SECTOR UPDATE

INFRA SCAPE

Metrolution: No signs of abating

India Equity Research | Infrastructure - Construction

Logic would dictate that weakening government finances (over the past year, especially post covid-19) would derail the ongoing metro rail boom in the country (refer to, *Metro Rail - Buckle up for a Metrolution*). Yet, since our report last year: (a) While ~INR225bn contracts in the metro space have been awarded, bids for ~INR230bn contracts are underway. (b) Tendering for new projects/phases in eight cities has commenced. (c) State governments have approved projects worth ~INR465bn across nine cities. (d) Construction has started on new projects/phases in three cities. (e) ~INR360bn loans have been approved/are being evaluated by multi-lateral agencies for projects across seven cities. Thus, the *Metrolution* continues to zoom at a rapid pace. This will significantly benefit L&T, NCC, J Kumar, ITD Cementation, Siemens, ABB and BEML.

Metro juggernaut continues to roll

Despite the stressed fiscal situation of central and state governments, metro rail projects continue to find favour with policy makers. Since our May 2019 thematic report on the metro rail space: (i) **State governments have approved ~INR465bn projects** comprising four projects in new cities and expansion of existing network in five. (ii) Construction has commenced in three cities including brownfield expansion in two. (iii) Funding support from multi-lateral agencies continues (refer to, ***Metro Rail - Metrolution money matters: No problem***) with **~INR360bn loans sanctioned/under evaluation** across seven projects.

Covid-19 fails to derail awarding momentum

In the metro rail space, **contracts worth ~INR225bn have been awarded over the past year** including ~INR140bn civil construction contracts, ~INR60bn pertaining to rolling stock and balance for systems contracts. This includes ~INR28bn worth of projects awarded post February 2020. Covid-19 has not impacted the bidding process much either with **bids for ~INR230bn contracts currently under progress or at L1 stage**. Importantly, **bids for 14 projects worth ~INR90bn have been called since March 2020**, indicating that the pandemic hasn't disrupted bidding activity.

Outlook: Metro revolution firmly on track

Metro systems are either operational, under construction or at bidding stage in 21 cities; in addition, projects have been proposed in multiple other cities. With funding burden spread across central/state governments and multi-lateral agencies, metro projects are well suited to cope with the changed economic environment post covid-19. Hence, short-term issues notwithstanding, we envisage investments in this space to remain robust going ahead. Likely beneficiaries include L&T (**BUY/SO**), NCC (**BUY**), J Kumar (**BUY**) and ITD Cementation (**Not Rated**) in construction; Siemens (**BUY/SO**) and ABB (**HOLD/SP**) for systems contracts; Titagarh Wagons (**BUY**) and BEML (**Not Rated**) for rolling stock work.

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Metrolution Gathers Steam

Metro rail projects proliferating across India

One would think that the weakening credit profile of state governments (which champion metro projects) and central government (which contributes equity support), especially over the last year, would put the brakes on India's metro rail boom. The massive hit to public sector finances post covid-19 should logically act as a dampener for roll out of such projects. However (and almost miraculously), the metro rail juggernaut continues to roll merrily, defying naysayers.

We believe there are two reasons behind the same:

- **Sharing of funding burden**: Metro rail projects are funded by central and state governments along with multi-lateral agencies. Thus, the funding burden is shared across several entities and hence the financial commitment from a single entity is less. Contrast this with sectors like roads, where almost the entire burden is borne by the NHAI.
- **Involvement of multi-lateral agencies**: With multi-lateral agencies involved, the wriggle room for local governments to terminate/defer projects is lower once the funding agreement has been tied up. With a sovereign guarantee involved (as far as debt repayment is concerned), the seriousness towards development of projects is far higher compared to projects in other sectors, which are solely funded by central/state governments. In those cases, governments have a far greater degree of leeway as far as the pace of project development is concerned.

Metro rail rollout in any city involves a number of steps. The pace of metro expansion in the country during a period can be judged by looking at the progress achieved on each of these milestones. The steps include:

- Approval from state government, followed by that from central government.
- Tying up of debt funding from multi-lateral agencies.
- Preparatory activities like appointment of consultants for project management, design, etc.
- Start of bidding process.
- Awarding of projects.
- Start of construction.

Evaluation of these parameters across various cities over the past year indicates steady progress on every front. In the ensuing sections, we will summarise major developments in each of these milestones across various cities to analyse the ever expanding footprint of the metro ecosystem in India.

Government Support Continues

Since the start of FY20, central/state governments have approved metro projects in nine cities worth ~INR460bn. These include four projects in new cities and expansion of existing network in five cities.

Table 1: Metro rail projects approved since FY20 start

City	Project	Length (km)	Cost (INR bn)	Status
Brownfield expansion				
Delhi	Delhi Metrolite (Kirti Nagar – Dwarka Sector 25 corridor)	19	27	Approved by DMRC and Ministry of Urban Affairs, state government approval pending
Mumbai	Line 10, 11 and 12	40	191	State government approval received
Gurugram	Phase III	31	51	State government approval received
Noida-Greater Noida	Line 1 extension	15	27	State government approval received
Pune	Swargate-Katraj	5	42	State government has sanctioned funds
Sub-total		**111**	**338**	
Greenfield projects				
Nashik	Metro Neo (Line 1 and 2)	33	21	State government approval received
Dehradun-Rishikesh-Haridwar	Line 1 and 2	73	NA	Unified Metropolitan Transport Authority (UMTA) approval received
Jammu	Phase I	23	48	State government approval received
Srinagar	Line 1 and 2	25	57	State government approval received
Sub-total		**154**	**127**	
Grand total		**265**	**464**	

Source: Government documents, Media articles, Edelweiss research

We discuss various approvals received over the past year in greater detail below:

- **Delhi Metrolite**: Metrolite is a light rail transit system being planned in corridors with lower ridership projections. It is intended to act as a feeder system for the existing metro network. Such systems will have less passenger capacity, but will cost much less than traditional metro projects.

Table 2: Proposed Metrolite corridors in Delhi

Project	Corridor	Length (km)	Cost (INR bn)
Line 1	Kirti Nagar – Dwarka Sector 25	19	27
Line 2	Rithala – Narela	22	29
Total		**41**	**56**

Source: Government documents, Media articles, Edelweiss research

The government has proposed to develop Metrolite system in Delhi across two corridors – Kirti Nagar-Dwarka Sector 25 and Rithala-Narela.

Of these, the Kirti Nagar-Dwarka Sector 25 corridor has been approved by DMRC and the Urban Affairs Ministry of the central government; approval from Delhi government is currently pending. The feasibility study of the second corridor between Rithala and Narela has also been completed.

DMRC has already submitted detailed project reports (DPRs) for the two corridors to Delhi government for approval.

- **Mumbai:** The Maharashtra government has approved three new lines in Mumbai at a cost of ~INR191bn. Details of the lines are:

Table 3: Metro lines approved in Mumbai over past year

Project	Corridor	Length (km)	Cost (INR bn)
Line 10	Gaimukh - Shivaji Chowk (Mira Road)	8	45
Line 11	Wadala - CSMT	12	87
Line 12	Kalyan - Dombivali - Taloja	20	59
Total		**40**	**191**

Source: Government documents, Media articles, Edelweiss research

Of the 12km Wadala to CSMT project, while 4km between Wadala and Sewri will be elevated, the balance 8km between Sewri and CSMT will be underground.

- **Gurugram:** The Haryana government has approved Phase III of the metro project in Gurugram, connecting old and new Gurugram. It has been proposed to develop a composite network without any interchange for existing metro network in the city (Rapid Metro) and the Gurugram section of Delhi Metro.

- **Noida-Greater Noida**: The Uttar Pradesh government has approved extension of the existing Line 1 (Sector 51-Greater Noida Depot). The 14.95km extension will connect Sector 51 to Knowledge Park V at an estimated cost of ~INR27bn. It is expected to connect the densely populated areas of Gaur City and Noida Extension to the existing Line 1 and the adjoining Blue Line of Delhi Metro.

- **Pune:** The Pune Municipal Corporation's Standing Committee has approved the extension of Pune Metro Line 1 (currently till Swargate) to Katraj. The Swargate-Katraj extension, which is 5.4km long, will be an underground section and is expected to cost INR42bn.

  In addition, certain other extensions like Pimpri-Nigdi (5km), Ramwadi-Wagholi (10km), Vanaz-Chandni Chowk (1.5km), ShivajiNagar/Shevalwadi (20km) and Hinjewadi-Pirangut (11km) are being evaluated.

  The state government has already provided INR6.4bn funds in the state budget in February 2020 for these extensions.

- **Nashik**: The Maharashtra government has approved the Greater Nashik Metro or Metro NEO to connect Nashik city with its Suburbs. Details of the lines are:

Table 4: Metro lines approved in Nashik

Project	Corridor	Length (km)	Cost (INR bn)
Line 1	Gangapur to Nashik Road	23	
Line 2	Gangapur to Mumbai Naka	11	
Total		**33**	**21**

Source: Government documents, Media articles, Edelweiss research

The project will be the first of its kind in the country, with rubber-tyred AC bus coaches running on two elevated corridors. The DPR of the project has been forwarded to the central government for approval.

- **Dehradun-Rishikesh-Haridwar**: In a meeting chaired by the state Chief Minister, Uttarakhand's Unified Metropolitan Transport Authority (UMTA) in June 2020 approved a Comprehensive Mobility Plan for the state which includes building the 73km Dehradun–Rishikesh–Haridwar metro project. News reports indicate that the metro project is likely to cost ~INR5.5bn/km.

  Details of the lines are:

Table 5: Metro lines approved in Uttarakhand

Project	Corridor	Length (km)
Line 1	Haridwar – Rishikesh	32
Line 2	Dehradun (ISBT) – Nepali Farm	41
Total		**73**

Source: Government documents, Media articles, Edelweiss research

- **Jammu and Srinagar**: In a meeting chaired by the Lieutenant Governor, the Administrative Council has approved the development of metro projects in Jammu and Srinagar. It is proposed to develop a 23km corridor in Jammu from Bantalab to Bari Brahmana at a cost of INR48bn.

  In Srinagar, two lines are proposed to be developed, details of which are given below:

Table 6: Metro lines approved in Srinagar

Project	Corridor	Length (km)	Cost (INR bn)
Line 1	Indira Nagar to HMT Junction		
Line 2	Usmanabad to Hazuri Bagh		
Total		**25**	**57**

Source: Government documents, Media articles, Edelweiss research

  The Administrative Council has authorised the submission of DPRs for both the cities to the central government for appraisal and funding.

It is clear from all these developments that economic weakness over the past few years as well as covid-19 have not really impacted state governments' willingness to develop metro rail projects. In fact, the following decisions have been taken post the health crisis:

- **June 2020:** Decision to approve metro rail in Uttarakhand by the state government.
- **June 2020:** Decision to send the DPR for Nashik Metro to central government for approval.
- **July 2020:** Decision to invite bids to appoint general consultant for Mumbai metro Line 10 and 12 (discussed in detail later); this is essentially the first step in project execution.

This indicates that the pandemic, while definitely hurting fiscal situation, has not really forced a rethink in the government about metro development.

No Paucity Of Funding

We had captured the funding support being provided by various multi-lateral agencies to metro projects across India in our report, ***Metro Rail - Metrolution money matters: No problem***). Over the past year, these agencies have continued to pour funds in to India; they have approved or are evaluating loans worth ~INR360bn across seven cities. This indicates that the volatile external environment has not impacted fund availability for the Indian metro space.

Table 7: Loans approved/under evaluation by multi-lateral agencies since start of FY20

Agency	Project details	Loan amount (INR bn)	Status
European Investment Bank (EIB)	Bhopal Metro	32	Loan approved
New Development Bank (NDB)	Indore Metro	17	Loan approved
Japan International Cooperation Agency (JICA)	Patna Metro	54	Loan approved
Agence Française de Développement (AFD), France	Surat Metro	21	Loan approved
KfW, Germany	Mumbai Metro Line 4	44	Loan approved
Asian Infrastructure Investment Bank (AIIB)	Mumbai Metro Line 5	18	Loan concept approved
Asian Infrastructure Investment Bank (AIIB)	Chennai Metro Phase II Line 5	33	Loan concept approved
Asian Infrastructure Investment Bank (AIIB)	Chennai Metro Phase II Line 4	27	Loan concept approved
Asian Development Bank (ADB)	Chennai Metro Phase II Line 3 and 4	59	Loan concept approved
Asian Development Bank (ADB)	Bengaluru Metro Phase 2A/2B	38	Loan concept approved
New Development Bank (NDB)	Mumbai Metro Line 6	18	Loan concept approved
Grand total		**360**	

Source: Government documents, Media articles, Edelweiss research

Various developments in the funding arena over the past year:

- **Bhopal Metro**: The EIB has agreed to lend INR32bn for the Bhopal Metro project. The bank had given an in-principle approval for the loan in December 2019 and a formal agreement is to be signed shortly.

- **Indore Metro**: In December 2019, the NDB approved a loan of ~INR17bn for the Indore Metro project. The bank will fund USD225mn of the total project cost of USD1.2bn, accounting for 18.8% of the total estimated cost.

- **Patna Metro**: Media reports indicate that JICA has agreed to provide a loan of INR54bn for the Patna Metro project. Formalities of inking a loan agreement are to be completed shortly.

- **Surat Metro**: AFD is supporting the Surat Metro project and has agreed to provide a loan of EUR250mn (~INR20.7bn). Media reports indicate that KfW will also co-finance the project along with AFD.

- **Mumbai Metro**: A bevy of multi-lateral agencies are funding the Mumbai Metro project. With as many as eight lines currently under construction, there are plenty of options for these agencies to decide which line to support.

For e.g., KfW has already approved a loan of EUR525mn (~INR44bn) for Mumbai Metro Line 4.

In addition, in February 2020, the loan concept was approved by NDB to lend USD241mn (~INR18bn) for Line 6 of Mumbai Metro. The loan will form roughly ~29% of the project cost of USD825mn and will be used to fund the systems contracts for the project.

Lastly, in April 2020, the loan concept was approved by AIIB to lend USD236mn (~INR17.9bn) for Line 5 of Mumbai Metro. The loan will be used to fund the rolling stock and systems contracts for the project. It is also proposed that the OPEC Fund for International Development (OFID) will also co-finance the project along with AIIB.

- **Chennai Metro**: The Phase II of Chennai Metro is also attracting significant interest from multi-lateral agencies, considering the large size of the project (~INR690bn). These agencies are looking at various lines of the second phase of the project.

  For e.g., in December 2019, the loan concept was approved by AIIB to lend ~USD357mn (~INR27bn) for Line 4 of Chennai Metro. Proceeds of the loan will go towards construction of 16km of elevated viaduct, 18 elevated stations and 8 underground stations.

  In addition, in April 2020, the loan concept was approved by AIIB to lend ~USD439mn (~INR33bn) for Line 5 of Chennai Metro. The loan will fund construction of 26km of elevated viaduct and 24 elevated stations.

  It is also proposed that the ADB will co-finance the Line 5 (of USD114mn) along with AIIB. The ADB loan is proposed to be used for funding the traction and power supply, track work, and telecommunication, electrical and mechanical works.

  Lastly, in June 2020, the loan concept was approved by ADB to lend ~USD780mn (~INR58.9bn) for Line 3 and 4 of Chennai Metro. The loan will be used for developing the 10.1km elevated section between Sholinganallur and SIPCOT on Line 3 and the 10km underground section between Lighthouse and Meenakshi College on Line 4.

- **Bengaluru Metro**: In December 2019, the loan concept was approved by ADB to lend ~USD500mn (~INR38bn) for Phase 2A and 2B of Bengaluru Metro. The loan will be used to finance the construction of the 56km Line 5 (Silk Board – Bengaluru Airport).

Thus, it is evident that there is no dearth of funding for metro rail projects in India, as far as multi-lateral agencies are concerned. Multiple projects have been approved over the last year or are under evaluation currently. Post covid-19, loan concept for ~USD1.5bn loans have been approved, which indicates that the pandemic has not impacted funding situation for these loans adversely.

Preparatory Work In Full Swing

Once a project has been approved by the government and funds have been tied up, focus turns to project execution. The first step in this process is appointment of consultants who enable speedy implementation of projects by assisting government bodies in charge of metro development (like DMRC, MMRDA) with activities like design, supervision, safety, quality control and contract management. Appointment of consultants thus indicates that development of a metro project is on its way.

Over the past year, most major metro projects have either already appointed consultants or have invited bids for doing so. Importantly, some of these developments have happened post-covid-19. We take a look at major developments in this space:

Table 8: Major consultancy projects awarded over last fiscal

Metro project	Particulars	Details
Bengaluru Metro	Detailed Design Consultants	Challaghatta Depot and Inter Modal Integration Hub
Bengaluru Metro	Detailed Design Consultants	Line-5 (Blue Line)
Chennai Metro	General Consultant	Priority section, Phase II
Kochi Metro	Project Management Consultant	Petta-Tripunithura extension
Kochi Metro	Detailed Design Consultant	S.N. Junction-Thripunithura section
Agra and Kanpur Metro	General Consultant	Agra and Kanpur Metro
Patna Metro	Detailed Design Consultant	Line 1 and 2

Table 9: Major consultancy projects for which bids have been invited

Metro project	Particulars	Details	Bid invitation
Bengaluru Metro	Consultancy services	Yellow Line, Phase II (RV Road – Silkboard – Electronic City – Bommansandra)	May-20
Chennai Metro	General Consultant	Line 4	Jan-20
Delhi Metro	Geotechnical Investigation	Delhi Metrolite (Kirti Nagar – Dwarka Sector 25 corridor)	May-20
Kolkata Metro	Detailed Design Consultant	Line 6 - Titurmir – Biman Bandar (Airport) section	May-20
Kolkata Metro	Geotechnical & Design	Line-4 (NSCBI-New Barrackpore section)	Jan-20
Mumbai Metro	General Consultant	Line 10 and 12	Jul-20
Mumbai Metro	Detailed Design Consultant	Interchange facilities	Jun-20
Mumbai Metro	General Consultant - Sytems work	Line 5, 7A and 9	Feb-20
Maha Metro	General Consultant	Nagpur Metro Phase II, Pune Metro Phase II, Nashik Metro Neo	Dec-19
Noida Metro	Detailed Design Consultant	Line 1 extension	Jan-20
Patna Metro	Detailed Design Consultant (DDC)	DDC services for 25 kV OHE system, power supply and SCADA system	Jan-20
Surat Metro	General Engineering Consultant	Phase 1	May-20
Surat Metro	Detailed Design Consultant	Elevated portion of Phase 1	Apr-20

Source: Government documents, Media articles, Edelweiss research

It is evident from the tables above that metro projects across the country have been witnessing feverish activity as far as preparatory work is concerned. Bids have already been invited for appointing consultants in major cities like Mumbai, Delhi, Chennai, Kolkata, Bengaluru, etc. A large number of these bids have been invited post-covid-19, which indicates that the pandemic has not hampered government's plans to expand the metro network. This is a significant positive, in our view, and holds hope that metro rollout will continue unhindered.

Tendering Process Underway At Full Steam

Another metric of measuring resilience of the metro ecosystem towards disruptions like slowdown in economic growth or the pandemic is the invitation of new bids for project award. This is because the entire awarding process takes a couple of quarters to conclude; hence, if new bids are being invited now, it indicates that the awarding authority has a reasonably optimistic outlook over the medium term and is confident of bearing the financial burden which any incremental project award entails.

On this parameter, the Indian metro rail seems to be in fine health. Currently, bids for projects worth ~INR230bn are underway i.e., they are either at bidding stage or have already been opened (at L1 stage). The fact that this is more than the total quantum of orders awarded since the start of FY20 (discussed in detail later) indicates sustained traction in ordering.

Table 10: Snapshot of bids underway in metro projects in India

Project	Civil construction	Systems work	Rolling stock	Total
Ahmadabad	15			15
Delhi	8			8
Bengaluru	17	12		29
Chennai	60			60
Kanpur/Agra	15			15
Kochi	2			2
Kolkata	15			15
Mumbai	23	4	19	46
Noida	4			4
Patna	7			7
Pune				0
Surat	27			27
Grand total	**193**	**16**	**19**	**228**

Source: Government documents, Media articles, Edelweiss research

These ~INR230bn of bids include ~INR15bn of projects where bids have been opened. These projects are in L1 stage and are expected to be awarded soon.

Table 11: Major projects at L1 stage

Project	Details	Date of bid opening	Estimated amount (INR bn)
Civil construction			
Delhi Metro	Haiderpur Badli-Mor to Ashok Vihar (Janakpuri west - R K Ashram Corridor) - viaduct and 4 stations	Jun-20	7.7
Bengaluru Metro	Kothanur Depot	May-20	1.5
Kolkata Metro	Balance work of 7 stations (Titumir and Sub CBD-1)	Jun-20	2.9
Systems works			
Bengaluru Metro	Signalling	Apr-20	2.5

Source: Government documents, Media articles, Edelweiss research

There are ~INR215bn worth of projects which are currently at the bidding stage. These orders span multiple projects across various cities and encompass the three major fields of metro work–civil construction, systems and rolling stock.

A majority of these orders (~INR180bn) pertain to civil construction with rolling stock and systems orders contributing the balance. We discuss the bidding scenario in greater detail:

- **Civil construction**: Currently, civil construction tenders are underway in more than 10 cities. This indicates the wide spectrum of opportunities available for civil contractors in the country. Major civil construction projects currently under bidding include:
  - **Bengaluru Metro:** Currently bids for construction of the Blue Line (ORR Metro) as part of Phase 2A have been invited. This line will connect Silk Board to K.R. Puram.
  - **Mumbai Metro:** Major projects for which bids have been invited are for Line 2B; these had been awarded to some contractors earlier, but their contracts have been terminated due to contractual issues and bids have been reinvited.
  - **Chennai Metro:** Currently bids for construction of Line 3, 4 and 5 of Phase II of the Chennai Metro project have been invited. These include elevated and underground sections.
  - **Ahmadabad Metro**: Currently bids for construction of Phase II of the Ahmadabad Metro project have been invited. These bids in fact mark the commencement of development of Phase II of the project.
  - **Kolkata Metro**: Bids invited for Kolkata Metro pertain to Line 3 and 6 of the project.
  - **Kochi Metro**: Currently bids for construction of Phase I B of the project have been invited.
  - **Noida Metro**: Work has begun on the extension of Line 1 of Noida Metro and bids have been invited for the same.
  - **Kanpur Metro**: Bids for construction of an underground section of the Kanpur Metro as well as for nine elevated stations have been invited.

Table 12: Major civil construction projects at bidding stage

Project	Details	Estimated cost (INR bn)
Bengaluru Metro		
	Viaduct and 6 stations - Silk Board – Kadubeesanahalli	7.3
	Viaduct and 7 stations - Kadubeesanahalli – K.R. Puram	5.9
Mumbai Metro		
	Balance work of package CA-06 - Elevated Viaduct and 5 Elevated Stations	4.7
	Balance works of CA-04R - Elevated corridor and 10 stations (D.N. Nagar – MTNL)	10.6
	Balance works of CA-14 - Mandale car depot	4.6
Chennai Metro		
	Tunnels - TU-01 - Venugopal Nagar - Kellys Station	18.3
	Tunnels - TU-02 - Kellys Station-Taramani Road Junction	25.5
	Viaduct & 9 stations	16.0
Ahmedabad Metro		
	Viaduct & 11 stations (GNLU to Gandhinagar Sector-1)	10.2
	Viaduct & 5 stations (GNLU to Gandhinagar Sector-1)	4.7
Kolkata Metro		
	Joka depot	3.7
	Viaduct (Sub-CBD-2 to Biman Bandar)	5.3
Kochi Metro	Viaduct (SN Junction-Tripunithura)	1.7
Noida Metro	Viaduct & 5 stations	4.3
Kanpur Metro	Tunnel & 4 stations - Motijheel - Nayaganj	14.0
Patna Metro	Viaduct & 5 stations - Malai Pakri – New ISBT	5.1
Surat Metro		
	Viaduct & 10 stations - Kadarsha Ni Nal to Dream City	8.1
	Tunnel and 3 stations	9.3
	Tunnel and 3 stations	9.4

Source: Government documents, Media articles, Edelweiss research

- **Patna Metro**: Currently bids for construction of an elevated section of Line 1 of the Patna Metro project have been invited. These bids, in fact, mark the commencement of development of the Patna Metro project.
- **Surat Metro**: Currently bids for construction of an elevated section as well as underground section of Line 1 of the Surat Metro project have been invited. These bids in fact mark the commencement of development of the Surat Metro project.

In addition to these projects, bids for Phase IV of Delhi Metro are also underway. Thus, a significant quantum of civil construction opportunity is available in the metro rail space.

- **Systems work**: Currently, bids for undertaking systems works for the Bengaluru and the Mumbai Metro projects are underway. Major systems projects currently under bidding include:

Table 13: Major systems contracts at bidding stage

Project	Details	Estimated cost (INR bn)
Bengaluru Metro		
	Escalators	4.3
	Electrification	5.6
Mumbai Metro	Signalling, train control and platform screen doors	3.8

Source: Government documents, Media articles, Edelweiss research

Bids in Bengaluru Metro relate to Phase II of the project, while that in Mumbai pertain to Line 4 of Mumbai Metro.

- **Rolling stock**: Currently, there are two major contracts for rolling stock for which bids have been invited. These include:

Table 14: Major rolling stock contracts at bidding stage

Project	Details	Estimated cost (INR bn)
Mumbai Metro	234 coaches for Line 4/4A	18.7
Delhi Metrolite	29 nos. of standard gauge Metrolite trains	NA

Source: Government documents, Media articles, Edelweiss research

- **Mumbai Metro**: Currently a bid for providing 234 coaches for Line 4 and 4A of the Mumbai Metro project is underway.

- **Delhi Metrolite**: Bid for providing and maintaining 29 standard gauge Metrolite trains and complete depot for Line 1 of the Delhi Metrolite project has been invited.

- **Delhi Metro**: DMRC had earlier initiated a tender to procure 24 additional coaches for the 22.9 km Airport Express Line in Delhi (which is now being extended to Dwarka Sector 25). Chinese company CRRC Nanjing Puzhen had emerged as the sole bidder for the project. DMRC had cancelled the bid in May 2020. There is lack of clarity currently regarding the future plans of DMRC regarding this tender.

As is evident, a plethora of bids are underway for various metro projects in the country. **Importantly, bids for 14 projects worth ~INR90bn have been called since March 2020**, indicating that the pandemic hasn't disrupted bidding activity. This is a significant positive, in our view, and bodes well for the future of metro expansion in India.

Traction In Awarding Activity Sustains

The metro rail space has witnessed steady pace of ordering over the past year. These orders have come from various cities, indicative of the geographical spread of the metro network expansion in the country. Overall, orders worth ~INR225bn have been awarded since the start of FY20. These orders span multiple projects and straddle the three major fields of metro work – civil construction, systems and rolling stock.

Table 15: Snapshot of projects awarded since start of FY20

Project	Civil construction	Systems work	Rolling stock	Total
Delhi	32	2	11	45
Bengaluru	38		9	46
Kanpur/Agra	8		21	29
Kochi	3			3
Mumbai	56	15	8	79
Pune	1	10	11	23
Grand total	**138**	**27**	**60**	**225**

Source: Government documents, Media articles, Edelweiss research

As expected, majority of orders awarded over the last fiscal pertain to civil construction. Rolling stock orders at ~INR60bn have also contributed a significant chunk followed by systems awards.

The onset of the pandemic hasn't impacted the pace of project award. Since February 2020, ~INR28bn projects have been awarded. This indicates that project awarding continues unhampered.

We discuss project award scenario in greater detail below:

- **Civil construction**: Over the last year, civil construction orders have contributed more than 60% to the total awarding with Delhi, Bengaluru and Mumbai being major contributors. Major orders awarded over the last year include:
  - **Delhi Metro:** Towards the end of CY19, the construction of Delhi Metro Phase IV started. DMRC has awarded contracts to build elevated and under construction portions for Phase IV. A significant portion of civil construction contracts are yet to be awarded.
  - **Bengaluru Metro**: Construction of Phase II of the Bengaluru Metro project had started long back. The last fiscal witnessed award of projects to construct Reach 6 (Gottigere – Nagavara section) of the Pink Line as part of Phase II. Simultaneously, orders for construction of depots on Purple, Pink and Yellow line have also been awarded.
  - **Mumbai Metro**: Mumbai has multiple lines currently under development. The last fiscal witnessed projects related to various lines getting awarded. This included work on new lines such as Line 4A, Line 5, Line 9 and Line 7 extension as well as those on lines already under construction such as Line 2B, Line 3 and Line 7. Some of these were necessitated by the termination of work given to a few existing contractors who could not deliver as per expectations.

Table 16: Major civil construction orders awarded since start of FY20

Project	Details	Date of award	Amount (INR bn)	Winner
Delhi Metro				
	Vikaspuri Ramp – Haiderpur-Badli Mor (Janakpuri west - R K Ashram Corridor) - viaduct and 10 stations	Nov-19	9.5	CCECC-KEC
	Mukundpur – Maujpur (Maujpur - Majlis Park corridor) - Viaduct and 8 stations	Nov-19	10.8	KEC - Longjian
	Sangam Vihar – Saket G-Block (Aerocity to Tuglakabad corridor) - Viaduct and 4 stations	Dec-19	7.3	YFC Projects
	Vikaspuri Park Shaft – Vikaspuri Ramp (Janakpuri west - R K Ashram Corridor) - Tunnel and 1 station	Jan-20	4.9	HCC-VCCL
Bengaluru Metro				
	P1: Dairy Circle, MICO Industries, Langford Town - Tunnel and 3 stations	Nov-19	15.3	Afcons
	P4: Venkateshpura, Arabic College, Nagawara - Tunnel and 4 stations	Nov-19	17.7	ITD Cementation
Mumbai Metro				
	Viaduct from Diamond Garden to Mandale (Depot)	Apr-19	3.9	NCC
	Track Work - BKC to Cuffe Parade	Jun-19	3.0	L&T
	Kasarwadavali-Gaimukh - Viaduct and 2 stations	Jan-20	3.4	J Kumar
	Viaduct and 7 stations - Kapurbawadi – Dhamankar Naka	Jan-20	8.8	Afcons
	Balance work of Package 1 - viaduct	May-20	1.7	J Kumar
	Balance work of Package 1 - stations	May-20	1.3	NCC
	Dahisar (E) (North side) -Mira-Bhayandar (Line 9) and Andheri to CSIA (Line 7 extension)	Jan-20	20.0	J Kumar
	Metro Bhavan	Jan-20	11.0	NCC
Kochi Metro	Viaduct - Petta-S N Junction	Aug-19	2.7	KEC-CCECC
Kanpur Metro	Viaduct & 9 stations - IIT – Moti Jheel	Sep-19	7.3	Afcons

Source: Government documents, Media articles, Edelweiss research

- **Other projects**: Apart from these cities, civil contracts were also awarded in projects such as Kanpur Metro, Pune Metro and Kochi Metro (Phase IA).

- **Systems works**: Systems work contracts are generally smaller in quantum compared to civil construction or rolling stock orders. Hence, their overall quantum at ~INR27bn is relatively lower. Major orders awarded over the last year include:

  - **Delhi Metro:** Some pending contracts for systems works for Delhi Metro Ph III were awarded during the last fiscal.

  - **Mumbai Metro**: With a large number of lines currently under construction in Mumbai, the systems works awarded during the year also belonged to various lines such as Line 2A and 2B, Line 3 and Line 7.

  - **Pune Metro**: With bulk of the civil construction tenders for the project having already been awarded over CY17 and CY18, the last fiscal witnessed orders related to systems works being awarded in Pune.

Table 17: Major systems work orders awarded since start of FY20

Project	Details	Date of award	Amount (INR bn)	Winner
Delhi Metro				
	Traction system	Aug-19	0.5	Siemens
	Tunnel ventilation system	Sep-19	1.2	ETA-Tricolite
Mumbai Metro				
	Traction, Auxiliary Power Supply and SCADA - Line 7	Jun-19	1.4	L&T
	Escalators - Line 2A	Jun-19	0.5	Schindler
	Half Height Platform Gates System - Lot 1 - Line 2A, 2B and 7	May-19	2.1	KTK Group Co. Ltd.
	Half Height Platform Gates System - Lot 2 - Line 2A, 2B and 7	May-19	3.3	Zhuzhou CRRC Times Electric Co.
	OHE - Line 2A	Jul-19	1.7	Sterling-Cimechel Consortium
	Air conditioning and tunnel ventilation system - Phase 2 Lot 1 - BKC-Grant Road	Jun-19	2.5	Blue Star
	Air conditioning and tunnel ventilation system - Phase 2 Lot 2 - Cuffe Parade to Grand Road	Aug-19	2.3	Voltas Limited
Pune Metro				
	Traction substation	May-19	3.0	Sterling and Wilson Private
	Escalators	Sep-19	1.2	Schindler
	Escalators	Sep-19	0.5	Johnson Lifts Private Limited
	Telecommunication	Feb-20	1.7	Honeywell
	Tunnel ventilation system (TVS) and environmental control system (EVS)	Mar-20	2.8	Sterling and Wilson Private
	M&P contract for Depot	Mar-20	1.1	Univio Consortium

Source: Government documents, Media articles, Edelweiss research

Table 18: Major rolling stock orders awarded since start of FY20

Project	Details	Date of award	Amount (INR bn)	Winner
Delhi Metro				
	40 coaches	May-19	4.0	Bombardier Transportation
	80 coaches	Oct-19	7.3	BEML
Bengaluru Metro	216 coaches	Dec-19	8.5	CRRC
Mumbai Metro	126 coaches for Line 2A, 2B and 7	Aug-19	8.3	BEML
Pune Metro	102 coaches	Aug-19	11.3	Titagarh Wagons
Agra and Kanpur Metro	201 coaches for Agra & Kanpur metro	Jul-20	20.5	Bombardier

Source: Government documents, Media articles, Edelweiss research

- **Rolling stock**: Major rolling stock orders being awarded over the year include those for Delhi Metro (capacity expansion for existing cars), Bengaluru Metro (for Phase II project), Mumbai Metro (for Line 2A, 2B and 7), Pune Metro and for Agra and Kanpur Metro. The biggest rolling stock order amongst various projects awarded, was that for Agra and Kanpur Metro; it was awarded in July 2020 which again indicates that ordering has been steady despite the corona crisis.

Thus, we can safely conclude that the awarding of projects has not been impacted adversely by the economic slowdown over the past couple of years. In addition, with ~INR28bn worth projects having been awarded since February 2020, even covid-19 has not derailed ordering activity. The strength in ordering activity is a good signal for India's metro rail ecosystem.

Metro Footprint Continues To Expand

The geographical expansion of metro network in the country has continued at a frenetic pace. Currently, including brownfield expansion, metro projects are under construction in 13 cities in the country. In addition, tendering activity is underway in five more cities including brownfield expansion in two cities. All in all, there is no let up in metro development in the country.

Table 19: Status of metro projects in India

Status	City
Operational	Ahmedabad, Bengaluru, Chennai, Delhi, Gurugram, Hyderabad, Jaipur, Kochi, Kolkata, Lucknow, Mumbai, Nagpur, Noida
Under construction	Ahmedabad, Bengaluru, Bhopal, Chennai, Delhi, Indore, Kanpur, Kochi, Kolkata, Mumbai, Nagpur, Navi Mumbai, Pune
Tendering stage	Agra, Noida, Patna, Surat
Planning stage	Delhi Metro-Lite, Jammu, Nashik, Prayagraj, Srinagar, Vijaywada
Concept stage	Gorakhpur, Guwahati, Varanasi, Vizag

Source: Government documents, Edelweiss research

Over the past year, construction has started in projects in three cities including one greenfield project. These include:

- **Kanpur**: During CY19, Kanpur became the latest city to join the metro bandwagon with its first civil construction project getting awarded to Afcons. Work on the project is underway in full steam with one more civil contract awarded and bid for two more contracts currently ongoing.

- **Delhi**: During the last fiscal, work on the much-awaited Phase IV of Delhi Metro commenced. Both elevated and underground sections have been awarded and are currently under development.

- **Mumbai**: Mumbai has multiple lines currently under execution. During the last fiscal, work on new lines like Line 4A, Line 5 and Line 9 has commenced.

In addition, tenders for starting construction in Surat and Patna are already underway. While bidding for civil construction contracts has not yet started on the Agra Metro project, rolling stock contract for the project was awarded recently which indicates that commencement of project development is not far. Similarly, rolling stock tender for the Delhi Metrolite project is already up for grabs, which indicates that construction will also start sooner than later.

Thus, economic weakness over the past few years or the covid-19 pandemic have not impacted the metro network expansion in the country. We expect more cities to join the metro bandwagon going ahead.

Scope, Extent Of Opportunities For Service Providers

We believe service providers will be major beneficiaries of metro projects. Viability concerns are likely to cloud opportunities for developers.

Civil construction

Civil construction forms biggest chunk of metro rail projects

Civil construction forms the largest chunk in a metro project (more so if it is an underground project). Major type of civil work involved in metro projects include tunneling, viaducts, stations, depots, etc.

Civil contracts which involve tunnelling or any other structural work are complex and hence face lower competition. As a result, margins in these contracts are higher compared to usual construction contracts. Stations, depots, etc., are more of 'building' contracts and hence have lower margins.

Our analysis of civil construction contracts awarded over the past couple of years indicates that most projects have been won by Indian companies. However, foreign firms have also started making their presence felt.

Table 20: Beneficiaries of major civil construction awards

Project	Companies
Delhi Metro	HCC, J Kumar, L&T, ITD Cementation, NCC, Sadbhav Engg, JMC Projects, Tata Projects, KEC, Sam (India) Builtwell, YFC Projects, STEC-SUCGIN, Afcons, IRCON
Bengaluru Metro	ITD Cementation, NCC, Simplex, HCC, L&T, Afcons, Vascon Engineers, Texmaco
Mumbai Metro	Reliance Infra, J Kumar, L&T, Soma, ITD Cementation, TPL, NCC, SEW Infra, Ahluwalia Contracts, Afcons, Vascon Engineers, Sam (India) Builtwell
Chennai Metro	Afcons, NCC, URC Construction, L&T, Simplex, ITD Cementation
Hyderabad Metro	L&T
Ahmedabad Metro	J Kumar, URC Construction, Afcons, L&T, TPL, Ranjit Buildcon, Simplex, DRA – CICO, Pratibha Industries, Gannon Dunkerly-PSPO
Pune Metro	NCC, HCC, J Kumar, TPL, Afcons
Lucknow Metro	L&T, Sam (India) Builtwell, TPL, SP Singla, Rama Construction
Kochi Metro	L&T, McNally Bharat, CVCC-VNC, IRCON, KEC-CCECC
Nagpur Metro	NCC, Pratibha CSRL – Sudhir Constructions, Afcons, ITD Cementation, Texmaco Rail - Rahee Infra
Indore Metro	Dilip Buildcon
Bhopal Metro	Dilip Buildcon
Navi Mumbai Metro	J Kumar, NCC, San José Constructora
Kolkata Metro	Simplex, L&T, ITD Cementation, Afcons
Gurugram Metro	NCC, IL & FS
Jaipur Metro	DSC Limited, ITD Cementation, Pratibha Industries, BL Kashyap, Continental Engineering, KMV-RVR
Noida Metro	CEC-Sam (India) Builtwell, Anupam Construction, Texmaco, Paras Railtech
Kanpur Metro	Afcons, K.S.M. Bashir Mohammad & Sons

Source: Government documents, Edelweiss research

Rolling stock

The rolling stock used in various Indian cities uses broad and standard gauge. Apart from Delhi and Kolkata Metros, which use both these gauges, all other networks use only standard gauge.

Rolling stock forms 15-20% of overall project cost; most contracts for rolling stock have been won by foreign companies

As far as Delhi Metro is concerned, while broad gauge was used in Phase I, from Phase II lines are using standard gauge rolling stock. In Kolkata, while Line 1 uses broad gauge, standard gauge is being used in Line 2.

Rolling stock forms 15-20% of overall project cost. Our analysis of rolling stock orders which have been awarded so far indicates that these orders are generally awarded 6-12 months after civil construction starts.

Most contracts in this field have been won by foreign companies like Hyundai Rotem, Bombardier, Alstom, CSR Nanjing, CRRC, among others. Indian players who have made their presence felt are BEML and Titagarh Wagons.

Table 21: Beneficiaries of major rolling stock awards

Project	Companies
Delhi Metro	Bombardier, BEML, CAF Spain
Bengaluru Metro	BEML, CRRC
Mumbai Metro	BEML, CSR Nanjing/CRRC, Alstom,
Chennai Metro	Alstom
Hyderabad Metro	Hyundai Rotem
Ahmedabad Metro	Hyundai Rotem
Pune Metro	Titagarh Wagons
Lucknow Metro	Alstom
Kochi Metro	Alstom
Nagpur Metro	CRCC
Navi Mumbai Metro	CSR Zhuzhou
Kolkata Metro	BEML, CRRC
Gurugram Metro	Siemens, CRRC
Jaipur Metro	BEML
Pune Metro	Titagarh Wagons
Agra/Kanpur Metro	Bombardier
Noida Metro	CRRC

Source: Government documents, Edelweiss research

The burgeoning opportunity for rolling stock in India will continue to attract global majors. In fact, some of them have started manufacturing coaches in India as increased indigenisation will boost cost savings. For e.g., Bombardier has a plant in Savli (Vadodara), while Alstom has a plant in Sri City SEZ, Tada.

Over the past few years, CRRC had emerged major player in the rolling stock space having won multiple projects. However, the recent Sino-Indian border tensions may result in the company facing issues in winning projects going ahead. This will benefit other players.

Like rolling stock, majority of the orders in the systems space have been bagged by foreign firms

Systems work

Apart from civil construction and rolling stock, the other major component in the development of a metro network is the systems work. This includes signalling & communication systems, power transmission, track laying, baggage handling system, automation control systems, fare collection systems, etc.

Our analysis of orders awarded in this space indicates that like rolling stock, majority of the orders in this space have been bagged by foreign firms (sometimes in collaboration with their Indian arms). Akin to rolling stock contracts, systems works are also awarded 6-12 months after civil construction contracts.

Table 22: Beneficiaries of major systems awards

Project	Companies
Delhi Metro	Siemens, ABB, Alstom, Bombardier, Nippon Signal, Indra Sistemas S.A, ETA-Tricolite, Cranex-IFE
Bengaluru Metro	Alstom, Thales, ABB, Siemens, L&T, ETA-Polycab
Mumbai Metro	ABB, Siemens, Thales, Alstom, L&T, Shanghai Tunnel Engineering, Datamatics Global Services, Sterling-Cimechel Consortium, Zhuzhou CRRC Times Electric Co., Sterling & Wilson, Schindler, Kalindee-ASIS JV, Blue Star, Voltas
Chennai Metro	Siemens, Nippon Signal, Voltas, ETA, Johnson Lifts-SJEC Corporation
Hyderabad Metro	Thales, Samsung
Ahmedabad Metro	Siemens, Nippon Signal, L&T, Shenzhen Fangda Automatic System, Johnson Lifts-SJEC Corporation
Pune Metro	Alstom, Bright Power, Sterling & Wilson, Honeywell
Lucknow Metro	Alstom, L&T, Kalindee, Datamatics-Mikroelektronika
Kochi Metro	Alstom
Nagpur Metro	Siemens, L&T, Bright Power, Sterling & Wilson, Schindler
Navi Mumbai Metro	Ansaldo STS
Kolkata Metro	Siemens, Ansaldo STS, Isolux Ingenieria, SA, Sterling & Wilson, Panasonic-CRRC, Indra Sistemas SA (Spain)
Jaipur Metro	Alstom, ABB, Samsung, Thales
Noida Metro	Siemes, Blue Star, ASTS-ZTE Consortium, Schindler, Pioneer-Fangda Consortium, Yuanda – Stone India Consortium

Source: Government documents, Edelweiss research

Annexure: Status Of Metro Projects In India

Success of Delhi Metro has paved the way for metro rail revolution in India

Metro projects in India have generally been undertaken in phases, keeping in mind the huge investments involved and specific requirements of a network. Even within a particular phase, more than one line has been constructed, depending upon the need for passenger connectivity. To this extent, most cities have a dynamic metro network with some phases already operational and others, either under construction or at planning stages.

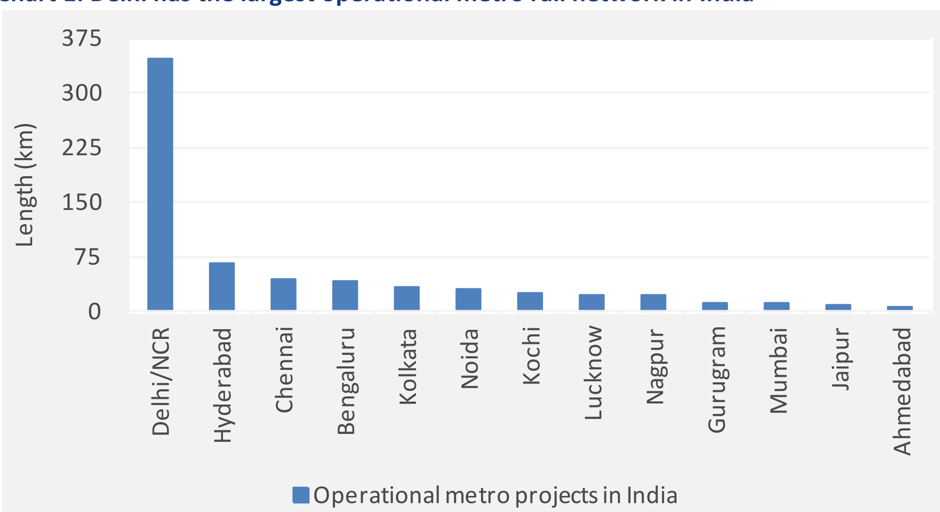
The first MRTS project in India was the Kolkata Metro, the master plan for which was prepared in 1971. While the project's foundation stone was laid down on December 29, 1972, actual construction of Line 1 began only in 1978. The project started commercial services in 1984.

The second metro project was the Chennai MRTS, which was planned in the 1970s and 1980s, but taken up for implementation by the railways in 1983–84. The project opened in 1995 and was extended twice in 2004 and 2007.

However, the turning point for MRTS in India came with the Delhi Metro. While planning for the project had started in 1984, Delhi Metro Rail Corporation (DMRC) was registered under the Companies Act, 1956, only in May 1995. Construction began in 1998 and first section became operational in 2002. Currently, Phases I, II and III are operational with Phase IV on the cards. Currently, Delhi Metro is amongst the top 10 in the world as far as network length is concerned; its annual ridership was 830mn plus in FY19.

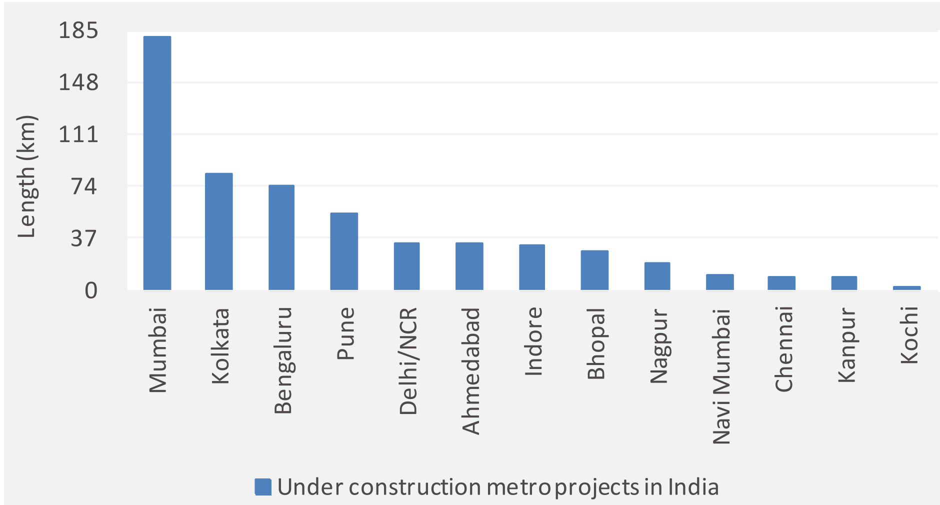
While Delhi boasts of the largest operational metro rail network in the country, Mumbai has the maximum length of metro network under construction

Chart 1: Delhi has the largest operational metro rail network in India



Source: Government documents, Edelweiss research

Chart 2: Mumbai has the largest under construction metro rail network in India



Source: Government documents, Edelweiss research

Table 23: Status of metro projects across various cities

Particulars	Phases	Length (km)	Project cost (INR bn)	Status	Time lines *
Delhi	Ph I	65	106	Operational	Start - 1998; Completed in 2005
	Ph II	125	188	Operational	Start - 2006; Completed in 2011
	Ph III	160	411	Partly Operational	Start - 2011; Expected completion - 2020
	Ph IV	105	468	Under Construction	Start 2020; Expected completion - 2025
	Airport Metro **	23	57	Operational	Start - 2007; Completed in 2011
Mumbai	Line 1	11	43	Operational	Start - 2008; Completed in 2014
	Line 2A	19	64	Under Construction	Start - 2016; Expected completion - 2021
	Line 2B	24	110	Under Construction	Start - 2018; Expected Completion - 2024
	Line 3	34	300	Under Construction	Start - 2016; Expected completion - 2023
	Line 4	32	155	Under Construction	Start - 2018; Expected Completion - 2022
	Line 4A	3	9	Under Construction	Start - 2020; Expected Completion - 2024
	Line 5	25	84	Under Construction	Start - 2019; Expected Completion - 2024
	Line 6	15	67	Under Construction	Start - 2019; Expected Completion - 2024
	Line 7	16	62	Under Construction	Start - 2016; Expected completion - 2022
	Line 8	35	150	Concept Stage	
	Line 9	13	65	Under Construction	Start - 2020; expected completion - 2024
	Line 10	8	45	Approved by MH Cabinet	
	Line 11	12	87	Approved by MH Cabinet	
	Line 12	20	59	Approved by MH Cabinet	
Navi Mumbai	Ph I	11	31	Under Construction	Start - 2011; Expected completion - 2021
	Ph II	10	40	Concept stage	
	Ph III	2	6	Concept stage	
Pune	Ph I	31	123	Under Construction	Start - 2018; Expected completion - 2022
	Ph II	23	83	Awarded	
Bengaluru	Ph I	42	138	Operational	Start - 2007; Completed in 2017
	Ph II	114	428	Under construction	Start 2015; Expected Completion - 2024
	Ph IIA	17	53	Tendering underway	
	Ph III	95		Concept Stage	
Kolkata	6 lines	117	162 bn for 5 new lines	Line 1 operational, other 5 lines under construction	Line 1 - Completed in 1984
Chennai	Ph I	45	153	Operational	Start - 2009; Completed in 2019
	Ph I extension	9	38	Under Construction	Start - 2016; Proposed completion - 2020
	Ph II	119	690	Tendering underway	
Hyderabad	Ph I	67	188	Operational	Start - 2012; Completed in 2020
	Ph II	58	100	Planning Stage	DPR submitted to state government
Jaipur	Ph 1A	10	20	Operational	Start - 2011; Completed in 2015
	Ph 1B	2	11	Work completed	Start - 2013; Expected completion - 2020
	Ph 2	24	46	Concept stage	
Gurugram	Ph I	5	11	Operational	Start - 2010; Completed in 2013
	Ph II	7	24	Operational	Start - 2013; Completed in 2017
	Ph III	31	51	Planning Stage	Approved by state government
Noida	Line 1	30	55	Operational	Start - 2015; Completed in 2019
	Line 1 extension	15	27	Tendering underway	
Nagpur	Ph I	42	87	Partly Operational	Start - 2015; Expected completion - 2023
	Ph II	48	112	Planning Stage	Approved by state government
Lucknow	Ph I	23	69	Operational	Start - 2014; Completed in 2019
	Ph II	11	45	Concept stage	
Kochi	Ph I	25	55	Partly Operational	Start - 2013; Expected completion - 2020
	Ph IA	2	4	Under construction	
	Ph IB	1	4	Tendering underway	
	Ph II	11	20	Planning stage	Approved by state government
Ahmedabad	Ph I	40	108	Partly Operational	Start - 2015; Expected completion - 2023
	Ph II	28	55	Tendering underway	
Kanpur		32	111	Under construction	Start - 2019; Expected completion - 2025

Source: Government documents, Edelweiss research

Table 23: Status of metro projects across various cities (Contd…)

Particulars	Phases	Length (km)	Project cost (INR bn)	Status	Time lines *
Vijaywada		77	200	Planning stage	Revised DPR submitted to state government
Agra		30	84	Tendering underway	Approved by Centre
Indore	Ph 1	32	75	Under construction	Expected completion - 2025
	Other phases	72	193	Concept stage	
Bhopal	Ph 1	28	69	Under construction	Expected completion - 2025
	Other phases	67	156	Concept stage	
Patna		31	134	Tendering underway	Expected completion - 2026
Vizag		43	83	Concept stage	DPR being prepared
Guwahati		65	180	Concept stage	DPR being prepared
Surat		40	120	Tendering underway	Approved by Centre
Gorakhpur		28	46	Concept stage	
Nashik		33	21	Planning stage	Approved by state government
Srinagar		25	57	Planning stage	Approved by UT administration
Jammu		23	48	Planning stage	Approved by UT administration
Prayagraj		40	80	Planning stage	DPR submitted to state government

Source: Government documents, Edelweiss research

*Note: * "Start" refers to Calendar Year in which construction started/expected to start*

*** Airport Metro is a part of Phase II*

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Coverage group(s) of stocks by primary analyst(s): Infrastructure - Construction

Ahluwalia Contracts, Ashoka Buildcon, Capacit'e Infraprojects Limited, Hindustan Construction Co., J Kumar Infraprojects, KNR Constructions, NBCC, Nagarjuna Construction Co, PNC Infratech, Sadbhav Engineering,

Recent Research

Date	Company	Title	Price (INR)	Recos
08-Jul-20	**NBCC**	Weak performance; *Result Update*	27	Hold
01-Jul-20	**Ahluwalia Contracts**	Healthy order book; pandemic pain in near term; *Result Update*	210	Buy
29-Jun-20	**J Kumar Infraprojects**	COVID-19 fallout: A near-term blow; *Result Update*	93	Buy

Distribution of Ratings / Market Cap

Edelweiss Research Coverage Universe

	Buy	Hold	Reduce	Total
Rating Distribution* * 1stocks under review	161	67	11	240

	> 50bn	Between 10bn and 50 bn	< 10bn
Market Cap (INR)	156	62	11

Rating Interpretation

Rating	Expected to
Buy	appreciate more than 15% over a 12-month period
Hold	appreciate up to 15% over a 12-month period
Reduce	depreciate more than 5% over a 12-month period

All price charts cannot be included given the large number of companies in our coverage. Specific charts may be available upon request.

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