bringing the total to three complete train sets available for service.[18]

However, BMRCL did not immediately announce a commencement date even when it had three trains in hand. They first sought the mandatory clearances: an Independent Safety Assessment (ISA) report and then certification from the Commissioner of Metro Rail Safety. The ISA review encountered some technical glitches (minor software issues in the train control systems), which required software updates and retesting, causing a few more weeks of delay. Finally, the ISA clearance was obtained on July 19, 2025, and the safety commissioner's inspection took place at the end of July. On August 1, 2025, the Yellow Line received the safety green light for passenger operations.

The line was formally inaugurated on August 10, 2025, and opened to the public the next day. As noted, the service launched with just 3 trains running 25-minute frequencies, far from the original goal of 5 minute frequencies. BMRCL announced that a fourth train set was "on the way" and due to join service in late 2025, which could cut wait times to about 15–20 minutes. The full fleet of 15 trains

for the Yellow Line is now expected by March 2026, according to BMRCL's revised timeline.[19]

Namma metro saw a record high daily ridership of 1.048 million passengers on the day that the Yellow line was opened to the public.

4 Implications

The project's financial implications are significant. By 2025, the total cost had ballooned to ₹7,610 crore, representing a 32% jump from initial estimates.[20] This translates to an elevated metro line cost of approximately ₹400 crore per kilometre, making it one of the costliest elevated metro lines in India. This figure is noticably higher than the typical cost for similar projects in the country. For example, Kochi Metro's elevated sections were constructed at approximately ₹200 crore per kilometre.[21] This cost overrun directly links to the project's extended timeline and logistical delays, with the final price far exceeding the original budget due to the issues with rolling stock procurement.

A 2024 Ministry of Statistics and Project Implementation MoSPI report found 41.6% of Union government infrastructure projects face delays, with cost overruns averaging 20.7% (₹5 lakh crore total). Rail projects are noticably amongst the worst affected, with an average delay of 52 months.

The eventual cost overrun attributable to the rolling-stock delay is estimated at ₹1,866 crore, while the initial saving from selecting CRRC was only ₹410 crore relative to BEML and ₹216 crore relative to Bombardier. Thus, the delay cost exceeded the original Chinese price advantage by more than eight times.

Other than the monetary costs, the time costs are also real. In effect, the metro line will have taken an extra four and a half years to reach its proper capacity after civil construction was fully complete. Bangalore's citizens, in the meantime, have borne the cost of time: these four years of continued traffic congestion (which could have been avoided) and inconvenience that the metro was meant to alleviate.

This time cost also has a hidden monetary cost on public finance: BMRCL missed 3 years of revenue from the yellow line, and even now, it is only making 1/5th of what it should ideally have been making. Across the rest of Namma Metro the farebox brings in a little over ₹2 crore from roughly 7.6 lakh daily riders, implying an average ticket of about ₹26.[22] Applying that benchmark, every day of restricted Yellow Line service forfeits roughly ₹44 lakh in potential fare revenue, or ₹3 crore each week, a gap the state treasury must presently absorb. This is only a quantification of how much the Yellow line is losing in deferred revenue at its current partial operation stage. The revenues that the State has missed for the three years of complete inoperation are even higher.

4.1 Changes since the Yellow Line

Post-2020, the Indian government and many state agencies became far more cautious about engaging Chinese firms. We can see this shift in several instances:

First, in August 2020, when Indian Railways cancelled a global tender for forty-four Vande Bharat train sets despite a Chinese-led

joint venture being the lowest bidder. Officials stated that the specification would be rewritten to promote domestic manufacturing and to lower dependence on Chinese equipment in light of the border clash that June.

Second, The Delhi Metro Rail Corporation cancelled a tender in May 2020 for twenty-four coaches for the Airport Express line after finding that the sole qualified bidder was a Chinese company. [23] A similar cancellation had already occurred in 2019 for thirty-six coaches, and when a Chinese bid again led a Phase-IV tender in 2021 the order was withdrawn and re-issued with revised conditions designed to attract non-Chinese participants.

Third, BMRCL itself responded directly to its experience with the Yellow Line delays. In August 2023 BMRCL awarded a ₹3,177 crore order to BEML for 318 coaches to serve the Pink and Blue lines.[24] The unit cost is close to ₹10 crore per coach, well above the price earlier quoted by CRRC for the Yellow Line. A loan from the Japan International Cooperation Agency will cover part of the purchase, a financing institution that also favours non-Chinese sourcing. CRRC was not able to bid on this line at all, as Rule 144(xi) of the General Financial Rules which was, as noted previously, inserted post Galwan required all FDI bids from countries sharing a land border with India to go through cabinet approval. CRRC did not get this approval.

5 Policy Lessons

The underlying policy lesson from this saga is clear: critical infrastructure procurement must match long-term strategic posture. China will (inevitably) remain the lowest-cost source for many capital items, at least in the near term. The weighing must therefore be if the price advantage offered by a Chinese supplier is worth the risk posed by geopolitical uncertainties.

If the cost gap is large and the project team decides that working with a Chinese firm is economically rational, then the contract should be signed with the Chinese firm, and the Government (both at a State and Union level) should plan to manage that exposure. That means honouring the contract even if relations deteriorate, providing timely customs and visa clearances, and ring-fencing the project from sanctions that would stall work. National security signalling can still occur through other channels, but restrictions that halt an active infrastructure project largely impose costs on domestic users and taxpayers, not on the foreign supplier.

If the gap is small, the penalty for switching to a non-Chinese source is modest. In such cases paying the premium secures reliability and strategic autonomy. China is likely to remain a geopolitical rival to India because of structural factors such as geography, demography and divergent alliance systems. Even if relations appear workable at the moment a tender is floated, the probability of sudden deterioration is higher than with other trading partners. When that

probability is combined with only a narrow cost advantage, the prudent choice is to award the contract to a supplier that poses fewer future constraints. This stream of logic applies not only to China, but all suppliers from nations with whom India could potentially have geopolitical tensions.

Whatever choice is made must then be stuck by. The Bengaluru case shows the cost of mid-course reversal; you can't have your cake and eat it too. BMRCl selected a Chinese firm to save roughly ₹410 crore but eventually this saving was turned into a net cost as the Union government imposed import controls, denied visas and erected investment barriers that stopped production. The resulting delay raised project costs by more than eight times the original savings and forced commuters to live with half-finished infrastructure for three years. Switching suppliers after contract signature only shifts the price of strategic uncertainty onto the public.

The changed geopolitical dynamics demand that India adopt a more flexible approach to Chinese investment. The entry of Chinese firms cannot be predicated on economic grounds and exits purely on geopolitical grounds. Full exclusion is unnecessary outside a small set of critical infrastructure such as railway signalling. In all other sectors the priority should be to de-risk, not decouple. Chinese suppliers dominate upstream stages of electronics, infrastructure and several mass-manufacturing chains, and their participation can deepen India's export base, lower input costs and create jobs. Cutting them out would slow Indian production and shift costs to Indian firms without meaningfully reducing strategic exposure.

A practical way forward is an investment-review mechanism that matches security sensitivity with graduated checks.[25] Projects in low-risk consumer segments can move through an automatic route. Investments touching defence electronics, core telecom networks or railway signalling would be barred, or subject to conditional approval with appropriate de-risking mechanisms. This balanced screen would let India tap Chinese capital, tooling and talent where they support growth and would still keep Chinese hands out where it could pose a potential security or geopolitical threat. Such a mechanism must also then be largely immune to geopolitical shakeups; once a project passes this filter, reneging mid-way, as illustrated, simply shifts costs to Indian taxpayers. Ex-ante risk screening must be so robust that ex-post reversals are only able to occur under extremely exceptional circumstances.

The second lesson concerns procurement architecture itself. India relies heavily on the L1 system, which awards contracts to the lowest cost offer that meets minimum technical specifications. The L1 approach does not capture qualitative factors such as geopolitical risk, life-cycle performance or technical superiority. A more suitable method for strategic infrastructure is the Quality-cum-Cost Based Selection (QCBS) model. QCBS assigns a composite score to each bid, combining a technical evaluation with the financial

quote according to a pre-announced weight.

The technical score can already accommodate sub-criteria such as past delivery performance, local manufacturing share, intellectual-property transfer, and exposure to political restrictions. Geopolitical and supply-chain risk can therefore be addressed within the existing QCBS framework; the policy recommendation is simply to make these risk criteria explicit and to give them sufficient weight in future metro tenders. In this case, BEML did come back after the initial quotations with a lower bid than their initial ₹9.28 crore, but BMRCL was not able to award them the contract regardless as there was simply no provision to award the contract to the non-L1 seller.

The L1 system has faced sharp criticism from the Central Vigilance Commission (CVC) for overlooking critical aspects like quality, reliability, and long-term performance. L1 is now being used less, in favor of QCBS.

The offers are then opened only for firms that pass a minimum score threshold. The award then goes to the highest composite score, not automatically to the lowest bidder. QCBS is already standard for consultancy and information-technology services in several ministries and government functions, and can and should be more largely adopted across government procurement.

Critics of the QCBS system argue that the subjectivity that it introduces makes corruption easier. As the L1 system is objective, the lowest bidder has to get the contract. However, in the QCBS system, subjective evaluations make it more opaque, and easier to influence.

Endnotes

1. Kaushik, Krishna, and Chris Hay. 2025. "The unsustainable boom in India's Silicon Valley." Financial Times, August 25, 2025. Article

2. The Economic Times. 2024. "Bengaluru, world's second-most congested city, now has the highest number of cars in India, overtakes Delhi." January 13, 2024. Article

3. Ray, Aparajita. 2015. "No end in sight to 10-year wait for Bengaluru Metro." The Times of India, November 2, 2015. Article

4. CS, Yamini. 2024. "Bengaluru's Namma Metro hits record daily average ridership of 7.5 lakh passengers in June: Report." Hindustan Times, August 2, 2024. Article

5. Philip, Christin M. 2023. "MC Explains: Overcrowded Bengaluru Metro coaches: Fallout of Indo-China conflict." Moneycontrol, December 8, 2023. Article

6. Shrivastava, Rahul. 2020. "Chinese firm bids lowest for Delhi-Meerut project, RSS affiliate asks Modi govt to scrap company's bid." India Today, June 16, 2020. Article

7. Sharma, Akhilesh. 2020. "Tender For 44 Vande Bharat Trains Cancelled After Bid From Chinese Joint Venture." NDTV, August 21, 2020. Article

8. Saluja, Nishtha. 2020. "India rejects two Chinese companies bid's on development of Delhi-Mumbai Expressway." July 16, 2020. Article

9. Philip, Christin M. 2020. "Bengaluru: Chinese firm to make new Namma Metro coaches; they may be built in Andhra | Bengaluru News - Times of India." The Times of India, February 20, 2020. Article

10. Shrivastava, Rahul, and Milan Sharma. 2020. "Govt hits out at another Chinese economic interest, cancels railway tender with Chinese contender." India Today, August 22, 2020. Article

11. Ministry of Commerce and Industry, Government of India. n.d. "Press Note 3 (2020 Series)." Document

12. Ministry of Finance, Government of India. 2020. "Press Release:Press Information Bureau." Press Release:Press Information Bureau. Document

13. Jacob, Shine. 2022. "China's CRRC's Sri City mfg unit in limbo, may hit Bengaluru metro plans." Business Standard, February 9, 2022. Article

14. Dutta, Anisha. 2020. "Railways scrap tender for Vande Bharat trains month after getting bids from Chinese JV." Hindustan Times, August 21, 2020. Article

15. Phillip, Christin M. 2022. "Bengaluru: Coach supply delay from Chinese firm may hit Electronics City Metro operations." The Times of India, February 17, 2022. Article

16. Smith, Kevin. 2023. "Trenitalia orders up to 370 sleeping cars." International Railway Journal, August 10, 2023. Article

17. Prasad, Sanath. 2025. "How Bengaluru Metro's Yellow Line finally made it to the finish line after 8-year delay." The Indian Express, August 7, 2025. Article

18. Prasad, Sanath. 2024. "After missing August deadline, Titagarh's first train set for Bengaluru Electronic City corridor expected by January 2025." The Indian Express, December 20, 2024. Article

19. The Economic Times. 2025. "Bengaluru Electronic City Metro: Titagarh Rail Systems to roll out first train set on Monday." January 4, 2025. Article

20. The Economic Times. 2025. "Rs 7610 crore and eight years later: Yellow Line set to ease Bengaluru's techie and commuter crunch; All we know." August 10, 2025. Article

21. Ravi, Rajesh. 2017. "Infrastructure push: Kochi Metro Rail all set to change port city transport system." Financial Express, July 10, 2017. Article

22. Rahman Siddiqui, Muthi U. 2025. "Bengaluru metro fare to rise by 40-45%, BMRCL board approves panel's report." Deccan Herald, January 17, 2025. Article

23. The Metro Rail Guy. 2020. "Delhi Metro Cancels 24 Coach Tender with CRRC as Only Bidder." The Metro Rail Guy, May 16, 2020. Article

24. Deccan Herald. 2023. "Namma Metro, BEML sign 318-coach contract." Deccan Herald, August 20, 2023. Article

25. Kewalramani, Manoj. 2024. "Contours of a New Modus Vivendi with China." In Takshashila Discussion Document. 1.0. The Takshashila Institution. Document

The Takshashila Institution is an independent centre for research and education in public policy. It is a non-partisan, non-profit organisation that advocates the values of freedom, openness, tolerance, pluralism, and responsible citizenship. It seeks to transform India through better public policies, bridging the governance gap by developing better public servants, civil society leaders, professionals, and informed citizens.

Takshashila creates change by connecting good people, to good ideas and good networks. It produces independent policy research in a number of areas of governance, it grooms civic leaders through its online education programmes and engages in public discourse through its publications and digital media.