2022 INDIA DEBT CAPITAL MARKET SUMMIT

TRUST

In Partnership. With Trust.

INFRASTRUCTURE FINANCING IN INDIA: COMING OF AGE

INDIA DEBT CAPITAL MARKET SUMMIT

2022

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FOREWORD

India is an idea whose time has come. Against the challenging global environment, elevated inflation and monetary policy tightening across nations, economic activity in India remains stable. With the target GDP growth of India at 8%, we foresee Indian Debt Capital Markets to play a pivotal role to support this growth.

The Indian debt capital market has been evolving rapidly, and we believe is at an inflection point. The last few years has witnessed the debt market expanding boundaries, deepening the availability of credits, and reaching new heights of volume and spread of transaction structures. As we say, Latius (Wider), Altius (Deeper) and Altior (Higher).

Since 2002, Trust has been pivotal in supporting the growth of the Indian bond market, being at the forefront of innovation and continually aligning ever-evolving investor and issuer requirements. We have been collaborating across all stakeholders on innovative product offerings, agility in solutions and work towards deepening the Indian Debt Capital Market.

TRUST India Debt Capital Market Summit will showcase the emerging growth pillars of the Indian economy and the Indian bond market's contribution to the growth. The summit aims to provide a platform for issuers and investors to interact and showcase the spread of credits available across sectors for investors to understand and assess the opportunities.

One of the key pillars for India's growth is investment in "Infrastructure" for which, cultivating alternative sources of finance is critical to the meaningful achievement of National Infrastructure Pipeline (NIP) targets. Over the past five years, the total bond issuances have been Rs 6-7 lakh crore per annum of which infrastructure segment accounts for more than 15%. We have seen the growing interest of large global investor funds, government supported infrastructure funds and large domestic long-term investors commencing their investments in this sector.

We believe, product innovation will be key to bridging the financing gap and attract long term capital. We have seen significant innovation and activity in several new structures like Infrastructure Investment Trusts (InvITs), Co-obligor Structures, Hybrid Annuity Model (HAM), Sustainability Linked Bonds and Green Bonds.

The infrastructure sector compendium will showcase four sectors: roads, power, railways and urban infrastructure. It aims to provide an industry overview, bond market issuance analysis, profile of select issuers and opinion from industry experts. We are pleased to have CRISIL as our Knowledge Partner for part of the compendium covering the industry and the players.

We believe, it's an opportune time to explore the new phase of growth and development of the Indian Debt Capital Markets at TRUST's "India Debt Capital Market Summit"- a platform to engage and understand the perspectives from issuers and investors to better align the requirements, mitigate risks and support the development of capital pools. The evolving and developing trends bring the Indian debt market at an inflection point which can aid to achieving the dream of making India a USD 5 trillion economy.

TRUST Team

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Landscape of infrastructure lending

November 2022

Knowledge Partner

CRISIL

An S&P Global Company

Summary

National Infrastructure Pipeline: Towards robust infrastructure development

Faster economic growth requires more supply-side reforms. Creating new and upgrading the existing infrastructure is key to raising India's competitiveness and boosting GDP growth. The National Infrastructure Pipeline is a step in this direction.

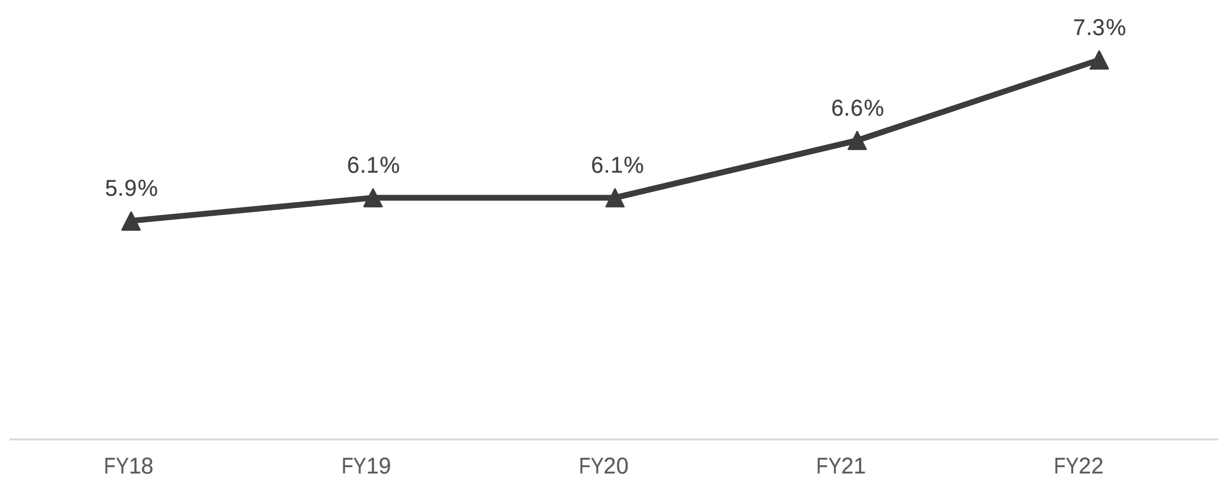
Roads, power, railways and digital infrastructure will together constitute ~81% of the total infrastructure investment in India during fiscals 2020 to 2025. Public funds have dominated infrastructure investments historically, with moderate investment from the private sector, that too, largely in the telecom industry. Airports, ports and warehousing are the other sectors that have seen healthy private investment. The private sector funding is mainly from financial institutions, with green bonds gaining traction to reduce the cost of capital for projects and improve project economies.

Infrastructure projects are complex. They involve elaborate legal arrangements to ensure proper distribution of payoffs and risk-sharing to align the incentives of all parties involved. Plus, they have a long gestation period and are subject to various risks including those due to changes in policies and delays in clearances. Every event that delays the implementation of a project leads to cost and time overruns that, in turn, have a bearing on the techno-economic viability of the project or would necessitate a revision in the price of the end product. Hence, proper implementation and timely available of funds play a crucial role in the success of any infrastructure project.

Infrastructure acts as a catalyst to GDP growth

Physical infrastructure, such as highways, railways, ports, airports, power, irrigation and urban development, is pivotal for economic growth. As per a recent Reserve Bank of India study, a rupee spent on revenue expenditure has a GDP multiplier of 0.45 in the same year and 0.55 in the next year, while a rupee spent by the central government on capital expenditure (capex) has a GDP multiplier of 2.45 in that year and 3.14 in the subsequent year. Given the impact of infrastructure on economic growth, investment in the sector as a percentage of real GDP has increased sequentially from 5.9% in fiscal 2018 to 7.3% in fiscal 2022. Infrastructure investments shot up in fiscals 2021 and 2022, as the government undertook sizeable capex to revive the economy ravaged by Covid-19. Given the government's undeterred thrust towards infrastructure development, the sector will continue to see robust investments. As a matter of fact, infrastructure investment as a percentage of real GDP is expected to comfortably cross the 8% mark by fiscal 2025.

Infrastructure investments as a % of real GDP



Source: CRISIL Research, NSO

The Centre has launched various umbrella schemes to aid infrastructure development in the country, with the National Infrastructure Pipeline (NIP) being the most important. The NIP encompassed all infrastructure projects in the country, barring projects costing less than Rs 100 crore and under-development/under-construction before 2018. The NIP included under-construction, under-planning as well as ongoing projects from both the private and public sectors. The National Infrastructure Plan, released in 2019, outlined investment of Rs 111 lakh crore over fiscals 2020 to 2025. It aims to meet the need for rapid urbanisation and changing demographic requirement, strengthen supply reforms, increase global competitiveness and attract investment, boost employment and income generation, and meet the Sustainable Development Goals by 2030.

81% of infrastructure spending seen in four sectors

Of the total investment of Rs 111 lakh crore, ~81% is expected to be in four sectors: roads, power, railways and urban infrastructure.

NIP achievement seen at 70% through fiscal 2025; share of roads ~28%

	Sector	FY20-FY22 Rs. Bn	FY23E-FY25E Rs. Bn	Share in Total infra Spend FY20-25E	FY23E:FY25E - FY20:FY22 spend	Source of funds (FY22)
	Roads		12,764	28%	43%	49% 39% 12%
	Power	8,299	11,584	25%	40%	34% 45% 22%
	Railways	5,137	7,495	16%	46%	91% 3% 6%
	Urban infra	3,136	6,549	12%	109%	36% 61% 3%
	Irrigation	2,637	3,204	7%	22%	11% 89%
	Other infra	3,600	5,019	12%	39%	
	Total Infrastructure spend	31,744	46,615		47%	

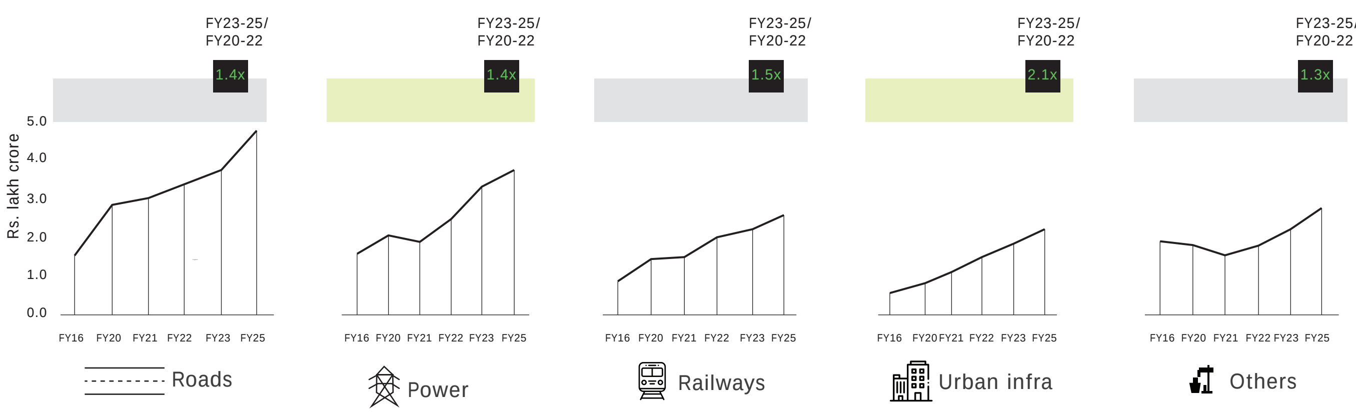
Centre State Private

Note: Others include airports, ports, telecom towers, warehousing, network capital expenditure, oil & gas pipeline and data centres

E: Estimated

Source: CRISIL Research

Healthy growth in infrastructure investments seen through fiscal 2026



Note: Other infra includes network capital expenditure, telecom towers, irrigation, airports, warehousing, and oil & gas pipeline

Source: CRISIL Research

Roads: This sector has the highest share of close to 28% in infrastructure investment in the country. It performed better than other sectors until fiscal 2022 and this should continue with achievement ratio for roads expected at least at 80%. Public funds continue to dominate, with the Centre accounting for nearly 50% and state governments Centre State Private for 40%. In line with the overall infrastructure sector, investments in roads are expected to scale up owing to the government's focus on improving the national highways network and the ambitious Bharatmala Pariyojana for expansion and upgrade of the national highway network, construction of high-value access controlled expressways, and upgrade of state highways. Some notable road and highway projects outlined in the NIP are listed below.

Notable road projects under the NIP

Sr. no.	Project name	Estimated cost (Rs billion)
1	Delhi-Mumbai Expressway	900
2	Chennai-Bengaluru Expressway	200
3	Nagpur-Mumbai Super Communication Expressway	553
4	Pradhan Mantri Gram Sadak Yojana	3730
5	Ganga Expressway	415

Source: India Investment grid, CRISIL Research

Power: This segment accounts for close to 25% of the total infrastructure investment in the country. Capex in the segment dipped in fiscal 2021 because of Covid-19, impacting project completions. As a result of this, along with the 6-9 months of extension granted by the regulator to renewable projects and supply-chain issues faced by solar projects, power investments have picked up sharply in fiscal 2022, surpassing the pre-Covid-19 level, with renewables leading the way. With private funds accounting for the bulk of the renewable investments, the power sector is one of the core infrastructure sectors with active private participation.

Investments in this segment are likely to be driven by non-fossil fuel additions in the power base, considering the COP 26 target of 500 GW installed base by 2030. Even among non-fossil fuels, additions will be driven by renewable energy resources of solar, wind and storage-based projects. This will be supported by measures to improve grid efficiency in the transmission and distribution segments. Investments to upgrade or replace critical equipment, along with rollout of improved systems, should improve revenue realisation or mitigate system losses.

Notable power projects under the NIP

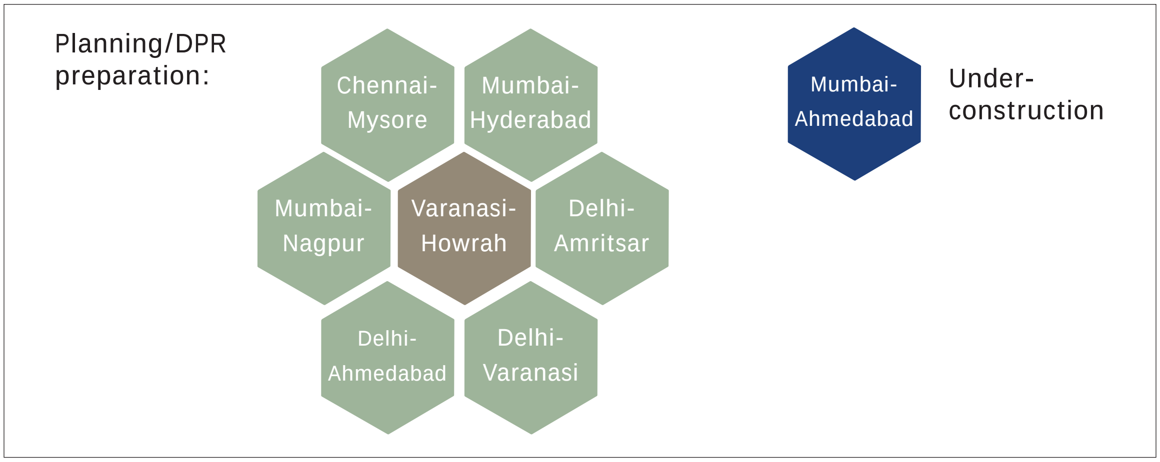
Sr. no.	Project Name	Estimated cost (Rs billion)
1	Dibang hydel project	280
2	High-voltage direct current bipole link project	147
3	Kundakulam nuclear power plant	895
4	Chennai power transmission project	511

Source: India Investment grid, CRISIL Research

Railways: After modest growth in fiscal 2021, railway investments have kicked off again, led by record allocation in the budgets for fiscals 2022 and 2023 through new avenues of investments, such as dedicated freight corridors (DFCs), high-speed rail and station redevelopment, besides the traditional areas, such as electrification, doubling, expansion, rolling stock and safety.

The locally developed Vande Bharat Express, along with the Kavach anti-collision system, will improve passenger and safety-related aspects. The freight-carrying capacity of India Railways will be boosted by the completion of the eastern and western DFCs, and commencement of construction of additional freight corridors. Newer avenues of investments, such as the high-speed rail and station redevelopment, should drive investments over the medium term.

Status of high-speed rail projects in India



Urban infrastructure: With increasing urbanisation across the nation, investment in urban infrastructure is expected to outpace all other infrastructure segments over the medium term (fiscals 2022 to 2025). A sharp rise in WSS allocation by the Centre (up from Rs 10,000 crore in fiscal 2021 to ~Rs 60,000 crore in fiscal 2022), near doubling of operational metro network by 2025, Pradhan Mantri Awas Yojana (PMAY) nearing completion, and rising allocations by state governments will boost urban infrastructure investment.

Notable schemes launched in the urban infrastructure sector

Sr. no.	Scheme	Sector
1	Swachh Bharat Mission	Rural and urban sanitation, municipal waste management
2	Smart City Mission	Area based development and technology solutions for cities
3	AMRUT	Water supply and sewerage networks
4	PMAY	Housing
5	HRIDAY	Heritage conservation

Source: India Investment Grid, CRISIL Research

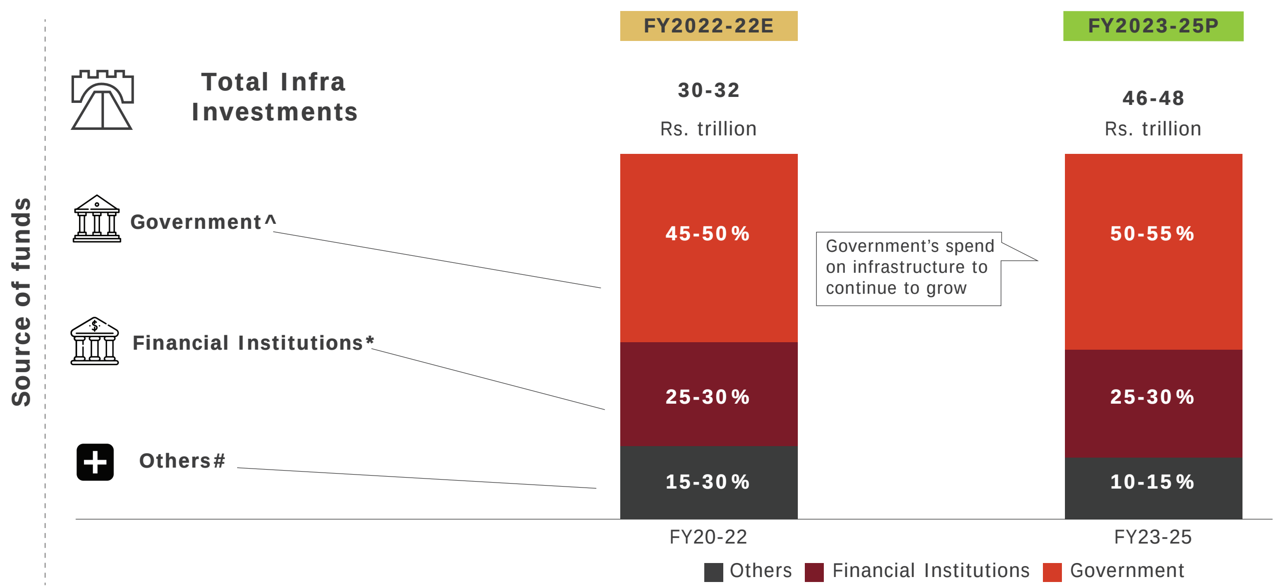
Focus on water supply to all homes under Jal Jeevan Mission (JJM), development of metro projects across cities along with Metro Neo and Metro Lite, development of regional rapid-rail, smart cities under flagship schemes such as AMRUT and Smart City Mission should drive investment in this segment.

Irrigation: Investment in irrigation is critical as it directly impacts agriculture and the rural economy. As the livelihood of a large proportion of India's population depends on agriculture and allied activities, it is important to minimise uncertainty owing to dependence on rains. The irrigation sector is dominated by state spending, with the Centre only contributing through the Pradhan Mantri Krishi Sichayi Yojana (PMKSY) for micro-irrigation. Covid-19 had led to deferral of planned investment in irrigation in fiscals 2021 and 2022. States should step up irrigation capex with the pandemic now in control, state funds bolstered by early devolution of GST compensation and interest-free loans from the Centre, increased borrowing limit as a percentage of state GDP post-reforms by state governments, and a healthy rise in state revenues with the economy surpassing the pre-pandemic level. Growth impetus will come from a high number of incomplete projects stuck in initial stages across major spending states, such as Karnataka, Madhya Pradesh and Maharashtra, along with large projects in the pipeline in states such as Andhra Pradesh and Telangana.

Government to lead funding, financial institutions to support

Public funds have dominated infrastructure investment historically. The private sector has made moderate investments, mainly in the telecom industry, apart from airports, ports and warehousing. Skewed risk sharing between private and government entities led to declining participation of private funds in infrastructure, with public funds having to step in and do the heavy lifting.

Close to half of the infrastructure funding will continue to be from state and central governments



Note; Total infrastructure spend is incremental investment for block of 3 years. ^Government includes Central and State government. *Financial Institutions includes contribution from Banks, NBFC, new DFI. #includes Bons markets, equity, internal accruals, FDI, Multilaterals/ bilaterals and asset monetisation plans by private players.
E: Estimates; P: Projected
Source: Government reports, Industry, CRISIL Estimates

Government: Government funding includes contribution from the central and state governments.

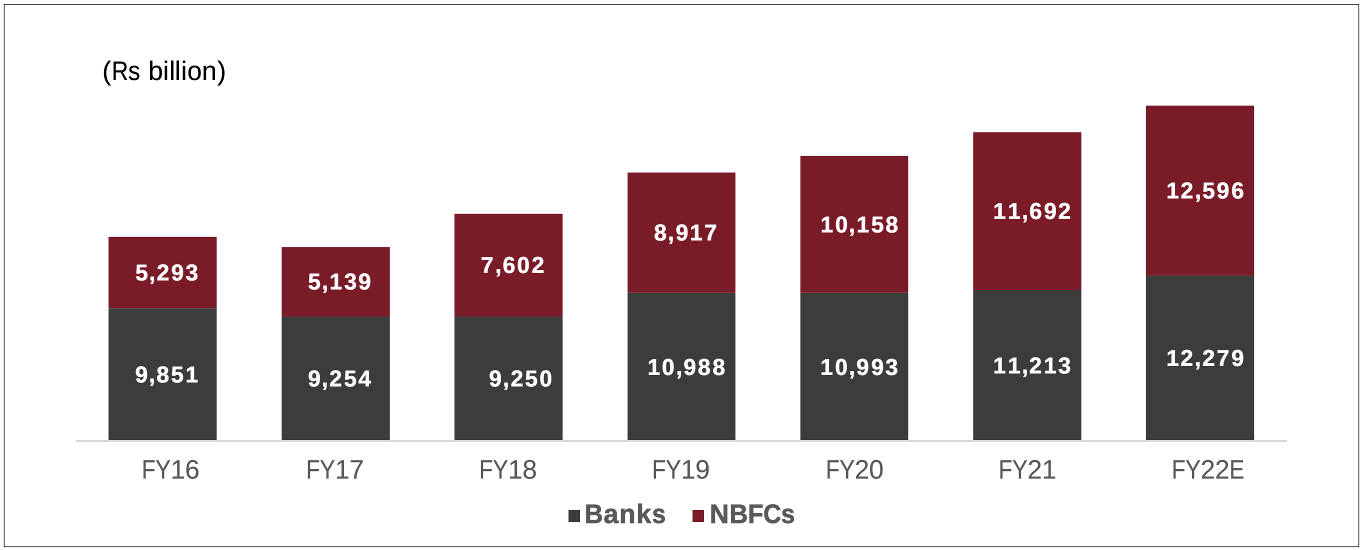
Centre: The share of capex in the annual expenditure of the government has been rising, which bodes well for the infrastructure sector. The share has risen from 11% in fiscal 2011 to 16% in fiscal 2022, while the quantum has grown from Rs 1.1 trillion to Rs 6 trillion. Of this, the Centre's contribution in the NIP was 21% during fiscals 2020-2022. This is expected to increase to 25% during fiscals 2023-2025.

Capex allocation in the Union Budget has been rising. Capex by the central government consists of direct budget allocations, namely gross budgetary support (GBS), retained earnings and borrowings by public sector undertakings and enterprises such as internal and extra budgetary resources (IEBR), and grants to states by the Centre for capex (grants-in-aid). The overall central government capex for infrastructure registered compound annual growth rate (CAGR) of 14% between fiscals 2010 and 2022, rising to 18% over fiscals 2015-2022, signifying the heightened focus on capital asset creation. Funding through asset monetisation is expected to increase the Centre's contribution in the coming years.

State: State governments, too, have been ramping up capex allocation due to the higher GDP multiple it provides, as well as driven by increasing grants from the Centre through centrally sponsored schemes to be implemented by the states. Capex by state governments clocked a 12% CAGR between fiscals 2010 and 2022 and 12% over fiscals 2015 to 2022. Based on this, the state's contribution in the NIP was 30% during fiscals 2020-2022 and is expected at a similar level during fiscals 2023-2025.

Financial institutions: Banks and infrastructure-specialised non-banking financial companies (NBFCs) also play an important part in infrastructure financing. Almost 27% of the funding during fiscals 2020-2022 came from them. Banks were growing at a much faster rate until 2017, post which NBFCs picked up pace and now have almost the same quantum of outstanding book as banks. Overall, the infra financing book logged a CAGR of 9% between fiscals 2016 and 2021. In fiscal 2022, too, the growth was 9%.

NBFCs have been growing faster than banks



Source: Company reports, CRISIL Research

In addition, the government has announced the creation of a development financial institution (DFI) to ease fund flow for infrastructure projects,. DFIs are set up for providing long-term finance for segments of the economy which involve risks beyond the acceptable limits of commercial banks and other ordinary financial institutions. The National Bank of Financing Infrastructure and Development (NBFID) will be set up as a corporate body with authorised share capital of Rs 1 lakh crore, to support the development of long-term non-recourse infrastructure financing in India, including development of the bonds and derivatives markets. Its financial objectives will be to directly or indirectly lend, invest or attract investments for infrastructure projects located entirely or partly in India. The government has committed Rs 5,000-crore grant over and above the Rs 20,000-crore equity capital for NBFID.

Others: Other funding sources include the bond market, equity raised by players, internal accruals and foreign direct investment.

Green bonds support renewable energy projects by providing wider access to domestic, foreign capital

Several large renewable energy players, such as Greenko, ReNew Power and Azure Power, have raised funds from the offshore market through green or masala bonds. Government entities and large financial institutions are also raising funds through the bond route to invest in the country's thriving renewable energy sector, the most recent being Greenko Group, IRFC and Renew Power raising $750 million, $500 million and $400 million, respectively. PSUs, such as PFC and NTPC have also been active. The latter plans to construct 60 gigawat (GW) of solar projects by fiscal 2030 and had raised Rs 200 billion twice via green masala bonds in August 2016 and masala bonds in April 2017 (to finance power projects that would include renewables).

Indian entities have so far issued ~$16.85 billion in green bonds cumulatively until the end of September 2022. Some key advantages of such issuances are:

A firm with a strong background and appropriate instrument structuring can raise funds at a lower capital cost than domestic banks, including hedging costs, if the market conditions are right. Additionally, green bonds offer a fixed rate of financing compared with the floating nature of project loans, in tandem with the fixed tariff power purchase agreement (PPA) revenue models of these projects

Green bonds help diversify the debt profile and refinance existing bank debt, thus allowing bank credit to be utilised later/elsewhere

Structural flexibility is relatively easier when coupon payment frequency can be structured (for instance, step-up in coupon rate at a later stage in the tenure). However, this can affect yields and banks may also provide similar terms, depending on creditworthiness

However, the caveat here is that most recent bond issuances have been towards refinancing existing debt and meeting operating expenses of operational assets (commissioning and stabilisation of operations already achieved), which are less risky compared with greenfield projects. Consequently, this mode is being utilised by players and financial institutions to lower the cost of debt once the project is operational, that is, refinancing the project at a later stage.

NBFCs, too, raised funds through green bonds

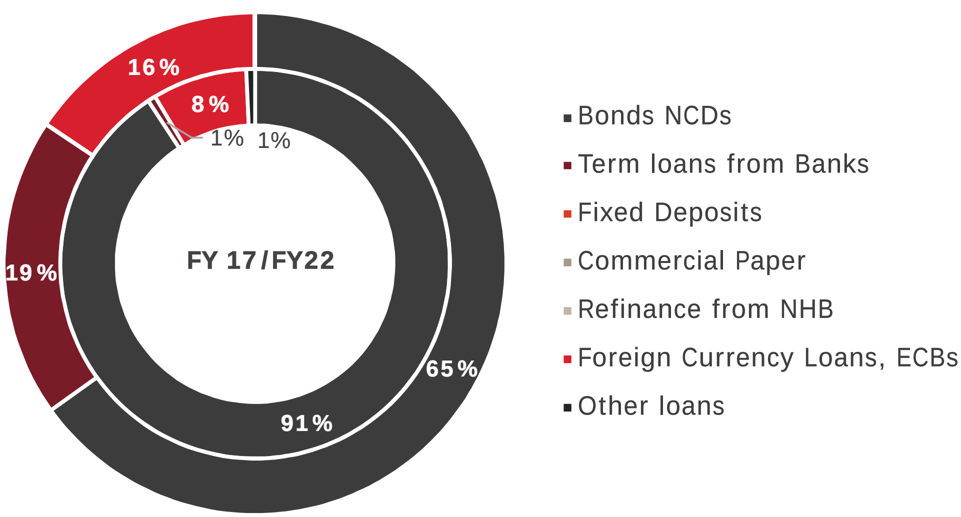
PFC issued its first USD green bond in December 2017 and raised $400 million (Rs 2,575 crore) at a coupon of 3.75%. These bonds are listed on the London Stock Exchange's new International Securities Market (ISM) and Singapore Stock Exchange. In September 2021, PFC issued its first ever euro green bonds amounting to EUR 300 million (Rs 2,597 crore) at a coupon of 1.841%. These bonds are listed on the Singapore Stock Exchange, India INX and NSE IFSC.

The funds raised through green bonds have been utilised to finance renewable energy projects as per the 'eligible projects' under PFC's green bond framework. As on March 31, 2022, loan balances of solar and wind energy projects funded by PFC were Rs 11,794 crore and Rs 6,573 crore, respectively. The total capacity of outstanding solar and wind energy projects funded by PFC as on March 31, 2022, is 6,225 megawatt (MW). Accordingly, PFC's green bond portfolio is more than the amount raised through issue of green bonds.

REC raised $450 million via green bonds with tenure of 10 years in July 2017. The bonds are listed on the ISM segment of the London Stock Exchange and Singapore Stock Exchange.

The proceeds have been utilised to finance solar, wind and renewable purchase obligations (RPO), including refinancing of eligible projects, as defined in the green bond framework of REC, contributing to positive environmental impact and strengthening India's energy security by reducing fossil fuel dependency.

Share of foreign currency loans and ECBs on the rise in the borrowing mix for NBFCs



Note: Inner circle represents FY17 and outer circle represents FY22

Data is not exhaustive and includes the top three NBFCs. ECB: External commercial borrowings, NCD: Non-convertible debenture

Source: Company reports, CRISIL Research

Most of the funding is long term, as is typical for infrastructure assets. Players rely the most on long-term corporate bonds (60-70% of the funds raised by NBFCs). However, the share of NCDs reduced from 91% in fiscal 2017 to 65% in fiscal 2022. Share of banks has increased and foreign currency loans and ECBs have gained momentum.

Investments in emerging segments such as gas pipeline and data centre to rise in India

Gas pipeline:

Natural gas currently accounts for about 6.5% of India's energy mix, with the government pushing to increase the share to about 15% by 2030. India's annual domestic natural gas consumption is expected to increase at a CAGR of 8-10% over the next five years owing to development in city gas distribution networks and increase in regasification capacity. The important constituent that supports such demand growth is the development of natural gas pipeline infrastructure. As of June 2022, India's natural gas pipeline infrastructure was 21,946 km long.

GAIL is the leading player in the country, with an operational pipeline length of 14,488 km accounting for ~65% of the total pipeline infrastructure. The company's pipeline network covers 19 states. Gujarat State Petronet Limited (GSPL), which operates primarily in Gujarat, and PIL, which operates the east-west gas pipeline connecting Kakinada (Andhra Pradesh) and Bharuch (Gujarat), are the other leading players in the industry.

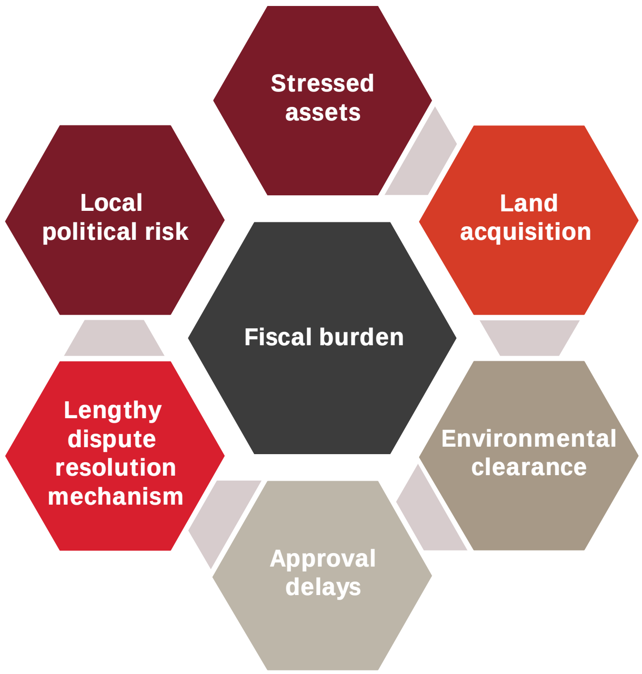
The government plans large investments to improve pipeline infrastructure through the 'One Nation, One Gas Grid' project to connect the eastern and the western regions of the country. The target is to expand the natural gas grid to 33,500 km and to improve clean energy access across the nation and aid development of city gas projects. The envisaged investment in gas infrastructure is $60 billion owing to increase in regasification capacity from 42.5 MTPA to ~70 MTPA in the next five years and development of authorised geographical areas for city gas distribution networks covering 88% of the country, including 17,700 CNG stations by the end of this decade. All this augurs well for the natural gas pipeline segment.

Data centre:

The Indian data centre industry is at an inflection point, with accelerated digitisation and rapid cloud adoption driving the growth. As part of digitisation strategies, industries are shifting their IT infrastructure to cloud to enhance user experience and reduce costs. The industry was ~$2.1 billion in fiscal 2022, rising at a CAGR of 19-21% between fiscals 2018 and 2022. This growth was supported by Digital India initiatives and the growth of sectors such as e-commerce, BFSI (banking, financial services and insurance), technology and media. The industry is expected to clock ~20% CAGR between fiscals 2022 and 2025 led by robust investments by Indian and global players.

India currently hosts about ~164 data centres spread across nine cities, with total installed capacity of 550-580 MW as of fiscal 2022, up from 320-370 MW in fiscal 2020. With digital transformation becoming a necessity during the pandemic, the demand for hybrid cloud models and colocation models surged. Data usage also increased, creating more demand for data storage and transforming the data centre industry to a large and strategically important segment. India's data centre industry is expected to add 320-340 MW of capacity this fiscal on account of the growing internet penetration, increase in data consumption and rising adoption of cloud and big data analytics. Government initiatives such as Digital India and emphasis on data protection and localisation will also play a significant role. The country has potential to become the data centre hub in the Asia-Pacific region on account of low power tariff, presence of undersea cable landing stations and high bandwidth speed.

Infrastructure development looks promising, remains challenging



Fiscal burden

Almost half of the total investment in the infrastructure sector is by the government through budget allocations. But government funds have competing demands, such as, education, health and employment generation.

Challenges of stressed assets

The infrastructure sector is facing issues with respect to availability of capital for new projects. Banks and NBFCs have high exposure to stressed assets in the sector. These stressed assets have led to capital adequacy issues for several major banks/lenders, restricting their ability to lend. The GNPAs in the infrastructure portfolio of banks and NBFCs were at 13% and 7%, respectively, in fiscal 2020 and declined to 7.7% and 5%, respectively, in fiscal 2022, driven by regressive writing off of bad loans and resolutions passed.

The traditional risks associated with long-term lending, such as asset-liability mismatch (ALM) issues, have also led to risk aversion among lenders.

Land acquisition

Timely land acquisition is a major bugbear across infrastructure projects. While authorities have tweaked land acquisition rules to mitigate the impact on project timelines and costs (for instance, handing over projects for construction only after the entire land has been acquired), the issue persists, especially in opposition-owned states. The Mumbai-Ahmedabad bullet train being the shiniest example of the same where in Gujarat and Dadra Nagar Haveli, more than 95% of the required land has been acquired while the same in Maharashtra is only at 47%. Many build-operate-transfer (BOT) road projects that were bid out in the early 2010s are still awaiting stretches of land to be handed over. This affects the risk appetite of lenders.

Issues around environmental clearances to time and cost overrun

Delays in environmental clearances is another issue faced by the industry although the formulation of the PM Gati Shakti initiative should help solve this problem. Even projects under construction need to adhere to changing environmental laws and guidelines. For instance, the construction of the airport at Mopa in Goa had started but had to be halted for more than a year as the environmental clearance was revoked by the authority only to be reinstated later. The delay led to cost escalation.

Approval delays

Permissions/approvals across the project lifecycle involve a host of local bodies, especially for infrastructure projects. A large number of projects are delayed due to delays in regulatory clearances from local bodies as many of these operate independently and do not co-ordinate with other agencies/project authorities.

Lengthy dispute resolution mechanism:

A lot of projects are mired in litigation between the executing agencies and the authorities which own the projects even during the construction lifecycle, which leads to claims/counterclaims impacting financial viability of projects/contractors leading to delays/challenges in execution.

Local political risk

Political risk can range from demands in change of alignment of projects to entire projects getting cancelled, post commencement of construction/ financial closure.

Conclusion:

Infrastructure embodies the most basic facilities that smoothen economic activities through the development of education, communication, transport, banking and insurance, healthcare and technology, thereby accelerating growth. **However,** infrastructure development is a demanding task, which involves huge investments, long gestation period, procedural deays and returns spread over a long period of time.

TRUST BOND MARKET PERSPECTIVE

India Infrastructure Financing: Coming of Age

India is an idea whose time has come. Against the challenging global environment elevated inflation and monetary policy tightening across nations, economic activity in India remains stable. India is poised to emerge as the 3rd largest economy with USD 5.36 trillion GDP by FY29. We believe **Infrastructure growth is one of the drivers for this optimism.**

Infrastructure acts as a catalyst for a country's growth. In the last 5 years, India has been developing world -class infrastructure emphasising on:

- Physical infrastructure: building a network of roads & highways, creating new railway corridors, resolving the electricity generation and distribution,
- Natural resource allocation: mainly telecom spectrum, coal blocks, mining leases for various ores,
- Logistics and Supply Chain: simplifying logistics resulting in integration of supply chain nodes across the country and globally

Finally, setting up the legal framework and processes to construct world-class infrastructure in the country.

With substantial infrastructure development plans, optimal financing is paramount at the construction as well as the post-operations stage. The Indian debt capital markets can play a pivotal role in financing and reducing the cost of funds. Precedence has been demonstrated by refinancing operational projects and using the proceeds to support new projects.

In India, infrastructure financing has witnessed several challenges, including a lack of long-term funding and high funding costs. Banks, hitherto the predominant source of infrastructure debt have found it challenging to increase the proportion of funding as they grapple with sectoral exposure, single borrower limit, risk and manage ALM mismatches.

CRISIL's report estimates that the infrastructure sector would make bond issuances of INR 5.5-7.5 trillion over the next five years and an additional INR 7-10 trillion in issuances of innovative debt instruments. Developing alternative sources of finance is critical to achieving National Infrastructure Pipeline (NIP) targets.

The NIP for FY 2019-25 is a first-of-its-kind, fully government-supported initiative to provide world-class infrastructure to citizens and improve their quality of life. NIP aims to improve the viability of projects through time-bound and efficient implementation of infrastructure projects. To achieve this goal, it recognises the need for an effective regulatory mechanism and timelines for implementation, financing and monitoring, ensuring the achievement of the target project returns. An effective dispute resolution framework is critical to attracting private capital in capital-heavy long gestation infrastructure projects.

The government of India has enhanced its focus on segments like roads, renewables and power transmission, with record levels of project execution and prudent financing framework, making India a preferred investment destination among emerging markets for bond investors looking for low-risk, consistent long-term returns.

Several initiatives are being taken to streamline infrastructure development, and the Government has played a vital role in augmenting the financing ecosystem to raise private capital through bond markets. An important step towards the same is initiatives taken towards broadening the mandate of DFIs like NABFID, NIIF, ASEEM Infrastructure, IIFCL and IDFs. These agencies are mandated to underwrite broad infrastructure sector credit, ensuring reasonable cost long-term financing. All these efforts have enabled long-term investors in the infrastructure sector to provide finance through debt markets and transform the financing landscape, while fostering structural interventions and product innovation.

The Indian debt capital market has been evolving which we believe is at an inflection point. The last few years witnessed the debt market expanding boundaries, deepening the availability of credit, and reaching new heights of volume and spread of transaction structures. As we say, Latius (Wider), Altius (Deeper) and Altior (Higher).

An often-repeated concern by investors is the lack of well-structured projects having a balanced risk-reward framework. For bond markets to capitalize on these opportunities, these issuances need to be structured to mitigate risks of bond investors. Some of the key product innovations that have accelerated bond market activity in infrastructure and need to be supported by the stakeholders are:

a. Hybrid Annuity Model

b. InvITs

c. Co-Obligor or pooled vehicle structures

d. Green Bonds/Blue Bonds

e. Holding Company Financing

f. Guaranteed Bonds

g. Partial Guarantee backed transactions

The bond markets have regular participation from public sector enterprises like IRFC, IREDA, REC, PFC and many more. However, the private sector players have been regularly tapping bond markets with structured bonds. Roads and Renewable players have been dominating this segment. With the experience of these issuers showcasing reduction in their cost of financing and long tenor financing, we expect issuers from other infrastructure sectors also to tap the bond markets, namely, logistics, sewage and wastewater treatment, schools, warehousing and so on.

InvITs -an efficient platform for resource intermediation

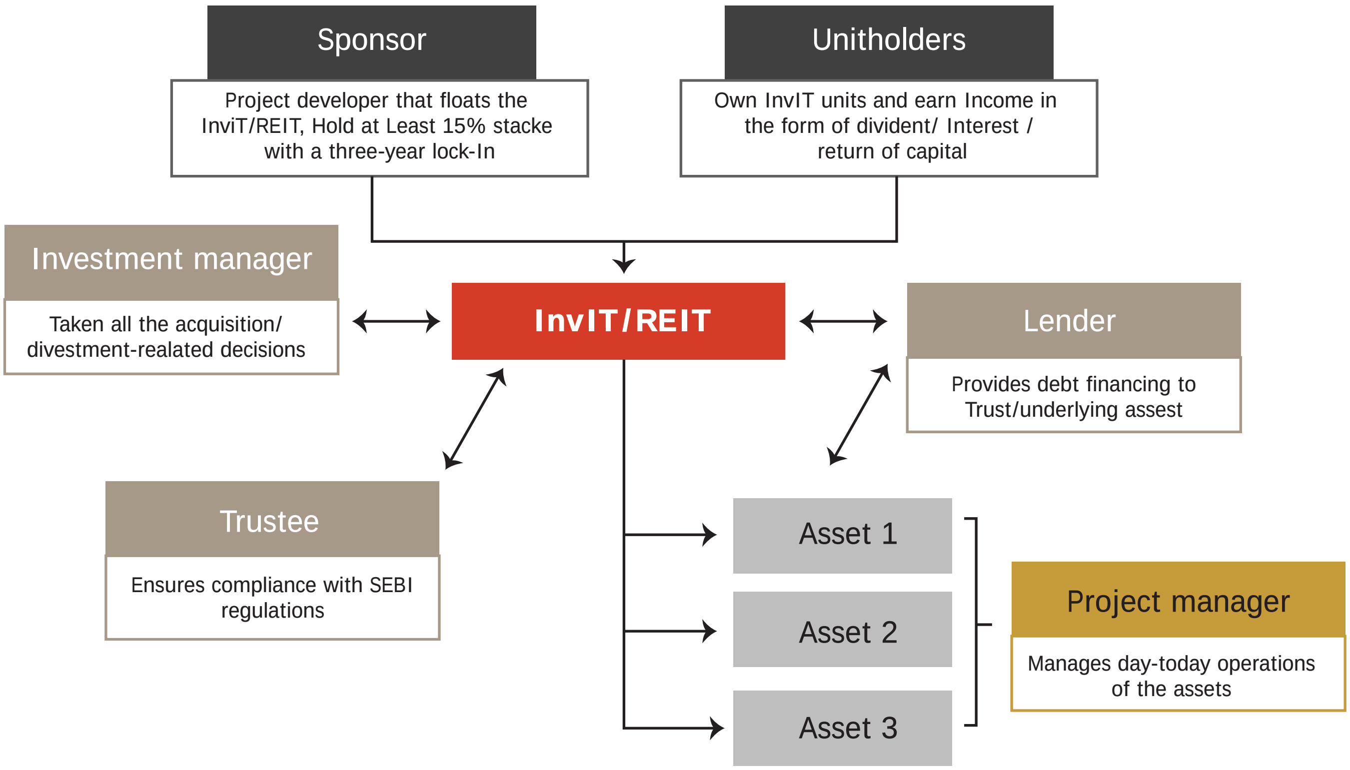
The global success of InvIT as an efficient asset monetization mechanism for long-term assets has been replicated in India with almost 19 InvITs being floated over the last five years. InvITs have become a preferred vehicle allowing new investors to hold operating assets and developers to monetize their assets.

The portfolio of assets with infrastructure PSUs, in addition to passive infrastructure assets, to be completed over the next two fiscals totalling up to ~Rs. 30-35 trillion offer significant potential for asset monetization. Furthermore, Hybrid Annuity Model (HAM) and renewable energy projects have an inherent low-risk cash-flow structure and can be easily monetized by transferring to an InvIT offering. The launch of PGCIL's InvIT and the InvIT by NHAI reflect investor confidence in this vehicle.

Today we have 19 InvITs with an AUM of Rs. 4.43 trillion and debt raised of ~Rs 1.8 trillion. The AUM is expected to reach 9.43 trillion by the end of FY25[1]. Credit risk profiles of InvITs at AAA or AA make this an attractive investment option for all investor segments from institutional to retail.

[1]Crisil coverage on REIT and InvITs

InvIT Structure:



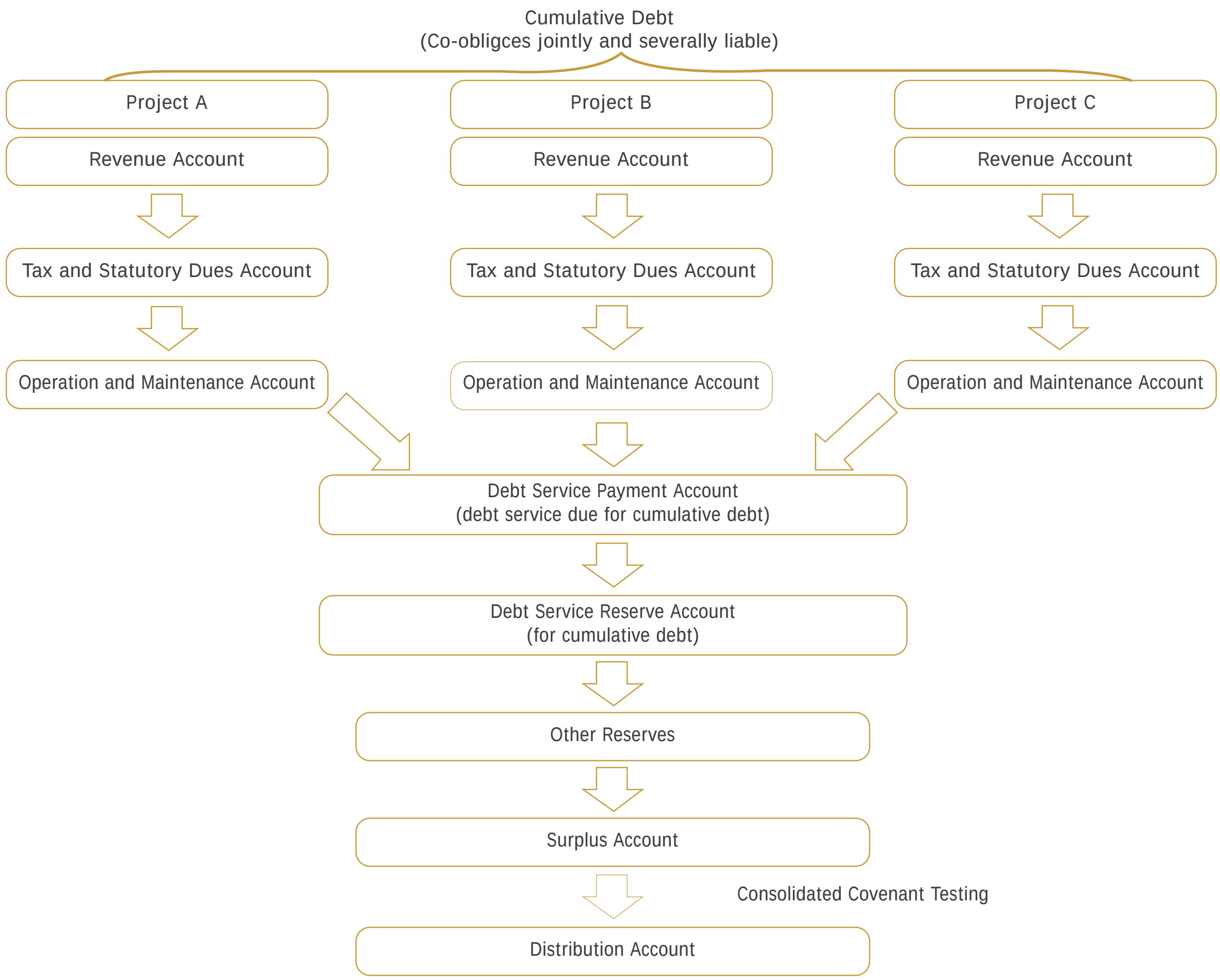
Co-obligor structures

Investors are often wary of concentration risks in infrastructure assets arising from geography or counterparty. Co-obligor structure or securitization of a pool of infrastructure assets helps in diversifying these risks to over a diversified set of assets. A restricted group (RG) - co-obligor structure allows cash flows from completed projects to be ring-fenced from other under-construction projects, thereby providing a robust cash flow profile.

All the SPVs are jointly and severally liable for the cumulative debt. The cash flows are consolidated before debt servicing, and financial covenants are tested on the combined cash flows of all the SPVs. The underlying obligor and co-obligor structure list the mechanism for money transfer to co-obligors in the event of insufficient funds in their respective trusts and retention accounts, and any cash outflows from the RG towards distribution to subordinated debtholders, dividend payments and other are subject to the meeting of the restrictive covenants at the consolidated level.

Roads and renewables have already witnessed structured issuances in the capital markets tailor-made to suit the investors' risk appetite. These structures have the potential to attract investors with their structural safeguards and diversified revenue profile.

Restrictive Group (RG) and Co-obligor Structure



The co-obligor structure has been the most favoured mechanism by the renewable and warehousing sectors to refinance their pool of completed projects. Adani Group, Renew Power, Azure Power, Sembcorp India, Amplus Solar, Greenko, among others have raised funds through these structures from domestic as well as international bonds markets.

Hybrid Annuity Model /Cashflow based bonds

Hybrid Annuity Model (HAM), launched in 2016, continues to be the favoured route for implementing projects for developers and lenders. These projects have a pass-through structure for expenses while having a stable annuity flow. Operational HAM projects have a low-risk, long-term cash flow, and are ideal for refinancing through bond markets especially for investors like mutual funds, insurance companies and retirement funds. Additionally, HAM projects are well-designed for being transferred to InvITs allowing investors with safeguards of HAM with the benefits of InvIT.

Type of structure	Issuers	Rating Range	Tenor Range
HAM/ Cash flow based models	Cube, GRIL, Gawar, KNR, DBL, PNC,	AA to AAA	13 years with Put/Call after 2/3 years

Green bonds / Blue Bonds

As climate change becomes a key issue for stakeholders around the world, the need for sustainable infrastructure has become more pronounced. A growing proportion of global capital is being invested in "Green norm" compliant assets.

Green Bonds are financial instruments backed by revenue-generating infrastructure assets classified as complying with the green norms. While global markets have already recognized the need for dedicated, low-cost funds for infrastructure, India is catching up as well with ~ USD 8 billion[2] of green bond issuance in the last 3 years. SEBI's efforts towards increasing non-financial disclosures and extending the applicability of BRSR[3] will enhance global investor confidence in Indian bond markets.

Blue Bonds have been explored by various issuers however we foresee this market to grow in the next 1-2 years.

Holding Company Financing:

Infrastructure companies avail financing at their asset holding company for the following:

1. Against a pool of cash flow generating assets directly held by them (instead of SPVs) to refinance the project debts, or
2. Raise hybrid debt to support their subsidiaries. Generally, these transactions happen against the comfort accruing to the consolidated cashflow position and sponsor comfort.

Type of structure	Issuers	Rating Range	Tenor Range
Pooled structure at the holdco level	Cleanmax Enviro, Cleantech Solar, Fourth Partner	AA to BBB	3-7 years
Other infra finances (Holdco Financing, Operating company financing etc.)	Tata Power Renewables, Hero Future Energies, GR, DBL	AA to A+	3-10 Years

Guaranteed Bonds

A highly rated sponsor provides its guarantee to a subsidiary or undertaking to enhance the rating or provide structural comfort with cash collateralization. Trust Group has successfully structured and placed such transactions as showcased below.

Type of structure	Issuers	Rating Range	Tenor Range
Guaranteed bonds	UPPCL, MSRDC, APState Beverage	AAA to A+	Upto 12 years

[2]Source: Climate Bonds Initiative

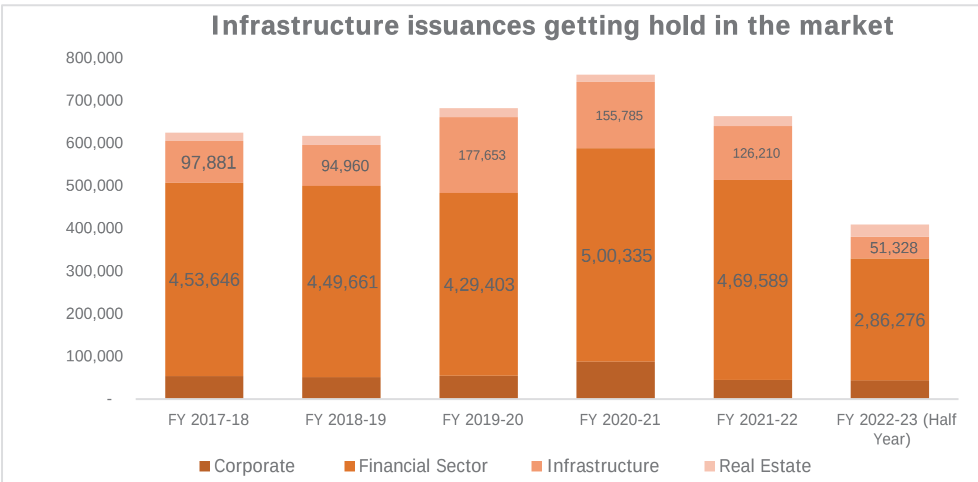
[3]Business Responsibility and Sustainability Reporting

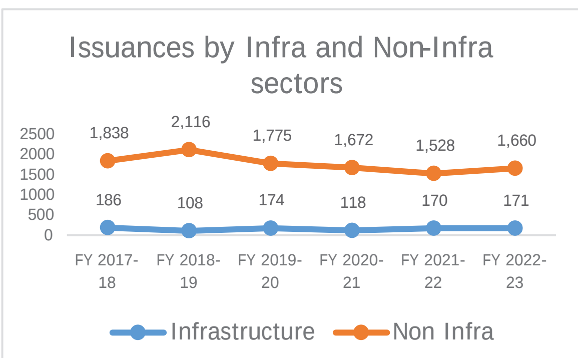
Summary of key features of different financing structures till date

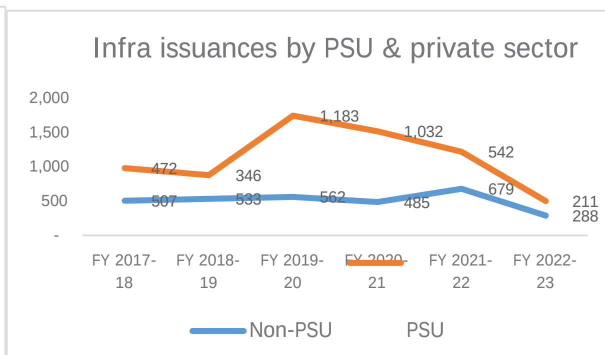
Parameters	HAM	Co-Obligor	InvIT	Green Bonds	Guaranteed Bonds	Debt IPO	Holdco structures	Partial Guarantee based structures
Listing	Not mandatory	Not mandatory	Yes	Not mandatory	Not mandatory	Yes	Not mandatory	Not mandatory
Stage	Completed	Completed	Completed	Completed	NA	Completed	Completed	Completed
Sponsor	Defined	Not mandatory	No, Project Manager and Investment Manager	Yes	Yes	Yes	Yes	Yes
Rating	AA+ to AAA	AA to AA+	AAA	Investment Grade	Yes	Yes	Yes	Yes
Tenure	upto 13.5 years	15-18 years	upto 25 years	15-18 years	upto 12 years	3-5 years	5-7 years	12-15 years
Asset	Single asset	Multi Assets, Mix	Multi Asset	Single asset	Single Asset	Multi asset	Multi asset	Multi asset
Sectors	Roads/ Railways/ Waste water and Sewage	Renewables, Warehousing Roads under ToT model	Roads, Transmission, Renewables W/H, Airports, Telecom Towers	Any	Any	Any	Any	Infrastructure assets
Coupon type	Fixed / Floating	Fixed / Floating	Fixed	Fixed / Floating	Fixed / Floating	Fixed	Fixed / Floating	Fixed / Floating
Spread Reset	2-3 years	2-3 years	2-3 years	2-3 years	2-3 years	No	Yes	Yes
Cashflows	Ring fenced	Ring fenced	distribution of 90% of NDCF	Not ring fenced	Not ring fenced	Not ring fenced	Ring fenced	Ring fenced
Cash Sweep	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Restricted Payment Conditions	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes
Sponsor Undertaking	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Security	Cashflows and documents	Assets, cashflows and documents	InvIT assets	Charge over the underlying	Charge over the underlying	Multiple	assets & cashflows	Charge over the assets, PCG, CF
DSRA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Bond market issuances analysis

From 2018 till date, Indian bond markets have seen issuances of Rs. 37.60 trillion, of which infrastructure bonds accounted for Rs. 7.03 trillion, accounting for 18.71% of market shares of the total amount of issuances.

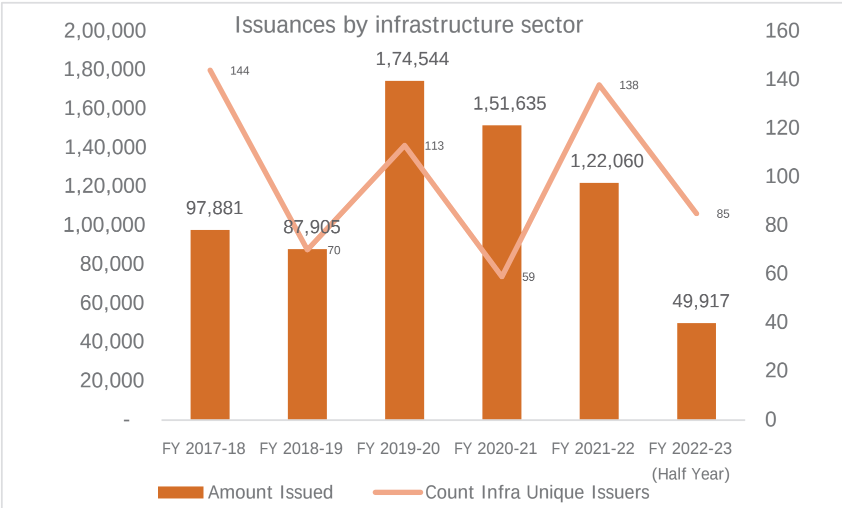






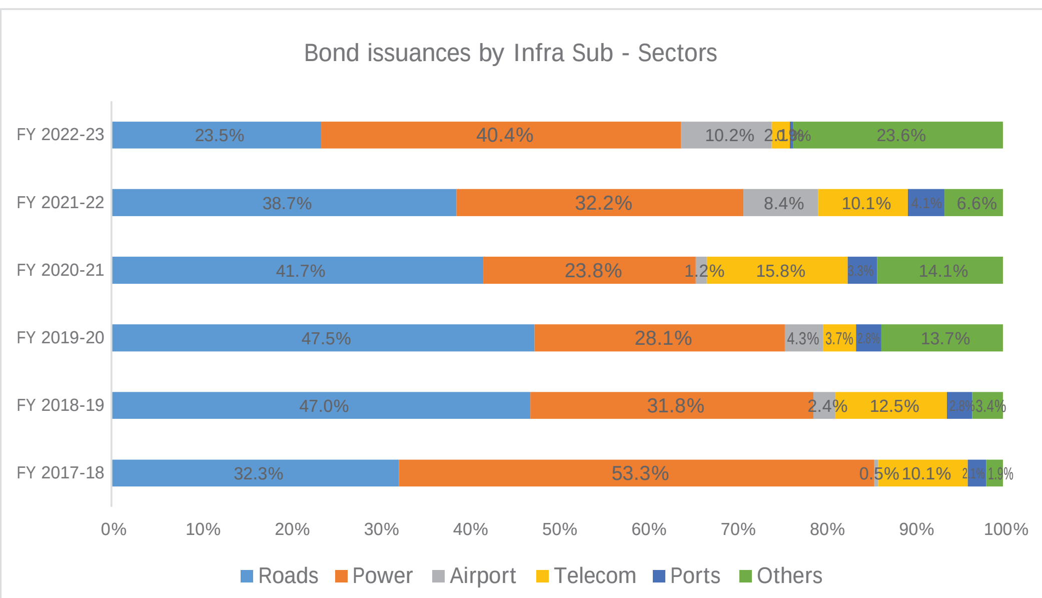
Infrastructure issuances accounted for ~10.0% of the overall issuances by number in FY22 but accounted for 19% of the overall issuances by value. Further, private sector infrastructure issuances accounted for 68% of total infra issuances in FY22 compared with 32% in FY21, which is on account of NHAI reducing issuances of bonds during the period.

The market share of bonds issued by the infrastructure sector touched a high of 26% in FY20, declining to 12.5% in H1FY23. This has been primarily due to NHAI curtailing its bond issuances drastically from FY21 onwards and the rising interest rate environment in FY23 to date, wherein the banks' lending was cheaper due to a lag in transmission of rates.



On the flip side, during the period, NHAI vacated the market, HAM issuances picked up considerably, and several issuers such as DBL, PNC, Cube Highways, GR Infraprojects, Gawar Constructions, Welspun Enterprises promoted completed HAM SPVs issued bonds in the market. Most of the issuances happened on the fixed coupon basis for 2-3 years with a door-to-door tenor of up to 13.5 years with a reset or a put/call, while GR Infra promoted SPVs issued variable rate instruments considering the variable pass-through nature of underlying HAM projects. In addition, renewable players adopted to co-obligor structures such as Adani Green, Renew Power, Cleanmax Enviro, Aavada Group, AO2 Power, Greenko, and Fourth Partner.

Infra sub-sector wise issuance from 2018 till date



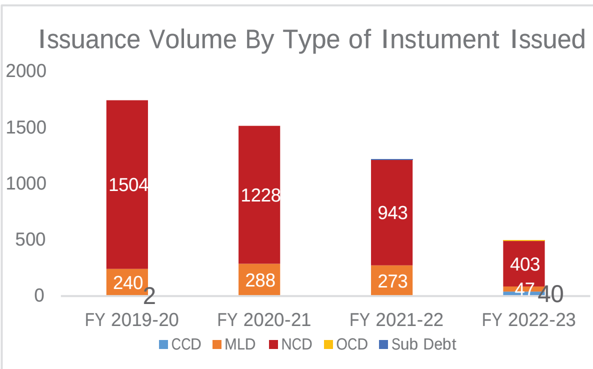
Source: Prime Database

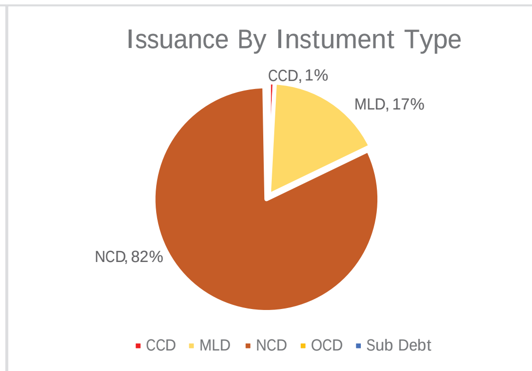
Roads and power accounted for approx. 70% of the overall issuances during the last 5 years. Leading PSU infrastructure segment entities like NHAI, NTPC, SECI, SJVN, and NHPC were the largest issuers.

During the last 2-3 years, InvITs also gained traction and they were regular issuers in the market. Further, telecom infrastructure continued to raise funds from debt markets like Reliance Jio, Bharti Telecom as well as Data Infrastructure InvIT.

The airport sector witnessed GMR Group entities, Bangalore International Airports, and Adani Airports raising funds through bonds. However, the bonds raised by Adani Airports' subsidiaries are primarily Optionally Convertible Debentures (OCD) and infused by the parent itself.

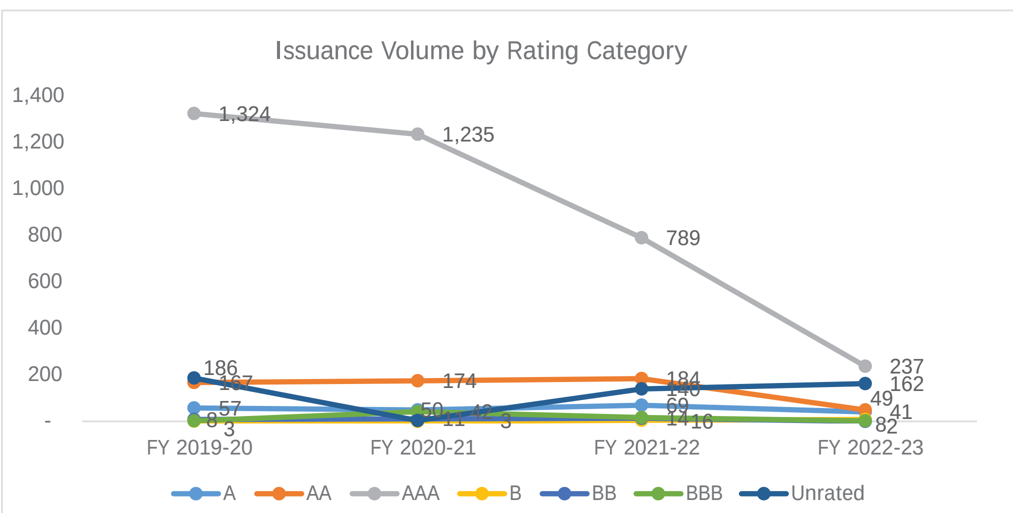
Issuance by type of Instruments:





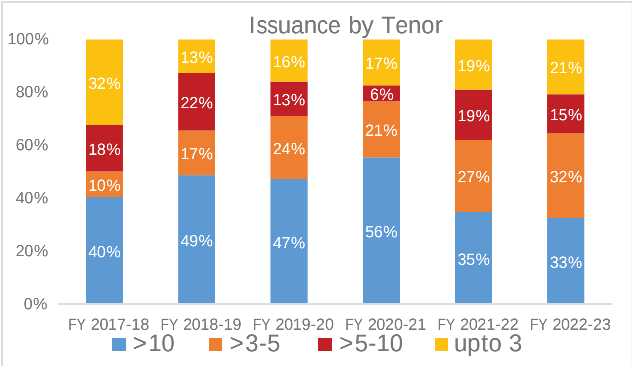
Source: Prime Database

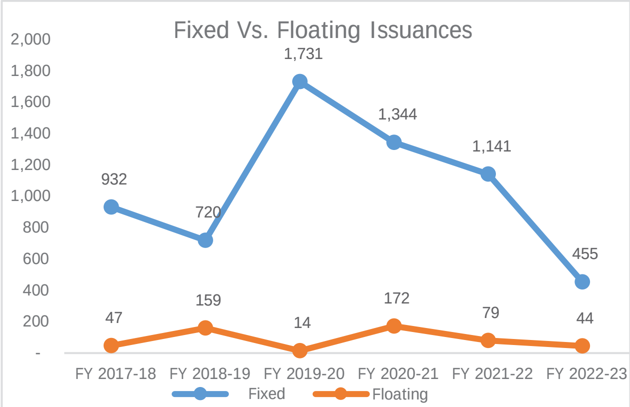
NCDs traditionally dominate the issuance with a share of 82%, while MLDs account for 17% of the issuances. Notably, investment in the equity of renewable companies from their foreign investors/sponsors also comes in the form of Optionally Convertible Debentures (OCDs)



Source: Prime Database

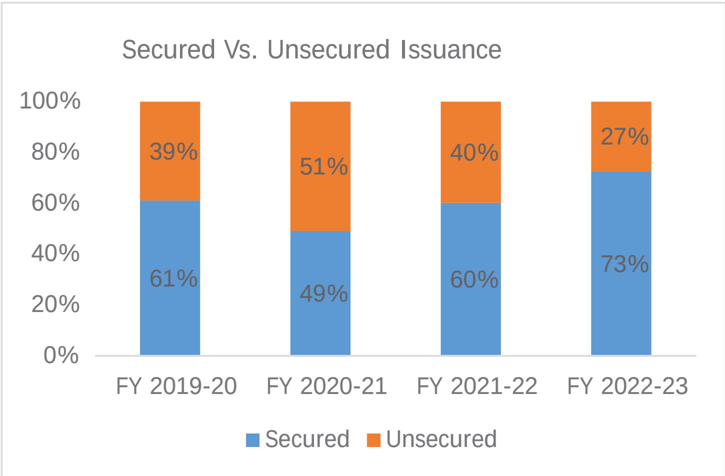
The deepening of the debt market can be observed with the bond issuances across rating categories. Further, the investor base is growing wider for the infrastructure sector bonds as the investors participating in the bond issuances include Banks, NBFCs, Foreign Banks, Financial Institutions, Development Finance Institutions, Pension and Provident Funds, Insurance companies, AIFs and family offices to name a few.





Source: Prime Database

An average of 65% of the issuances have been more than 5 years, with a preference for 10-year and longer structures. Further, the bond market has shown a preference for fixed-rate issuances.



Source: Prime Database

The majority of the issuances are secured, while unsecured issuances are primarily from strong public sector undertakings.

Further, individual investors are unable to participate in the infrastructure sector issuances because of the high -ticket size of the single bond and lack of investor awareness. Recently, regulation changes allowed a reduction in the ticket size of the issuance to Rs. 10,000 per bond. Infrastructure companies are yet to see tapping the debt IPO market. Trust Group expects large infrastructure companies to access the Debt IPO route to raise funds shortly.

As the country targets to become a developed economy by 2047, a very large infrastructure investment is needed. Foreign investors, including pension funds, retirement funds, insurance companies, private equity funds and many more capital pools, must be available for the Indian infrastructure sector.

To support this growth, certain sectors may need nodal agencies to support the growth, like the renewable sector – in the form of “Green Bank of India” or infrastructure guarantee providers or government-promoted entities to use securitization as a vehicle to raise funds and lower the cost of financing.

Since 2002, Trust has been at the forefront of showcasing innovative transactions to support infrastructure growth. A few marquee transactions are covered as follows:

- Sole arranger for Rs. 7800 Crores NCD issuance by AP State Beverages Corporation
- Lead arranger for Rs. 4355 crs NCD issue by UP Power Corporation Ltd
- Sole arranger for Rs. 612 Crores First long-term Rupee Green Bonds issued by Adani Green RG1
- Sole arranger for Rs. 235 crs NCD issue by DBL Byrapura Challakere Highways Pvt Ltd (Sponsor Dilip Buildcon Limited)
- Virescent Renewable Energy Trust- Raising long-term debt and arranging investor meetings for its upcoming maiden NCD issue of 5 years
- InvITs debt- Powergrid InvIT, IRB InvIT, Indigrid InvIT for distribution of units and debt issuance
- Pioneer in unique structure for last mile funding under UDAY Scheme for Uttar Pradesh Power Corporation Limited

India’s time has come, and it has finally started the journey to be a USD 5 trillion economy by 2027. India targets to invest Rs. 115 trillion by FY2025 to build:

- Network of expressways, rural roads, urban infrastructure, railways, tunnels,
- Renewable energy generation capacity of 500GW by 2030,
- Water to every home and housing for all,
- Sewerage and wastewater treatment, irrigation network,
- Telecom and broadband network,
- Education infrastructure among others.

India bond markets provided a capital of Rs. 3.03 trillion during the last 16 months starting January’21 to finance infrastructure assets. The strong characteristics of the underlying structures, strengthening regulatory and legal frameworks provide an additional impetus. We could see investors in the search for long term consistent cash flows in line with their investment requirement for the likes of endowment funds, insurance, pension companies and thereby resolving the challenges faced by the banks to free up their capital to reinvest in under-construction projects.

We are witnessing the initial tip of the iceberg on infrastructure financing; however, the conducive environment, structural reforms and innovative product innovations going forward will be critical for the long-term sustainable growth.

EXPERT OPINION

TRUST
In Partnership. With Trust.

Mr. P.R. Jaishankar
Managing Director
India Infrastructure Finance Company Limited

Infrastructure sector is one of the most crucial pillars of growth for any Economy. The fact that infrastructure sector has a compounding effect on the growth and development of any economy is not new. The sector as we know has strong backward and forward linkages with a strong multiplier effects across sectors. As per estimates, investments in infrastructure equal to 1% of GDP will result in GDP growth of at least 2% in the case of India.

'Infrastructure-led recovery' continues to be the motto of the Indian Government for reviving economic growth across sectors. The Union Budget for 2022-2023 evidently showcased the intent of the Government for the development of the infrastructure and allied sectors in the country through progressive schemes such as the PM Gatishakti, PM GatiShakti National Master Plan, Parvatmala etc. along with a massive push to infrastructure capex.

India Infrastructure Finance Company Ltd (IIFCL) has been leading the infrastructure financing space in the country with cumulative consolidated sanctions and disbursements of over Rs 2.4 lakh crore and Rs 1.1 lakh crore, respectively. Around 35% of this business has been done in the past two and a half years alone. So far, IIFCL has participated in around 650 projects, providing financial assistance to nearly 27 percent of PPP projects in the country. IIFCL's financial assistance has enabled the development of about 29,000 kms of roads, constituting about 17 percent of National Highway capacity, 65 GW of installed energy capacity, which is 17 percent of India's total installed energy capacity, 800 MT of port capacity, which is about 32 percent of India's Major Port capacity along with development of major International Airports such as Delhi, Mumbai, Hyderabad and more. Some of the new and prominent greenfield projects such as Navi Mumbai International Airport, Jewar International Airport, Pune IT City Metro and Ganga Expressway are also being financed by IIFCL.

Financing infrastructure, with its intrinsic complex nature, has become very challenging over the years. In this changing landscape, financial institutions need to re-invent their outlook towards fulfilling the mammoth funding requirement of infrastructure. It is pertinent to mention that India's outstanding infrastructure credit is around Rs 26 Lakh Crore. Nearly 45-50% of Infrastructure projects are either completed or are in O&M stage. This presents an opportunity for refinancing about Rs 13 Lakh Crore. Further, the National Infrastructure Pipeline (NIP) estimates around 6%-8% or another Rs 9 Lakh Cr to be funded by Bond Markets. These funds if channelled through the bond market can free up banks' capital for investment into newer projects and can enable churning of capital.

To tap into the bond market potential and further its role in innovative infrastructure financing, IIFCL has recently ventured into investment in Project Bonds and lending to Infrastructure Investment Trusts (InvITs).

It is also estimated that InvITs can be utilised for monetization of infrastructure assets worth 6 lakh crores in the next four years.

The infrastructure sector has come out of its "teenage" phase over the last two decades and it is time for the regulators to support innovative structured solutions and help to de-stress the lending space. Presently, refinancing a project is treated as akin to 'restructuring' which requires higher provisions by lenders, as per the extant RBI norms. Refinancing of Standard assets with no overdues should be encouraged, particularly from regulatory perspective. It must be like a 'relay race' where the baton (financial assets) are passed on to the next runner (bank/financial institution), thereby enabling an effective sustainable solution for long term financing in the immediate short run. In order to improve the viability of the projects, IIFCL is pushing for Refinancing of Standard and Viable Project Loans without change in Asset Classification. Another key area where focus needs to be directed is the pending termination payments by Concession Authorities. Termination payment is a key component while a project's credit appraisal is being carried out by the lenders and its timely release of Termination Payment is very important to protect the interest of lenders and developers. Hence, the concession agreements should have clear timelines for the release of termination payment by the concessioning authorities.

Infrastructure project completion often faces risks due to delays in land acquisition, delays in obtaining clearances and approvals, etc. Such unwarranted delays lead to termination of the project. There is a need for a comprehensive insurance structure in the infrastructure sector that covers the project completion risks. IIFCL is advocating such a product – "Project Completion Risk Insurance (PCRI)". Such an insurance structure would limit the Concessioning Authorities' outlay to the amount of premiums to be paid to the insurance providers and also reduce the financial burden on the exchequer. It will also lead to early release of Termination Payments which will benefit the project developers and lenders. Amongst our digital initiatives, we have put in place an Online Project Monitoring System (OPMS) initiative as an effective tool for ensuring progress-linked disbursement in infrastructure projects.

Given the immense infrastructure financing requirements of the country, it only becomes crucial for institutions to come together at this juncture with a unified goal of developing the country's infrastructure as no single entity is a panacea to meet the long-term funding requirements of the infrastructure sector.

Mr. Vineet Mittal
Chairman
Avaada Group

India targets to increase its non-fossil energy capacity to ~450 GW-500 GW by 2030 and meet 50% of its energy requirement from renewable energy to reduce the carbon intensity of its economy by 45% by 2030 and achieve net-zero status by 2070. In order to achieve this targeted milestone of 450-500GW of renewable capacity by FY30 (from the current level of 112GW), India needs to add ~30GW-35GW of renewable capacity annually in the next decade (a bulk of this - ~25-26GW - would come from solar energy).

Recognizing this valuable opportunity to strengthen the country's energy security, establish a global hub for solar equipment manufacturing, and boost economic growth, the Indian government is focusing heavily on enhancing domestic solar equipment manufacturing capacity across the entire value chain.

India's renewable growth story is not limited to the addition of plain vanilla solar or wind capacities alone, but the sector's growth promises to provide many emerging opportunities across hybrids, energy storage, green hydrogen, electric vehicles (EVs) and other segments. Green hydrogen and its derivatives are expected to play a critical role in decarbonising the pollutant sector globally. As countries step up their decarbonisation efforts to mitigate climate change, green hydrogen has emerged as a key alternative to controlling emissions while meeting the growing energy demand.

India has envisaged that hydrogen usage in the country will enhance from 6.7MMT in FY21 to ~12MMT over the next decade, led by strong growth in the fertilizer and refining sectors and also from the replacement of expensive natural gas/oil/coal across other sectors like steel, chemicals, long-haul transport, shipping and aviation. In this context, hydrogen needs to be low carbon from the outset and ultimately green. India targets to achieve 20-30% of this 12 MMT of demand through green hydrogen.

Mr. Pritesh Vinaye
Director (Finance)
JSW Energy Limited

Indian Power Sector: Bright & Breezy

Energy security is a key enabler for any nation's economic growth and India's focus on clean and affordable energy is central to creation of a sustainable and progressive society for the coming generations. India's power demand in the next decade is expected to grow at 7% p.a. at a 1.1x elasticity to GDP growth. As per the latest IMF projections, India's GDP is expected to grow at 6.8% and 6.1% in 2022 and 2023 respectively, outperforming major economies of the world. The positive outlook on India's medium term economic outlook is an outcome of favorable policies, ease of doing business and access to capital.

India's per capita energy consumption has doubled in the last 20 years, but is still a third of world average and considerably lower than the comparable developing economies. However, we are currently transitioning to an era of high per capita energy consumption, and a large part of this will be met by electricity. The increase in power requirement of our country is underpinned by last mile access to power, improved per capita income, population growth, impetus on domestic manufacturing on the back of 'Aatmanirbhar Bharat' initiative. Further impetus is expected from electrification of mobility and transitioning to new energy like green hydrogen and its derivatives.

Our current installed capacity stands at 408 GW with the share of renewable at 118GW (excl. large hydro). This is against the current base load demand of ~ 170 – 180 GW and peaking power of ~ 200 – 210 GW. India aims to have an installed capacity of 623 GW by FY27 and 866GW by FY32 while striving to meet 50% energy requirement from renewable sources by 2030 in-line with COP26 commitments. This effectively implies renewable capacity to increase by almost four times, primarily from wind and solar power. However, thermal generation remains crucial for India on the back of increasing base load demand. The transition to clean energy amid rising power requirement is a win-win situation for generating companies, consumers and the country as a whole. This transition is backed by favorable government policies like PLI schemes to support domestic manufacturing of solar panels and its supply chain, which will be key to achieve the targeted generation capacity. In addition, the sanctity of long term offtake contracts being upheld by judiciary has reinforced the confidence on value creation within the sector, evidenced by the massive capital commitment plans for almost ~200GW of capacity additions by large Indian corporates by 2030.

The shift to clean energy would translate into massive capital raising and funding requirement in this sector. The total funding needs for the capacity additions are estimated to be ₹14.3 trillion during FY22-FY27 and another ₹17.2 trillion during FY27-FY32, including capex for energy storage. Assuming a 25% equity contribution by the developers, debt financing amounting to ₹23.6 trillion will be needed by the industry by 2032. As per NITI Aayog estimates, funds availability for power sector from National Monetization Pipeline is estimated to be ₹8.5 trillion over 2022-25.

The intermittency of green power will lead to emergence of energy storage solutions (BESS and Pumped Hydro), and in addition, the industry is pivoting from 'electrons to green molecule'. These projects would need initial policy support and risk capital funding from multilateral, sovereign or quasi sovereign funds. Invariably, the debt markets would need to adapt to review credit risk of these new-age businesses with an alternative lens for financial appraisal. Similarly, the sector is expected to attract long-term patient capital from strategics, pension funds, sovereign funds, etc. Historically, banks' exposure to the Renewable sector has been low due to unstable project cash flows and sectorial exposure limits. As of Sep-22, the total non-food advances by India's Scheduled Commercial Banks stands at ₹126 trillion which compares to the total debt funding requirement of ₹23.6 trillion by FY32 for the capacity additions.

India is in a sweet spot in its journey towards clean energy transition underpinned by increasing power demand and favorable policies. Further, storage solutions and viable green hydrogen will boost adoption of Renewable power. The outlook is indeed bright and breezy !

Draft National Electricity Plan - Published by CEA in Sep-22

Mr. Vinay Sekar
Chief Executive Officer
Cube Highways Trust

Growing Indian Road Sector

India has set a target of spending 1.4 trillion USD over a period of 5 years (FY 2020 – FY 2025) under the National Infrastructure Pipeline (NIP). This is nearly two and half times more than the historical spending on infrastructure. Our National Highway (NH) network is expanding at a pace never seen before. The length of NHs has increased by more than fifty percent in last seven years from 91,287 km in 2014, to 1,40,152 km in 2022. The Ministry of Roads Transport and Highways (MoRT&H) target to increase NH network to 2,00,000 km by 2025. The pace of construction has increased more than 3 times, from 12 km per day in 2014-15 to 37 km per day in 2020-21.

There has been a strategic shift in creation of road infrastructure. The focus has shifted from a piecemeal approach to a holistic approach with focus on long term value creation. Greenfield expressways with world class amenities are being created to shorten travel time and provide great customer experience. Coordinated road infrastructure development is being undertaken through several National schemes such as Bharatmala Pariyojna (Roads), Gatishakti Master Plan (Logistics) and Sagarmala Pariyojna (Coastal Shipping).

This is a sector of strategic national importance, and the scale of the investment opportunity at hand today, is matchless. In addition, the highway sector also forms over 25 billion USD of the 80 billion USD National Monetization Pipeline.

What makes Roads sector great for investment?

MoRT&H along with NHAI (National Highways Authority of India) have been at the forefront of creating a fostering ecosystem for bringing in private sector investments in the sector. The sector, which initially started with the Annuity form of PPPs, has evolved significantly over the past 25 years – developing and implementing projects on DBFOT, HAM, OMT and TOT. It is also now focussing on asset monetization through creation of infrastructure trusts (InVITs).

The sector is backed by a stable and mature policy environment, where the concession framework has been tested over a 25-year period. One of the hallmarks of the concession framework is the formula based toll revision based on inflation that has now been institutionalised. The fact that toll is collected directly from end users provides a significantly better counter-party risk profile compared to other infra sub-sectors. The concessions typically lock-in long term cash flows, up to 30 years and provide opportunities for organic growth through (a)Traffic growth which is driven by economic growth and rising disposable incomes; and (b) Toll rate growth which is indexed to inflation.

For an InvIT holding a diversified portfolio of assets, the cash flows are therefore likely to be highly correlated to the nominal GDP growth of the country. This makes InvITs attractive for investments by long term investors and will therefore become the primary holding vehicle for road infrastructure assets in this country.

Mr. GRK Babu
CFO-AirportSector
GMR Airports Limited

The global aviation sector was among the worst affected due to COVID pandemic during FY21. However, significant recovery was witnessed during FY22. Even with recurring COVID waves, domestic traffic exhibited an impressive recovery. For many intermittent periods, Indian domestic traffic even clocked near pre-pandemic passenger traffic. The relatively stronger recovery after the first wave as compared to many geographies has demonstrated the intrinsic resilience of the Indian market. A higher number of first-time flyers were observed during the year which bodes well for enhancing penetration into the India market post recovery. Further, post the 2nd Wave recovery in June 2021, there has been significant increase in leisure / vacation travel despite the crippling impact of the 2nd wave. The phenomenon of pent-up demand and ‘revenge travel’ has resulted in faster recovery of hospitality and air traffic. International traffic also recovered to nearly 60-65% levels by end of FY22. India’s post COVID recovery has been impressive and it has been consistently projected to be the best performing major economy for years to come. Thus, we remain largely confident that in spite of a few short to medium term head winds, given government policy initiatives especially in the infrastructure sector, India’s long term growth story remains intact. Government had announced that 100 new airports are to be developed by 2024 under UDAN regional connectivity scheme. The scheme has progressed well and even amid pandemic-hit couple of years, government has managed to operationalize 67 airports under the scheme as on April’22. The UDAN – regional connectivity scheme has been very effective in connecting more cities and thus tapping the largely under-developed broader aviation market in India. We believe that this scheme will be a major driver towards increasing India’s air traffic as it increases the overall aviation network of the country. In addition, as government continues with privatization of existing airports, investment opportunities in Indian aviation sector are immense. Further as per Budget 2022-23 announcement, issuance of e-Passports using embedded chip will be rolled out in 2022-23 to enhance convenience for the citizens in their overseas travel. Even airlines seem upbeat on the future growth prospects and continue to add more aircrafts to their fleet. In line with this optimism, Indian airline sector witnessed key developments during the year. On one hand Air India was acquired by TATA group, while a new airline ‘Akasa’ was launched in August FY23. Also, Jet Airways is well on the way to re-start operations.

The rapidly evolving situation related to COVID-19 required a robust response by airport operators to ensure the safety of passengers, staff, and operations at airports. GMR is proud to mention that it has done exceedingly well in the current situation and has proactively implemented contingency plans. Few such initiatives that were implemented at our airports include:

Contactless passenger processing; Camera based contactless ID and travel document verification; Contactless car park transactions via Fastag etc.

In terms of airport financing, in Sep'22 GMR Airports Limited (GAL) successfully raised INR 1,110 crore from JP Morgan and Morgan Stanley to pay back INR 1,330 crore payments due to DB International, SCB and Aditya Birla Special Situation Fund through private placement of bonds. Further, in Jun'22, DIAL, a subsidiary of GAL successfully completed the issuance of 5-year NCD's, to partly fund the Phase 3A expansion programme of the airport while in Feb'21 GMR Hyderabad International Airport (GHIAL), raised USD 300million bond 4.75% senior secured notes of 5-year tenure in the international market. GMR's ability to raise funds by way of private placement / NCD's to international / domestic investors goes on to show growing investor confidence and group's ability to create value for the investors

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Mr. Sandeep Bagla
Chief Executive Officer
TRUST Mutual Fund

The US Fed and the Indian RBI have both started tightening monetary conditions in an attempt to bring down inflation, which has gone far higher than their comfort levels. For the last 14 years, ever since the Global Financial Crisis in 2008, central banks have kept rates low and liquidity easy to support growth. The conventional wisdom that excess supply of money causes inflation was seriously challenged as inflation remain by and large subdued all these years. In response to Covid 19, the central bankers globally sprayed money generously to support demand, which led to a massive expansion in their balance sheets. This time the monetary expansion resulted in rip-roaring inflation, which has since gotten broad based gradually and led to a sharp turnaround in thinking of central banks, who rapidly increased policy rates and reduced money supply. The US rates have gone by almost 4% and the bloated balance sheet has reduced marginally so far.

In response to the regulatory measures, market yields too rose, with yield curves flattening as the shorter end rates rose more sharply than longer-term bonds. In the US, the 10 year yield has risen to 4.20%, while in India the 10 year Government bond yield is at 7.50%. Credit offtake has started rising as liquidity is tight and the funding from the foreign exchange route has simply dried up. The Rupee has depreciated against the Dollar, though less than most other currencies, but is expected to depreciate more in the near term.

Now we are at a true inflection point.

Most of the market participants seem to believe that the worst is behind us. Central banks are in control of inflation. Inflation will cool down gradually and investors will all live happily ever after.

Another group believes that it is going to be long drawn battle against inflation, one that could see many more casualties. Bond yields could rise more from here; the equities could see a sharp correction in valuations and in terms of prices.

There are many moving parts in the current market conundrum. There are geo political risks, which could take a turn for the worse. There has been unprecedented wage hikes and labour shortages that could easily lead to an upward wage price inflation spiral upwards, taking services inflation higher. If inflation expectations were to get entrenched at higher levels, central bankers would have tighten much more, much faster and for a longer period.

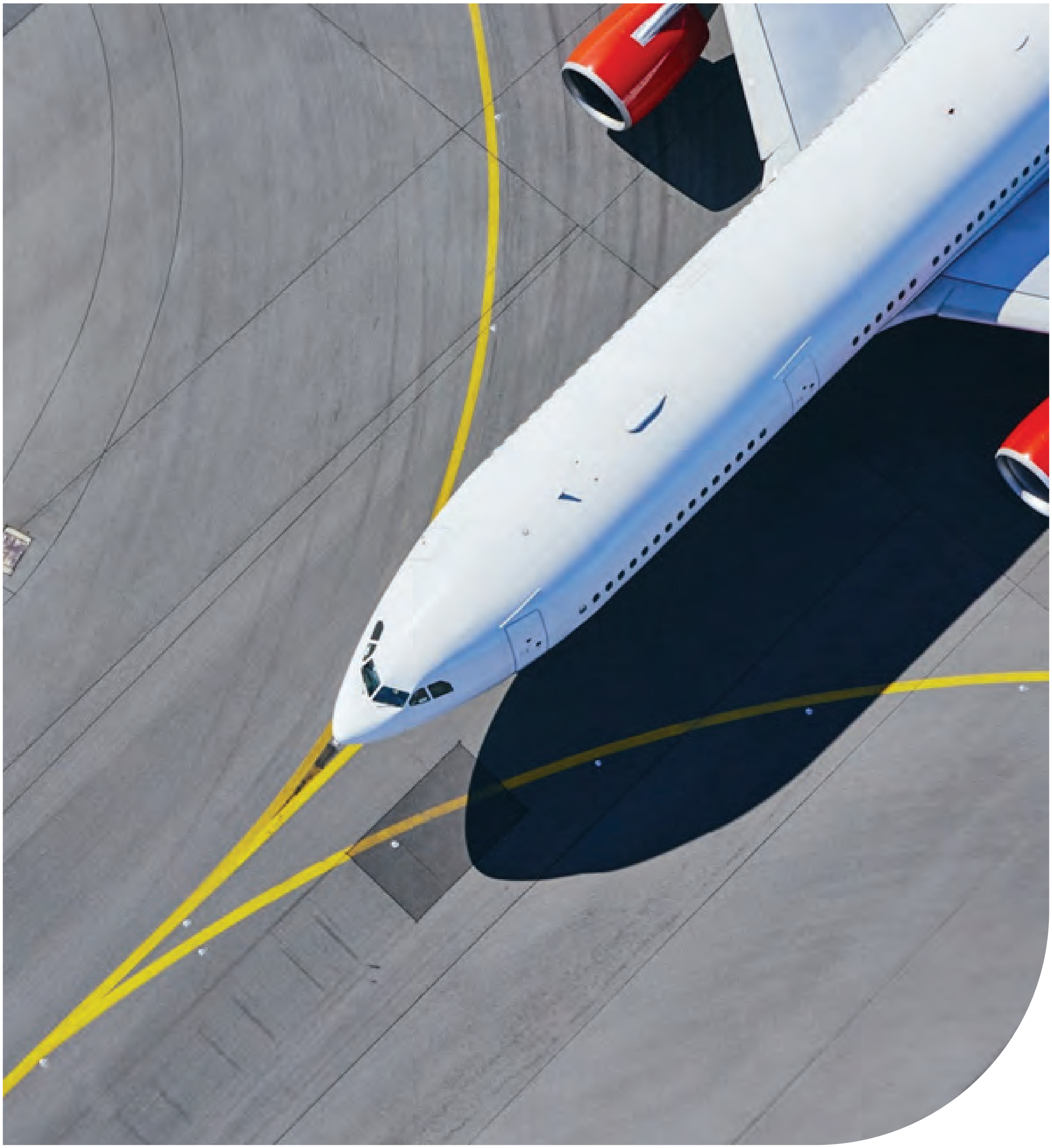
While on the surface it appears that storm may have passed and it is time to take out the boat for a pleasure cruise, it is quite possible that there is trouble brewing beneath the still waters which could create further mayhem.

Infrastructure financing in India has come of age with more issuers able to tap the structured debt markets. Bond markets will need to support the structure especially if there is full blow capex cycle in the coming years.

TRUST
In Partnership. With Trust.

Player profiles of Infrastructure sector

November 2022



Knowledge Partner

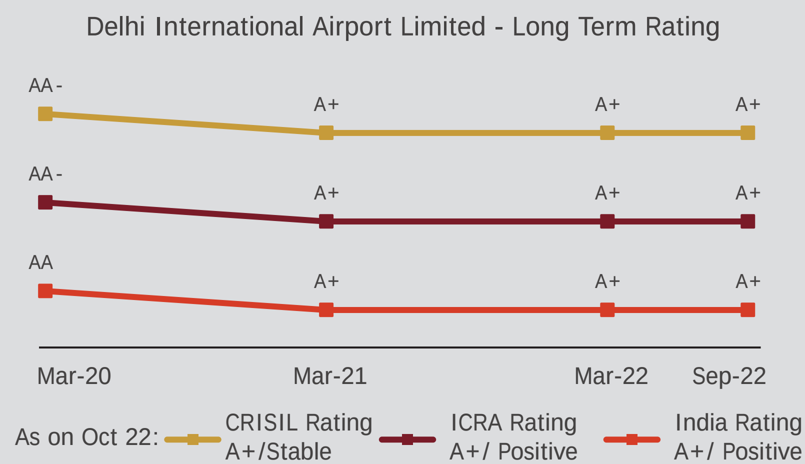
CRISIL
An S&P Global Company

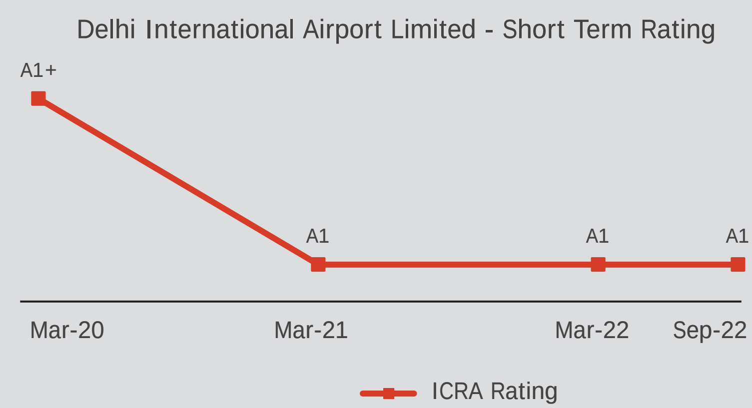
Player profiles of Airport

Delhi International Airport Limited

Company name	Delhi International Airport Limited
Incorporation year	2006
Promoter	GMR Group + Groupe ADP
About the company	Delhi International Airport Limited (DIAL) was incorporated in March 2006 to operate, modernise, and undertake a phased expansion of the Indira Gandhi International Airport (IGIA) in Delhi under a 30-year concession expiring in 2036 (extendable by another 30 years).

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

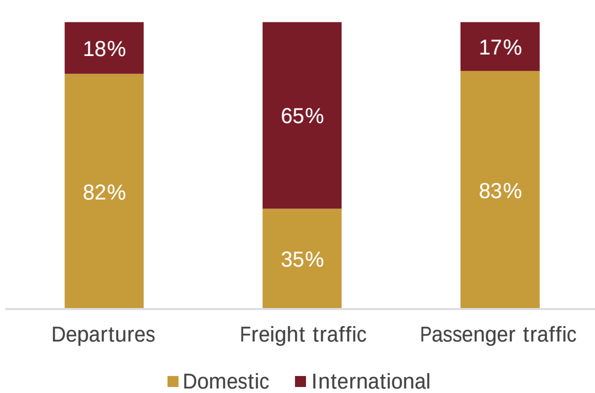
Overall revenue	**29**	Revenue share/ bid parameter	**46 %**
Total debt	**110**	Traffic - passenger ('000)	**39,340**
Concession period	**2006-2036**	Freight ('000 tonne)	**924**
Average monthly pax ('000)	**3,273**	Departures ('000)	**332.7**
Networth	**24**	Interest coverage ratio	**2.0**

Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/ adjustments to the reported financials by the entity.

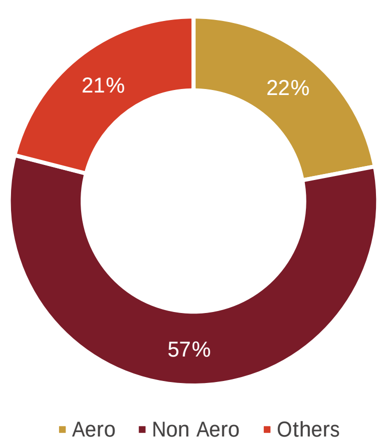
Operational parameters as of FY22

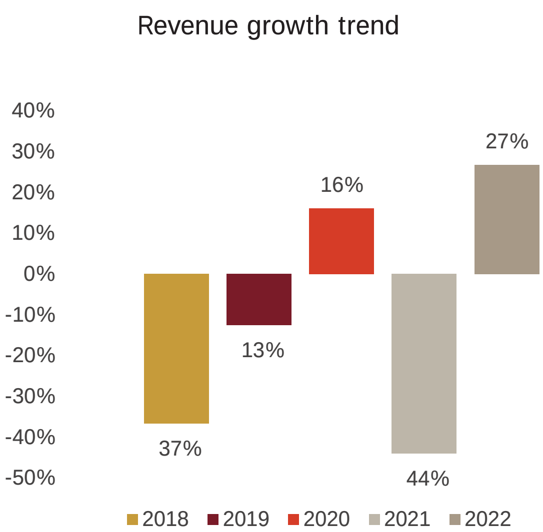
Source: CRISIL Quantix, Company Reports, AAI, CRISIL Research

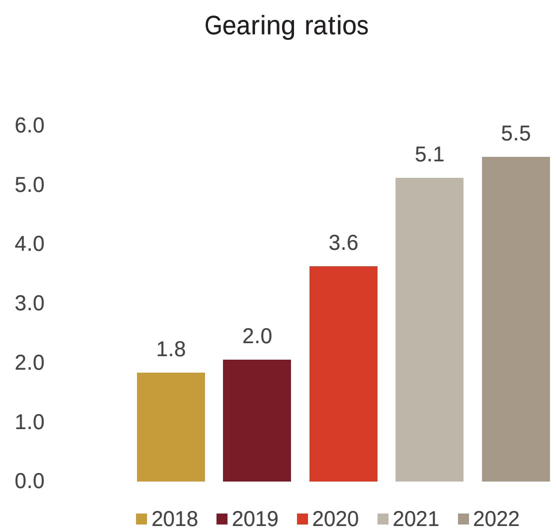
Split of departure/freight/passengers

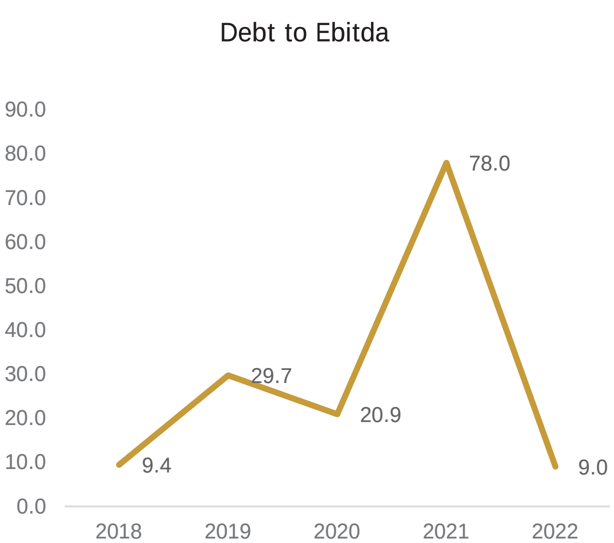


Split of revenue





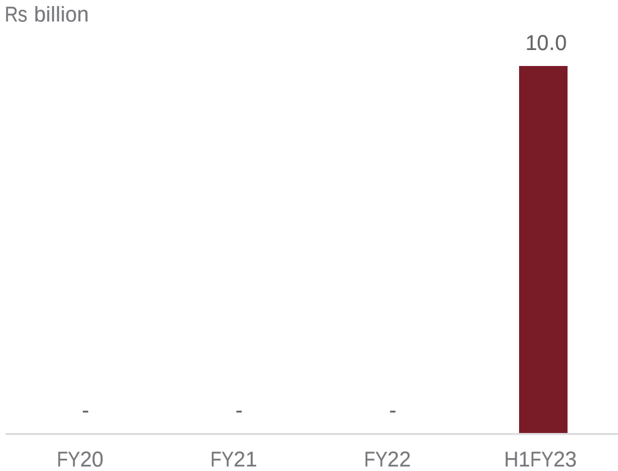




Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: AAI, Company reports, CRISIL Research

NCD Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

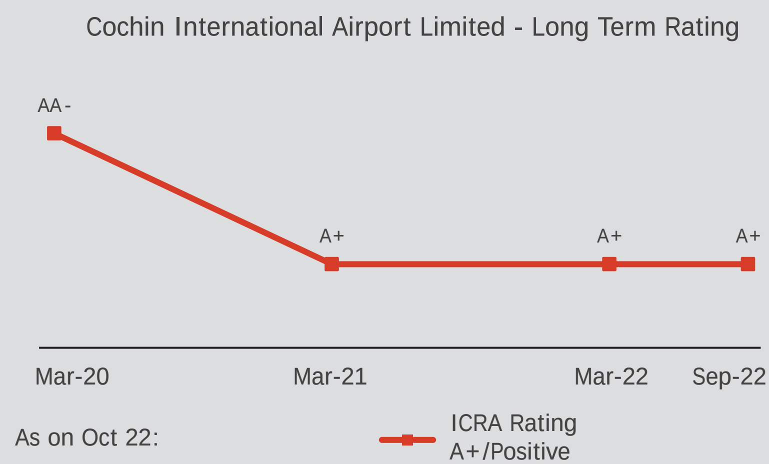
DIAL, an SPV, was set up in 2006 to operate and manage IGIA situated at Delhi. The company runs the largest airport (with around 67 million passengers handled in fiscal 2020) in India, with the next nearest operator clocking 48 million passengers in fiscal 2020. Over fiscals 2010 to 2020, passenger traffic increased at a CAGR of 10%. The growth was impacted in fiscals 2021 and 2022 due to Covid-19 pandemic-led disruption, leading to a drop in traffic; but DIAL continued to witness the highest passenger traffic over the Covid impacted fiscals 2021 and 2022. Passenger traffic has recovered to 97% of pre-covid level (fiscal 2020) in the first quarter of fiscal 2023.

DIAL has a concession to operate IGIA till 2036, extendable by another 30 years. DIAL shares 45.99% of its annual gross revenue to AAI as per the terms of the concession agreement. Groupe ADP, a French airport operator, purchased a 49% stake in GMR airports, the parent of DIAL. Expansion works are currently underway at Delhi airport post completion of which the airport will have four runways and three terminals. Non-aeronautical revenue accounted for 57% of the total revenue in fiscal 2022, aeronautical revenue for 22% and commercial property development for the balance. Its financial profile is supported by its strong market position as the operator of India's largest airport and hub for Indian airlines offset by any delay in demand recovery in passenger traffic and time/cost overrun in capex expansion underway.

Cochin International Airport Limited

Company name	Cochin International Airport Limited
Incorporation year	1994
Promoter	Private entities + Government of Kerala (GoK)
About the company	Cochin International Airport Limited (CIAL) was incorporated on March 30, 1994 as a public-limited company and commenced commercial operations in June 1999. GoK is the major shareholder in CIAL with 32.4% stake

Company outstanding rating



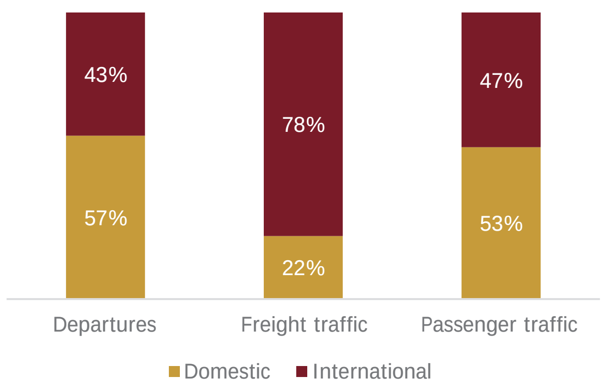
Key financial parameters (FY22)

Figures in Rs billion

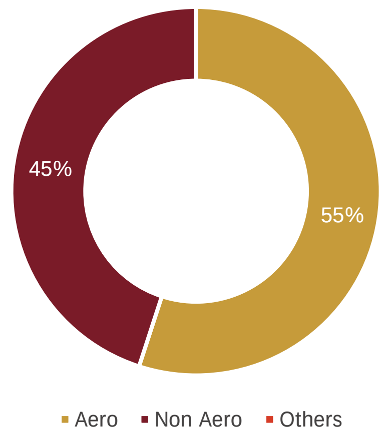
Overall revenue	4	Revenue share/ bid parameter	NA
Total debt	6	Traffic - passenger ('000)	4,718
Concession period	NA	Freight ('000 tonne)	55
Average monthly pax ('000)	393	Departures ('000)	40.4
Networth	13	Interest coverage ratio	4.3

Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.
Operational parameters as of FY22.
Source: CRISIL Quantix, Company Reports, AAI, CRISIL Research

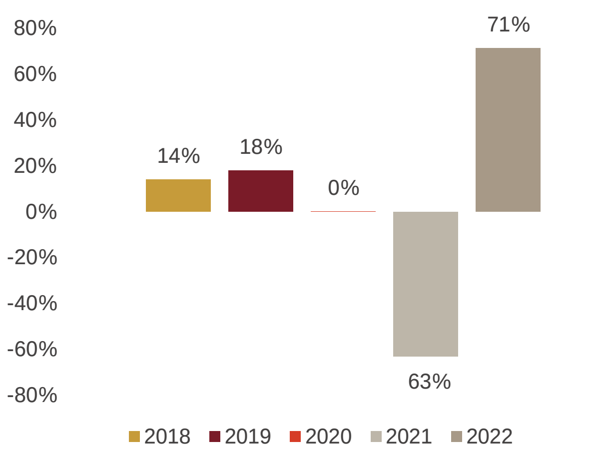
Split of departure/freight/passengers



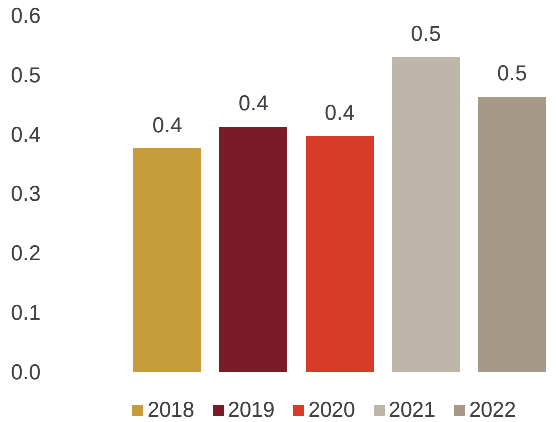
Split of revenue



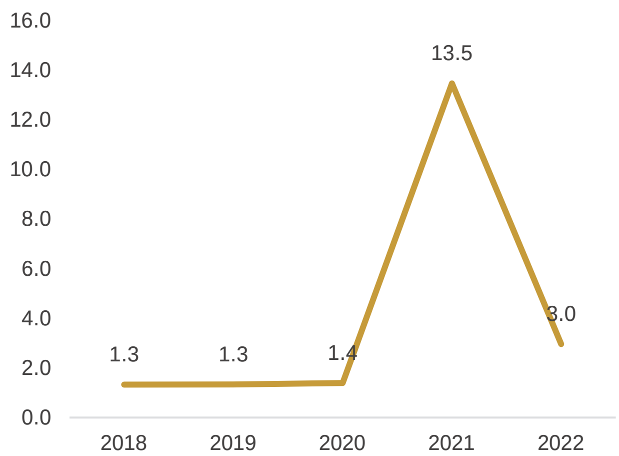
Revenue growth trend



Gearing ratios



Debt to Ebitda



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.
Source: AAI, Company reports, CRISIL Research

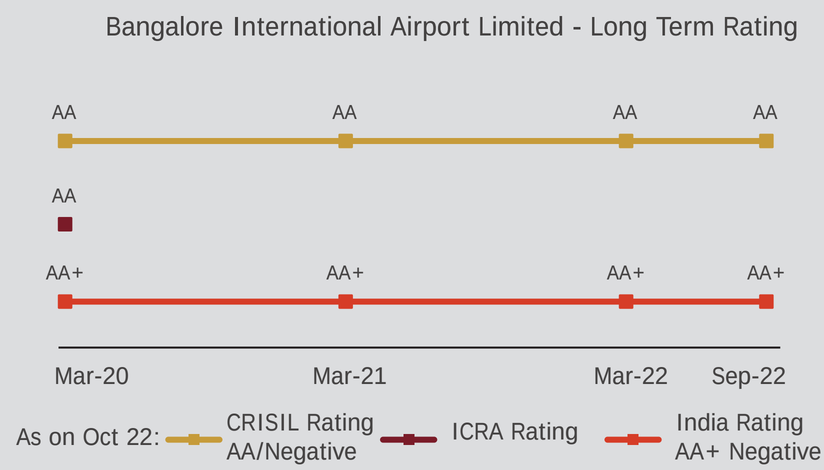
The company operated the eight-largest airport (with 9.6 million passengers handled in fiscal 2020) in India. Between fiscals 2010 and 2020, passenger traffic rose at a CAGR of 9.5% compared with 10.7% of pan-India growth. The growth was impacted in fiscals 2021 and 2022 due to the pandemic-led disruptions, leading to a drop in traffic; but passenger traffic has recovered to 74% of pre-Covid levels (fiscal 2020) in the first quarter of fiscal 2023.

CIAL completed construction of a new international terminal in March 2017. Non-aeronautical revenue accounted for 55% of the total revenue, while aeronautical sources make up the balance. Its financial profile is supported by healthy traffic flows, strong coverage metrics offset by increasing competition with mushrooming of International airports in its vicinity and lack of concession agreement.

Bangalore International Airport Limited

Company name	Bangalore International Airport Limited
Incorporation year	2001
Promoter	Fairfax Group
About the company	Bangalore International Airport Limited (BIAL) is the developer operator of the greenfield international airport at Bengaluru, under a 30-year concession (extendable for further 30 years at the option of the company).

Company outstanding rating



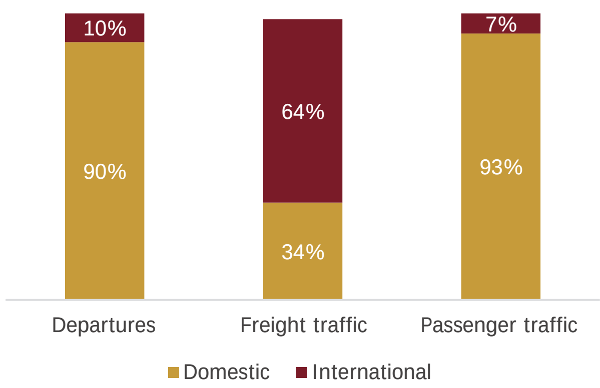
Key financial parameters (FY22)

Figures in Rs billion

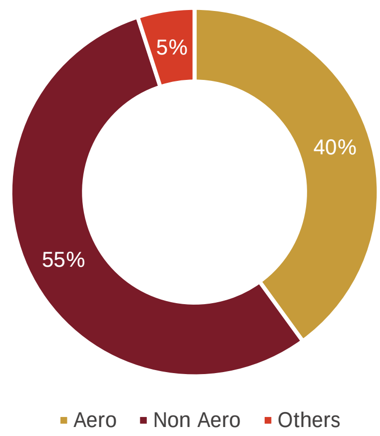
Overall revenue	8	Revenue share/ bid parameter	4%
Total debt	75	Traffic - passenger ('000)	16,287
Concession period	2008-2038	Freight ('000 tonne)	412
Average monthly pax ('000)	1,357	Departures ('000)	148
Networth	23	Interest coverage ratio	1.2

Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.
Operational parameters as of FY22
Source: CRISIL Quantix, Company Reports, AAI, CRISIL Research

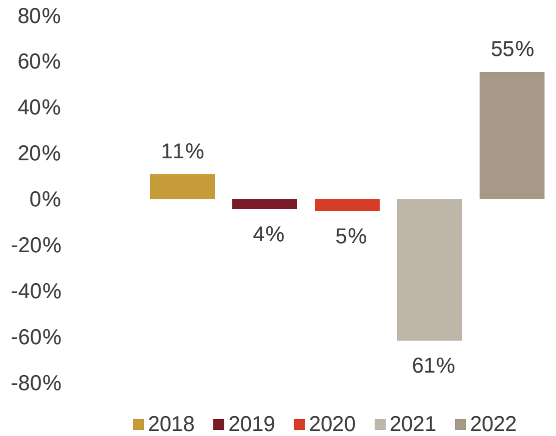
Split of departure/freight/passengers



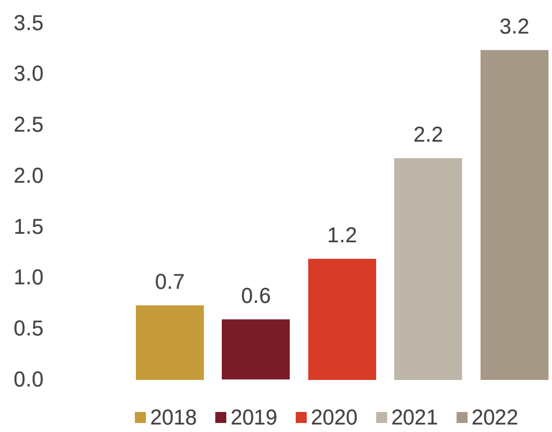
Split of revenue



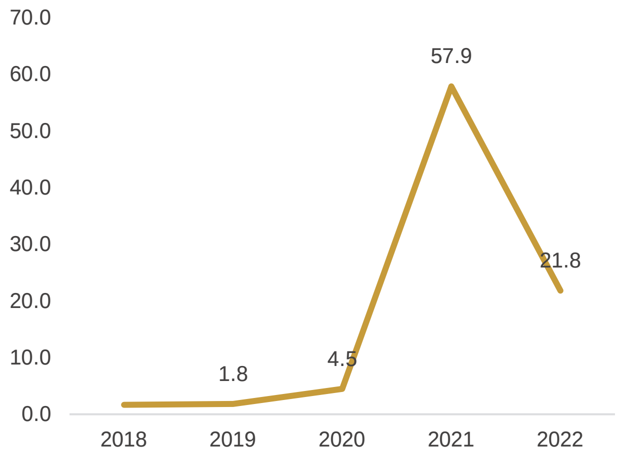
Revenue growth trend



Gearing ratios



Debt to Ebitda

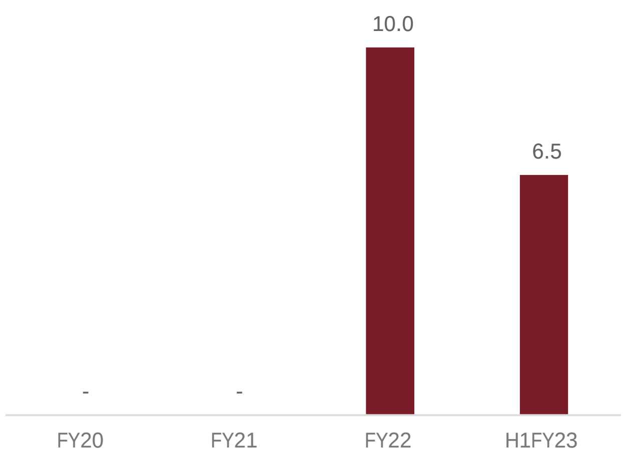


Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: AAI, Company reports, CRISIL Research

Debt to Ebitda

Rs billion



Source: Prime database, CCIL-FTRAC, Crisil Research

Bangalore International Airport Limited (BIAL), an SPV, was set up to operate and manage Kempegowda international Airport at Bangalore in 2006. The company was initially owned by the GVK group. In March 2017, the Fairfax group completed acquisition of BIAL from the GVK group. The company runs the third-largest airport (with around 32 million passengers handled in fiscal 2020) in India. Between fiscals 2010 and 2020, operational performance remained sound; passenger traffic grew at a compound annual growth rate of 12.5% compared with 10.7% of pan-India growth. The growth was impacted in fiscals 2021 and 2022 due to Covid-19 leading to a drop of traffic but passenger traffic has recovered to 83% of pre-Covid levels(fiscal 2020) in Q1FY23.

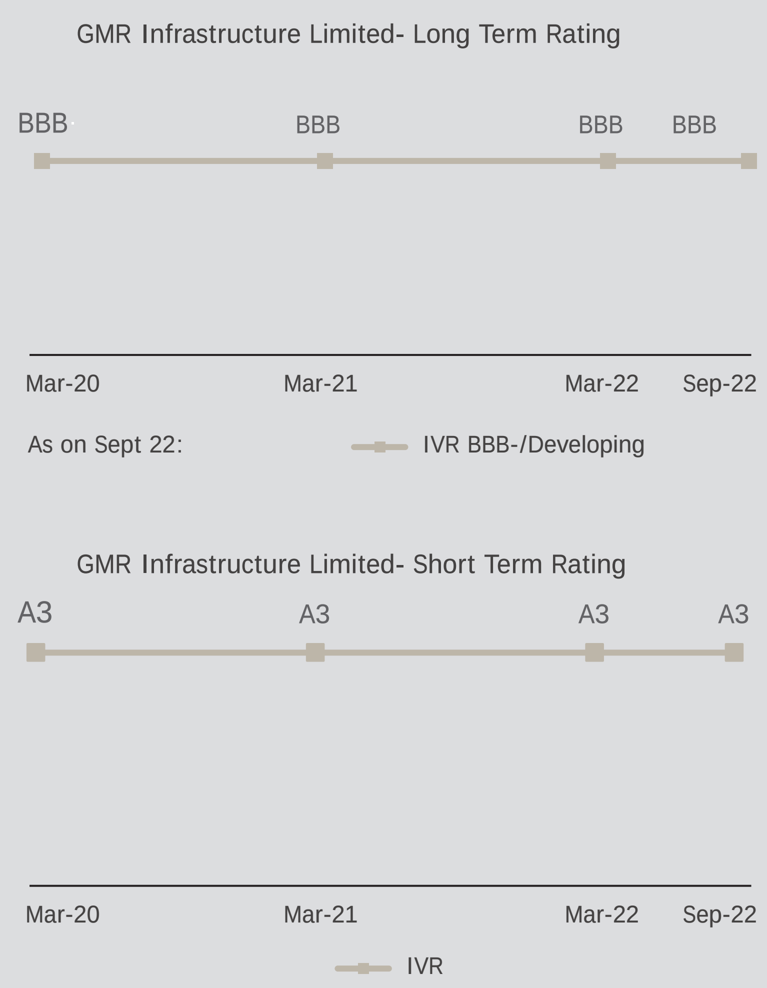
BIAL has a concession to operate the airport till 2038 extendable by another 30 years. BIAL shares 4% of its annual gross revenue to AAI as per the terms of the concession agreement. Capacity expansion is currently underway at the airport to include a second runway and a second terminal. Non-aeronautical revenues accounted for 55% of revenues in fiscal 2022 while aeronautical revenues accounted for 40% with balance accounted by other sources.

Its financial profile is supported by its strong market position as the operator of the largest airport in South India offset by time or cost overrun related to its ongoing capex plan and delay in tariff ramp up by the authority.

GMR Airport Infrastructure Ltd

Company name	GMR Airport Infrastructure Limited
Incorporation year	1996
Promoter	GMR Group + Groupe ADP
About the company	GMR Airport Infrastructure Ltd is a pure-play airport platform of the GMR group. The company has four operational airports and four that are being developed

Company outstanding rating



Note: The GMR group demerged GMR Airport Infrastructure from the erstwhile GMR Infrastructure Ltd to form a pure-play airport platform. With financial results for fiscal 2022, data for fiscal 2021 was reinstated to reflect results for the demerged entity, However, data prior to fiscal 2021 is not reinstated. Due to non-availability of data and the recent reorganization, We have considered Delhi International Airport and GMR Hyderabad International Airport for operational data while GMR Goa International Airport, GMR Visakhapatnam International Airport and Nagpur Airport have been added to financials for DIAL and GHIAL for financial data.

Key financial parameters (FY22)

Figures in Rs billion

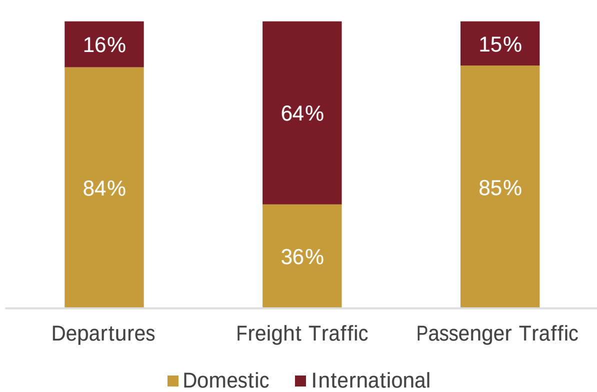
Overall revenue	**36**	Revenue share/ bid parameter	**NA**
Total debt	**195**	Traffic - passenger ('000)	**51,770**
Concession period	**NA**	Freight ('000 tonne)	**1,064**
Average monthly pax ('000)	**4,314**	Departures ('000)	**447.1**

Note: The above parameters represent standalone financials for DIAL, GHIAL, GMR Goa international airport, GMR Vishakhapatnam international airport, Inteas of March 2022 and may include, as applicable, reclassification/ adjustments to the reported financials.

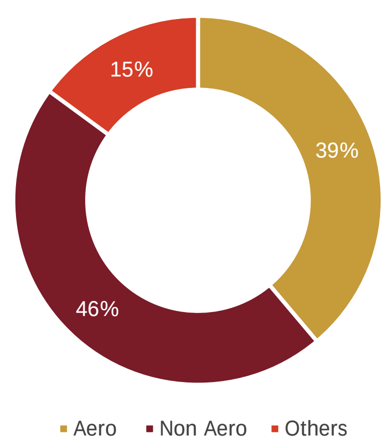
Operational parameters as of FY22

Source: CRISIL Quantix, company reports, AAI, CRISIL Research

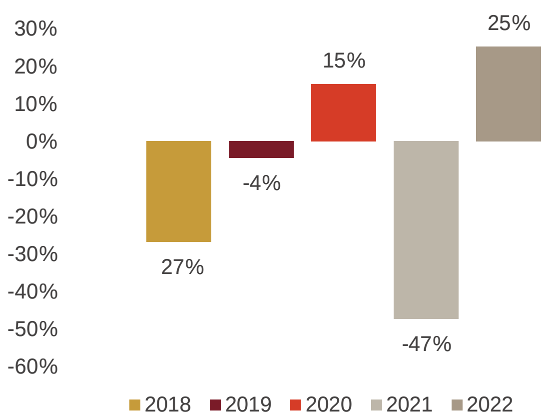
Split of departure/freight/passengers



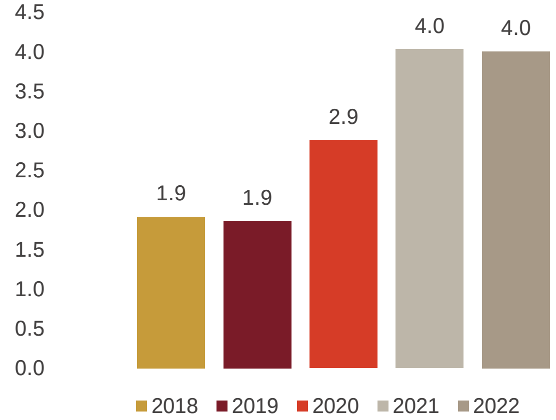
Split of revenue



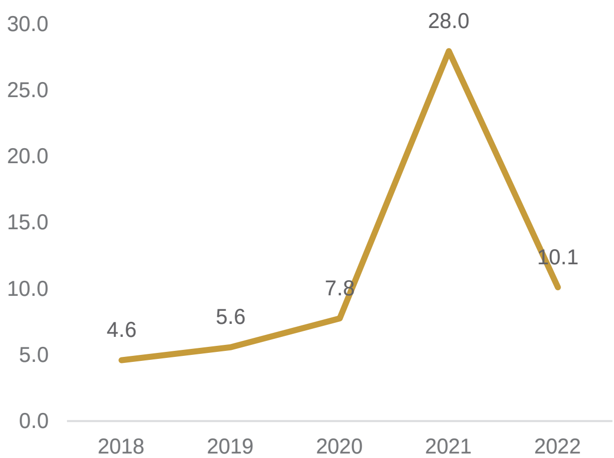
Revenue growth trend



Gearing ratios



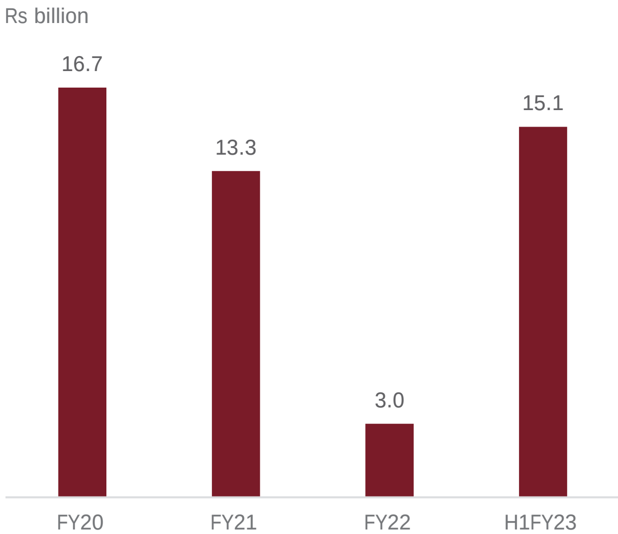
Debt to Ebitda



Note: The above parameters represent standalone financials as of March 2022 and may include, as applicable, reclassification/ adjustments to the reported financials.

Source: AAI, Company reports, CRISIL Research

NCD Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

GMR Airport Infrastructure Ltd is a pure-play airports platform demerged from the erstwhile GMR Infrastructure Ltd in fiscal 2022. The airport holding company consists of eight airports. Of the eight, four are operational — Delhi International Airport Ltd (DIAL), GMR Hyderabad International Airport Ltd (GHIAL), Bidar Airport and Mactan Cebu International Airport. The other four — GMR Goa International Airport Ltd, GMR Vishakhapatnam International Airport Ltd, Crete International Airport and Kualanamu International Airport — are being developed. DIAL and GHIAL are currently undergoing capacity expansion to cater to increased passengers and aircraft movements.

Groupe ADP, a French airport operator, has a 49% stake in GMR Airport.

DIAL and GHIAL (greenfield) are being operated under revenue share model. As per the contract, DIAL shares 45.99% of its gross revenue with the Airports Authority of India and GHIAL, 4%.

GMR Airport won the contract for Goa International Airport with a bid to share 36.99% of revenue with AAI. It won the greenfield Vishakhapatnam International Airport at the highest bid price of Rs 303 per passenger.

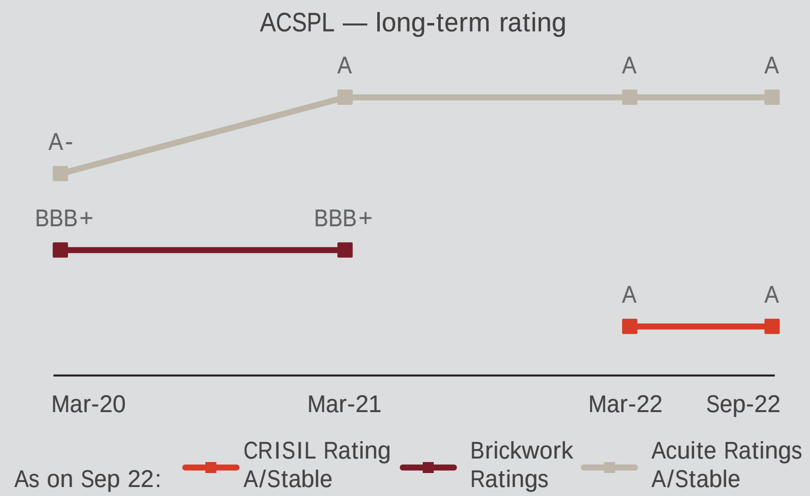
Healthy rise in passenger traffic, freight traffic, non-aero revenues coupled with on-time completion of on-going capex to aid the financials for GMR airports offset by delays in completion of capex, cost-overun in capex, slower than expected ramp up in passenger traffic coupled impact the financials negatively.

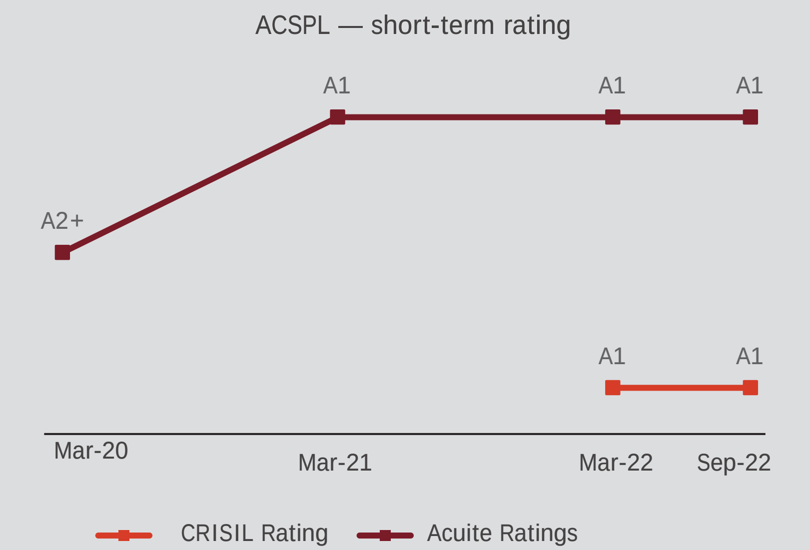
Player profile for power generation

ACME Cleantech Solutions Private Limited

Company name	Acme Cleantech Solutions Private Limited
Incorporation year	2003
Promoter	ACME Group
About the company	Incorporated in 2003, ACME Cleantech Solutions Private Limited (ACSPL) is the flagship company of ACME Group. It acts as the holding company for solar SPVs through ACME Solar Holdings Private Limited (ASHPL). On a standalone basis, the company operates in three main verticals, consisting of the EPC business for solar projects, telecom infra and EcoGrid solutions. More than 90% of ACSPL's standalone revenue is generated from the EPC business. It provides in-house EPC solutions to its various SPVs at multiple locations in India.

Company outstanding rating





Key financial parameters (FY22)

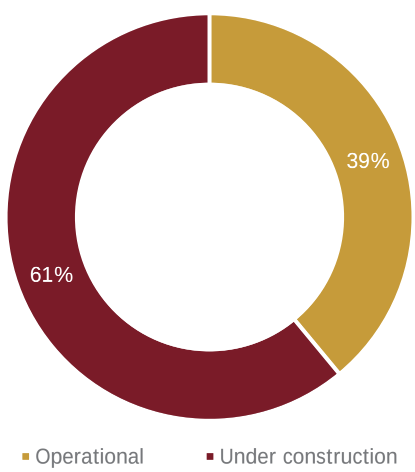
Figures in Rs billion

Total portfolio (MW)	**2,850**	Total revenue	**2.97**
Net profit / (loss)	**(0.7)**		

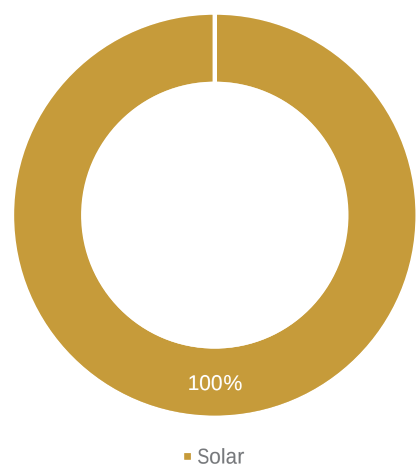
Note: Above parameters represent combined financials ACSPL and ASHPL as of March 2021 and may include, as applicable, reclassification / adjustments to the reported financials by the entity. For more details on reclassification / adjustments, refer to the detailed notes in Annexure I. The operational data above is as per disclosures dated March 2022.

Source: CRISIL Quantix, company reports, CRISIL Research

Capacity — operational / under-construction split



Portfolio — fuel-wise split



Note: The operational data above is as per disclosures dated January 2022.

Source: Rating rationale

Established in 2003, ACSPL entered the renewable energy business over a decade ago. It is promoted by Manoj Kumar Upadhyay, who is a first-generation entrepreneur and has close to 25 years of experience in clean energy and telecom. ACSPL is the flagship company. It primarily provides operations and maintenance (O&M) work for solar power plants and procurement and supply of solar modules. The engineering and construction business and procurement of other equipment are managed by ASHPL. However, the EPC business is restricted to offering services to group companies. The group has experience of setting up over 2 GW of capacity across 54 SPVs. Currently, there are close to 36 operational SPVs with aggregate solar capacity of ~1.1 GW (AC capacity) across more than 10 states, with 1.75 GW capacity under construction.

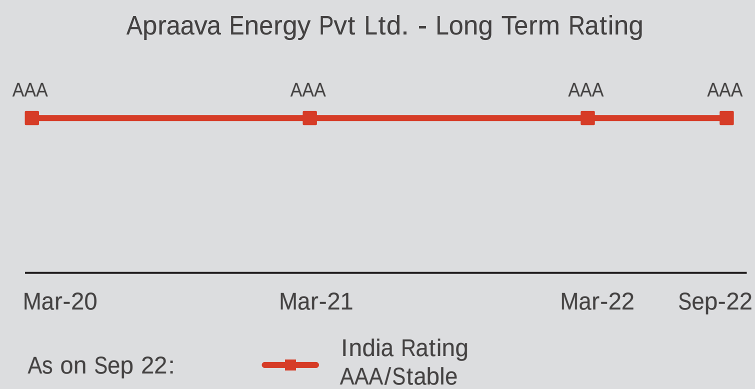
ACSPL has successfully executed projects with installation across different states, including Uttarakhand, Haryana, Jharkhand, Andhra Pradesh, Punjab, Madhya Pradesh, Odisha and Gujarat. The majority of ACME Group's projects have a long-term PPA (tenure of 25 years) with NTPC, state discom and SECI, thereby establishing long-term offtake arrangements.

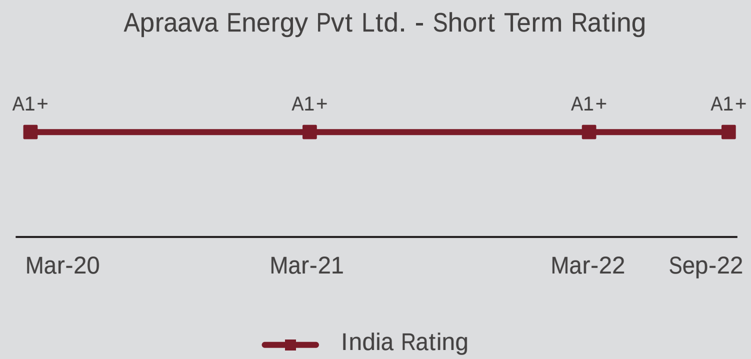
The company had an outstanding order book of Rs 81.18 billion as of February 2022, which is to be executed this fiscal. The orders relate to procurement of solar modules for the six new SPVs being set up under the company. ACSPL's total operating income declined about 50% to Rs 2.97 billion in fiscal 2021 from Rs 5.89 billion in fiscal 2020. The company's operations remained subdued due to the Covid-19 pandemic-induced lockdown — operations across the group were impacted, resulting in a significant decline in revenue derived from procurement and sale of solar modules. In line with the decline in operating income, ACSPL's operating profits declined to Rs 0.54 billion in fiscal 2021 from Rs 1.26 billion in fiscal 2020. Its operating margin also declined marginally to 18.23% in fiscal 2021 from 21.84% in fiscal 2020. This resulted in net loss of Rs 0.70 billion in fiscal 2021, as against net profit of Rs 0.28 billion in fiscal 2020.

Apraava Energy Private Limited

Company name	Apraava Energy Private Limited
Incorporation year	1992
Promoter	CLP Group
About the company	Apraava Energy was incorporated in 1992. Its business operations include thermal and renewable power generation and transmission of electricity.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

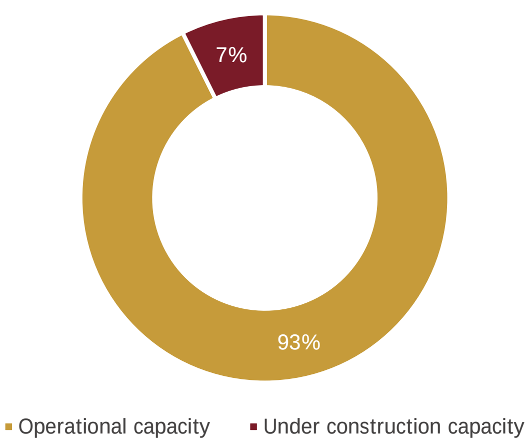
Total portfolio (MW)	3,399	Plant load factor (%)	67%
Total revenue	1	Operating margin (%)	10.7%
Total debt	9	Net profit/(loss)	(10)

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

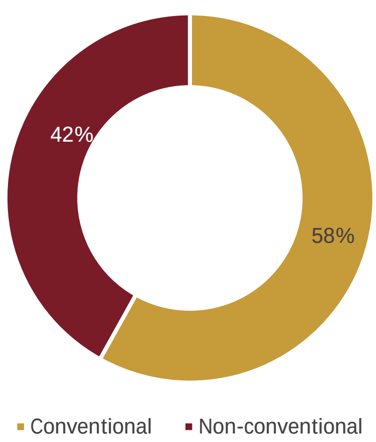
The plant load factor mentioned above is for the Jhajjar coal plant

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under-construction split



Capacity – Conventional/non-conventional split



Note: Above parameters represent operational parameters of the company as of March 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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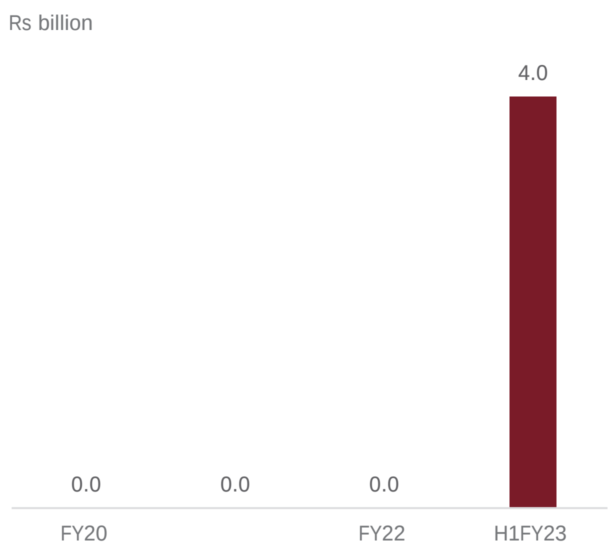


Source: Prime database, CCIL-FTRAC, Crisil Research

Apraava Energy Private Limited (AEPL) is a diversified power company, jointly owned by CLP Holdings Ltd (CLPHL) and Caisse de dépôt et placement du Québec (CDPQ) – a global investment group. It serves as the operating-cum-holding company of CLPHL in India for all its investments/expansions, and is present across power generation (coal, gas, solar and wind) and transmission.

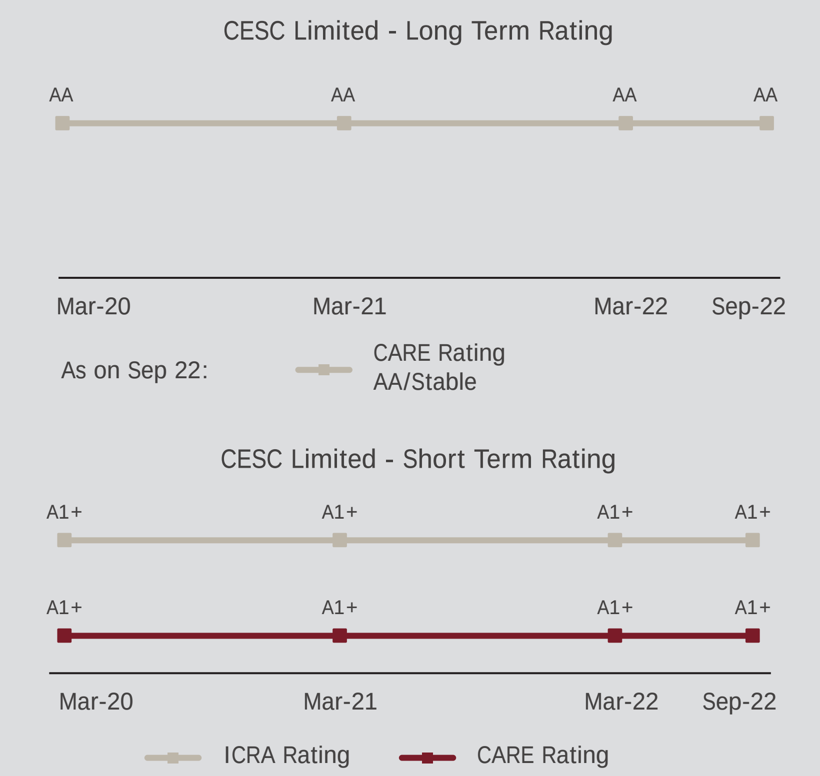
The operational portfolio comprises 3,150 MW of capacity, which includes wind assets (924 MW), solar assets (240 MW), a gas-fired combined cycle power plant (655 MW) in Paguthan (Bharuch) and a coal-fired power plant (1,320 MW) in Jhajjar, Haryana. AEPL also has 250 MW of wind assets under construction. Performance of the coal plant has witnessed capacity utilization factor (CUF) of 67.08%, where CUF for solar and wind was 20.9% and 21.1% respectively in fiscal 2022. In addition, AEPL holds a 49% stake in Kohima-Mariani Transmission Ltd, which operates a 254 km transmission line and has a wind plant of 250 MW under construction in Dwarka, Gujarat.

The company's financial profile is supported by healthy operational performance of its SPVs, an expected increase in its portfolio and strong linkages with its parent – CLP Holding. This could be offset by weakening of linkages with th e parent or a weakening of the company's credit profile.

The Calcutta Electric Supply Corporation (CESC Limited)

Company name	CESC Limited
Incorporation year	1978
Promoter	RPSG Group
About the company	CESC, incorporated in 1978, is the flagship company of the RP-Sanjiv Goenka Group. The company is involved in the generation and distribution of electricity.

Company outstanding rating



Key financial parameters (FY22)

Figures in Rs billion

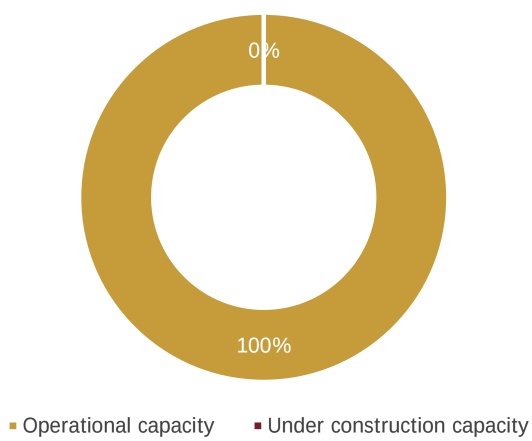
Total portfolio (MW)	2,143	Plant load factor (%)	81-85% *
Total revenue	81	Operating margin (%)	24%
Total debt	84	Net profit/(loss)	8

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

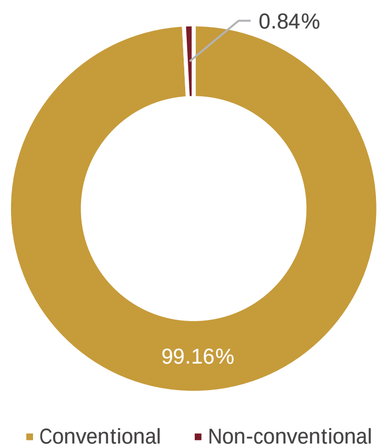
* Plant-wise PLF: Budge Budge: 81%, Haldia: 85%

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under construction split



Capacity – Conventional/non-conventional split



Note: Above parameters represent operational parameters of the company as of March 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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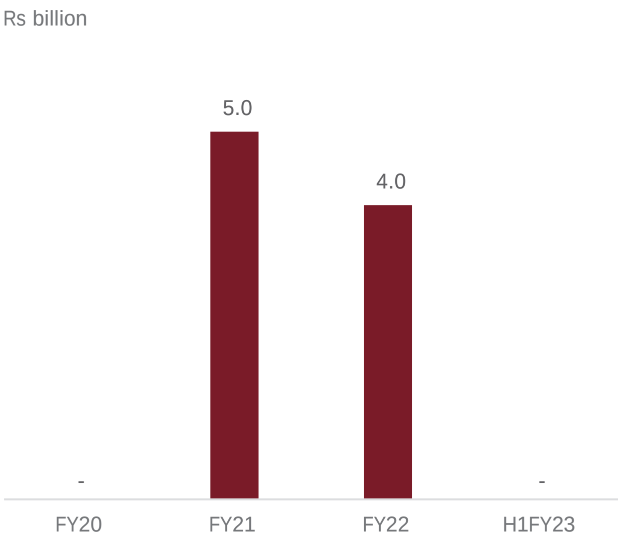

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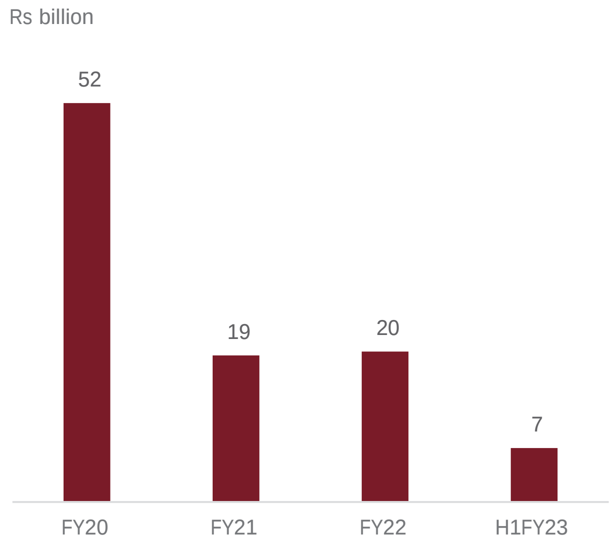


Source: Prime database, CCIL-FTRAC, Crisil Research

CESC is engaged in generation and distribution of electricity. It has the license to supply electricity in Kolkata and Howrah. The company caters to a licensee area of 567 sq km, and serves more than 0.35 crore consumers, including domestic, industrial and commercial users. The wholly owned subsidiaries, Haldia Energy Limited and Dhariwal Infrastructure Limited, each operate 2x300- MW coal-based thermal power plants. The entire generation capacity of Haldia Energy Limited is tied-up under a long-term cost-plus based PPA with the distribution entity of CESC. In case of Dhariwal Infrastructure Limited, around 50% has been tied-up under a long-term PPA, and the balance caters to short and mid-term demand.

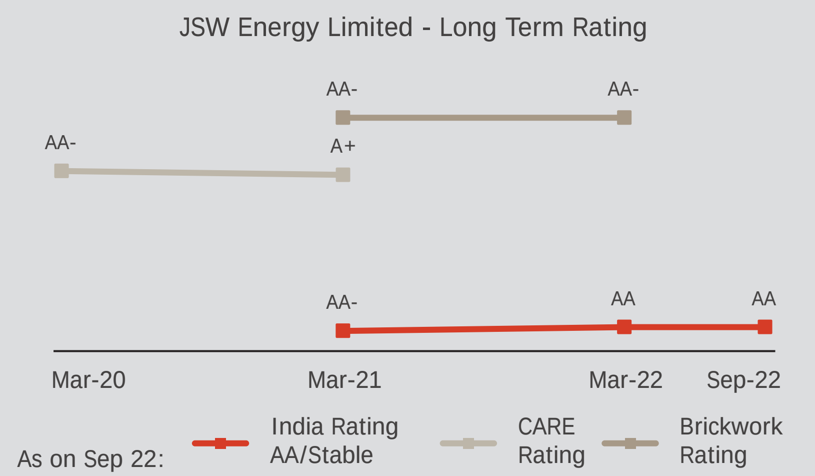
The company has 18-MW solar power assets and a 40-MW coal washery rejects-based thermal power plant under its subsidiary, Crescent Power Limited. In the power distribution segment, apart from Kolkata, CESC has the license to supply electricity in the Greater Noida area in Uttar Pradesh through its subsidiary, i.e., Noida Power Company Limited (NPCL). Besides the licensee power distribution business, CESC is gradually increasing its footprint in the power distribution franchise businesses. In fiscal 2017, it took over the distribution franchise operations at Kota, Bharatpur and Bikaner in Rajasthan. In March 2020, CESC took over the power distribution franchise operations in Malegaon, Maharashtra.

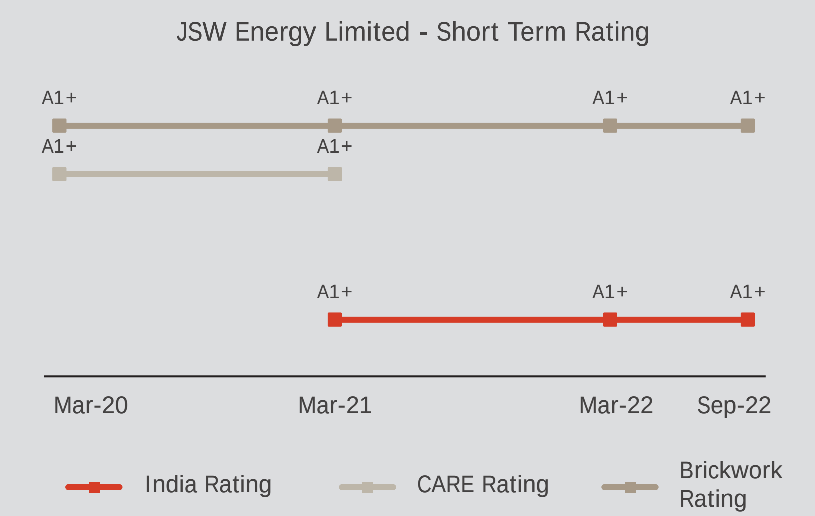
CESC’s financial profiles is supported by a long track record and established presence across different business verticals. This is further backed by improved performance of the power generating business, operational diversity and strong business integration with a large share of revenue from regulated businesses. However, high leverage and marginal coverage metrics, collection of regulatory assets and offering funding support envisaged for distribution franchisee businesses partly offset the strengths.

JSW Energy Limited

Company name	JSW Energy Limited
Incorporation year	1994
Promoter	JSW Group
About the company	JSW Energy Limited was incorporated in 1994. Key business activities include power generation (thermal, hydro, solar and wind), power transmission, mining, power plant equipment manufacturing and power trading.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

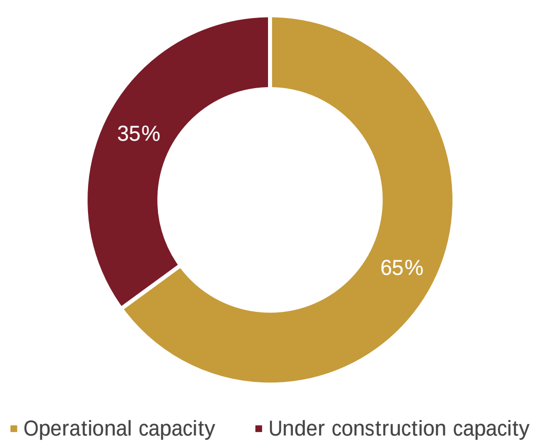
Total portfolio (MW)	**7,016**	Plant load factor (%)	**62%**
Total revenue	**36**	Operating margin (%)	**30.1%**
Total debt	**14**	Net profit/(loss)	**6**

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

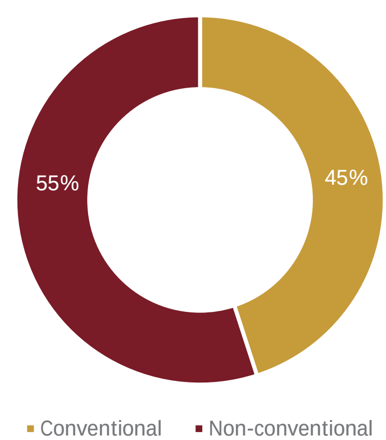
Plant Load Factor is deemed and inclusive of all fuel mix (thermal, hydro, and solar).

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under construction split



Capacity – Conventional/non-conventional split



Note: Above parameters represent operational parameters of the company as of March 2022.

Source: Company Reports, CRISIL Research

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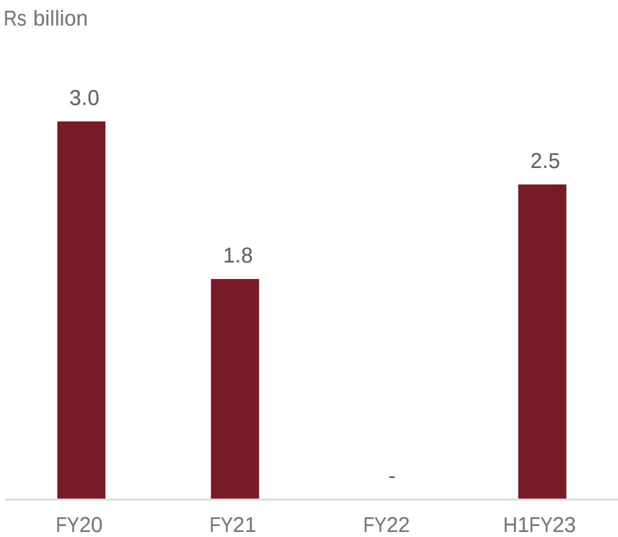

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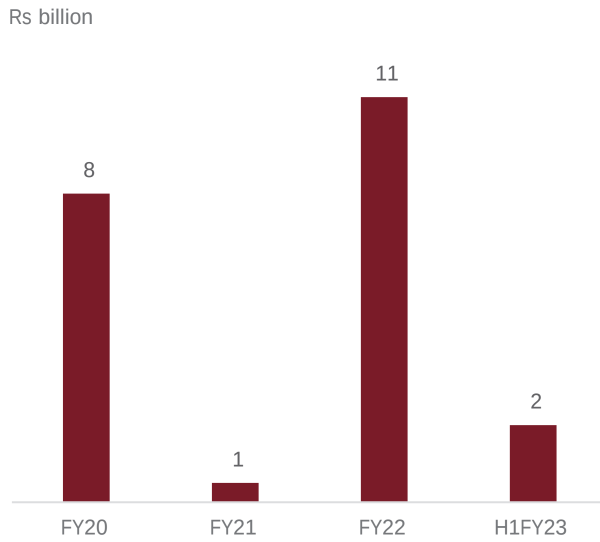


Source: Prime database, CCIL-FTRAC, Crisil Research

JSW Energy Ltd (JSWEL) is a private sector power producer in India. The company is part of the JSW Group, which is present across steel, energy, infrastructure, cement and sports sectors, among others. JSWEL operates through the power sector value chain with diversified assets in power generation and transmission.

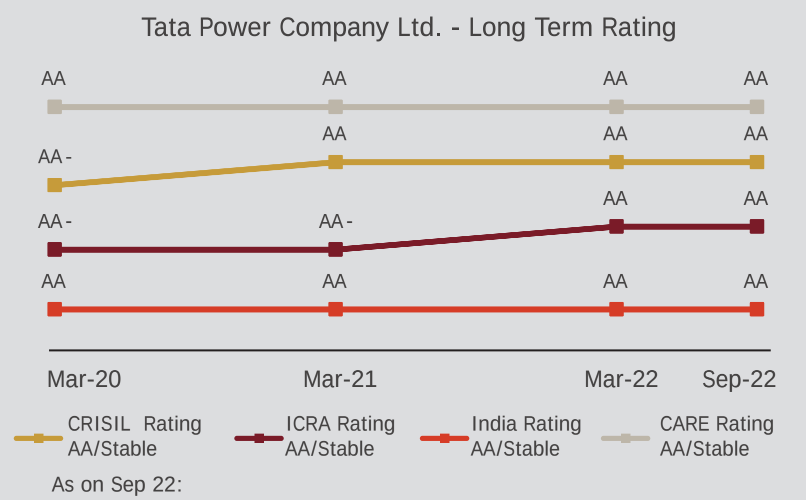
JSWEL is engaged in power generation and transmission primarily in Karnataka, Maharashtra, Rajasthan and Himachal Pradesh. The company began commercial operations in 2000, by commissioning its first 2x130 MW thermal power plants at Vijayanagar, Karnataka. The operating capacity of 4.6 GW, as on March 21, 2022, includes thermal (coal powered) capacity of 3.2 GW, hydro (1.4 GW), and solar (10 MW). The company also has under construction capacity of 2.5 GW, of which 225 MW is solar, 240 MW is hydro, and 2 GW is wind. It has long-term contracts for operational plants and has signed PPAs for the upcoming plants. Further, JSWEL is pursuing a growth strategy to expand from the current platform capacity of 7 GW to 10 GW by fiscal 2025, and 20 GW by fiscal 2030, with the entire capacity addition driven by renewables.

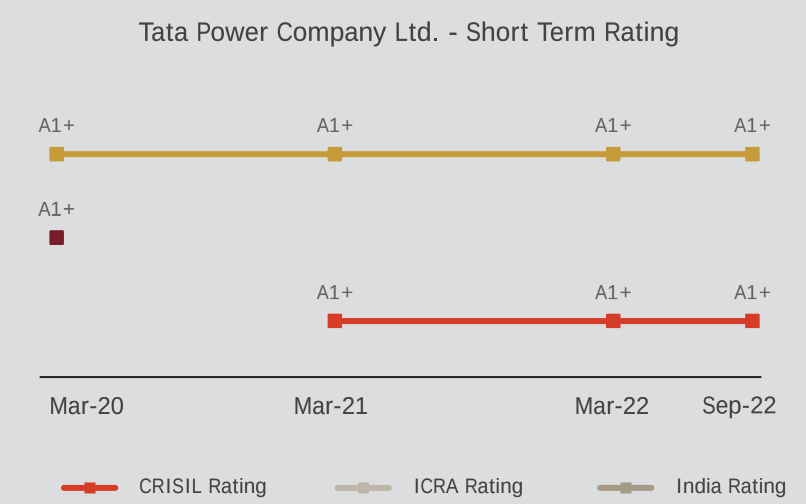
JSW Energy's financial profile is supported by its experience in the power sector and the backing of its promoter group along with an improvement in its financial risk profile and expected improvement in counterparty profile. These strengths are partially offset by susceptibility to rise in imported coal prices, uncertainty related to fuel tie-ups for subsidiary, and susceptibility to implementation risk on account of planned capex.

The Tata Power Company Limited

Company name	The Tata Power Company Limited
Incorporation year	1919
Promoter	Tata Group
About the company	The Tata Power Company Ltd (Tata Power) is an integrated private power utility. The company is present across the entire power business spectrum ranging from generation (thermal, hydro, solar, and wind) to transmission and distribution.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

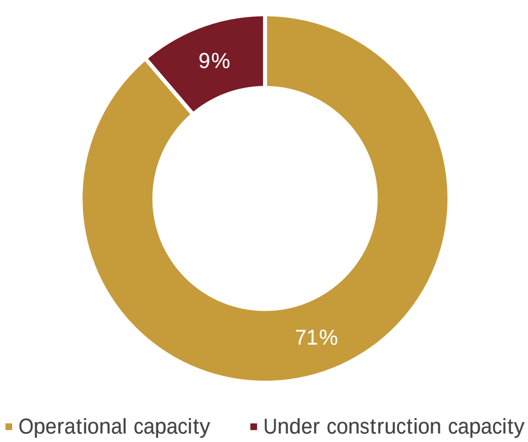
Total portfolio (MW)	**13,515**	Plant load factor (%)	**25-81%***
Total revenue	**111**	Operating margin (%)	**13.9%**
Total debt	**255**	Net profit/(loss)	**28**

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

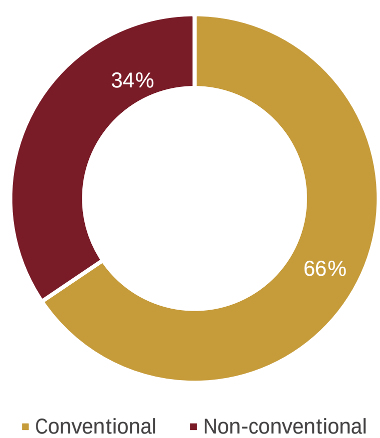
* Plant-wise PLF: CGPL (Mundra): 25%, Prayagraj Power Generation Co Ltd.: 67%, Maithon Power Limited: 81%

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under construction split



Capacity – Conventional/non-conventional split



Note: Above parameters represent operational parameters of the company as of March 2022.

Source: Company Reports, CRISIL Research

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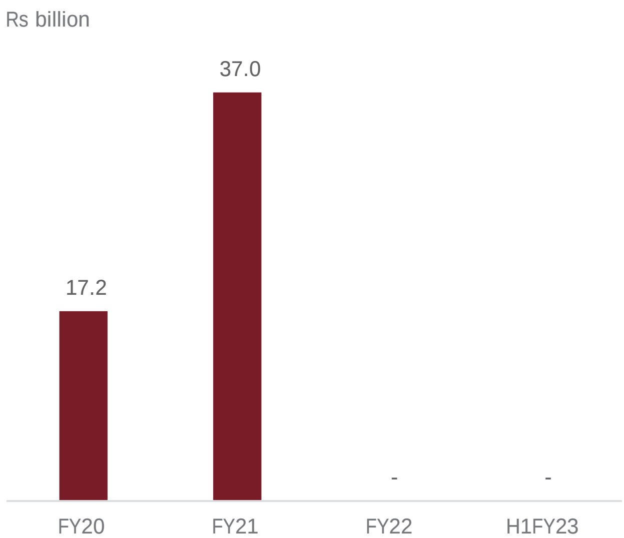

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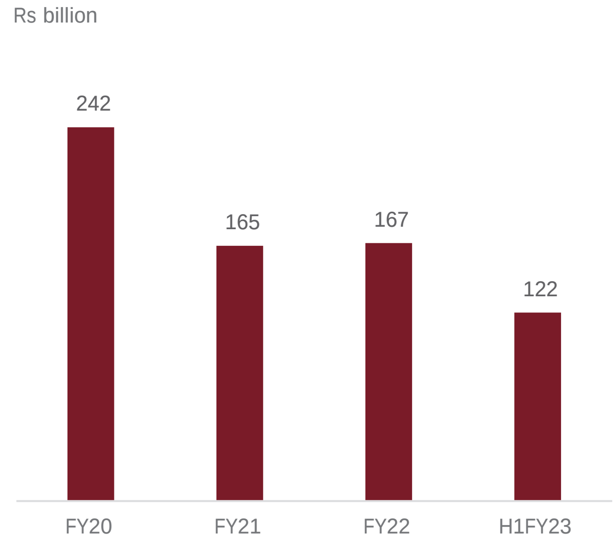


Source: Prime database, CCIL-FTRAC, Crisil Research

Tata Power is an integrated private power utility, present across the generation, transmission and distribution (T&D) segments, electric vehicle (EV) infrastructure, and solar engineering, procurement and construction (EPC) projects. The total portfolio of 13.52 GW includes 3.4 GW of renewable capacity as on March 31, 2022. It caters to 1.23 crore customers via its distribution business. It has a total of 3,552 circuit kilometer (Ckm) of total transmission line capacity. It has executed a cumulative 950 MW of solar roof top projects.

Coastal Gujarat Power Ltd (CGPL), which was formed to implement the Mundra Ultra Mega Power Plant (UMPP), has five units of 800 MW each. On the other hand, Maithon Power Ltd (MPL), Tata Power's 74% joint venture with Damodar Valley Corporation, operates the Maithon project, which has two units of 525 MW each.

Apart from this, Tata Power also holds 30% and 26% stake in Indonesian coal mining companies, PT Kaltim Prima Coal and PT Baramulti Suksessarana Tbk, respectively.

In September 2016, Tata Power and ICICI Venture had partnered to launch a power platform (known as Resurgent Power Ventures Pte Ltd [Resurgent]) in Singapore, along with global investors. Resurgent will invest in operational and near-operational thermal, hydro, and transmission assets. In December 2019, Renascent Power Ventures Pvt Ltd, a wholly owned subsidiary of Resurgent, completed the acquisition of 75.01% stake in Prayagraj, which owns and operates a 1,980 MW supercritical power plant in Uttar Pradesh.

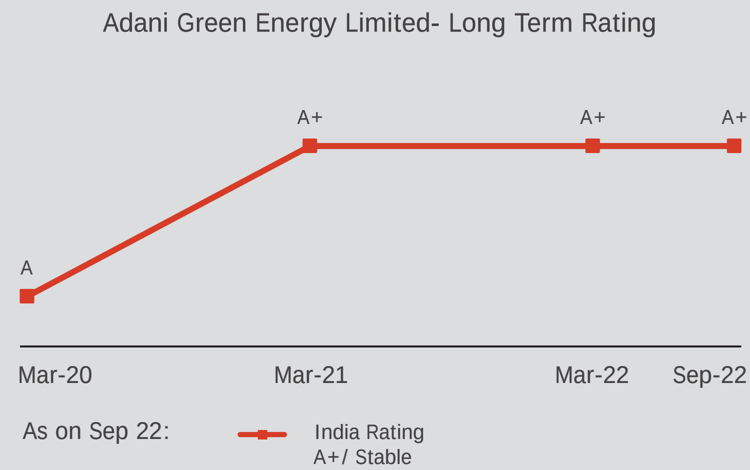
The balance life of the PPA for generation assets, including MPL, CGPL and the renewable portfolio, spans over 15 years, thus offering strong revenue visibility. Distribution licenses for Mumbai and Delhi also extend for another 19 years and 9 years, respectively. The PPA of the power generation business for Mumbai (Trombay assets for around 930 MW) is valid till fiscal 2024 and is subject to renewal post that.

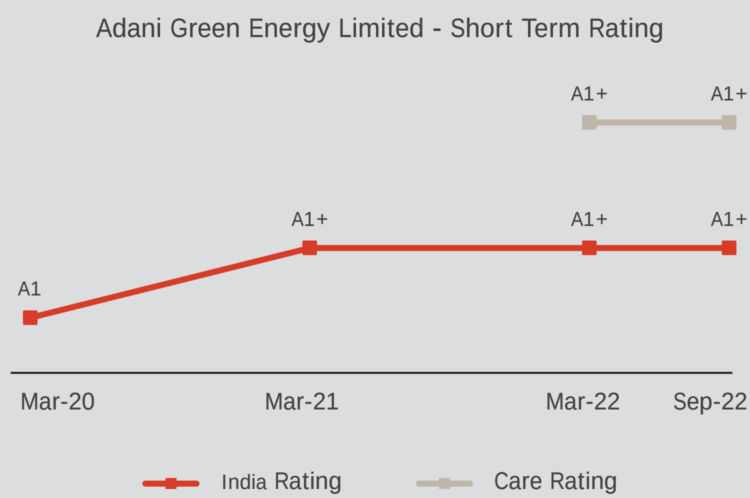
The financial profile is supported by a diverse business risk profile and a strong presence across generation, transmission and distribution verticals, and further backed by stable cash accruals from regulated businesses. This is offset by unviable project economics of Coastal Gujarat Power Limited (CGPL) and moderate leverage albeit a correction is likely in the medium term.

Adani Green Energy Limited

Company name	Adani Green Energy Limited
Incorporation year	2015
Promoter	Adani Group
About the company	Adani Green Energy Limited (AGEL) is a private sector renewable generator in India. It has a current project portfolio of 20,434 MW. The company develops, builds, owns, operates and maintains utility-scale grid-connected solar and wind farm projects. The electricity generated is supplied to central and state government entities and government-backed corporations.

Company outstanding rating





Key financial parameters (FY22)

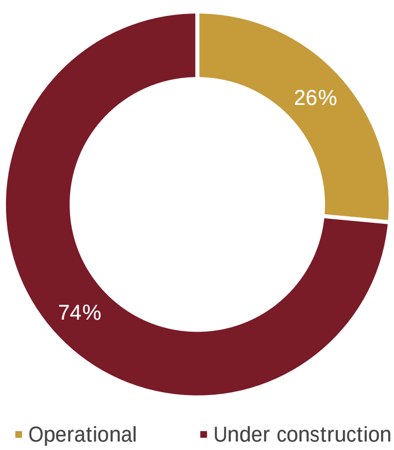
Figures in Rs billion

Total portfolio (MW)	**20,434**	Total revenue	**107**
Total debt	**173**	Net profit/(loss)	**(1)**

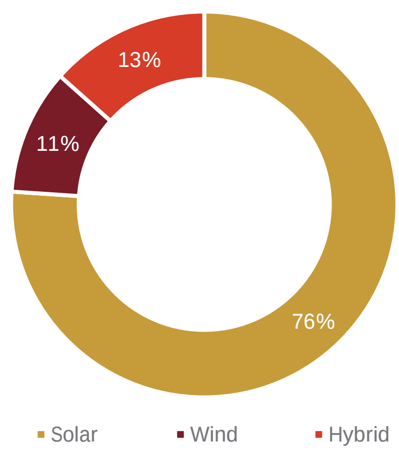
Note: Above parameters represent standalone financials and operational parameters of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under construction split



Portfolio – fuel-wise split



Note: Above parameters represent operational data as on March 2022

Source: Company Reports, CRISIL Research

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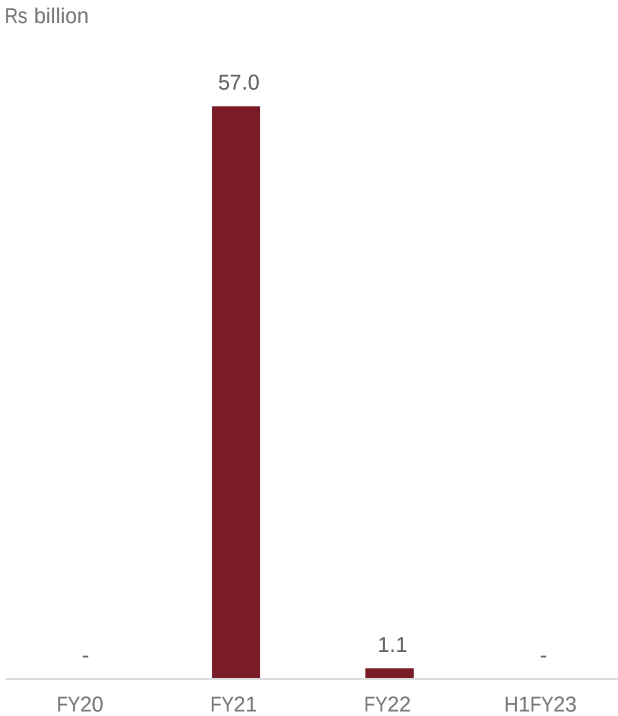


Source: Prime database, CCIL-FTRAC, Crisil Research

Capacity addition for AGEL in fiscal 2022 has come from the organic and inorganic routes, including the acquisition of a 5 GW portfolio of SB Energy that comprised of 1,400 MW operational and the remaining under construction in the first-half of fiscal 2022. AGEL has also secured a power sale agreement for 6 GW, a part of the 8 GW manufacturing contract of Solar Energy Corporation of India (SECI) won in fiscal 2021, while the remaining 2 GW is in the advanced stage of a tie-up.

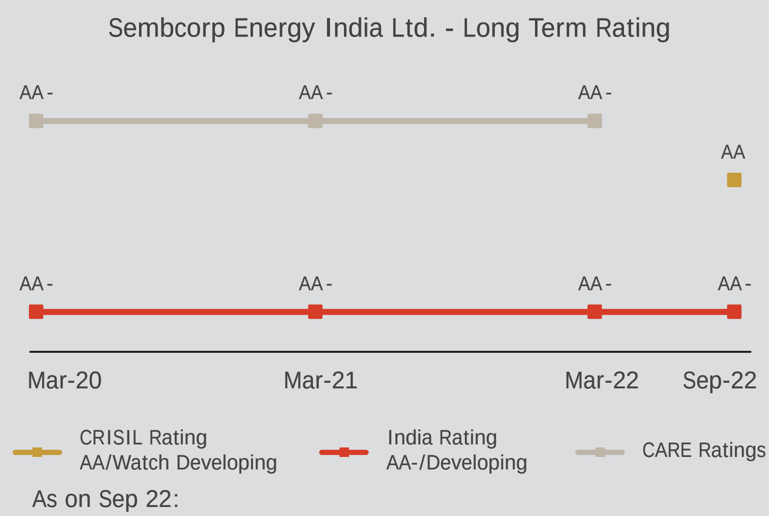
Around 65% of the current operational portfolio of 5.5 GW has been tied up with strong counterparties. The proportion has improved after the acquisition of SB Energy portfolio, which is completely tied up with SECI. The Adani group has identified 0.2 million acres of land on which it could develop its future projects and assets in clusters, providing resources for future execution. From a funding perspective, apart from the debt raised during fiscal 2021, AGEL had also received Rs 40 billion of debt as part of the 50% stake sale of 2.4 GW of operational assets to Total Energies.

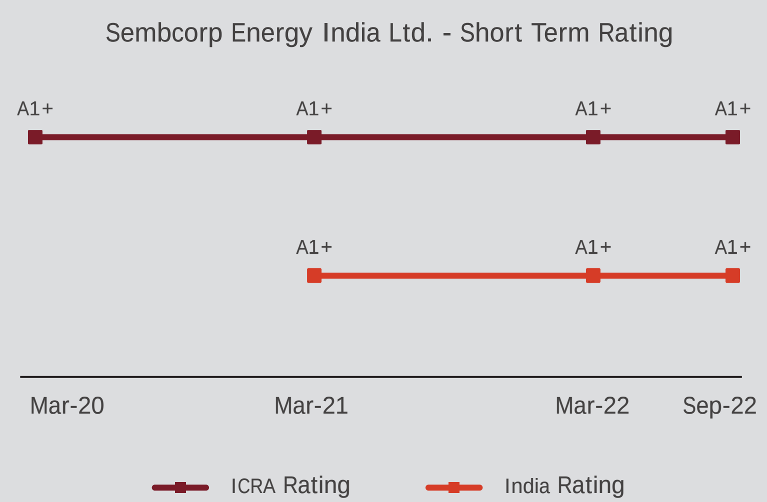
The financial profile is supported by the company’s position as the largest renewable developer in the country and debt tie-ups through revolvers which help ensure timely completion of under construction assets. The financial profile is further supported by strong operating parameters of assets. However, these strengths are partially offset by high current leverage and exposure to currency risk with foreign funding being utilized by the entity.

Sembcorp Energy India Limited

Company name	Sembcorp Energy India Limited
Incorporation year	2008
Promoter	Sembcorp Utilities Pte. Ltd
About the company	Sembcorp Energy India Limited was incorporated in 2008 and registered in Hyderabad. This company is publicly held. The promoters hold 93% of shares. Group companies include 27 subsidiaries. Key business activities include electric power generation, transmission and distribution contributing to 100% of the turnover.

Company outstanding rating





Key financial parameters (FY22)

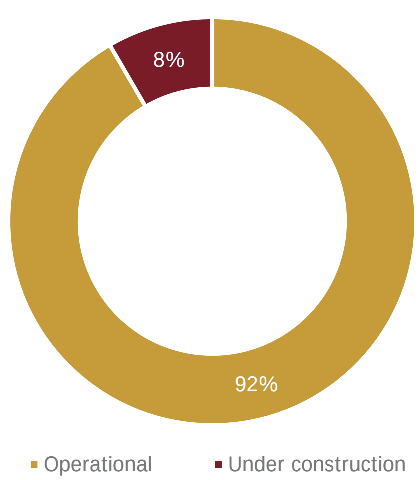
Figures in Rs billion

Total portfolio (MW)	**4,770**	Total revenue	**78**
Total debt	**90**	Net profit/(loss)	**1**

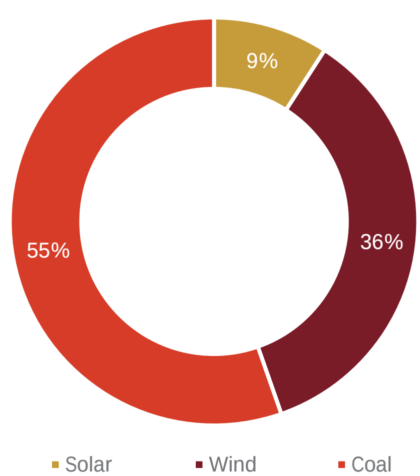
Note: Above parameters represent standalone financials of Sembcorp Energy India Limited and the operational parameters are with respect to SEIL and the renewable portfolio in India for the group as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational / under construction split



Portfolio – Fuel-wise split



Note: Above parameters represent operational parameters with respect to SEIL and the renewable portfolio in India for the group as of March 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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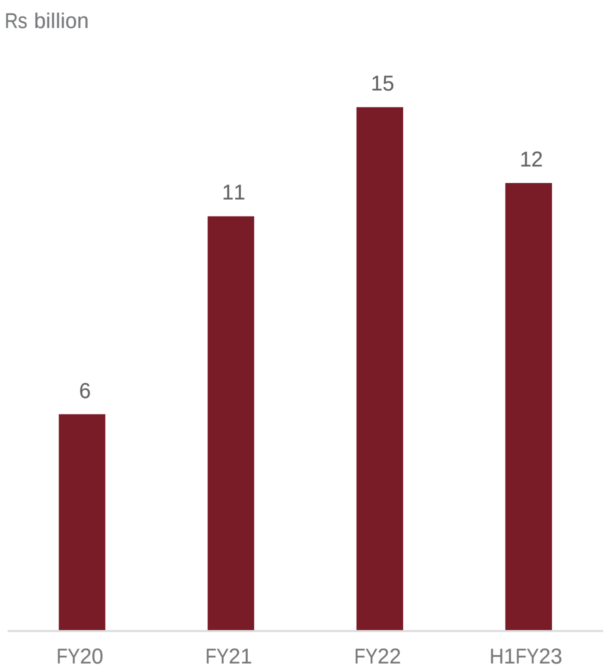


Source: Prime database, CCIL-FTRAC, Crisil Research

Sembcorp Industries, 49.5% owned by Temasek Holdings Pvt Ltd, is a leading energy, water and urban development group operating across five continents. It has around 6 GW of renewable energy capacity, 9 GW of conventional energy capacity and close to 9 million cubic metres of water treatment per day in operation and under development, globally. Headquartered in Gurugram, Haryana, Sembcorp Energy India Limited is a subsidiary of Sembcorp Utilities Pte. Ltd. is a step-down subsidiary of Sembcorp Industries Pte Limited.

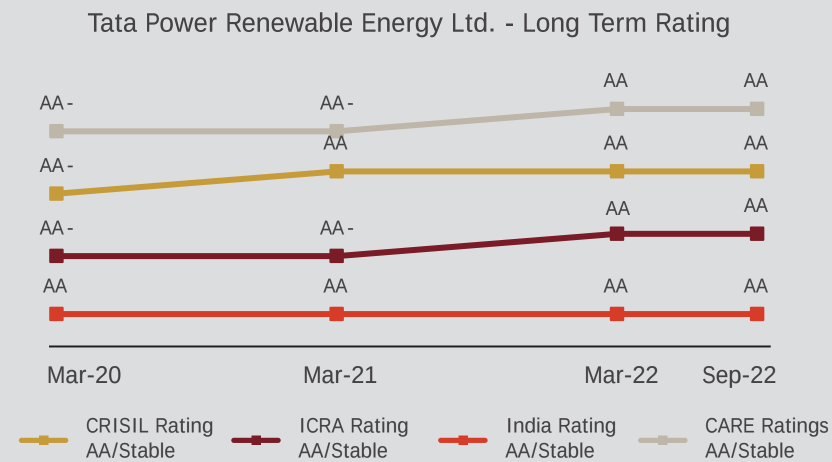
SGIL, through its network of subsidiaries, has an operating portfolio of renewable energy assets in seven states – Karnataka, Tamil Nadu, Maharashtra, Rajasthan, Madhya Pradesh, Gujarat and Andhra Pradesh. About 89% of the group portfolio has long-term power purchase agreements at fixed tariffs with state distribution utilities and central nodal agencies/intermediaries such as Solar Energy Corporation of India Limited and NTPC Vidyut Vyapar Nigam Limited.

The financial profile is supported by an established operating track record, a comfortable financial risk profile and good revenue visibility amid robust managerial and financial support from the parent. Exposure to changes in merchant prices and weak counterparties partially offset these strengths.

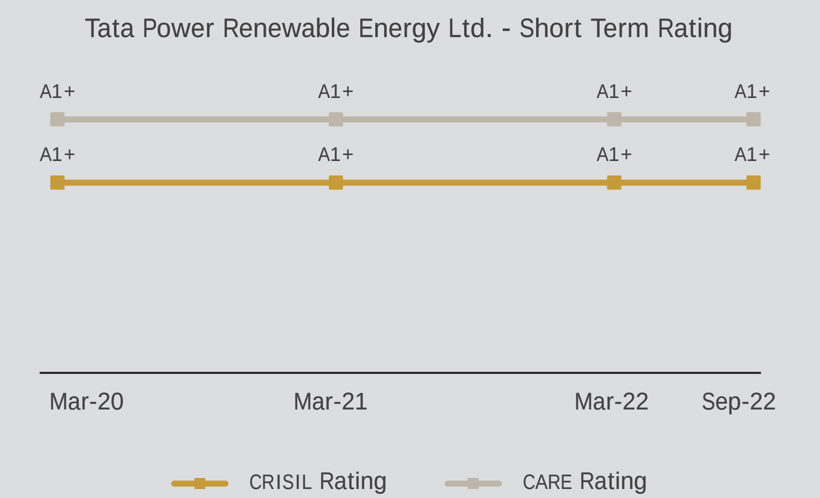
Tata Power Renewable Energy Limited

Company name	Tata Power Renewable Energy Limited
Incorporation year	2007
Promoter	Tata Group
About the company	Tata Power Renewable Energy Limited (TPREL), Walwhan Renewable Energy Ltd (WREL), and all their special purpose vehicles are collectively referred to as the TPREL group. TPREL group houses all the wind and solar renewable power assets of the parent, The Tata Power Company Limited (Tata Power). The renewable power projects are executed directly under the TPREL group.

Company outstanding rating



As on Sep 22:



Key financial parameters (FY22)

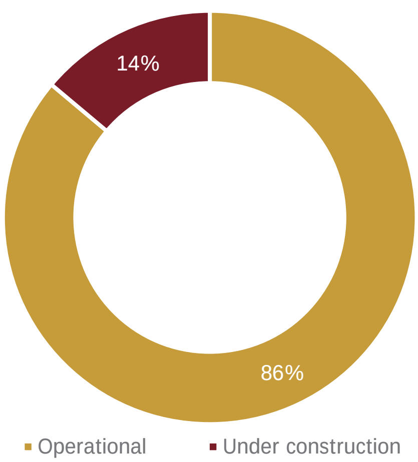
Figures in Rs billion

Total portfolio (MW)	**3,710**	Total revenue	**15**
Total debt	**93**	Net profit/(loss)	**2**

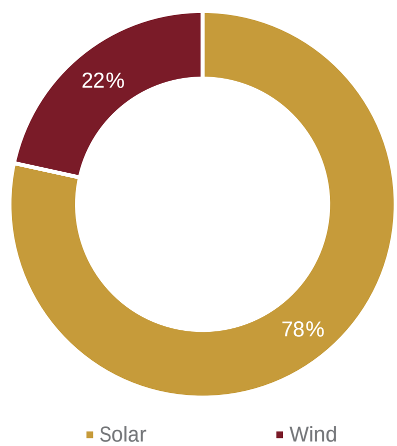
Note: Above parameters represent standalone financials and operational parameters of the company as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: Company Reports, CRISIL Research

Capacity – Operational / under construction split



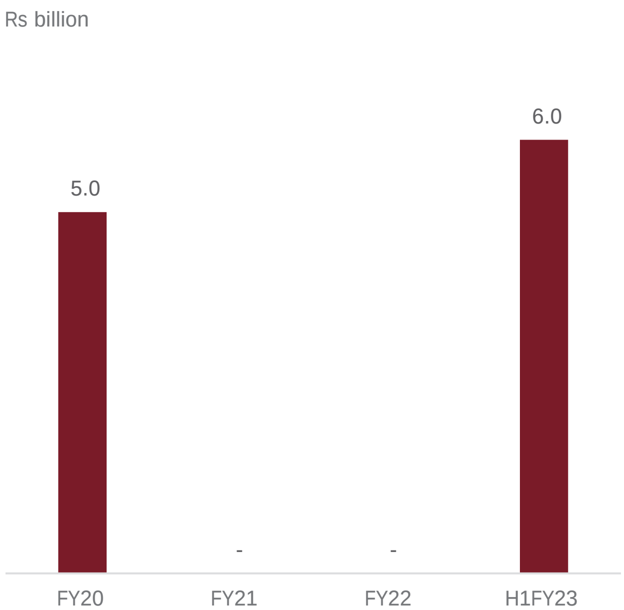
Portfolio – Fuel-wise split



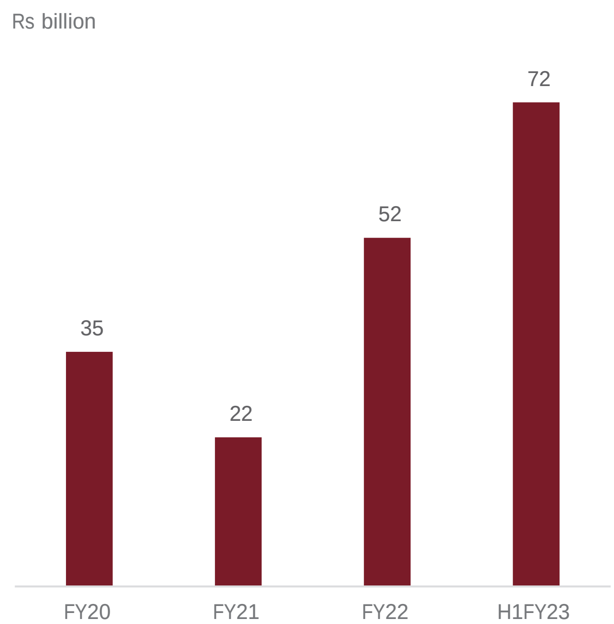
Note: Above operational parameters of the company are as of March 2022.

Source: Company Reports, CRISIL Research

NCD Issued



CP Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

Tata Power, the parent of TPREL, plans to have 50-60% of its total generation capacity from non-fossil fuel assets over the next 7-8 years. The operational capacity of the TPREL group has progressively grown to ~ 3.3 GW as on March 2022. The senior management of Tata Power is present on the boards of TPREL and WREL.

The TPREL group is one of the largest players in the Indian renewable energy space with around 3.3 GW of installed capacity and around 1.5 GW in under-construction projects. The group has a diversified proportion of solar-wind power capacity with geographical spread across 12 states. This helps mitigate risk of resource and location-specific generation variability. The operational portfolio is fairly matured, ~60% of which has a track record of above 3 years, and nearly 80% having maturity of more than a year.

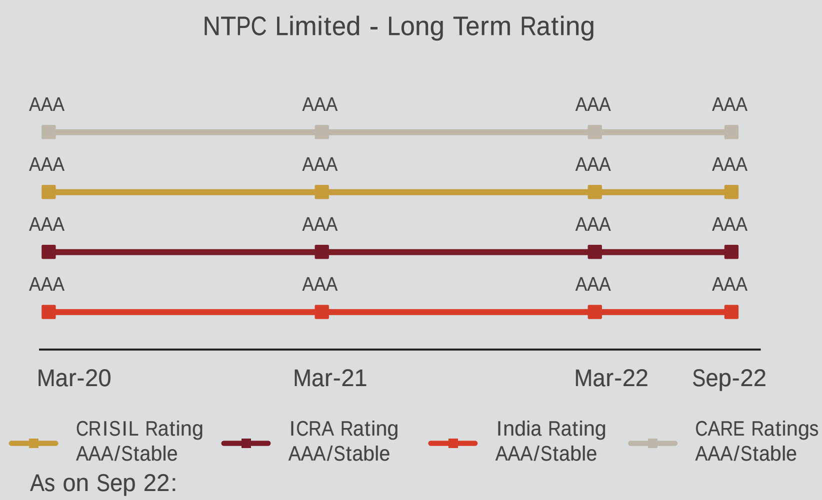
Receivables at a consolidated level for TPREL has improved to below 6 months in fiscal 2022 from around 6 months in fiscal 2021. As on March 31, 2022, receivables from discoms (distribution companies) such as Tamil Nadu and Andhra Pradesh were above 6 months. The weak financial health of the state discoms could lead to increased delays in payments. This risk is mitigated by diversity in counterparties with over 15 discoms and expected liquidity of around 6 months of debt servicing maintained at the group level. The company is also resorting to bill discounting to faster realise receivables.

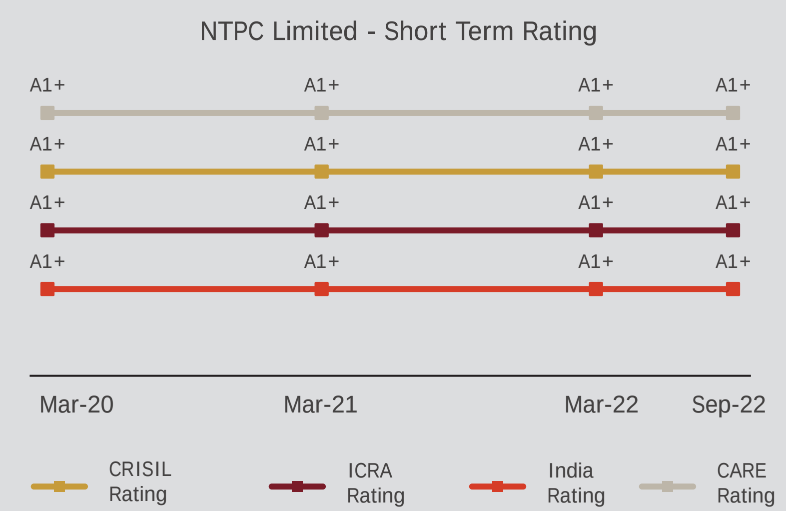
The financial profile is supported by strong financial and managerial support from the parent and a well-diversified portfolio in combination with healthy revenue visibility and a strong DSCR. This is constrained by exposure to risks surrounding operating renewable assets and exposure to receivables risk, though the company maintains diversity in its counterparties.

NTPC Limited

Company name	NTPC Limited
Incorporation year	2008
Promoter	Government of India
About the company	NTPC Limited (NTPC) was incorporated in 1975. It has been conferred a Maharatna status by the Government of India, which had a shareholding of 51.10% in the company as on March 31, 2022.

Company outstanding rating





Key financial parameters (FY22)

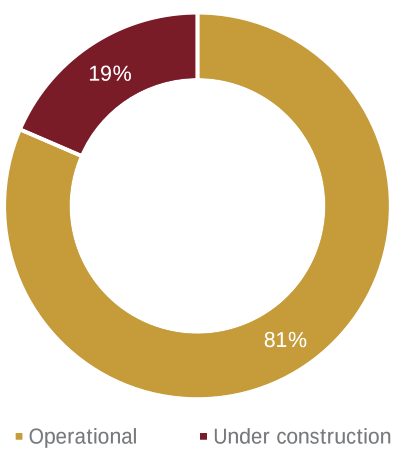
Figures in Rs billion

Total portfolio (MW)	--	Total revenue	1,129
Total debt	1,776	Net profit/(loss)	161

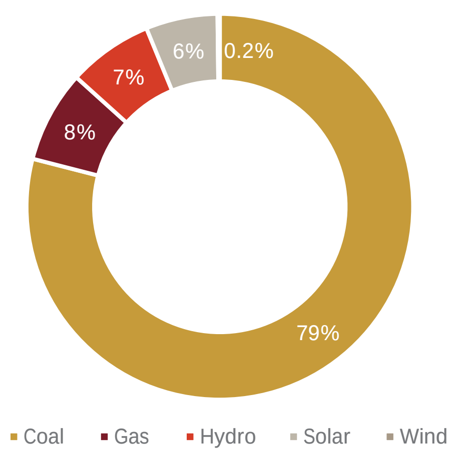
Note: Above parameters represent standalone financials and operational parameters of the group as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational / under construction split



Portfolio – fuel-wise split



Note: Above operational parameters of the group are as of March-2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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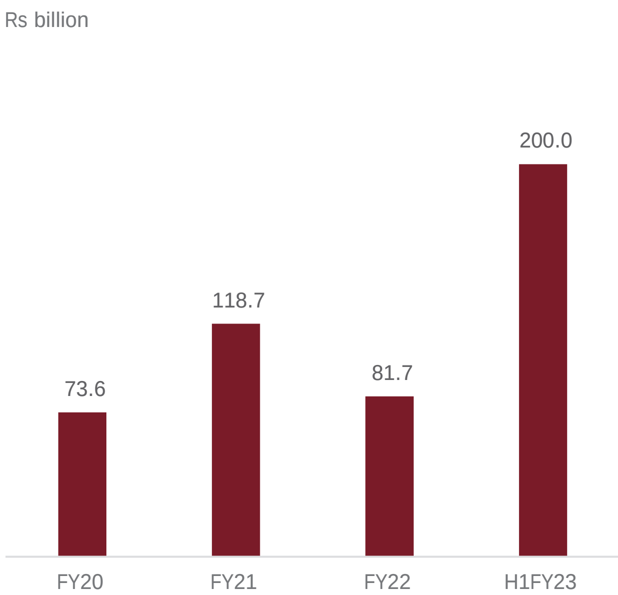

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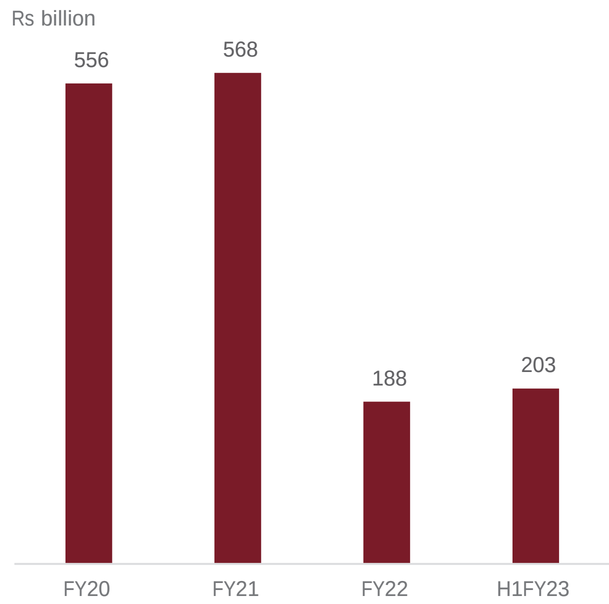


Source: Prime database, CCIL-FTRAC, Crisil Research

In addition to furthering capacity addition through coal-based power projects, NTPC has been looking to enhance its power generation portfolio through renewable energy projects (including hydro). To be in step with ambitious targets, the company is exploring all avenues for renewable capacity addition to look beyond conventional large-scale solar and wind parks. NTPC is utilising roofs of power plant buildings for solar power generation and integrating it to the existing plant infrastructure. It is also going ahead with floating solar at reservoirs of its projects, which is a step towards saving land and conserving water by reducing water surface evaporation.

As on fiscal 2022 ending, on the renewables front (sans hydro), NTPC won bids totaling 3,265 MW in fiscals 2021 and 2022 and commissioned 502 MW of new capacity. With this, the total renewable capacity (sans hydro) won through competitive bidding has reached 7,562 MW and total renewable (sans hydro) commissioned capacity crossed the 2 GW mark.

NTPC has also formed a new company, NTPC Green Energy Limited (NGEL), under which it plans to consolidate all green assets and is identifying strategic investors for NGEL and plans to complete the process in fiscal 2023.

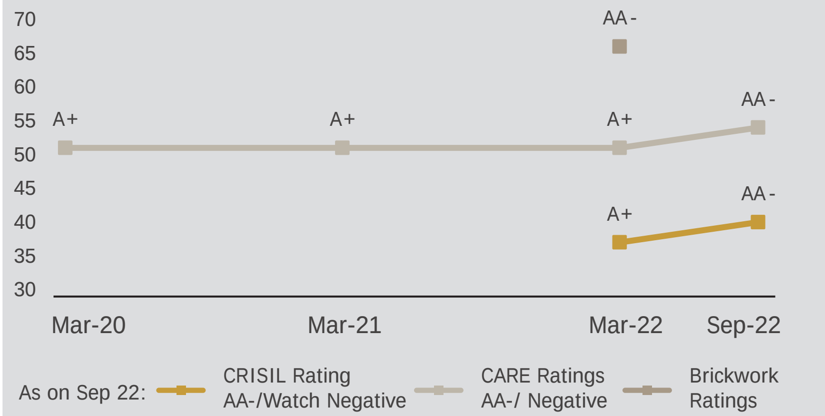
The company's financial profile is supported by its established position as the largest power generation group in India with a consistent operational performance, healthy financial risk profile and NTPC's strategic importance to the Government of India. These strengths are partially offset by risks pertaining to time overruns surrounding projects under implementation and weak health of discoms, which are NTPC's counterparties.

Azure Power India Private Limited

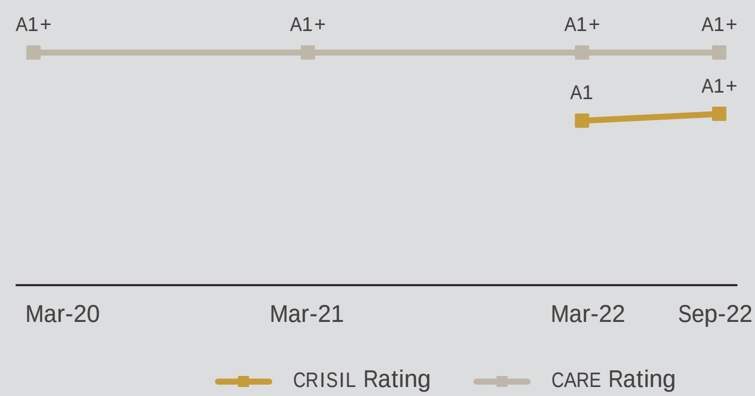
Company name	Azure Power India Private Limited
Incorporation year	2008
Promoter	Azure Power Global Limited.
About the company	Incorporated in 2008, Azure Power India Private Limited (APIPL) is the holding company for the Azure Power India (API) group's renewable assets in the country. This company is privately held by Azure Power Global Ltd (APGL).

Company outstanding rating

Azure Power India Pvt Ltd. - Long Term Rating



Azure Power India Pvt Ltd. - Short Term Rating



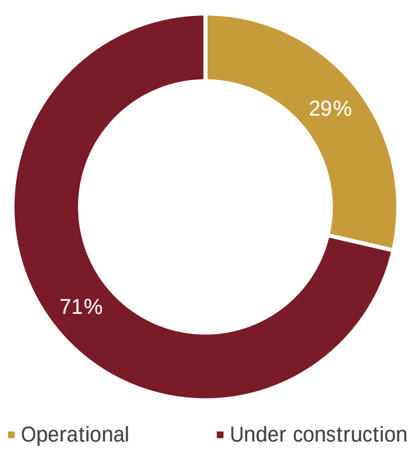
Key financial parameters (FY22)

Figures in Rs billion

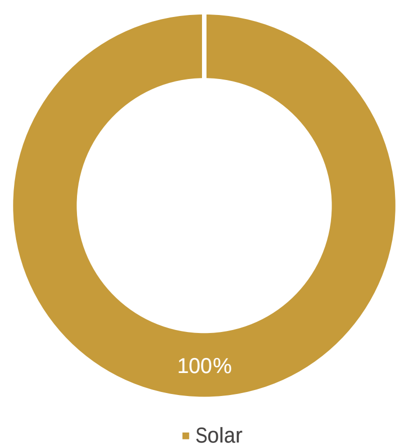
Total portfolio (MW)	**6,955**	Total revenue	**4**
Total debt	**29**	Net profit/(loss)	**(2)**

Note: "Above parameters represent standalone financials and operational parameters of the company as of March 2021 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. All operational parameters are as of fiscal 2021, as annual report for fiscal 2022 of the entity remains unreleased as on date of preparation of this report. Total portfolio includes awarded capacity where PPAs were unsigned as on disclosure date."

Capacity – Operational/under construction split



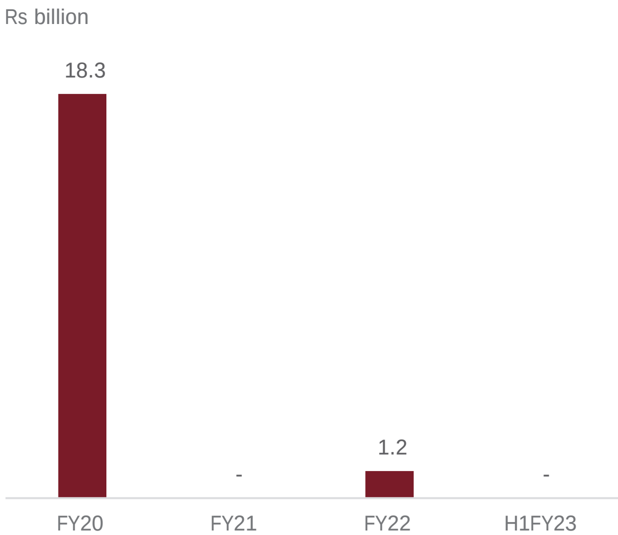
Portfolio – Fuel-wise split



Note: ""All operational parameters are as of fiscal 2021, as annual report for fiscal 2022 of the entity remains unreleased as on date of preparation of this report. Total portfolio includes awarded capacity where PPAs were unsigned as on disclosure date.""

Source: CRISIL Quantix, Company Reports, CRISIL Research

NCD Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

The Azure group commenced operations in 2008 where APGL is listed on NYSE, while its solar green bonds are listed on the Singapore Exchange. The group is backed by long-term investors such as CDPQ and OMERS.

The entity has a diversified portfolio in terms of location and counterparty. Its assets are in 13 states and have long-term PPAs of 25 years at pre-determined tariffs with over 10 state and central counterparties. The operating performance of the commissioned capacity was satisfactory, reflected in average plant load factor (PLF) of 20.9% in fiscal 2021, which exceeded the P-90 benchmark.

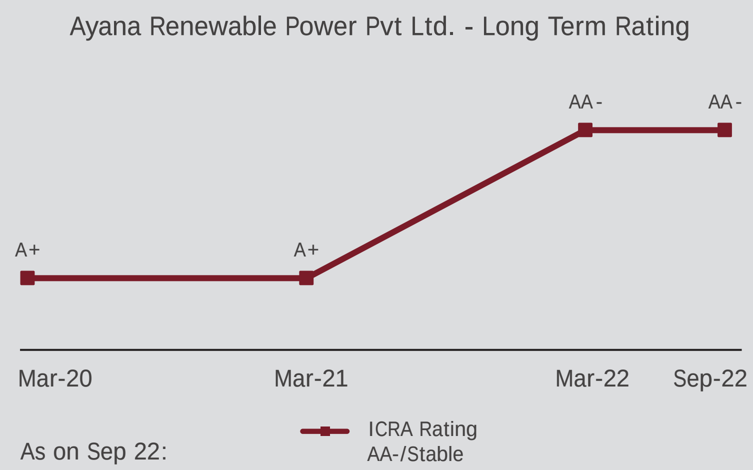
The group has expansion plans where almost 1 GW of capacity is aimed to be commissioned every fiscal over the next 4-5 years. It is implementing a manufacturing-linked tender for the 4 GW solar power project won in fiscal 2020.The completion of the project will be spread over four years. In addition, the group has won wind and hybrid (solar+wind) projects with combined capacity of 470 MW.

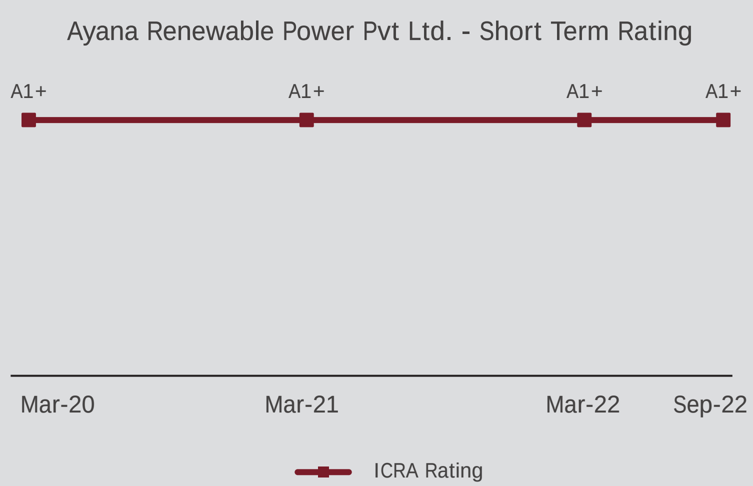
Azure Power's financial profile is supported by its strong parentage with presence of global investors in addition to the diversified portfolio of the group. This is partially offset by the company's exposure to completion of under construction projects and risks pertaining to renewable energy assets.

Ayana Renewable Power Private Limited

Company name	Ayana Renewable Power Private Limited
Incorporation year	2017
Promoter	NIIF, CDC Group Plc & GGEF
About the company	Ayana Renewable Power Private Limited (ARPPL) is a renewable energy focused player. ARPPL was previously fully backed by CDC Group Plc (CDC) (100% owned), which is a development finance institution owned by the UK government. However, in early 2019, CDC divested its 51% stake in ARPPL and the same has been acquired equally by the National Investment and Infrastructure Fund of India (NIIF) and EverSource Capital through its Green Growth Equity Fund (GGEF). In March 2021, NIIF increased its stake to 32%, which further went up to 51% in November 2021, committing to be a majority shareholder.

Company outstanding rating





Key financial parameters (FY22)

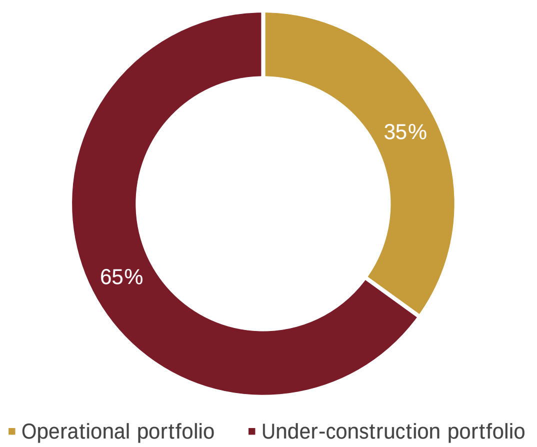
Figures in Rs billion

Total portfolio (MW)	**3,690**	Total revenue	**0.2**
Total debt	**0.4**	Net profit/(loss)	**0.07**

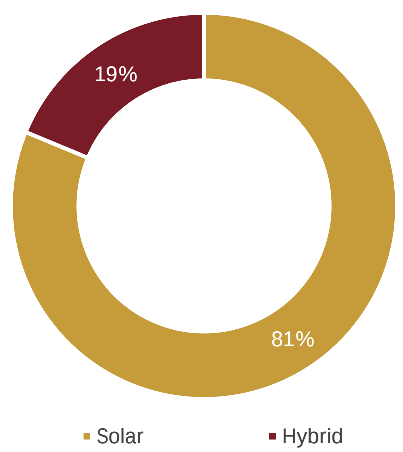
Note: "Above parameters represent standalone financials of the company as of March 2021 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. All operational parameters are as of April 2022."

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational/under construction split



Portfolio – Fuel-wise split



Note: All operational parameters are as on April 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

The Ayana Group is backed by NIIF (51%), CDC Group Plc (32%) and GGEF (17%). NIIF is anchored by the Government of India (GoI) in collaboration with leading global and domestic institutional investors and is India's first sovereign investment fund. The full ownership of the CDC Group belongs to the Secretary of State for International Development, which is controlled by the UK Government. EverSource Capital, a joint venture between Everstone Capital and Lightsource BP, is the fund manager of GGEF, a $700-million target private fund, which has NIIF and the UK Government as anchor investors. NIIF had increased its shareholding to 51% from 25.5% as of March 2021, along with a majority board representation. As on April 12, 2022, the shareholders have infused ~Rs. 26 billion in the platform. The committed equity capital would enable the platform to complete the under-construction and recently won projects aggregating to 2.4 GW.

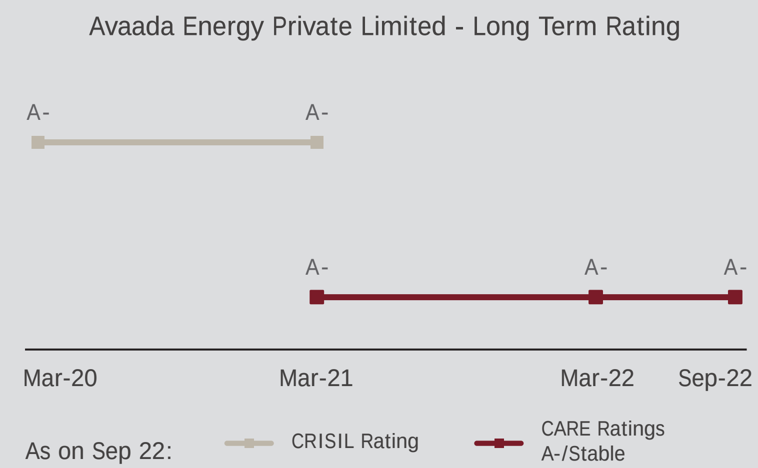
Of the 3,690-MW portfolio under ARPPL, the group has signed long-term PPAs for 2,640 MW at fixed tariffs, providing revenue visibility. The tariffs offered by the group's projects is cost competitive for the ultimate off-takers and are likely to remain competitive in the long run, given that the average power purchase cost for the utilities remains relatively high.

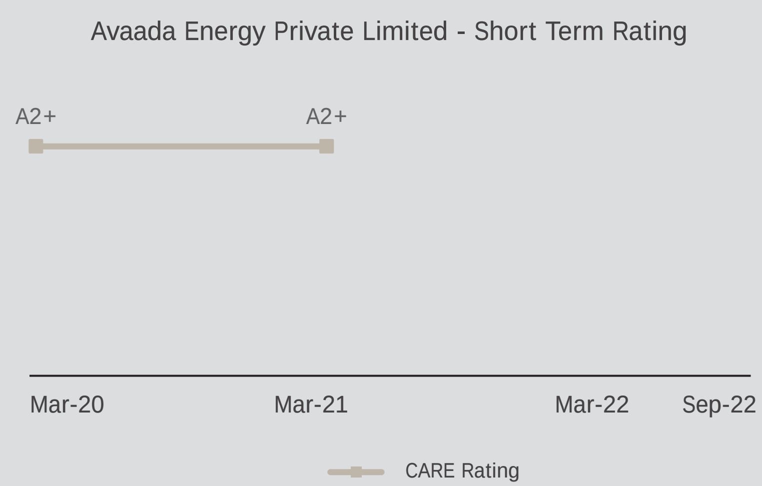
The financial profile is backed by strong sponsors' large capital commitments and low offtake risks driven by long-term PPAs, majority of which are with central counterparties. However, a large under construction portfolio and exposure to inherent risks in operating renewable energy assts partially offset these strengths.

Avaada Energy Private Limited

Company name	Avaada Energy Private Limited
Incorporation year	2007
Promoter	PTT Group & Mr. Vineet Mittal
About the company	AEPL is wholly owned subsidiary of Avaada Ventures Private Limited promoted by Mr. Vineet Mittal. Thailand's PTT group, through its subsidiary Global Renewable Synergy Company, had acquired a 42.93% stake in Avaada Energy Private Limited.

Company outstanding rating





Key financial parameters (FY22)

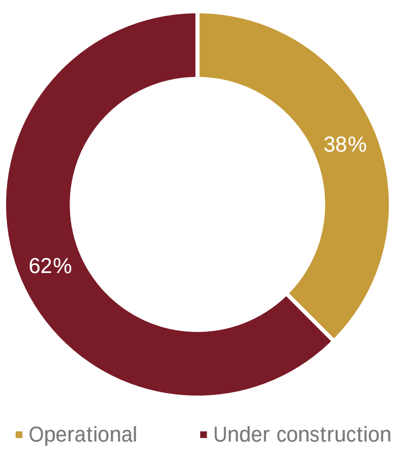
Figures in Rs billion

Total portfolio (MW)	4,463	Total revenue	1
Total debt	1	Net profit/(loss)	0.16

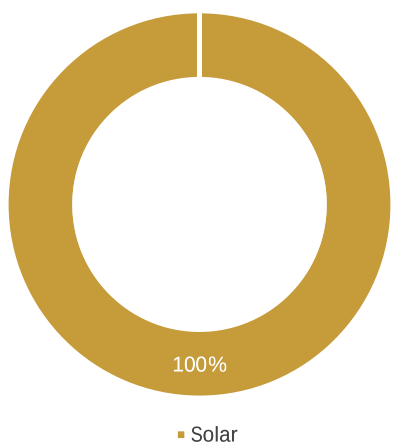
Note: Above parameters represent standalone financials of the company as of March-2021 and may include, as applicable, reclassification / adjustments to the reported financials by the entity. Operational parameters are as on March 2022 as per disclosures in the public domain.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Capacity – Operational / Under construction Split



Portfolio – Fuel-wise split



Note: Above parameters represent operational aspects as on March 2022 as per disclosures in the public domain.

Source: Rating documents

The Avaada Group is a developer of renewable energy projects in India and is promoted by Vineet Mittal. Avaada Energy Private Limited (a 100% subsidiary of AVPL) and Avaada Clean Projects Private Limited (ACPPL; a 100% subsidiary of AEPL) are jointly referred to as the Avaada Group.

Thailand's PTT group, through its subsidiary Global Renewable Synergy Company, had acquired a 42.93% stake in Avaada Energy Private Limited for Rs 35.63 billion in July 2021. Avaada's management has indicated that Thailand PTT plans to invest in renewable and climate-change initiatives of the group. The proceeds of the deal were utilised to redeem the entire outstanding debentures held by the existing investors, while the balance was used to pay off the outstanding debt of AEPL and meet the equity requirement of the projects under execution in FY22 and FY23.

AEPL had commissioned 1,507 MW DC solar projects for the Avaada Group, as on March 2022, and had a pipeline of about 2,509 MW DC to be executed in FY23 under various stages of implementation.

Apart from developing solar power projects, AEPL also undertakes EPC work for group company projects. AVPL also plans to undertake third-party EPC contracts. However, the company has no definitive agreements for that as on date.

The financial profile is supported by an experienced promoter group, established history of operations in renewable energy, and the presence of investors which partially offsets equity commitment risk. However, the company's large under construction portfolio, exposure to state counterparties and inherent risks in operating renewable assets offset these strengths.

ReNew Energy Global Plc

Company name	ReNew Energy Global Plc
Incorporation year	2011
Promoter	-
About the company	Incorporated in 2011 and registered at Delhi, ReNew Power Pvt Ltd is privately held. It is engaged in electric power generation

Company outstanding rating
Not available

Key financial parameters (FY22)

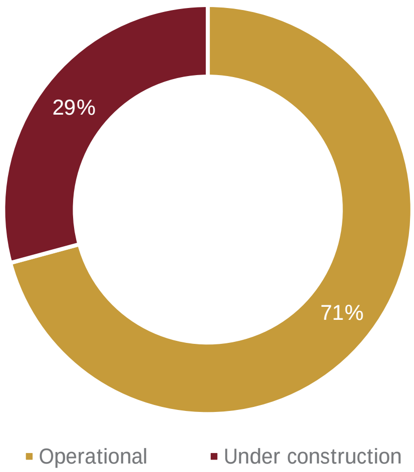
Figures in Rs billion

Total portfolio (MW)	**10,690**	Total revenue	**69**
Total debt	**449**	Net profit/(loss)	**(16)**

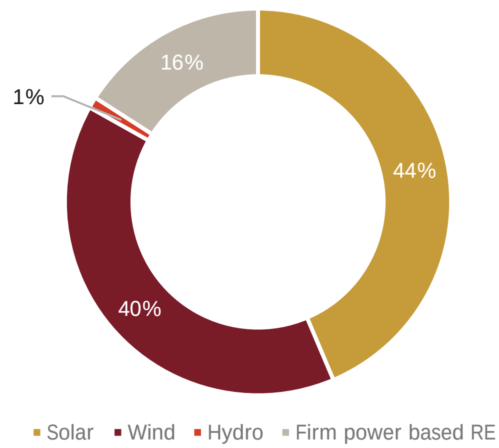
Note: Above parameters represent consolidated financials and operational parameters of the company as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity. Portfolio information includes projects where PPAs may not have been signed.

Source: Company reports, CRISIL Research

Capacity – Operational / Under construction Split



Portfolio – Fuel-wise split



Note: Above parameters represent operational parameters as of March 2022 and include projects under construction as well as projects where PPAs may not have been signed

Source: CRISIL Quantix, company reports, CRISIL Research

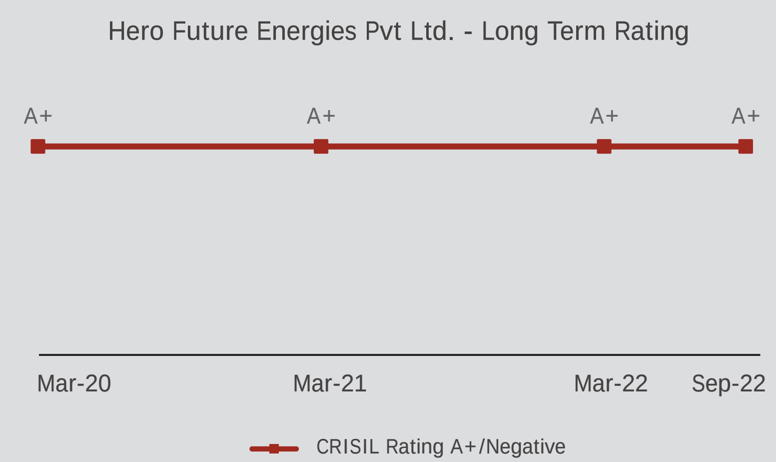
ReNew's portfolio diversified with wind and solar energy projects spread across nine states in India. This diversification mitigates the operational volatility due to seasonal weather conditions and reduces concentration risk. Its offtakers include central government agencies, public utilities such as state electricity utilities, and private industrial and commercial consumers. As on March 31, 2022, approximately 46% of offtakers (in terms of total capacity) included central agencies such as Solar Energy Corporation of India Ltd, National Thermal Power Corporation Ltd, and PTC India Ltd. In addition, approximately 9% of offtakers comprised corporate and industrial customers. The group won over 1.25 GW, 1.90 GW and 1.20 GW of new bids in the fiscal years ended March 31, 2020, 2021 and 2022, respectively. It has won new business model bids such as round-the-clock and peak power along with regular wind and solar energy projects.

The term of the PPAs with central government agencies and state electricity distribution companies is generally 25 years from the commercial operations date of the project. The term of PPAs with commercial and industrial customers ranges from 8 to 25 years. These PPAs provide for fixed tariff rates with limited escalation provisions, thus providing a stream of visible, predictable and long-term cash flows.

Hero Future Energies Private Limited

Company name	Hero Future Energies Private Limited
Incorporation year	2013
Promoter	Hero Group
About the company	Hero Future Energies Private Limited (HFEPL) is the green energy venture of the Hero group. It was incorporated as a renewable energy developer to operate and manage wind, solar, and small hydro plants. HFEPL is a jointly owned subsidiary of Bahadur Chand Investment Private Limited (BCIPL) and Brijmohan Lall Om Prakash Partnership (BMOP) which hold 33.99% in Hero MotoCorp Ltd (HMC) cumulatively. The company holds 100% stake in two vertical holding companies for wind and solar energy. HFEPL is managed by a team of experienced professionals, led by Mr Rahul Munjal (chairman) and Mr Sunil Jain (chief executive officer).

Company outstanding rating



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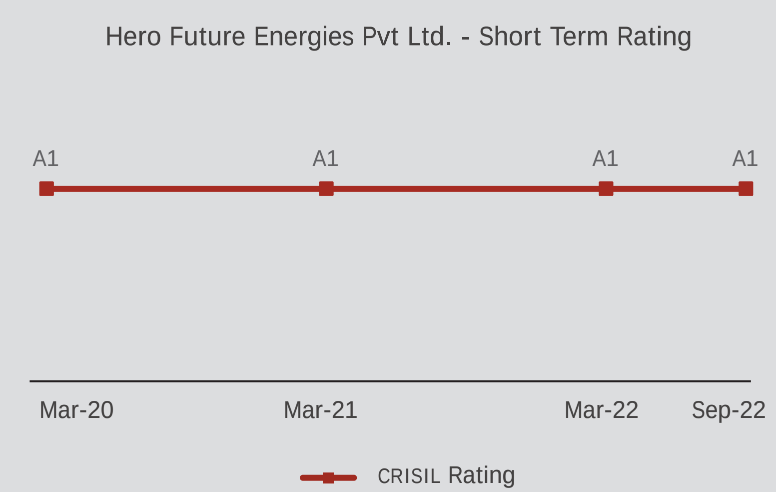


Key financial parameters (FY22)

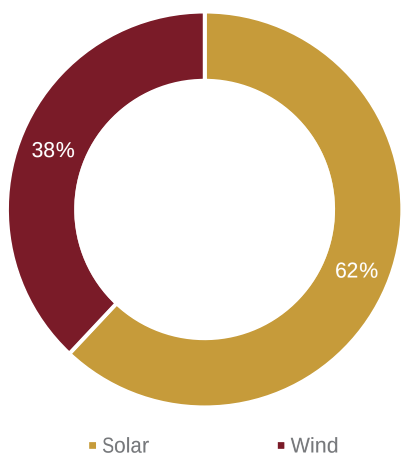
Figures in Rs billion

Total portfolio (MW)	**1,533**	Total revenue	**0.5**
Total debt	**31**	Net profit/(loss)	**(2)**

Note: Above parameters represent standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity. Operational parameters are as per disclosure dated May 2022 in the public domain.

Source: CRISIL Quantix, Company Reports, CRISIL Research

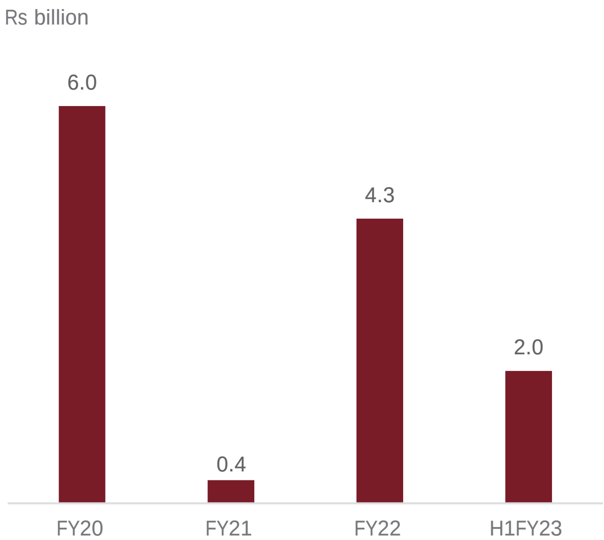
Portfolio – Fuel wise Split



Note: Above parameters represent operational parameters as per disclosure dated May 2022 in the public domain.

Source: Company Reports, CRISIL Research

NCD Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

The holding companies of the Hero Future Energies platform (HFEPL, Hero Rooftop Energy Pvt Ltd (HREPL), Hero Wind Energy Pvt Ltd (HWEPL) and Hero Solar Energy Pvt Ltd (HSEPL)) are majorly owned, directly or indirectly, by the promoters of the Hero group, Bahadur Chand Investment Pvt Ltd (BCIPL) and Brij Mohan Lall Om Prakash (BMOP). These entities draw strength from their 20.00% and 13.99% stakes, respectively, in Hero MotoCorp ('CRISIL AAA/FAAA/Stable/CRISIL A1+'). Both Bahadur Chand Investment Pvt Ltd (BCIPL) and Brij Mohan Lall Om Prakash (BMOP) have funded the initial equity requirement for the platform. Furthermore, presence of the Munjal family members on the board of group companies substantiates the importance of the venture to the Hero group and the Munjal family.

The SPVs in the HFE Global group benefit from being a part of a diverse portfolio. The operational portfolio comprised wind capacity of over 580 MW across Rajasthan, Maharashtra, Tamil Nadu, Karnataka, Madhya Pradesh, and Andhra Pradesh; and solar capacity of over 950 MW across Madhya Pradesh, Telangana, Andhra Pradesh, Karnataka, and Rajasthan as on Dec 31, 2021.

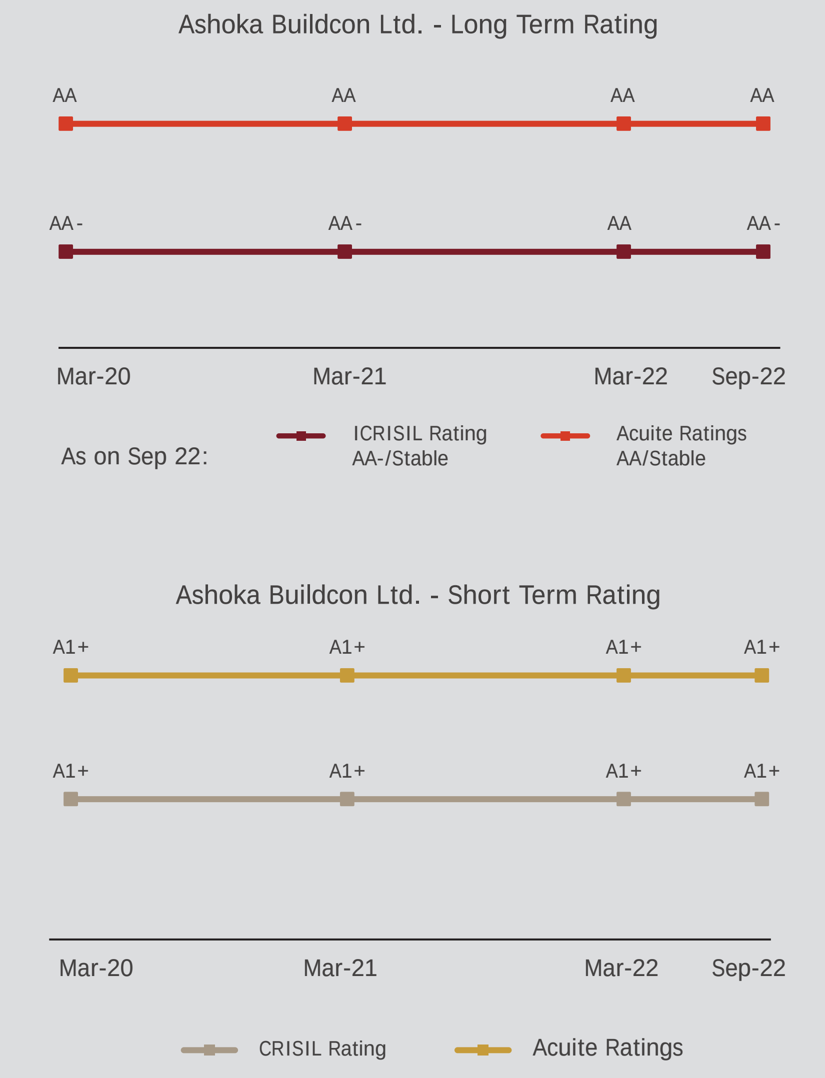
The financial profile is supported by a diversified operational portfolio and strong operational and financial support from the Hero Group. However, risks related to renewable energy generation and moderate financial risk profile of the HFE Global Group partially offset this.

Player profile for Roads

Ashoka Buildcon Limited

Company name	Ashoka Buildcon Limited
Incorporation year	1993
Promoter	Ashok Katariya, Ashish Katariya, Satish Parakh
About the company	Ashoka Buildcon Limited (ABL), incorporated in 1993, engineered and constructed residential, commercial, industrial, and institutional buildings until 1997. The company won its first BOT project in 1997. Currently, operations comprise BOT and EPC road projects, EPC power T and D projects, collection of tolls on roads and bridges owned and constructed by third parties, and manufacturing of ready-mix concrete.

Company outstanding rating



Key financial parameters (FY22)

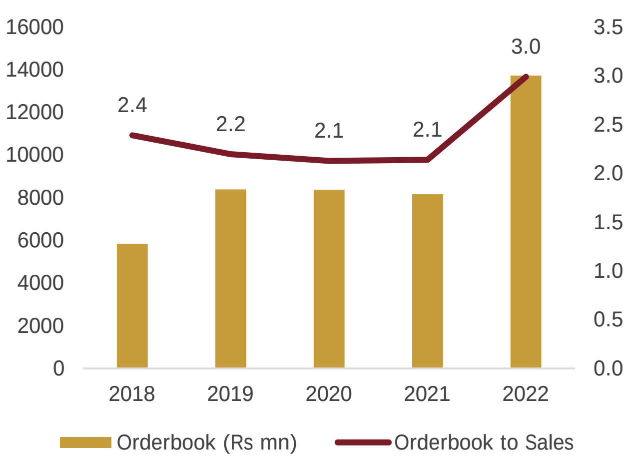
Figures in Rs billion

Order book	**137**	Overall revenue	**46**
Tangible networth	**27**	Total debt	**6**
Gearing (times)	**0.2**	OPM (%)	**11.0 %**
Market cap (full)	**21**	Market cap (free float)	**10**

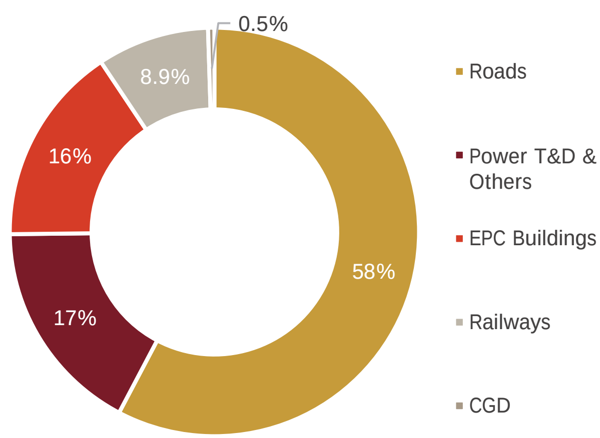
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/ adjustments to the reported financials by the entity. Market cap as of October 21, 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

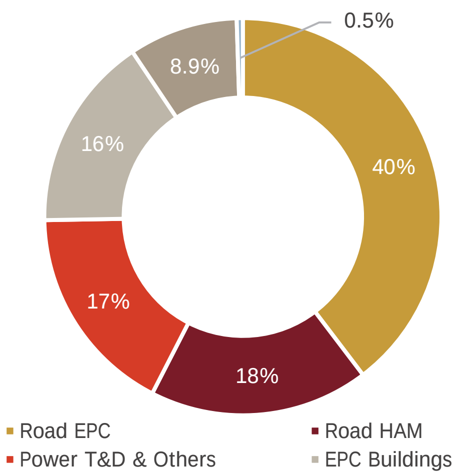
Order book to sales



Order book – Industry-wise



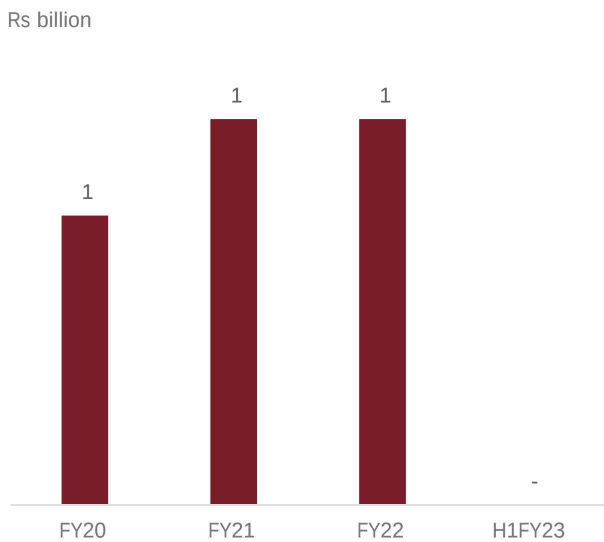
Order book – Contract type-wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

CP Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

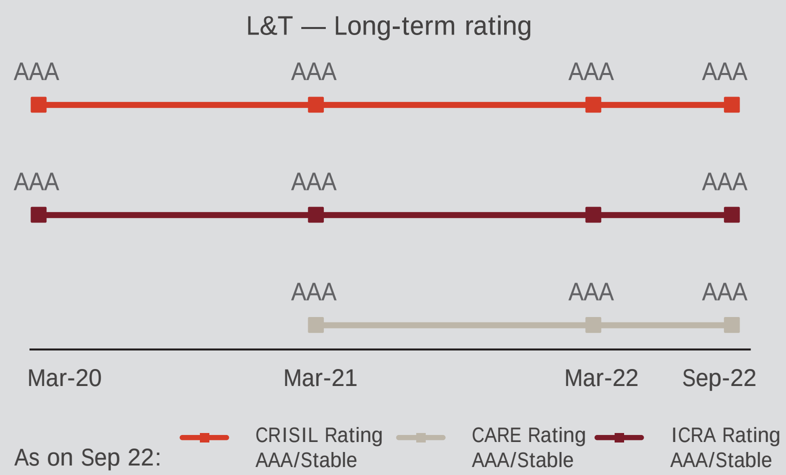
ABL has experience of over two decades in the EPC business and established relationships with state government departments, the National Highways Authority of India (NHAI), and MoRTH should continue to support the business. The order book of ABL has evolved over time. The company has shifted its focus from bidding for BOT and hybrid annuity model (HAM) projects to EPC projects. ABL aims to become an all-sector EPC player over the medium term.

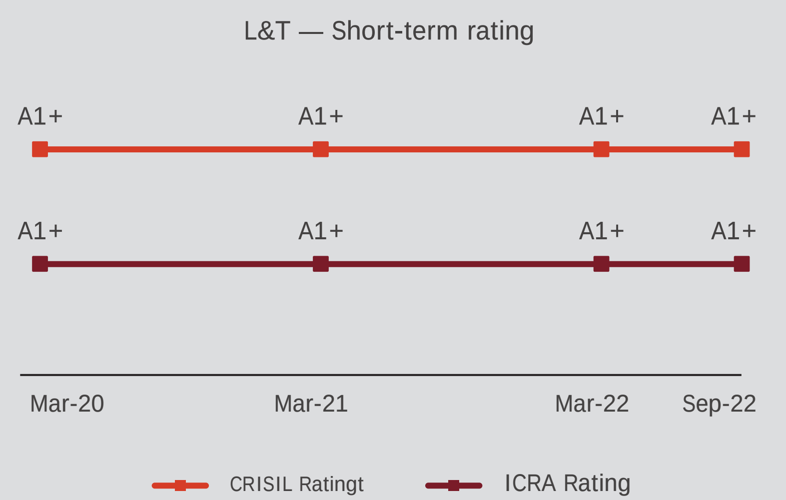
The company had an order book worth Rs 137 billion at the end of fiscal 2022. This translates into an order book to sales ratio of 3.0 providing decent revenue visibility. The roads sector accounts for 58% of the company's order book. From a geographical standpoint, the company's order book has pan-India presence. HAM contracts account for 18% of order book. With a gearing ratio of 0.2 time, the company's leverage is comfortably placed. Its financial profile is supported by capabilities in execution of projects, robust order books however offset by large working capital requirements and cyclicality and intense competition

Larsen & Toubro Ltd

Company name	Larsen & Toubro Ltd (L&T)
Incorporation year	1946
Promoter	-
About the company	L&T is a global conglomerate with operations in over 30 countries. It is engaged in engineering, construction, manufacturing and financial services. The company executes engineering, procurement and construction (EPC) projects across multiple segments, including roads, power, shipbuilding and ports.

Company outstanding rating





CRISIL
An S&P Global Company

Key financial parameters (FY22)

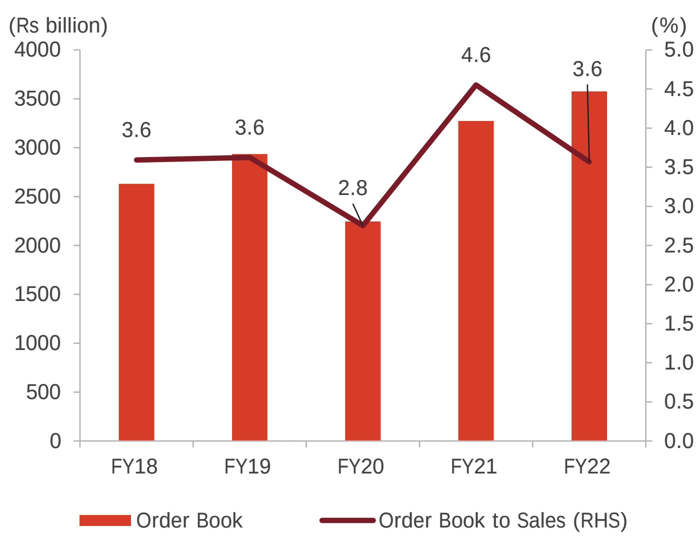
Figures in Rs billion

Order book	3,156	Overall revenue	1,002
Tangible networth	669	Total debt	203
Gearing (times)	0.3	OPM (%)	9.3%
Market cap (full)	2,844	Market cap (free float)	2,446

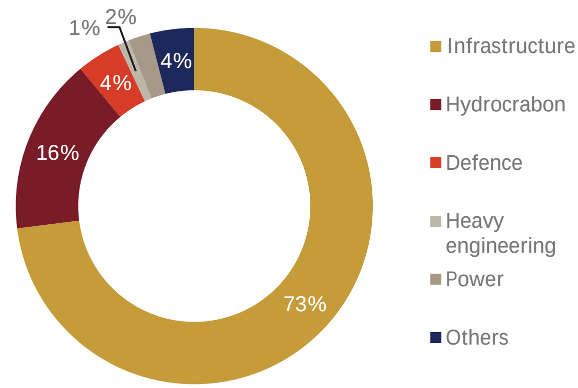
Note: The above parameters represent standalone financials of the company as of March 2022, and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, company reports, CRISIL Research

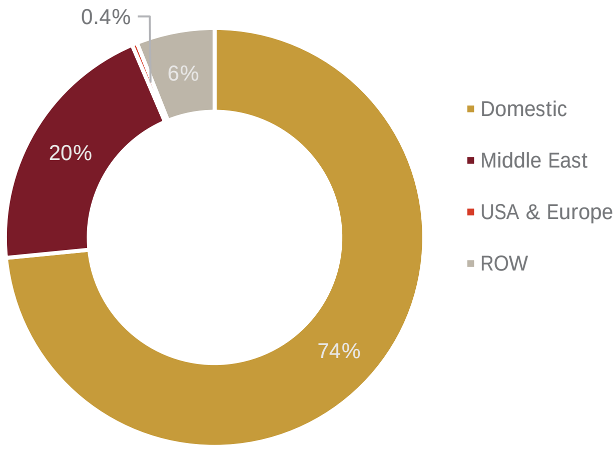
Order book to sales



Order book – Industry-wise



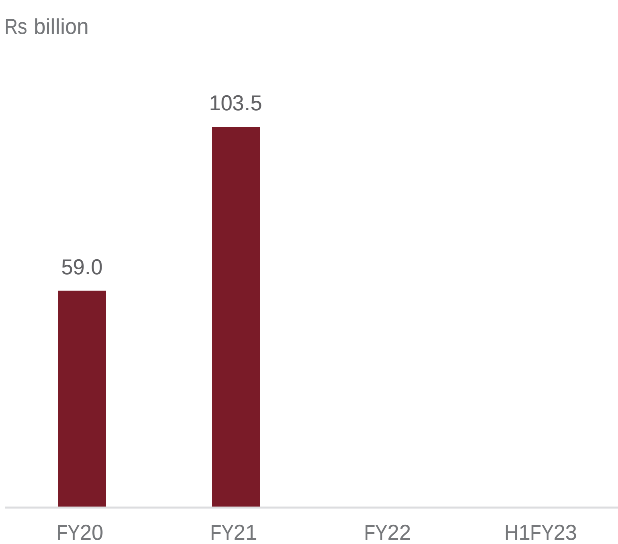
Order book – Contract type-wise



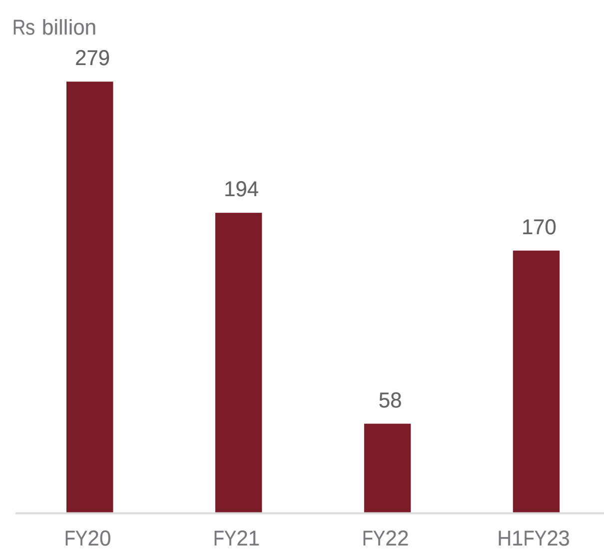
Note: The above parameters represent standalone financials of the company as of March 2022, and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, company reports, CRISIL Research

NCD issued



CP Issued



Source: Prime Database, CCIL-FTRAC, CRISIL Research

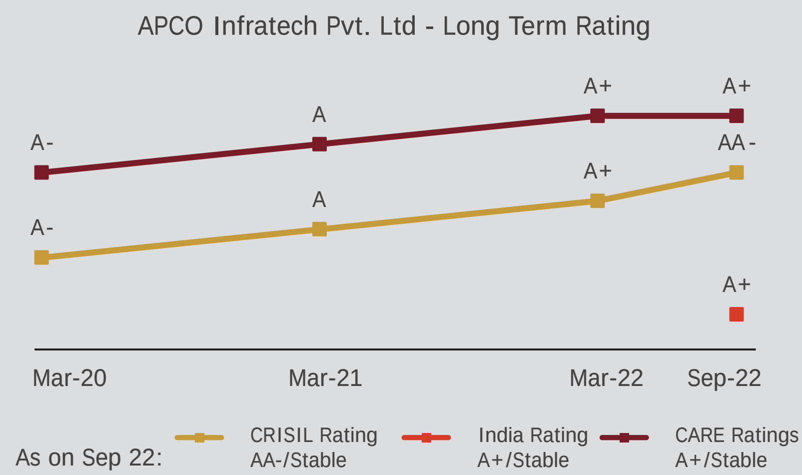
Set up in 1938 by Henning Holck-Larsen and Soren K. Toubro, L&T was incorporated in 1946 and reconstituted as a public limited company in 1950. It is a global conglomerate with operations in over 30 countries. It engages in engineering, construction, manufacturing and financial services. It is one of Asia's largest vertically integrated EPC conglomerates, with a strong market position across segments such as infrastructure, power, hydrocarbons, heavy engineering, defence engineering, electrical and automation, IT, IT&TS, metallurgical and material handling, and machinery and industrial products. The company has a strong brand name and a track record of over seven decades. It caters to various sectors in the domestic EPC segment, including roads, power, shipbuilding, metro projects, building and construction, airports and ports. The presence of in-house design and engineering facilities, as well as construction equipment and systems, lends a competitive advantage to L&T.

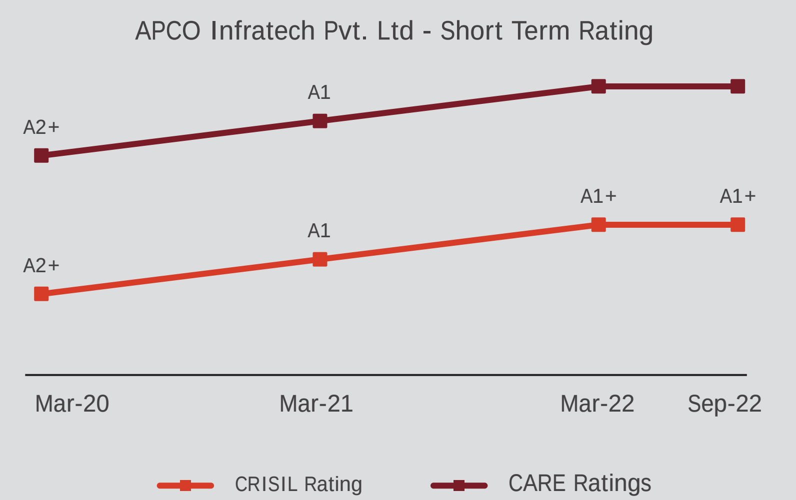
L&T's financial profile is supported by its exposure to diverse infrastructure and construction segments, and healthy order book. However, these strengths are partly offset by its large working capital requirement and capex-intensive business model.

Apco Infratech Private Limited

Company name	Apco Infratech Private Limited
Incorporation year	1992
Promoter	Anil Kumar Singh & family
About the company	Incorporated in 1992, Lucknow (Uttar Pradesh) based Apco Infratech Private Limited (Apco) (formerly, Apco Construction Pvt Ltd), promoted by Mr. Anil Kumar Singh who is primarily engaged in the construction of roads and buildings business, with most of its revenue coming from construction of roads.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

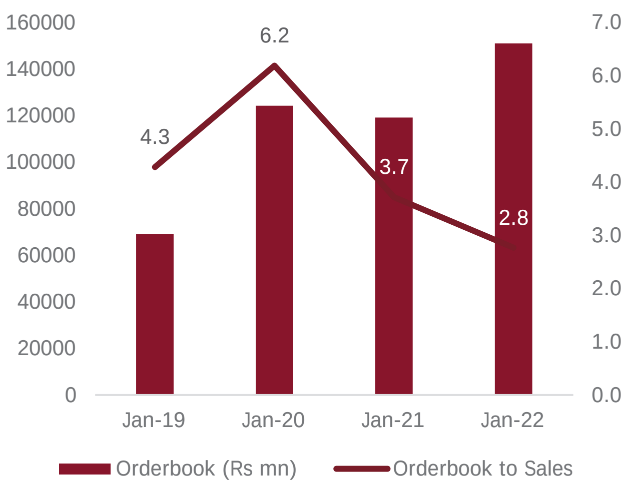
Order book	151	Overall revenue	55
Tangible networth	15	Total debt	8
Gearing (times)	0.5	OPM (%)	16.5%

Note: Above parameters represent standalone financials of the company as of March-2021 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

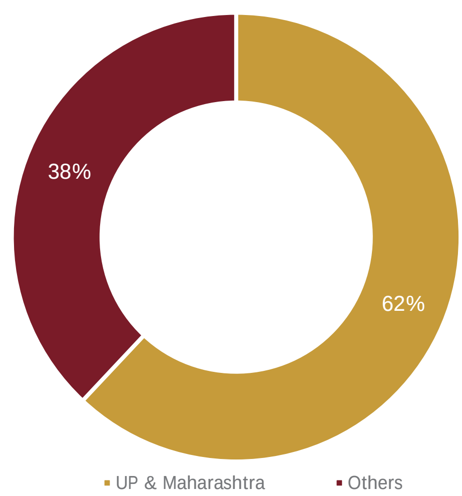
Orderbook is dated 1st January 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Order book to sales



Order Book - Geography Wise



Note: Above parameters represent standalone financials of the company as of March-2021 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Geography wise data as of 1st January 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Apco Infratech Private Limited is one of the leading players in the domestic roads and highways sector. It was incorporated in 1992 and has three decades of industry experience in constructing roads and highways. Over the years, the company has worked with multiple counterparties and successfully executed numerous projects.

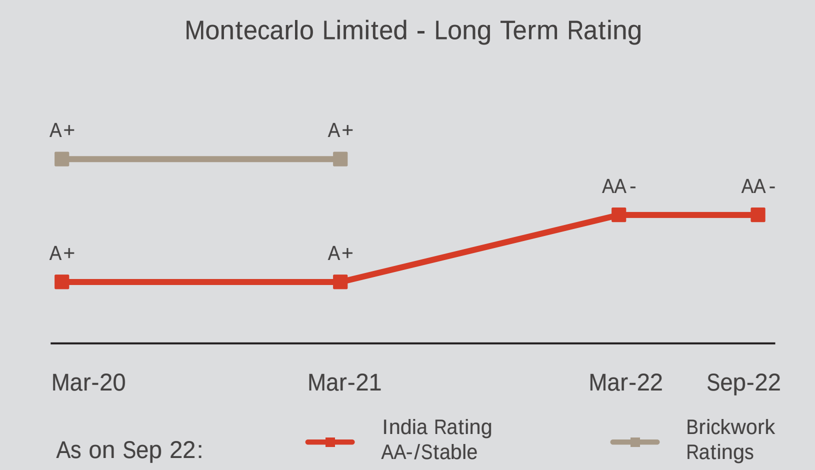
The company had an orderbook worth Rs 151 billion as of January 2022. This translates into an orderbook to sales ratio of 2.8 with respect to FY21 revenue and thus providing decent revenue visibility. The company's order book consists of diverse counterparties such as NHAI, NHIDCL, UPEIDA, MSRDC etc. The presence of such diversified prestrigious counterparties reduces the company's counterparty risk to a large extent. However, the company's order book suffers from geographical concentration with Maharashtra and UP accounting for 62% of the total order book.

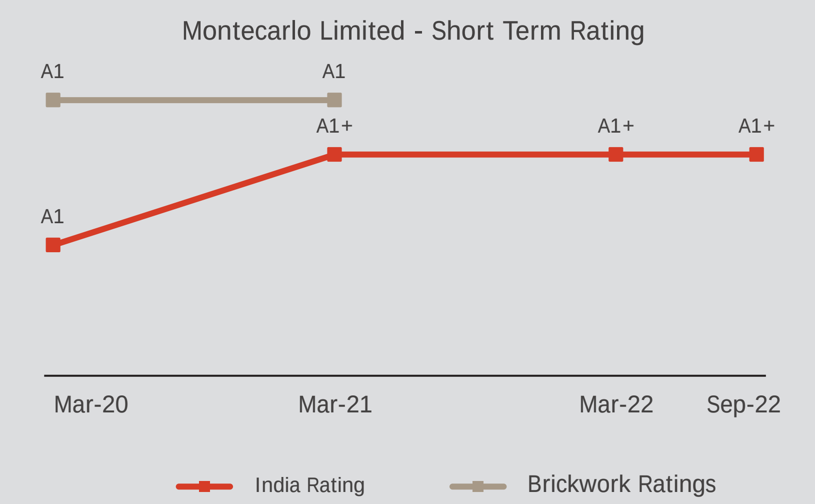
The company derives strength from the company's longstanding experience in the sector, decent leverage position with a gearing ratio of 0.5, healthy margins and efficient working capital management. On the other hand, intense competition in the sector, sizeable equity commitments and high geographical concentration act as constraint.

Montecarlo Limited

Company name	Montecarlo Limited
Incorporation year	1995
Promoter	Kanubhai Mafatlal Patel & family
About the company	Montecarlo Limited was incorporated in the year 1995 and registered at Ahmedabad. This company is publicly held. Promoters hold 99 percent of shares. Group companies include 4 subsidiaries, 1 associate. Key business activities include roads, railways, utility projects contributing to 92 percent of turnover of company.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

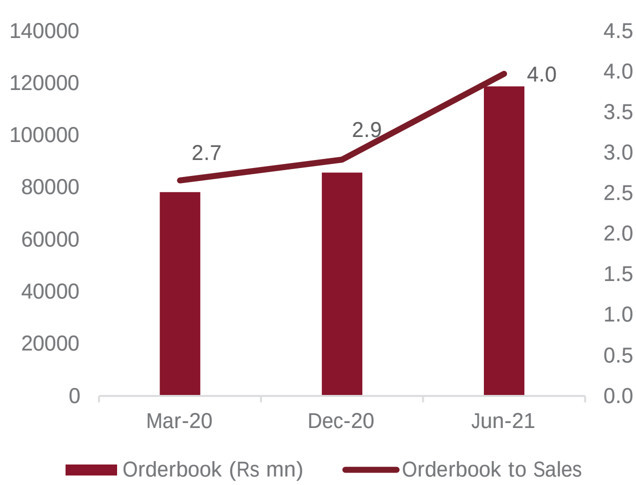
Order book	119	Overall revenue	32
Tangible networth	13	Total debt	2
Gearing (times)	0.2	OPM (%)	9.97 %

Note: Above parameters represent standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

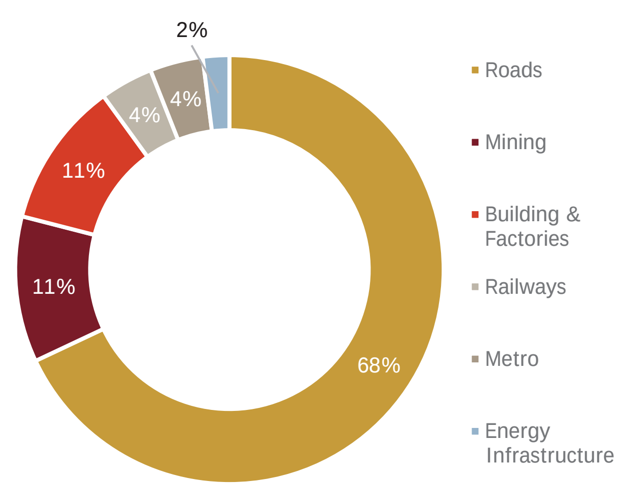
Orderbook as on June 2021.

Source: CRISIL Quantix, Company Reports, CRISIL Research

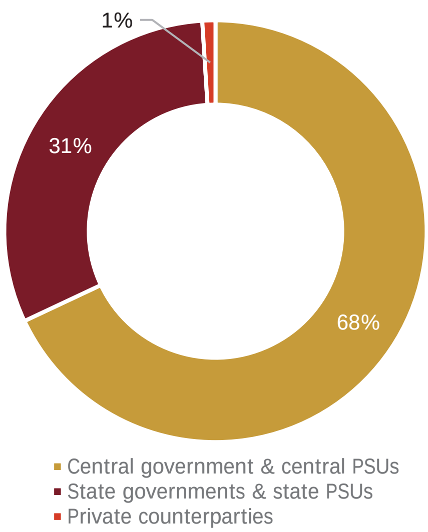
Order book to sales



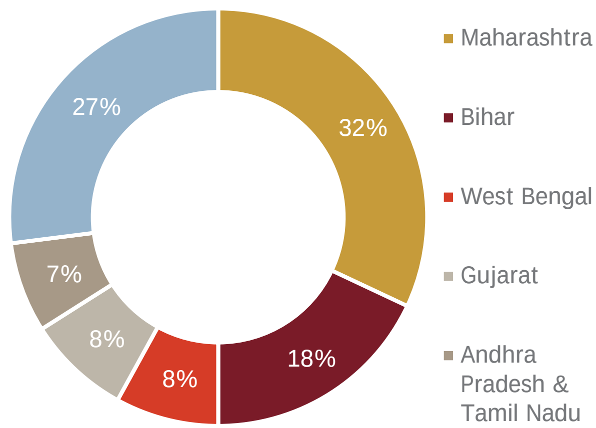
Orderbook - Industry Wise



Order Book - Client Wise



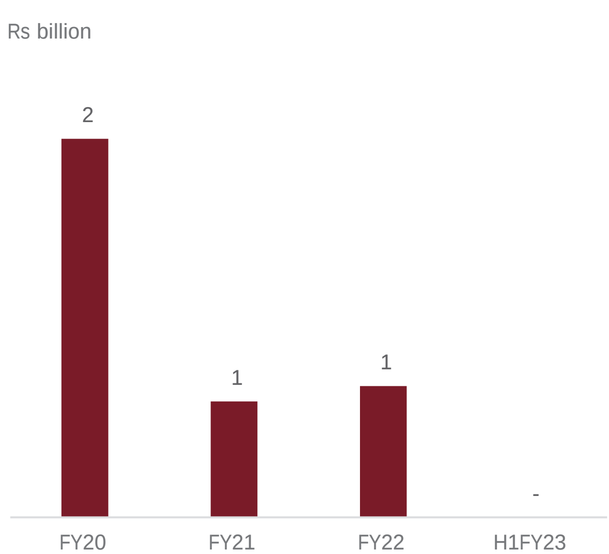
Orderbook - Geography Wise



Note: Above parameters represent standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

CP Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

Montecarlo Limited is one of the leading players in the domestic roads and highways sector. It was incorporated in 1995 and has nearly three decades of industry experience in constructing roads and highways. Over the years, the company has developed its expertise in executing large-scale projects in the sector.

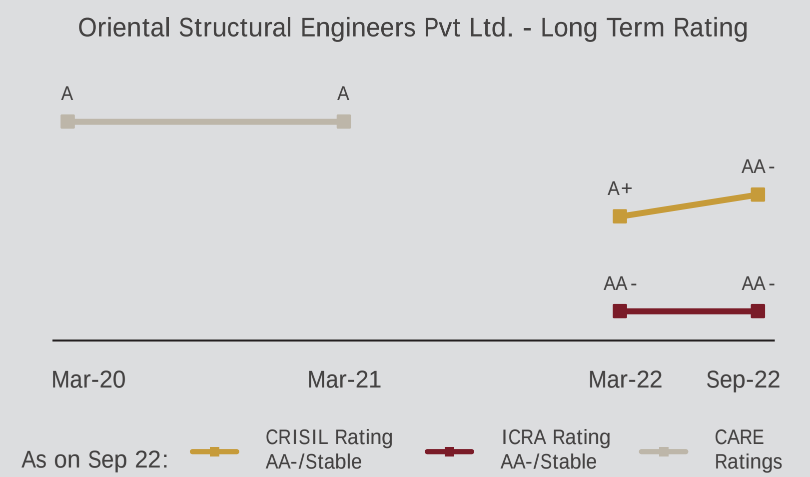
The company had an orderbook worth Rs 118 billion as of June 2021. This translates into an orderbook to sales ratio of 4.0 with respect to FY21 revenue and thus providing good revenue visibility. 68% of the company's order book is attributable to the roads and highways sector. The company's order book is also diversified geographically with presence in multiple states even though Maharashtra has the highest share of 32%. The company's order book consists of diverse counterparties as well with central government units being the counterparty for 68% of the order book. The presence of such diversified counterparties reduces the company's counterparty risk to a large extent.

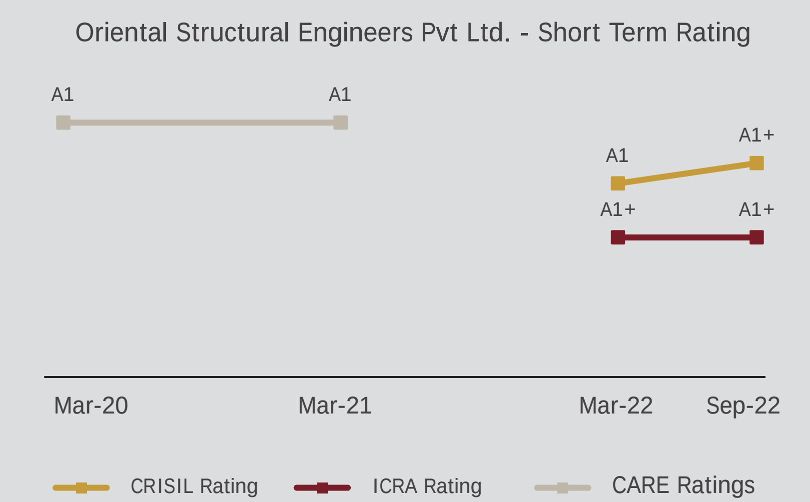
The company derives strength from the company's revenue visibility, consistent margins and monetization of assets. On the other hand, intense competition in the sector and sizeable upcoming equity commitments act as constraint.

Oriental Structural Engineers Private Limited

Company name	Oriental Structural Engineers Private Limited
Incorporation year	1971
Promoter	Bakshi family
About the company	Oriental Structural Engineers Private Limited was incorporated in the year 1971 and registered at Delhi. This company is privately held. Promoters hold 27 percent of shares. Key director shareholders of the company include Kanwaljit Singh Bakshi holding 27 percent of the shares. Group companies include 12 subsidiaries, 3 associates, 6 joint ventures. Key business activities include roads, railways, utility projects contributing to 100 percent of turnover of company.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

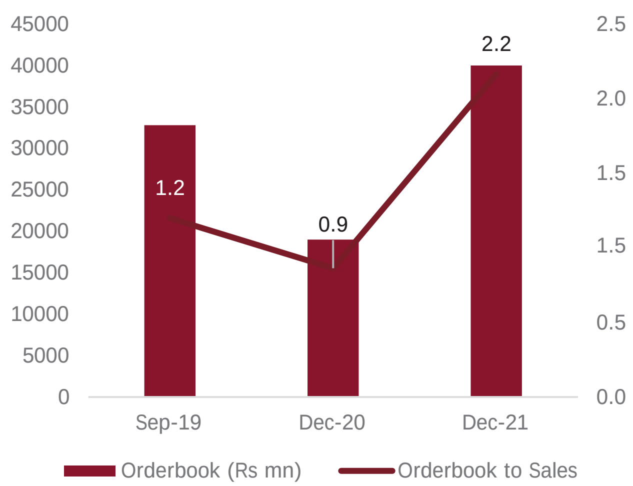
Order book	40	Overall revenue	19
Tangible networth	26	Total debt	5
Gearing (times)	0.2	OPM (%)	8.4%

Note: Above parameters represent standalone financials of the company as of March-2021 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

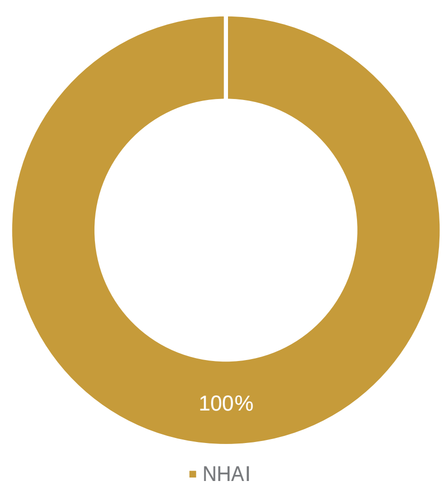
Orderbook as on December 2021.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Order book to sales



Orderbook - Client Wise



Note: Above parameters represent standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

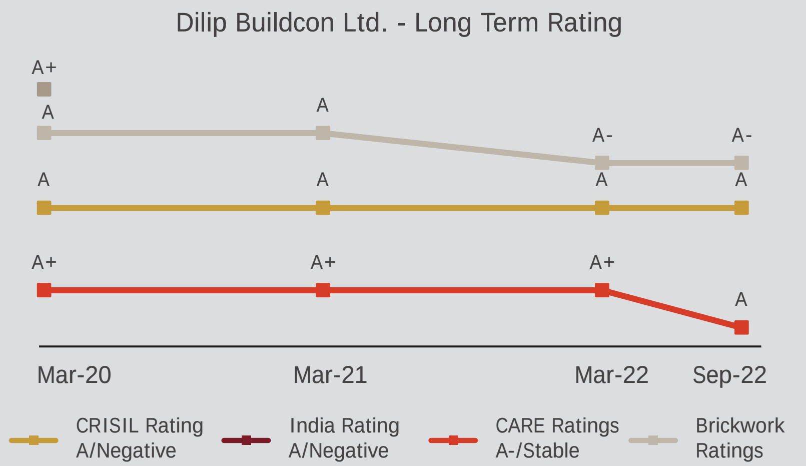
Oriental Structural Engineers Private Limited is one of the oldest players in the domestic roads and highways sector. It was incorporated in 1971 and has many decades of industry experience in constructing roads and highways during which it has constructed more than 8,000 kms of highways. The company along with its wholly owned subsidiary OTPL, is the sponsor of its road InvIT Oriental Infratrust and holds a combined stake of 60%.

The company had an orderbook worth Rs 40 billion as of December 2021. This translates into an orderbook to sales ratio of 2.2 providing limited revenue visibility. Orders from NHAI accounts for the entire pending order book. The company derives strength from its longstanding experience in the sector, comfortable leverage position with a gearing ratio of only 0.2 and financial flexibility unlocked through the steady income streams arising from investments in InvITs. On the other hand, moderate orderbook-to-sales position, intense competition in the sector and sizeable equity commitments act as constraint.

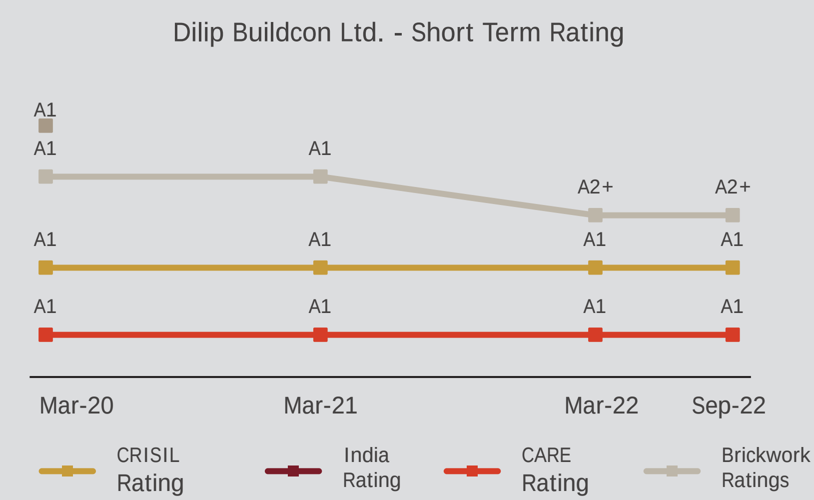
Dilip Buildcon Limited

Company name	Dilip Buildcon Limited
Incorporation year	2006
Promoter	Dilip Suryavanshi, Seema Suryavanshi, Devendra Jain and Suryavanshi Family trust
About the company	Dilip Buildcon Limited (DBL) was set up as a proprietorship firm (Dilip Builders) in 1989, reconstituted as a private limited company in 2006, and then as a public limited company in fiscal 2017. Promoted by Mr Dilip Suryavanshi and his family, Bhopal-based DBL is a leading private sector player that undertakes road construction on EPC basis; and road development on BOT basis

Company outstanding rating



As on Sep 22:



Key financial parameters (FY22)

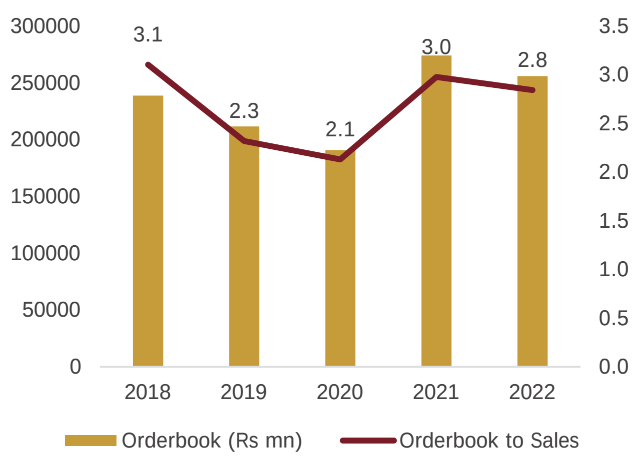
Figures in Rs billion

Order book	256	Overall revenue	90
Tangible networth	43	Total debt	31
Gearing (times)	0.7	OPM (%)	8.5 %
Market cap (full)	32	Market cap (free float)	10

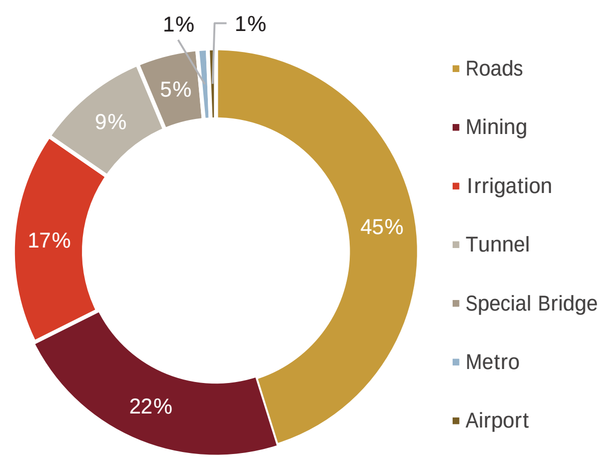
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

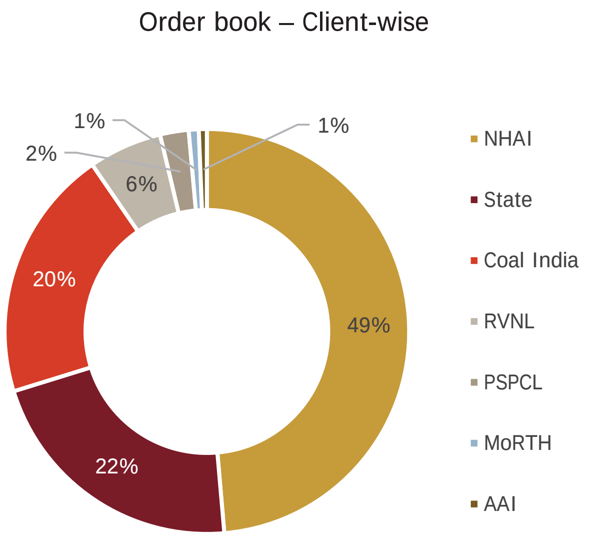
Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

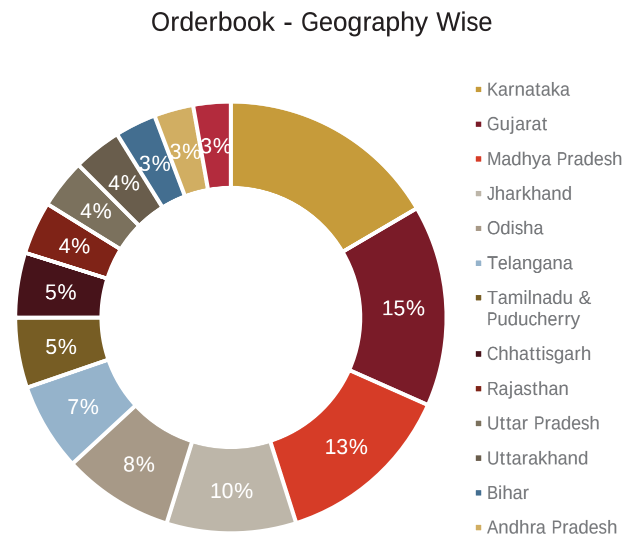
Order book to sales

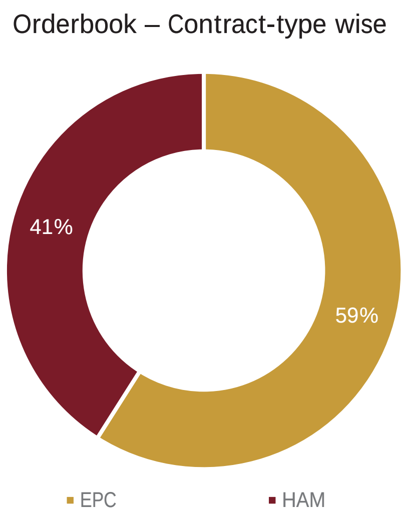


Order book – Industry-wise









Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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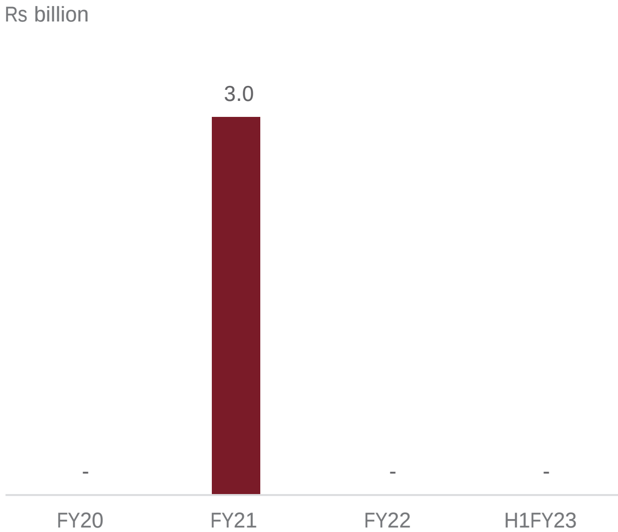


Source: Prime database, CCIL-FTRAC, Crisil Research

DBL has over 3 decades of experience in the roads and highways sector. During this period, it has established relationships with state government departments, NHAI and MoRTH, owing to its track record of executing projects on or before time. This has been enabled by the large equipment fleet and geographical clustering of projects.

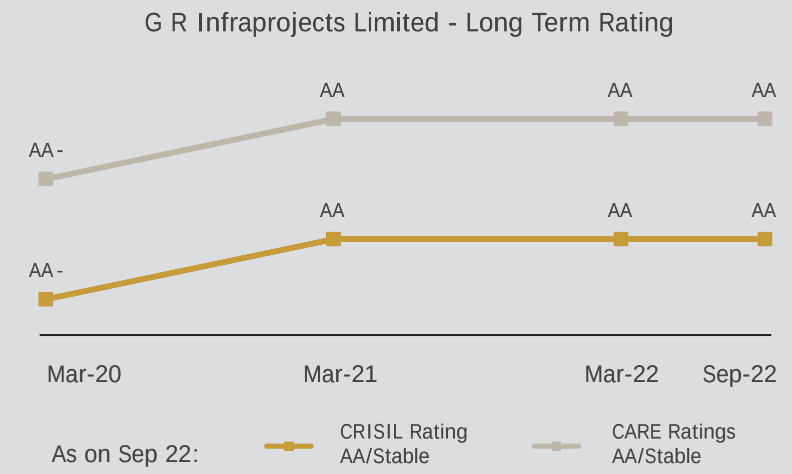
The company had an order book worth Rs 256 billion at the end of fiscal 2022, which translates into an order book to sales ratio of 2.8 providing decent revenue visibility. The roads sector accounts for 45% of the company's order book. From a geographical standpoint, the company's order book has pan-India presence with Karnataka, Gujarat and Madhya Pradesh accounting for 45%. Nearly 41% of the orderbook is composed of HAM contracts. NHAI is the counterparty for 49% of the order book, thereby reducing counterparty risk to a large extent. With a gearing ratio of 0.7 time, the company's leverage is slightly on the higher side.

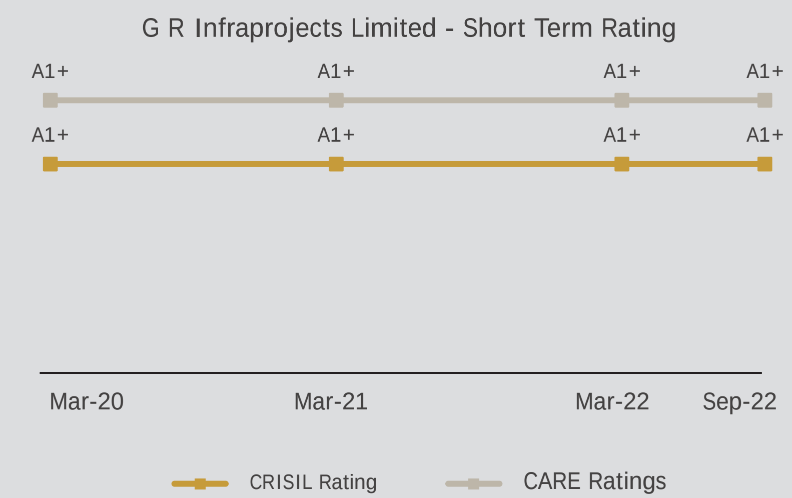
Its financial profile is supported by execution capabilities, robust order and its ability to monetize its assets however its large working capital requirements, intense competition and volatility in raw material costs offsets the strength

G R Infraprojects Limited

Company name	G R Infraprojects Limited
Incorporation year	1995
Promoter	Laxmi Devi Agarwal, Suman Agarwal, Ritu Agarwal, Lalita Agarwal, Sangeeta Agarwal, Kiran Agarwal and Manish Gupta
About the company	Incorporated in 1995, G R Infraprojects Limited (GRIL) is engaged in road construction and is promoted by Mr Vinod Kumar Agarwal and family. The company primarily undertakes road construction projects from NHAI and MoRTH on EPC, BOT and HAM.

Company outstanding rating





Key financial parameters (FY22)

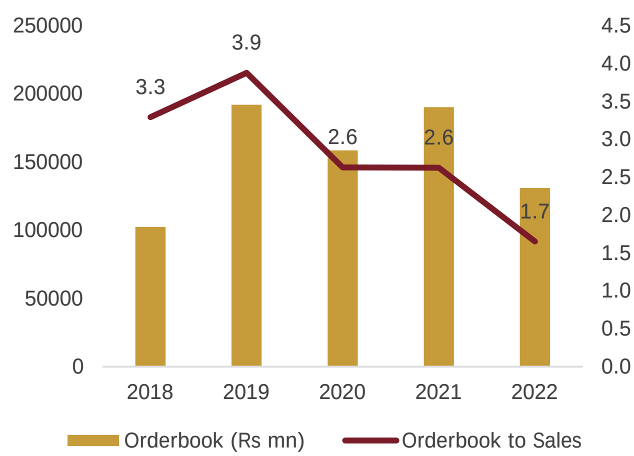
Figures in Rs billion

Order book	131	Overall revenue	79
Tangible networth	44	Total debt	11
Gearing (times)	0.3	OPM (%)	16.3 %
Market cap (full)	116	Market cap (free float)	14

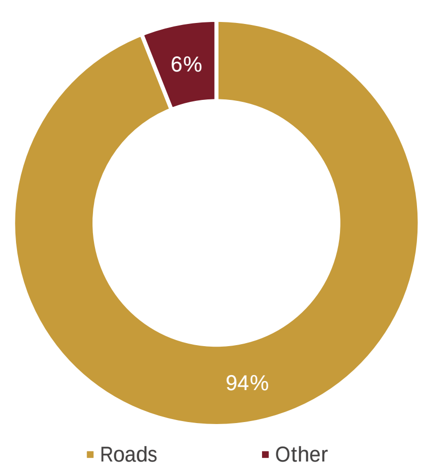
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. Market cap as on October 21, 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

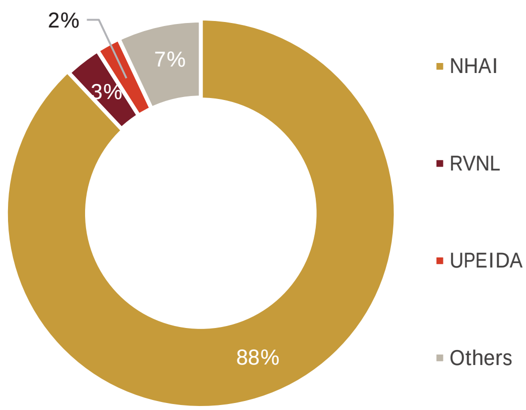
Order book to sales



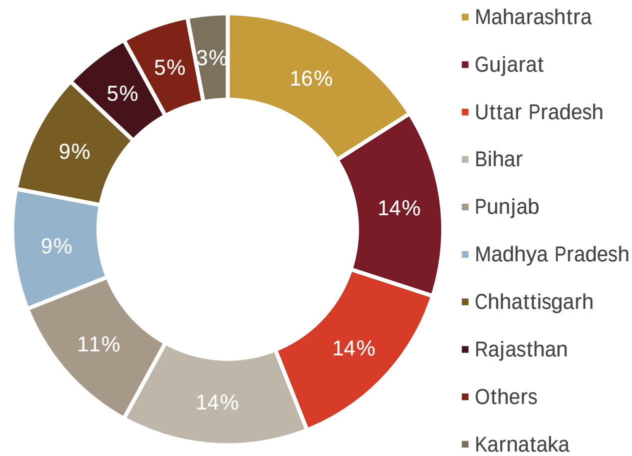
Order book – Industry-wise



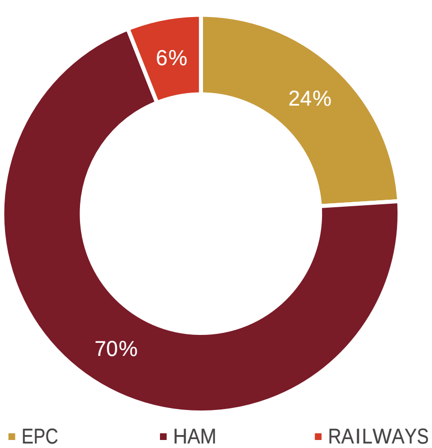
Order book – Client-wise



Orderbook - Geography Wise



Orderbook – Contract-type wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

GRIL has been constructing high quality roads within the stipulated cost and timeline for over two decades. The company has a track record of completing projects ahead of schedule.

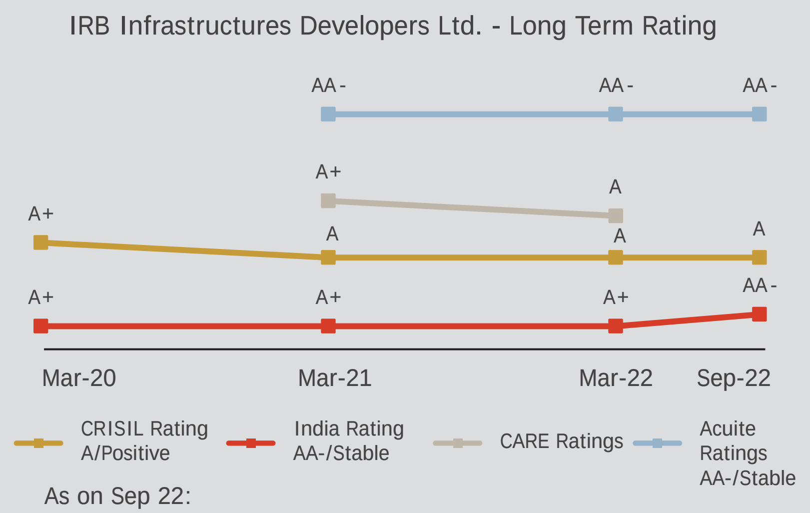
The company had an order book worth Rs 132 billion at the end of fiscal 2022., which translates into an order book to sales ratio of 1.7 providing decent revenue visibility. Roads sector accounts for 94% of the company's order book. From a geographical standpoint, Maharashtra and Gujarat together account for 30% of the total orderbook. HAM contracts account for almost 70% of the order book. Around 90% of the orders are from central government agencies, thereby reducing counterparty risk, with 72% of orders from NHAI. While the company has debt of Rs 11 billion, its gearing ratio is at a comfortable level of 0.3.

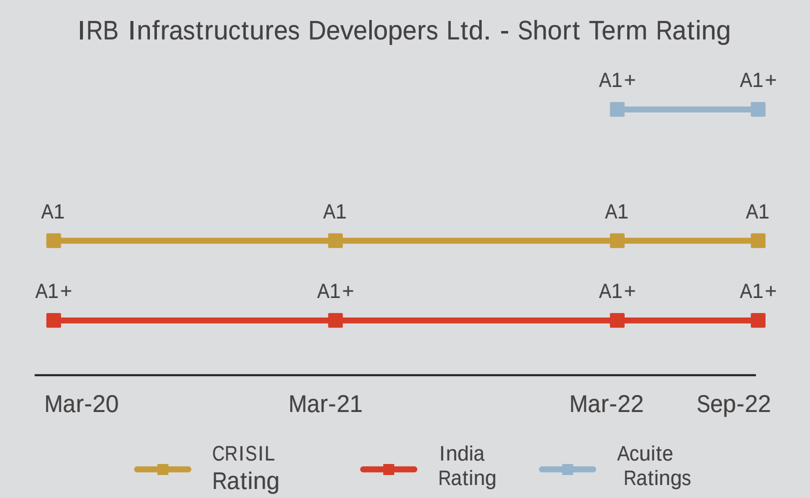
Its financial profile is supported by diversified order book, comfortable coverage however offset by increase in debt

IRB Infrastructure Developers Limited

Company name	IRB Infrastructure Developers Limited
Incorporation year	1998
Promoter	Virendra D. Mhaiskar, Deeapli V. Mhaiskar
About the company	Incorporated in 1998 and promoted by Mr Virendra D Mhaiskar, IRB Infrastructure Developers Limited (IRBIDL; part of the IRB group) is an infrastructure development and construction company in India, with extensive experience in the roads and highways sector. The company is also into other business segments in infrastructure, including maintenance of roads, construction, airport development and real estate activities.

Company outstanding rating





Key financial parameters (FY22)

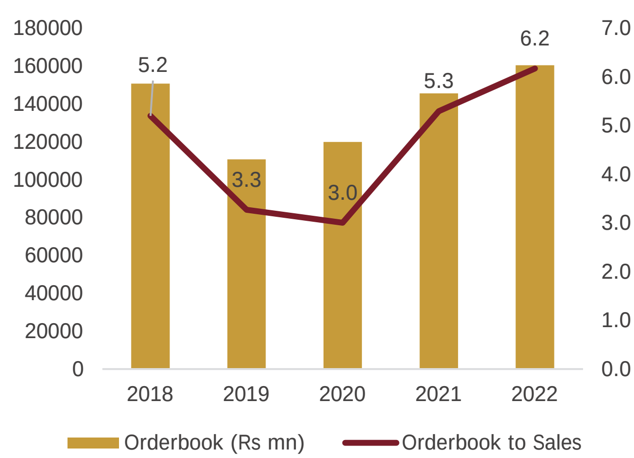
Figures in Rs billion

Order book	161	Overall revenue	26
Tangible networth	85	Total debt	54
Gearing (times)	0.6	OPM (%)	26.0%
Market cap (full)	138	Market cap (free float)	33

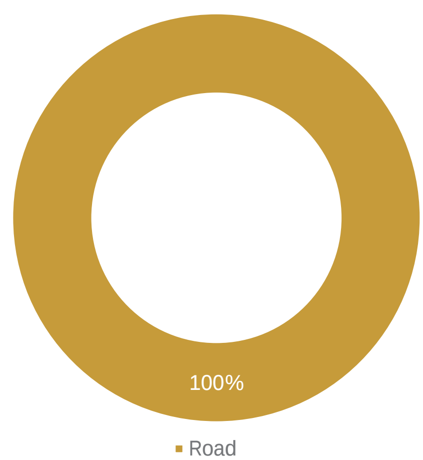
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. Market cap as of 21st Oct 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

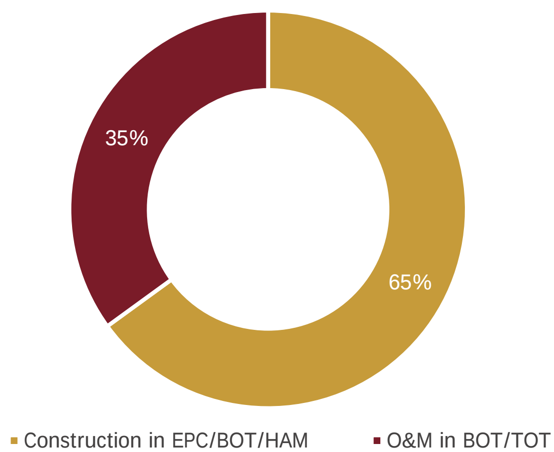
Order book to sales



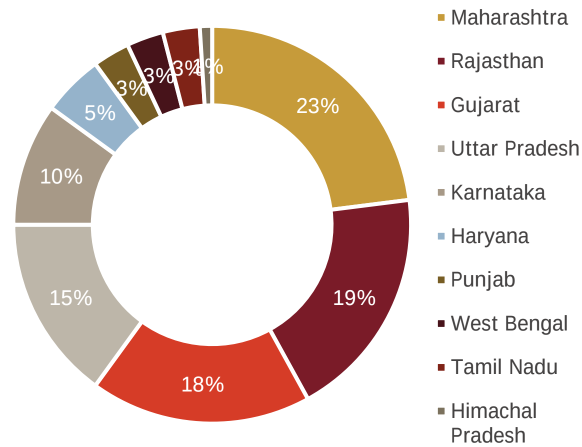
Order book – Industry-wise



Order book - Contract type wise



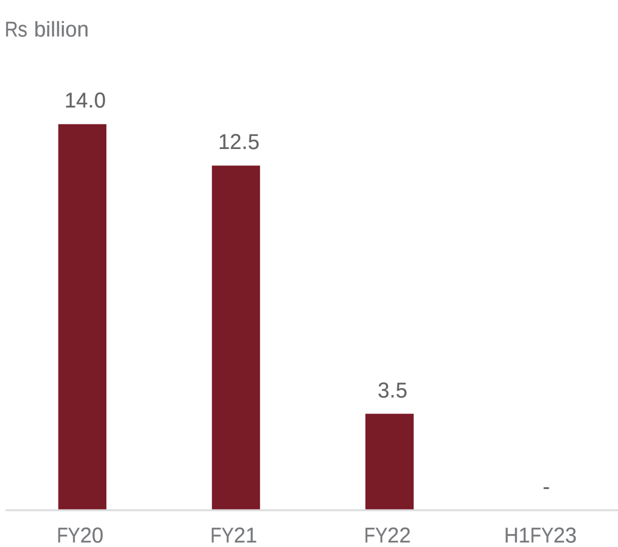
Order book - Geography wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

NCD Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

IRB Infrastructure Developers was established in 1998 and is one of the largest players in the domestic roads and highways sector. Over two decades of experience has helped the company establish strong relationships with its stakeholders, which include NHAI, MoRTH and state government departments.

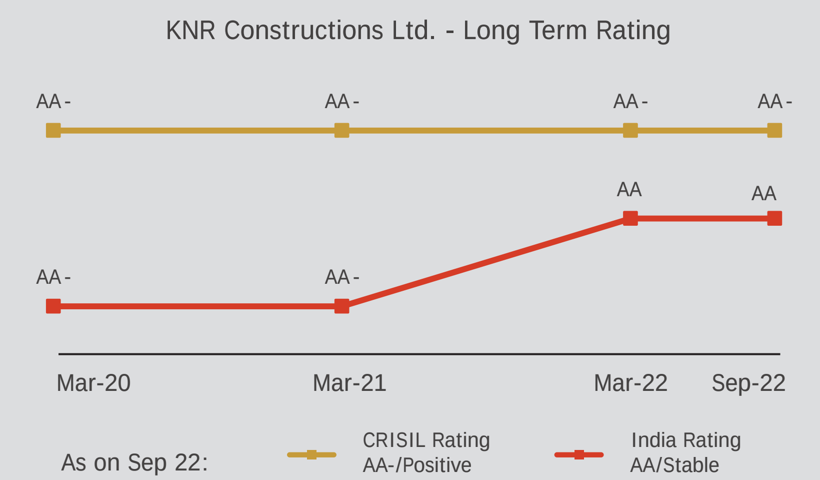
The company had an order book of Rs 160 billion at the end of fiscal 2022. This translates into an order book to sales ratio of 6.2 times providing sufficient revenue visibility. The roads sector accounts for 100% of the company's order book. From a geographical standpoint, Maharashtra accounts for 23% while Rajasthan accounts for 19% of the total order book. 65% of the order book is composed of construction contracts while 35% is made up of operation and maintenance contracts. The company also has sizeable leverage with gearing ratio of 0.6 time.

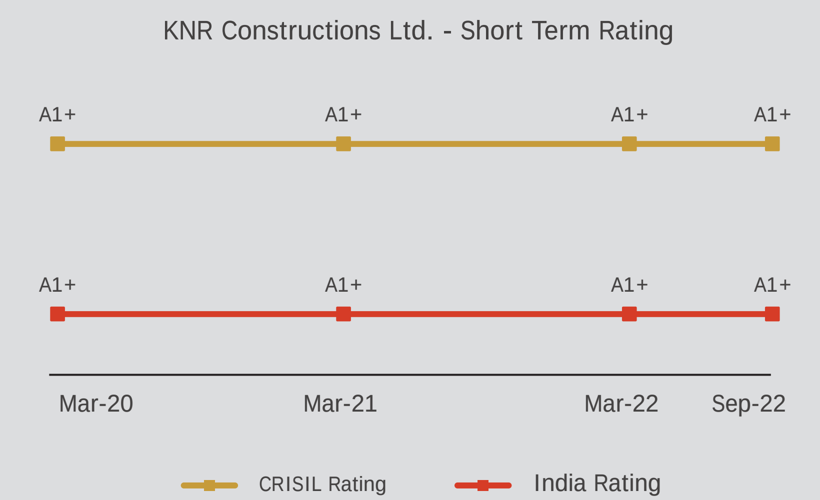
Its financial profile is supported by its expertise in roads and highways, moderate working capital and InVIT platform to support liquidation. Large exposure to project SPVs, intense competition and cyclicality in the sectors impacting the rating of the company

KNR Constructions Limited

Company name	KNR Constructions Limited
Incorporation year	1995
Promoter	K Narshima Reddy
About the company	KNR Constructions Limited was incorporated in 1995 and provides EPC services, primarily for the roads and highways segment. KNRCL has diversified in the past few years, with orders executed in irrigation, flyover and bridge construction segments as well.

Company outstanding rating





Key financial parameters (FY22)

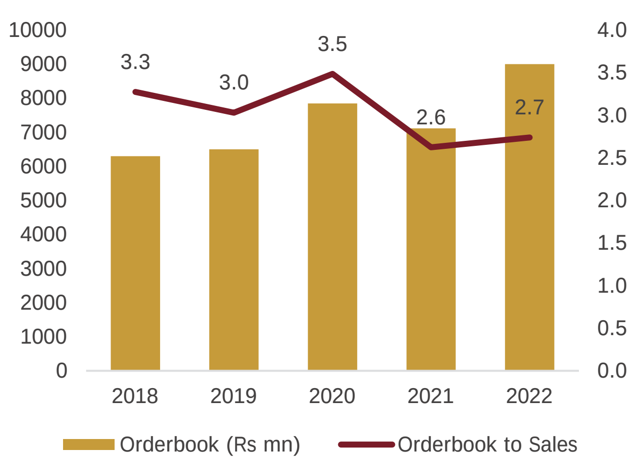
Figures in Rs billion

Order book	90	Overall revenue	33
Tangible networth	22	Total debt	0
Gearing (times)	0	OPM (%)	21.1%
Market cap (full)	60	Market cap (free float)	29

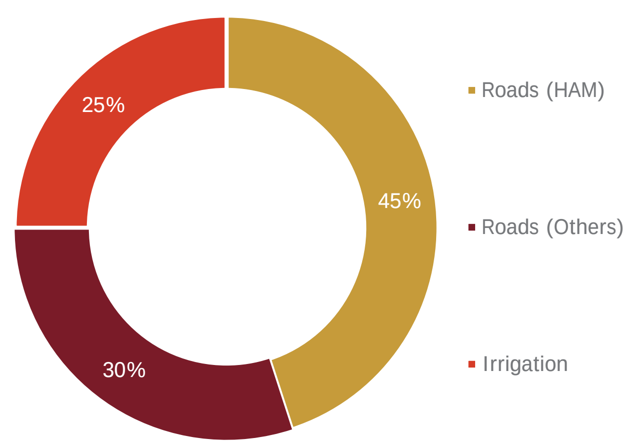
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.. Market cap as of 21st Oct 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

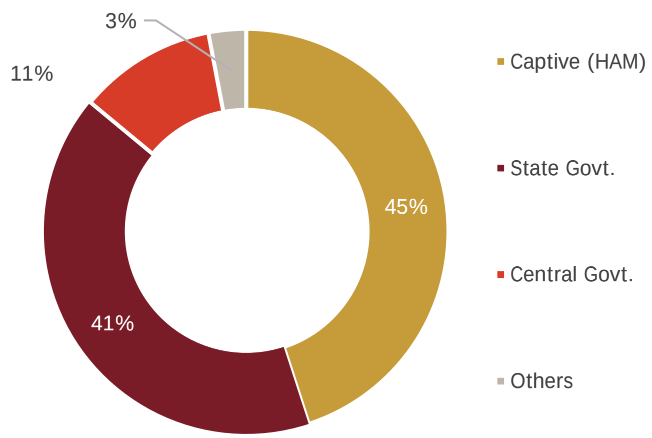
Order book to sales



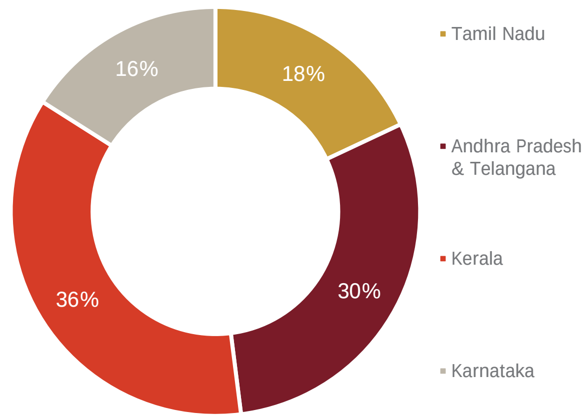
Order book – Industry-wise



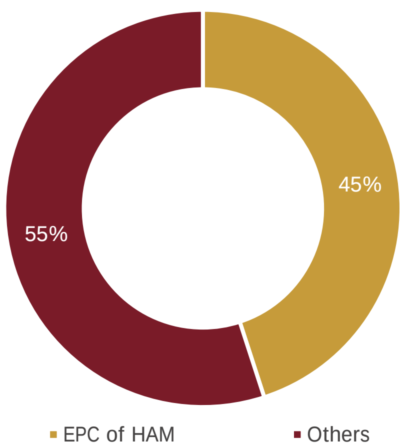
Order book – Client-wise



Orderbook - Geography Wise



Orderbook – Contract-type wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

KNR Constructions Limited is one of the largest players in the domestic roads and highways sector. Almost three decades of experience has helped the company establish strong relationships with its stakeholders, which include NHAI, MoRTH and state government departments. The company has a consistent track record of timely execution. It has completed the awarded projects in a timely manner and has even bagged early completion bonuses in some projects for finishing it before the stipulated time.

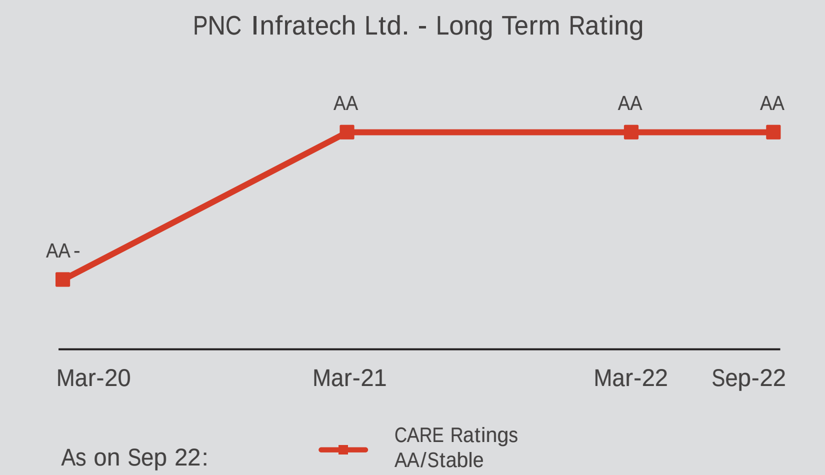
The company had an order book worth Rs 90 billion at the end of fiscal 2022. This translates into an order book to sales ratio of 2.7 times providing decent revenue visibility. The roads sector accounts for 75% of the company's order book. From a geographical standpoint, the company's order book is entirely in the southern region with Kerala, Telangana and Andhra Pradesh accounting for 66% of the total order book. 45% of the order book is composed of EPC of HAM contracts. The company is debt-free which not only removes interest-related expenses but also gives the company the financial firepower necessary to undertake newer projects, thus, helping the company scale up its revenue.

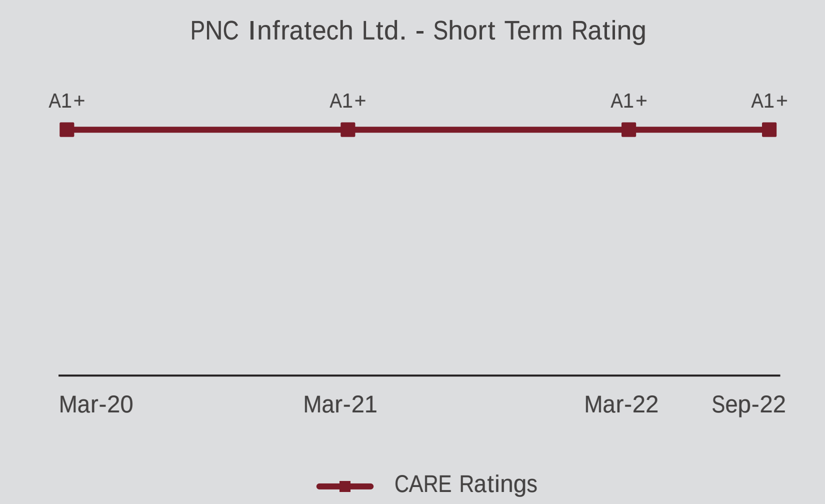
Its financial profile is supported by execution capabilities, order pipeline and financial profile impacted by high working capital requirements, cyclicality and intense competition in the sector

PNC Infratech Limited

Company name	PNC Infratech Limited
Incorporation year	1999
Promoter	Pradeep Kumar Jain, Chakresh Kumar Jain, Yogesh Kumar Jain
About the company	PNC Infratech Limited is an Agra-based construction company that specialises in the construction of highways, bridges, flyovers, airport runways and allied activities.

Company outstanding rating





Key financial parameters (FY22)

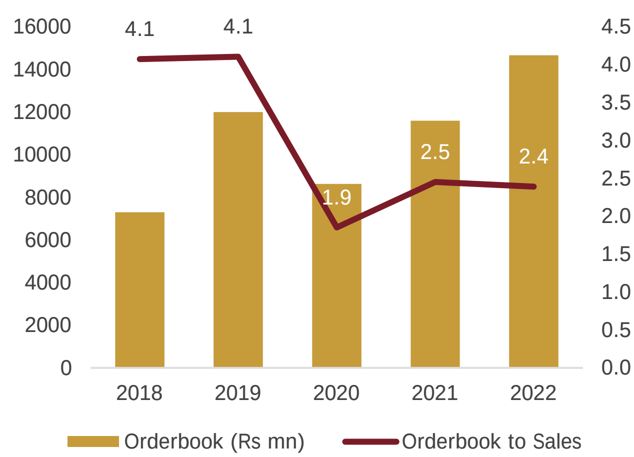
Figures in Rs billion

Order book	147	Overall revenue	61
Tangible networth	33	Total debt	2
Gearing (times)	0.1	OPM (%)	15.0 %
Market cap (full)	66	Market cap (free float)	29

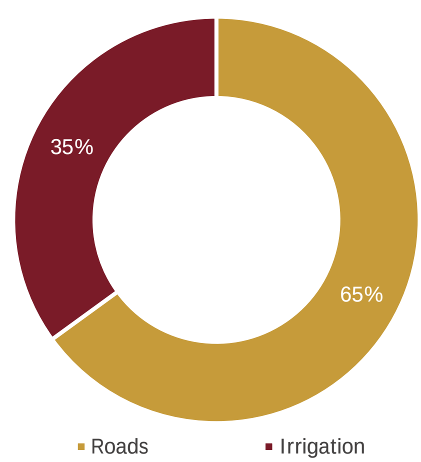
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. Market cap as of 21st Oct 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

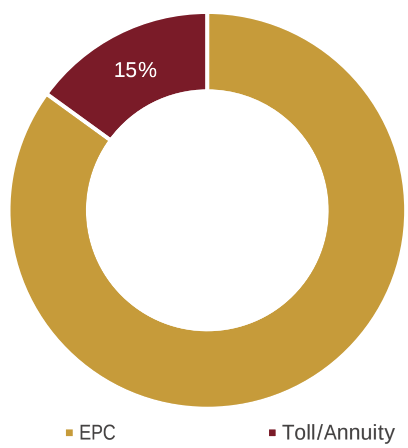
Order book to sales ratio



Order book – Industry-wise



Order book - Contract type wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

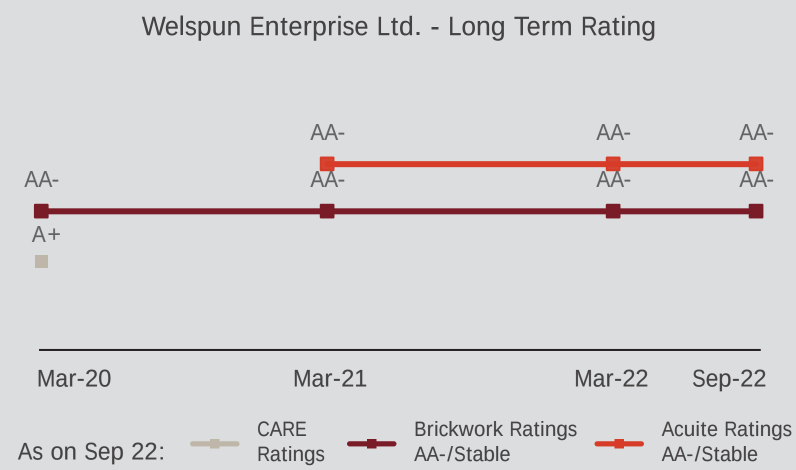
PNC Infratech Limited has longstanding experience in the construction and infrastructure sector given that the company has executed over 70 major infrastructure projects across 15 states in India. Furthermore, the consistent track record of timely execution of projects has also helped the company build a favorable reputation in the construction sector.

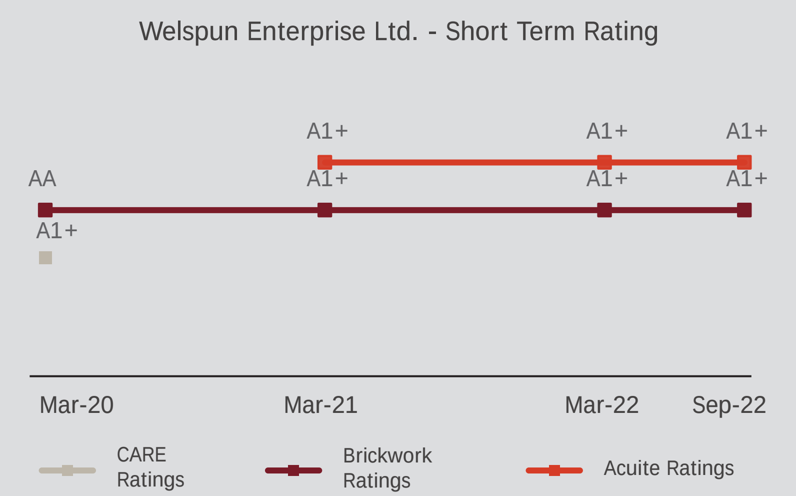
The company had order book worth Rs 146 billion at the end of fiscal 2022. This translates into order book to sales ratio of 2.4 times providing decent revenue visibility. The roads sector accounts for 65% of the company's order book. From a geographical standpoint, the company's order book is currently highly concentrated with Uttar Pradesh alone accounting for more than 70%. 85% of the order book is composed of EPC contracts. NHAI is one of the major counterparties, thereby reducing counterparty risk to an extent. With gearing ratio of 0.1 time, the company's leverage is comfortably placed.

Welspun Enterprises Limited

Company name	Welspun Enterprises Limited
Incorporation year	1994
Promoter	Balkrishnan Goenka, Rajesh R. Mandawewala
About the company	Welspun Enterprises Limited, a Gujarat-based organisation, was incorporated in 1994. Welspun Enterprises is a part of the Welspun group and its primary business activity mainly includes construction and development of road and water projects. Recently, it has also undertaken oil and gas exploration activities through a joint venture with the Adani group.

Company outstanding rating





Key financial parameters (FY22)

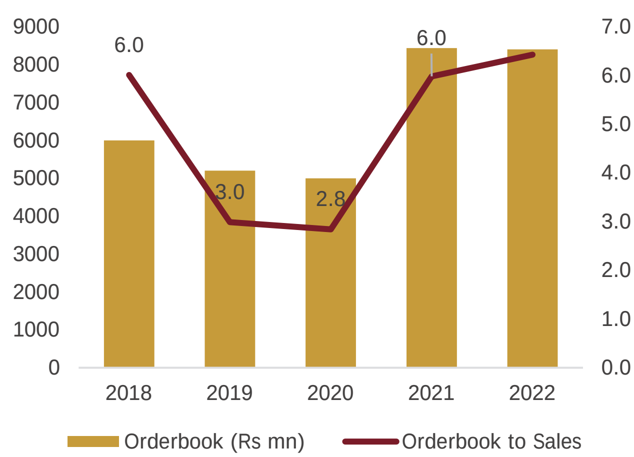
Figures in Rs billion

Order book	84	Overall revenue	13
Tangible networth	19	Total debt	5
Gearing (times)	0.3	OPM (%)	11.0 %
Market cap (full)	19	Market cap (free float)	9

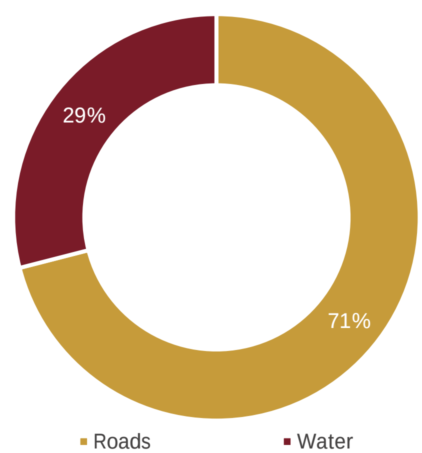
Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity. Market cap as of 21st Oct 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research, BSE

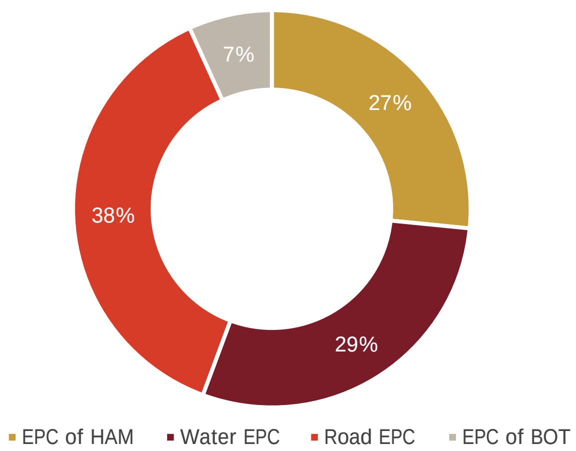
Order book to sales



Order book – Industry-wise



Order book - Contract type wise



Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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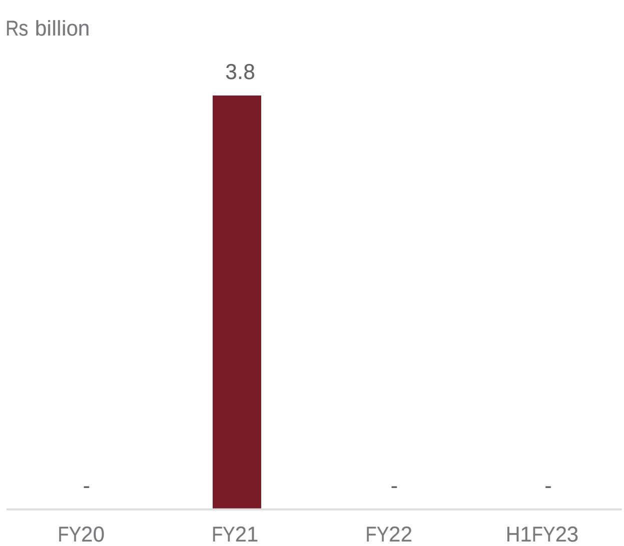
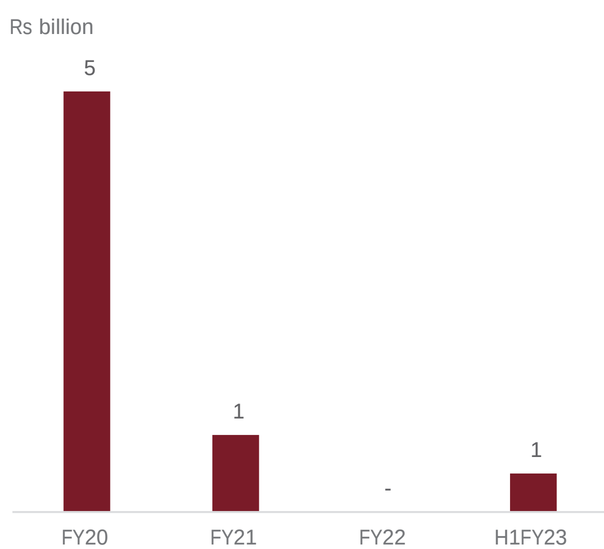


CP Issued



Source: Prime database, CCIL-FTRAC, Crisil Research

The company has experience of over a decade in the road construction sector and during this time it has executed multiple projects for prestigious organisations such as the NHAI and various state government and road development boards.

The company had an order book worth Rs 84 billion at the end of fiscal 2022. This translates into order book to sales ratio of 6.4 times, providing excellent revenue visibility. The roads sector accounts for 71% of the company's order book. From a geographical standpoint, it has pan-India presence. 27% of the order book is composed of HAM contracts. The company is also comfortably leveraged with gearing ratio of 0.3 time.

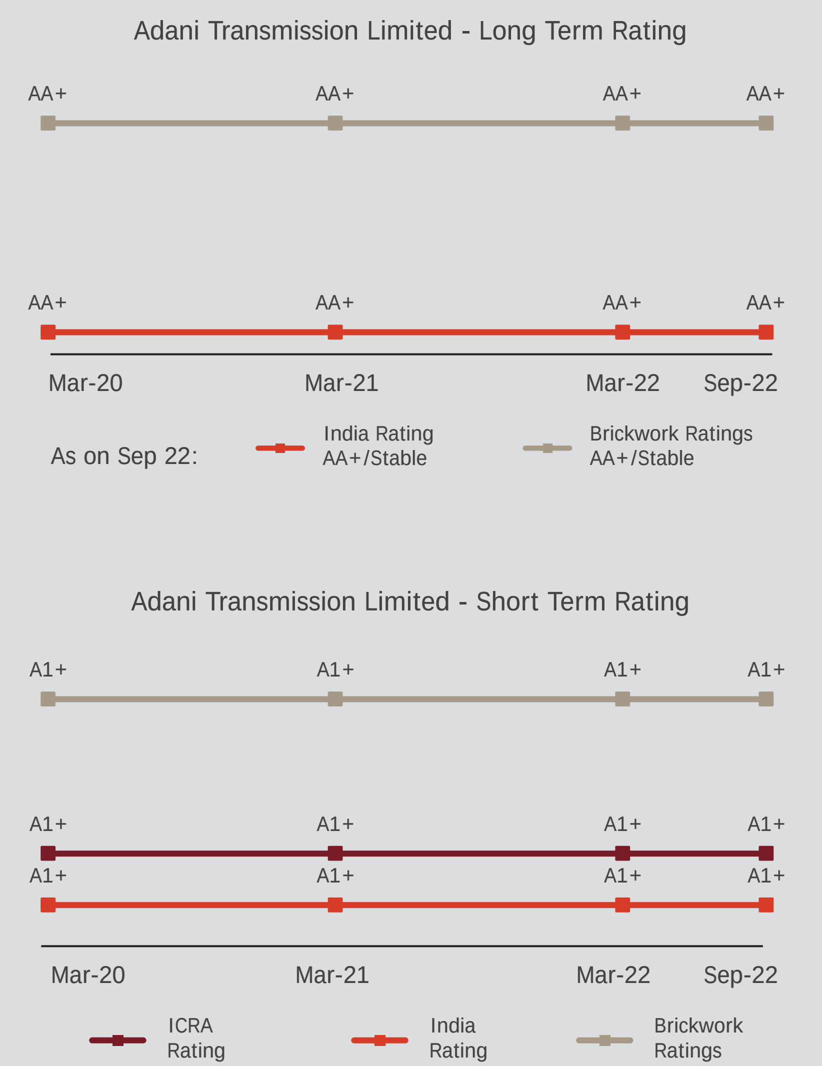
Its financial profile is supported by execution capabilities, operating performance and experienced promotors however impacted by large working capital requirements and high corporate guarantees

Player profile for Power Transmission

Adani Transmission Limited

Company name	Adani Transmission Limited
Incorporation year	2013
Promoter	Adani Group
About the company	Adani Transmission Limited (ATL), headquartered at Ahmedabad in Gujarat, owns and operates various high voltage AC transmission lines and substations of 132kV, 220kV, 400kV, 765kV along with high voltage DC transmission lines and substations of +/- 500kV.

Company outstanding rating



Key financial parameters (FY22)

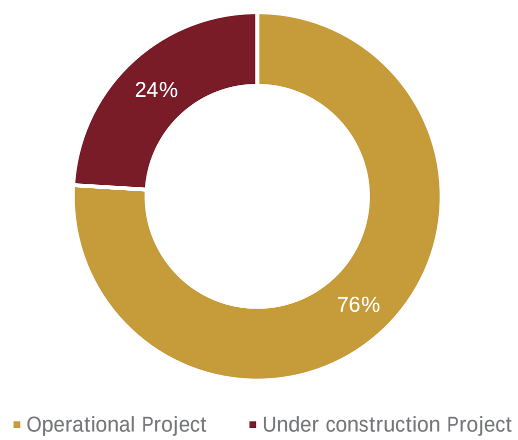
Figures in Rs billion

Total portfolio (ckm)	18,795	Portfolio availability (%)	99.7%
Total revenue	7	Net profit/(loss)	(1)
Total debt	85	Geographical diversification (states)	13

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification/adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Project – Operational/under construction split

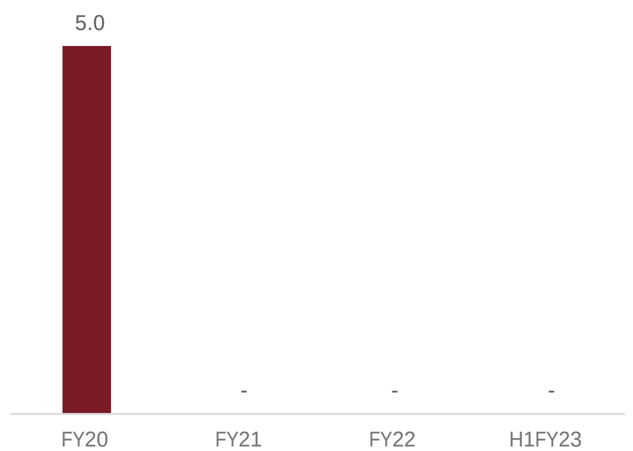


Note: Above parameters represent operational parameters of the company as of March 2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

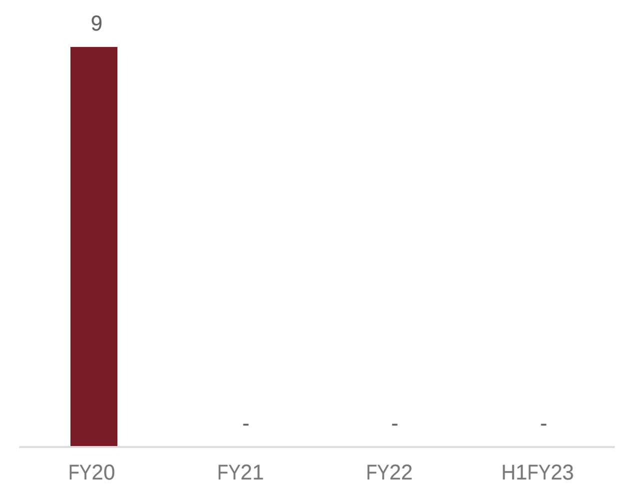
NCD Issued

Rs billion



CP Issued

Rs billion



Source: Prime database, CCIL-FTRAC, Crisil Research

Adani Transmission Ltd (ATL) is engaged in setting up and operating power transmission lines through its subsidiary companies. While ATL is the holding company for the transmission business of the Adani Group, it owns 100% stake in various operational companies, viz. ATIL, MEGPTCL, among others. As on June 30, 2022, ATL had a portfolio of 21 operational transmission assets with total length spanning 14,608 ckm.

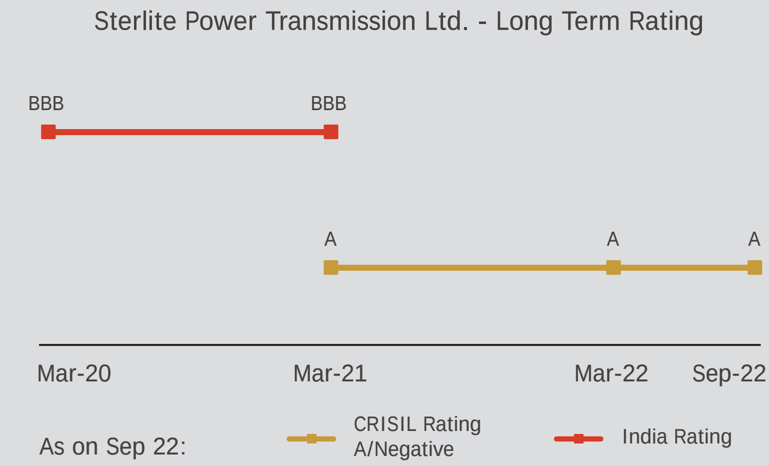
ATL is also the holding company for several project subsidiaries that are developing greenfield transmission projects with a total line length of about 4,186 ckm. Transmission assets are primarily spread across the western, northern and central parts of the country. The company also has a power distribution license for the Mumbai region with access to the integrated distribution network catering to over 3 million households under Adani Electricity Mumbai Limited (AEML).

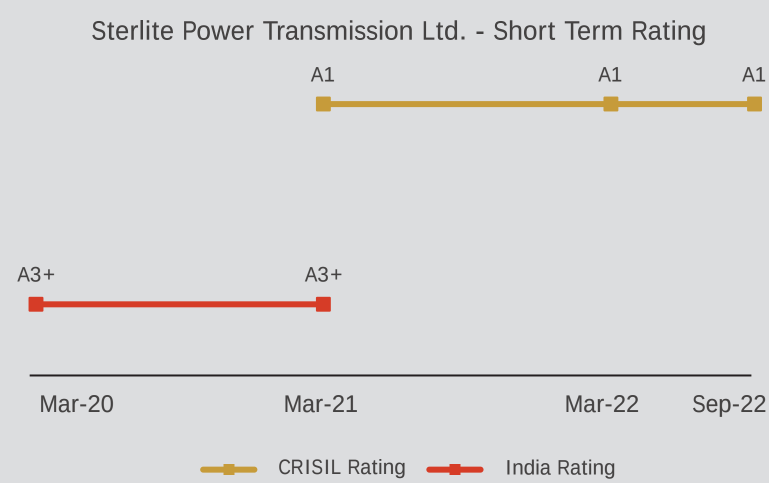
The financial profile is supported by a good track record of operations and favourable demographic profile of Mumbai license area. The financial profile is further backed by a track record of timely payments by counterparties, limited demand risks due to long-term TSAs for transmission assets and ability to raise debt funding. However, elevated leverage levels following large capital expansion plans, refinancing and foreign exchange risks and exposure to state-run distribution utilities may partially offset this.

Sterlite Power Transmission Limited

Company name	Sterlite Power Transmission Limited (SPTL)
Incorporation year	2015
Promoter	Vedanta group
About the company	SPTL is a part of the Vedanta group that has diversified interests across metals, mining and oil and gas. It also has presence in the power transmission segment as a private operator.

Company outstanding rating





Key financial parameters (FY22)

Figures in Rs billion

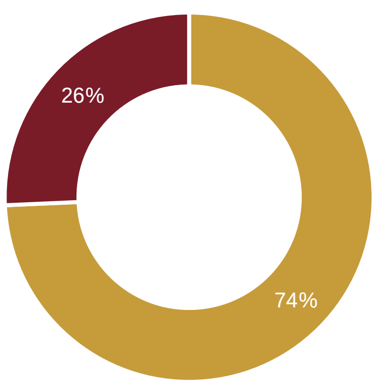
Total portfolio (ckm)	**13,945**	Portfolio availability (%)	**99.8 %**
Total revenue	**38**	Net profit/(loss)	**2**
Total debt	**0.38**	Geographical diversification (states)	**15**

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

The portfolio related data includes projects across India and Brazil.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Project – Operational/under construction split



Note: Above parameters represent operational parameters of the company as of March 2022. Portfolio includes projects located outside India.

Source: Company Reports, CRISIL Research

SPTL is a part of the Vedanta group that has diversified interests across metals, mining and oil and gas. SPTL currently has 17 transmission projects in India (both completed and under construction) spanning more than 9,529 ckm and 13 transmission projects in Brazil (both completed and under construction) spanning 4,416 ckm. Out of 17 projects in India, 11 are completed and 6 are at varied stages of development. SPTL also has a strong presence in the power conductor and cable manufacturing business, with 20% and 10% market share, respectively.

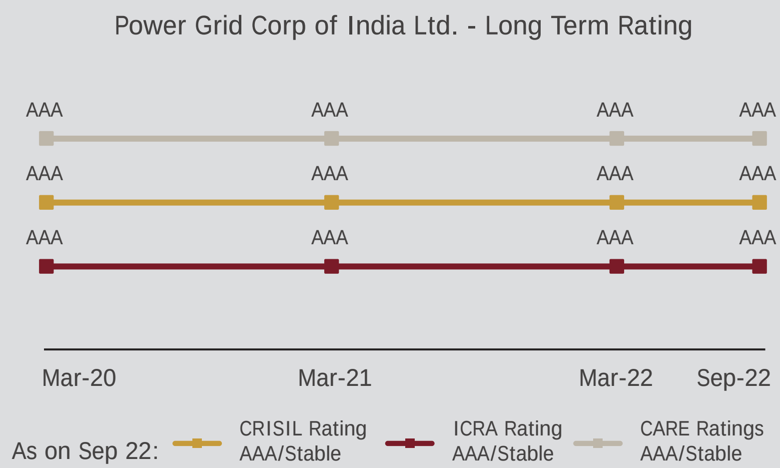
The company faces execution risk inherent in infrastructure development projects as it has been building greenfield transmission infrastructure assets on its own in India and Brazil. These risks include delays in getting the requisite approvals for under-construction projects. SPTL, as the developer and EPC contractor, undertakes the entire implementation risk and is liable to support cost overruns, if any.

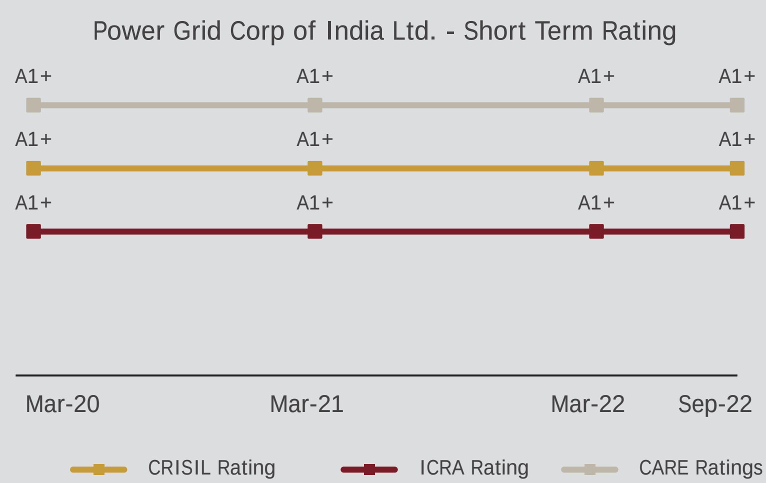
The financial profile is supported by a good operating efficiency and a comfortable financial risk profile and the company's market position in different segments of the power transmission industry. Exposure to project execution risk may partly offset these strengths.

Power Grid Corporation of India Limited

Company name	Power Grid Corporation of India Limited (PGCIL)
Incorporation year	1989
Promoter	Ministry of Power, Government of India
About the company	PGCIL is a 'Maharatna' central public sector enterprise. The company has presence in the transmission, consultancy, and telecom sectors.

Company outstanding rating





Key financial parameters (FY22)

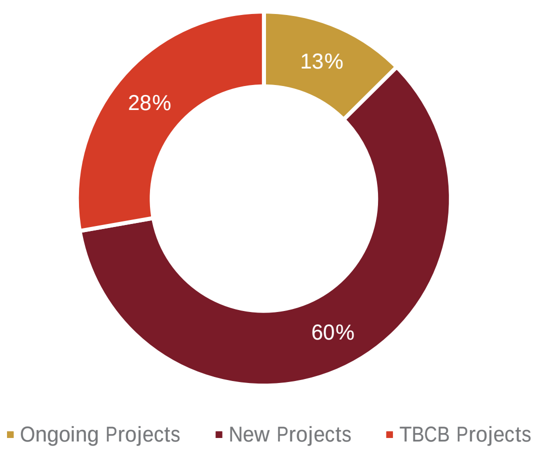
Figures in Rs billion

Total portfolio (ckm)	**172,437**	Portfolio availability (%)	**99.8%**
Total revenue	**390**	Net profit/(loss)	**168**
Total debt	**1,419**	Geographical diversification (states)	**11**

Note: Above parameters represent operational details and standalone financials of the company as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

Under construction project split



Note: Above parameters represent operational parameters of the company as of March-2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

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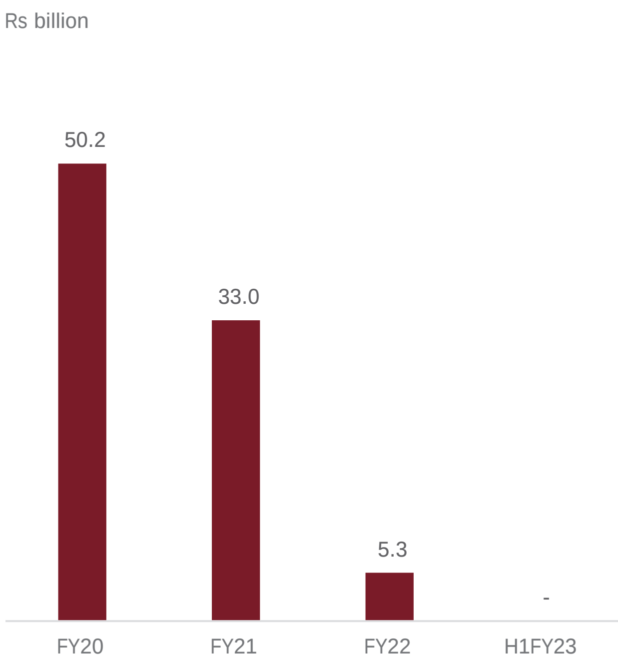

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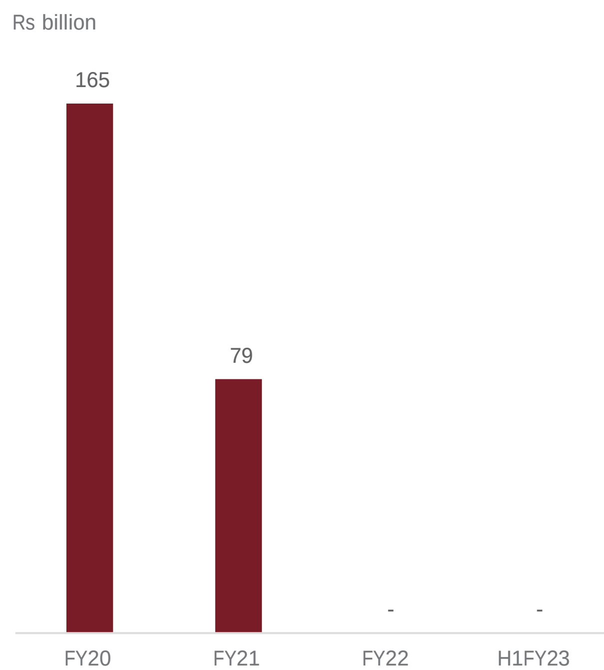


Source: Prime database, CCIL-FTRAC, Crisil Research

PGCIL was incorporated in 1989 to set up extra-high voltage alternating current and high-voltage direct current (HVDC) transmission lines. The company moves large blocks of power from the central generating agencies and areas that have surplus power to load centres within and across regions. It is under the administrative control of the Ministry of Power, Government of India. The company owns and operates an extensive nationwide network of transmission lines, which mainly comprise 400-kilovolt transmission lines and HVDC transmission systems.

Power Grid Corporation of India Limited owns about 85% of the interstate transmission network and carries around 45% of total power generated in the country. Apart from installing high voltage alternating current and HVDC transmission lines, PGCIL also sets up sub stations and communication facilities. As on March 31, 2022, the company owned and operated a transmission line network of 172,982 circuit kilometers and 267 substations, with a transformer capacity of over 486,592 megavolt amperes. Due to its experience in project-implementation and role as a CTU, projects of strategic importance, of compressed implementation timelines, or involving difficult terrain or other complexities are considered for award by nodal agencies to the company on nomination basis.

The financial profile is backed by the company's strategic importance to the Government of India due to its role in interstate power transmission. It is further supported by PGCIL's financial flexibility and strong operational efficiency amid favourable regulatory framework. These strengths are partially offset by weak credit profiles of its customers.

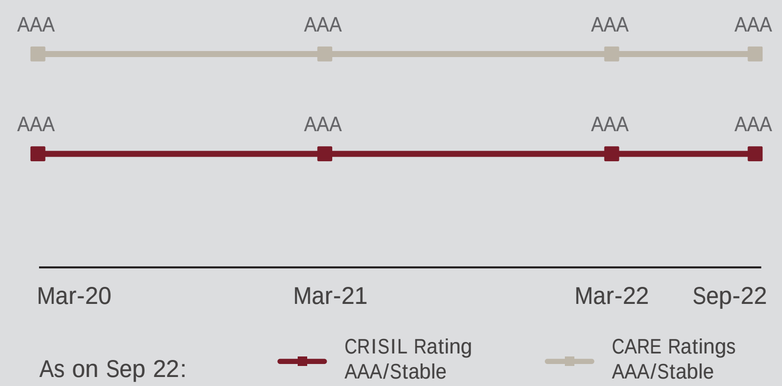
Player profiles of Infrastructure

NIIF Infrastructure Finance Limited

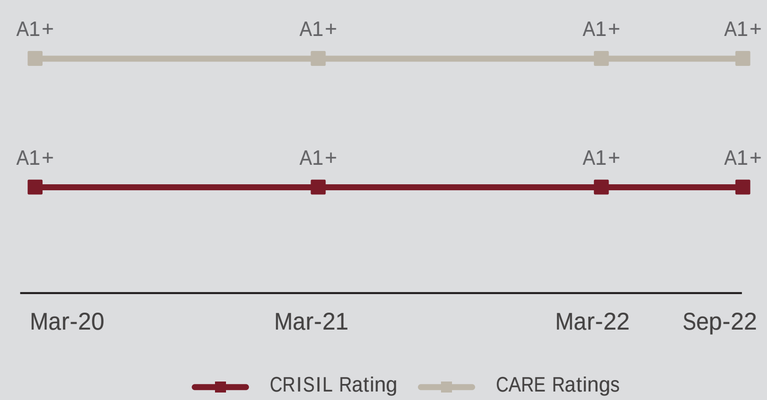
Company name	NIIF Infrastructure Finance Limited
Incorporation year	2014
About the company	NIIF Infrastructure Finance Limited (erstwhile IDFC Infrastructure Finance Limited) is an infrastructure debt fund under the NBFC structure. The company provides long-term financial assistance for various infrastructure projects which have completed at least one year of satisfactory commercial operations

Company outstanding rating

NIIF Infrastructure Finance Limited - Long Term Rating



NIIF Infrastructure Finance Limited - Short Term Rating



Key financial parameters (FY22)

Figures in Rs billion

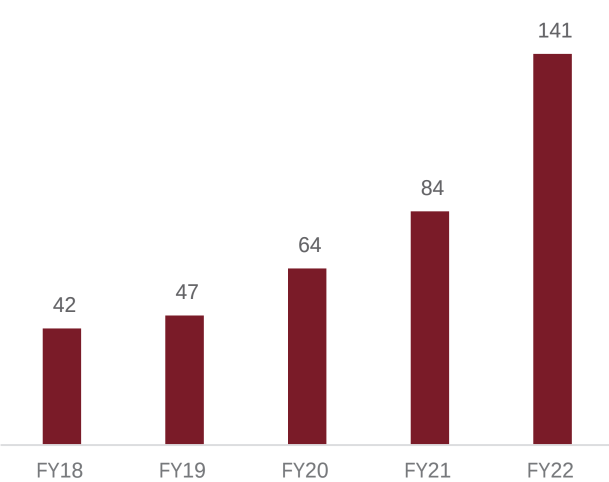
Loans and advances	141	GNPA (%)	0%
Total assets	155	ROA (%)	1.9%
Total borrowings	123	NIM (%)	2.5%
Net worth	31	CAR (%)	23.5%

Note: Above parameters represent standalone financials of the company as of March 2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

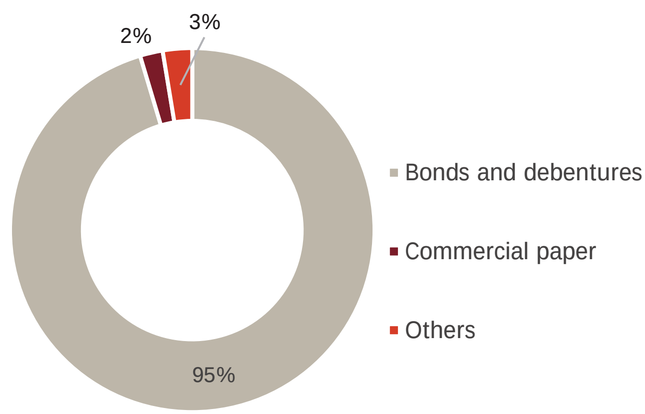
Source: CRISIL Quantix

Trend in loans and advances

Rs billion



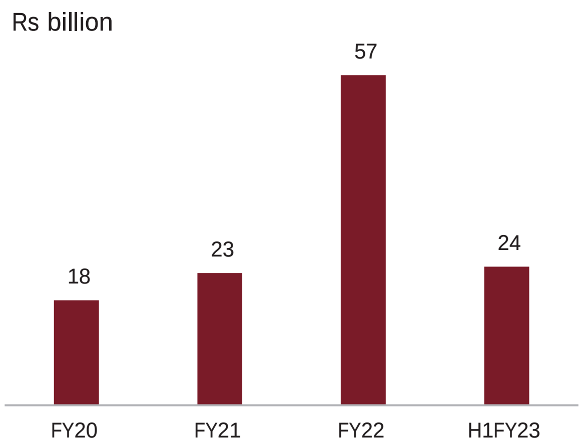
Borrowing profile (FY22)



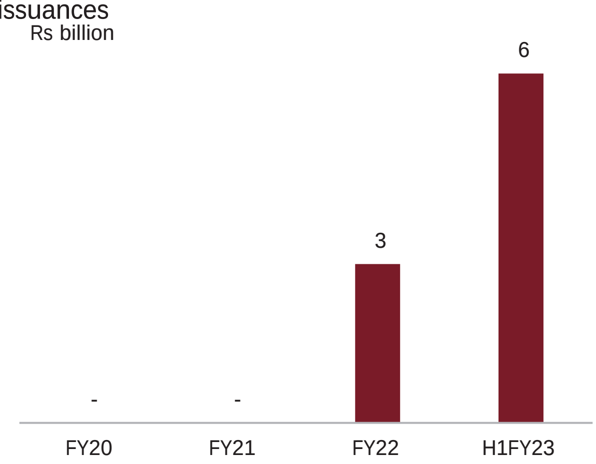
Note: Above parameters represent standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix

NCD issuances



CP issuances



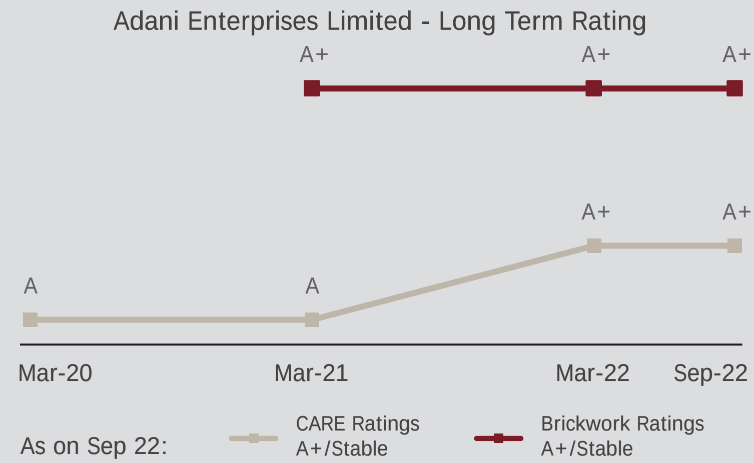
NIIF Infrastructure Finance Limited (NIIF IFL: erstwhile IDFC Infrastructure Finance Limited) is an infrastructure debt fund. It provides long-term financial assistance for various infrastructure projects which have completed at least one year of satisfactory commercial operations. The NBFC has a diversified portfolio across power, transmission and other infrastructure sectors with loans and advances aggregating Rs 141 billion as of March 31, 2022. Its borrowing profile is primarily from bonds with minimum five years' maturity, on the line of the maturity profile of the assets, leading to a comfortable liquidity position.

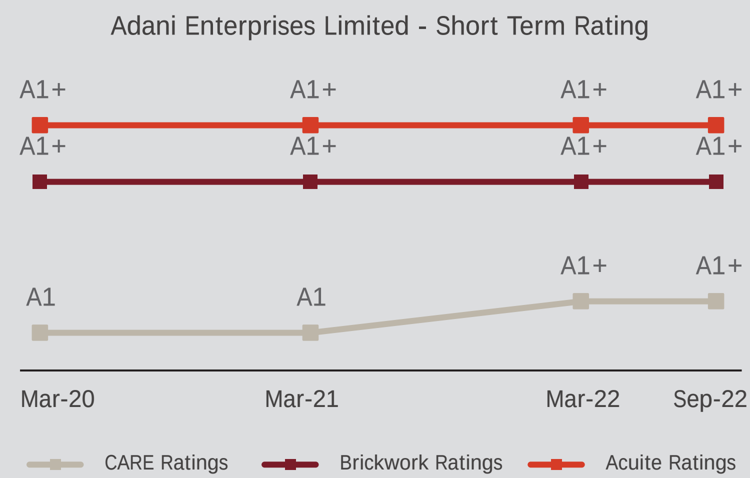
NIIF IFL has demonstrated a track record of zero NPAs and nil stage 2 and stage 3 loan assets since commencement of its operations in 2015. This is primarily on account of stringent underwriting norms, management expertise in infrastructure finance, and lending to operational projects. This, along with healthy capital adequacy ratio of 23.5% as of March 31, 2022, strengthens the company's financial position. However, these strengths are partly offset by relatively high concentration risk on account of the inherent nature of the infrastructure financing business.

Adani Enterprises Limited

Company name	Adani Enterprises Limited
Incorporation year	1993
Promoter	Adani Group
About the company	Adani Enterprises Limited was incorporated in the year 1993 and registered at Ahmedabad. This company is publicly held. Promoters hold 74 percent of shares. Company is listed on Bombay Stock Exchange, National Stock Exchange. Key business activities include wholesale trading contributing to 76 percent of turnover of company.

Company outstanding rating





Key financial parameters (FY22)

Figures in in bn

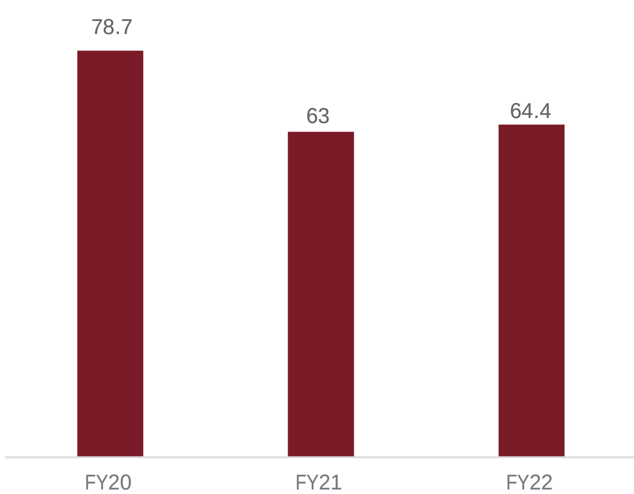
Volume of the IRM segment (MMT)	**64.4**	Mining services production (MMT)	**27.7**
Total revenue	**268**	Net profit/(loss)	**7**
Total debt	**42**	Despatched coal (MMT)	**25.2**

Note: Above parameters represent operational details and standalone financials of the company as of March-2022 and may include, as applicable, reclassification / adjustments to the reported financials by the entity.

Source: CRISIL Quantix, Company Reports, CRISIL Research

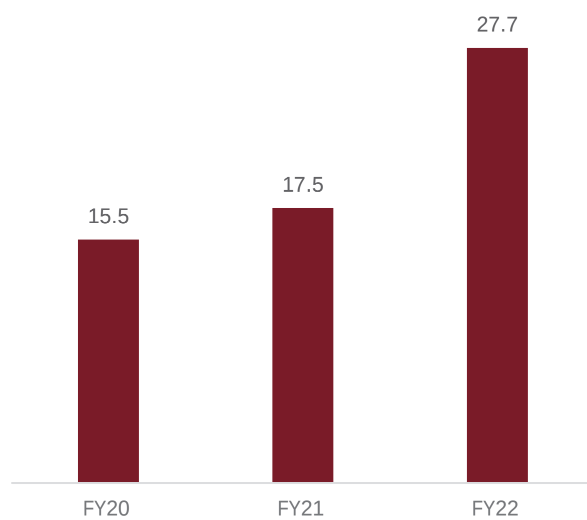
Coal volume of the IRM segment

in Mn tonnes



Coal mining production

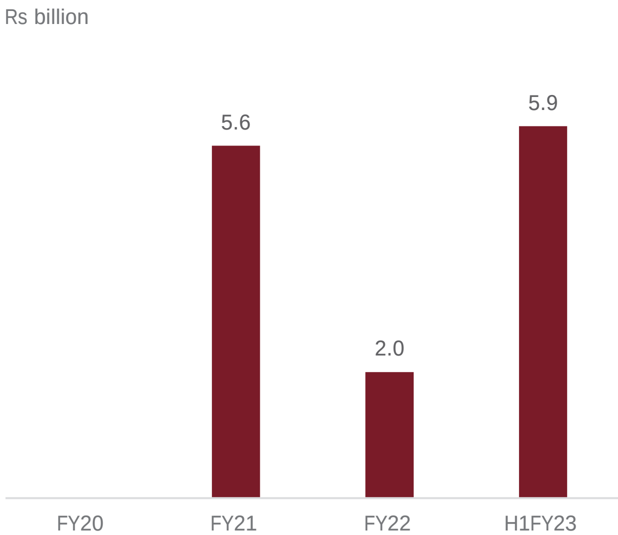
in Mn tonnes



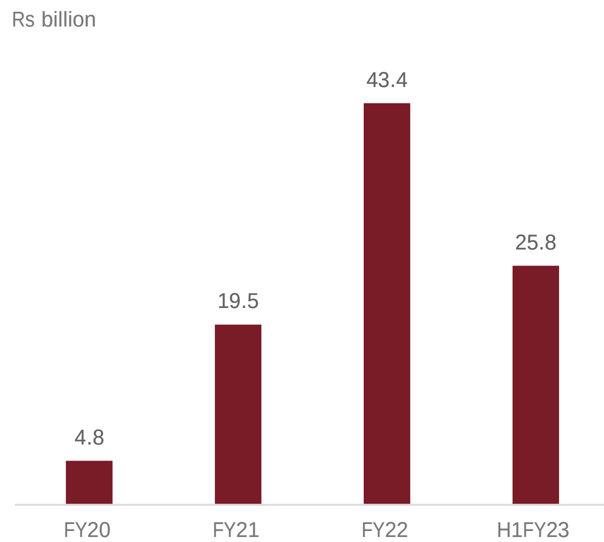
Note: Above parameters represent operational parameters of the company as of March-2022.

Source: CRISIL Quantix, Company Reports, CRISIL Research

NCD issued



CP issued



Source: Prime database, CCIL-FTRAC, Crisil Research

EL, incorporated in 1993, is the flagship company of the Adani group with the promoter group holding a 72.28% stake in the company as on June 30, 2022. AEL, on a standalone basis, has mainly integrated resources management (IRM) / coal trading, power trading and mining services businesses. AEL, on a consolidated basis, has diversified businesses, which include solar cell and module manufacturing, agro processing (including sale of branded edible oil), commodities trading, bunkering (fueling) of ships and shipping. AEL, through its subsidiaries, has invested significant funds in coal mining and related rail evacuation infrastructure in Australia and is currently incubating new businesses including airports, road development, water treatment plant, data centres. The Adani group was primarily involved in the imported coal trading business and gradually it has backward integrated its operations in domestic and overseas coal mining through AEL, along with forward integration in ports, logistics, thermal and renewable power generation, power transmission and distribution through various other group companies. AEL has coal mining operations in Indonesia and has also acquired a coal mine in Australia.

The combined market capitalisation of the Adani group has increased significantly to Rs 14,11,997 crore (including AWL) as on June 30, 2022, which provides significant financial flexibility to raise resources. The promoter continues to hold around 72% equity shares in AEL. The entity has been receiving need-based support from its promoters in case of exigencies as well as towards funding its growth capital requirements.

The promoters of the Adani group had acquired a 100% equity stake in Abbot Point Port Terminal in Australia. As a backward integration to the integrated risk management (IRM) business in 2010, the Adani group (through a step-down subsidiary of AEL) acquired a mine at Carmichael Basin and developed the mine along with laying down a railway network from the mine to Abbot Point Port terminal. While AEL's economic interest in the mine is 100%, the rail network is being developed as a 50:50 joint venture between AEL and a promoter group company. The implementation of the project was significantly delayed due to the public protest and delayed financial closure. The project has been completed in fiscal 2022.

AEL has also been acting as a domestic coal mine developer and operator (MDO) on behalf of Rajasthan Rajya Vidhyut Utpadan Nigam Limited (RRVUNL) for RRVUNL's coal requirement to run its thermal power plants in Rajasthan. AEL had completed mine development and coal production commenced in February 2013 and coal supply volumes have been gradually ramped-up. AEL has also secured contracts for other mines with various counterparties and therefore the number of operating mines have increased from one in fiscal 2018 to four during the nine months ending fiscal 2022.

The financial profile is supported by the strong financial flexibility of the Adani Group and its continued support to Adani Enterprises. Additionally, the completion of capex and the commencement of trial runs of coal dispatch in Australia, strengthening of domestic mining services business, vast experience of the promoters and diversified operations of Adani Group offer support to the financial profile. However, project risks surrounding plans of undertaking different large-scale projects across different business where the company may not have prior experience, increasing capital expenditure plans, regulatory and traffic risk inherent to the infrastructure business and fluctuations in commodity prices may partly offset the strengths.

Peer Comparison for Airport

		Parameters									
S. No.	Company Name	Overall revenue (Rs billion)	Total debt (Rs billion)	Concession period	Average monthly pax ('000)	Networth (Rs billion)	Revenue share/ bid parameter	Traffic - passenger ('000)	Freight ('000 tonne)	Departures ('000)	Interest coverage ratio
1	Bangalore International Airport Ltd	8	75	2008-2038	1,357	23	4.0%	16,287	412	148	1.2
2	Cochin International Airport Ltd	4	6	N.A.	393	13	N.A.	4,718	55	40	4.3
3	Delhi International Airport Limited	29	110	2006-2036	3278	24	46.0%	39,340	924	333	2.0
4	GMR Airports Limited	36	195	N.A.	4,314	N.A.	N.A.	51,770	1,064	447	N.A.

Peer Comparison for Roads

		Parameters							
S. No.	Company Name	Order book (Rs billion)	Overall revenue (Rs billion)	Tangible networth (Rs billion)	Total debt (Rs billion)	Gearing (times)	OPM (%)	Market cap (full) (Rs billion)	Market cap (free float) (Rs billion)
1	Apco Infratech Pvt. Ltd ^	151	55	15	8	0.5	16.5%	N.A.	N.A.
2	Ashoka Buildcon Limited	137	46	27	6	0.2	11.0%	21	10
3	Dilip Buildcon Limited	256	90	43	31	0.7	8.5%	32	10
4	GR Infraprojects Limited	131	79	44	11	0.3	16.3%	116	14
5	IRB Infrastructure Developers Limited	161	26	85	54	0.6	26.0%	138	33
6	KNR Constructions Ltd	90	33	22	0	0	21.1%	60	29
7	Larsen & Toubro Limited	3156	1002	669	203	0.3	9.30%	2,844	2,446
8	Montecarlo Limited	119	32	13	2	0.2	10.0%	N.A.	N.A.
9	Oriental Structural Engineers Pvt Ltd ^	40	19	26	5	0.2	8.4%	N.A.	N.A.
10	PNC Infratech Limited	147	61	33	2	0.1	15.0%	66	29
11	Welspun Enterprises Ltd	84	13	19	5	0.3	11.0%	19	9

Peer Comparison for Infrastructure

		Parameters													
S. No.	Company Name	Loans and advances (Rs billion)	Overall revenue (Rs billion)	Tangible networth (Rs billion)	Total debt (Rs billion)	Total assets (Rs billion)	Total borrowings (Rs billion)	GNPA (%)	ROA (%)	NIM (%)	CAR (%)	Volume of the IRM segment (MMT)	Mining services production (MMT)	Net Profit / (Loss) (Rs billion)	Despatched coal (MMT)
1	Adani Enterprises Limited	N.A.	268	N.A.	42	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	64.4	27.7	7	25.2
2	NIIF Infrastructure Finance Limited	141	N.A.	31	N.A.	155	123	0.0%	1.9%	2.5%	23.5%	N.A.	N.A.	N.A.	N.A.

Peer Comparison for Airport

		Parameters								
S. No.	Company Name	Total portfolio (MW)	Total portfolio (CKM)	Total revenue (Rs billion)	Total debt (Rs billion)	Plant load factor (%)	Operating margin (%)	Net profit/(loss) (Rs billion)	Geographical diversification (states)	Portfolio availability (%)
1	ACME Cleantech Solutions Pvt. Ltd. ^	2,850	N.A.	3	N.A.	N.A.	N.A.	(0.7)	N.A.	N.A.
2	Adani Green Energy Limited	20,434	N.A.	107	173	N.A.	N.A.	(1)	N.A.	N.A.
3	Apraava Energy Private Ltd	3,399	N.A.	1	9	67.0%	10.7%	(10)	N.A.	N.A.
4	Avaada Energy Private Limited ^	4,463	N.A.	1	1	N.A.	N.A.	0	N.A.	N.A.
5	Ayana Renewable Power Private Limited ^	3,690	N.A.	0	0	N.A.	N.A.	0	N.A.	N.A.
6	Azure Power India Private Limited ^	6,955	N.A.	4	29	N.A.	N.A.	(2)	N.A.	N.A.
7	Hero Future Energies Pvt Limited	1,533	N.A.	1	31	N.A.	N.A.	(2)	N.A.	N.A.
8	JSW Energy Ltd.	7,016	N.A.	36	14	62.0%	30.1%	6	N.A.	N.A.
9	NTPC Limited	84,637	N.A.	1129	1776	N.A.	N.A.	161	N.A.	N.A.
10	ReNew Energy Global Plc	10690	N.A.	69	449	N.A.	N.A.	(16)	N.A.	N.A.
11	Sembcorp Energy India Limited	4,770	N.A.	78	90	N.A.	N.A.	1	N.A.	N.A.
12	Tata Power Company Limited	13,515	N.A.	111	255	25-81%*	13.9%	28	N.A.	N.A.
13	Tata Power Renewable Energy Limited	3,710	N.A.	15	93	N.A.	N.A.	2	N.A.	N.A.
14	The Calcutta Electric Supply Corporation (CESC	2,143	N.A.	81	84	81-85%*	24.0%	8	N.A.	N.A.
15	Adani Transmission Limited	N.A.	18,795	7	85	N.A.	N.A.	(1)	13	99.7%
16	Power Grid Corporation of India Ltd (PGCIL)	N.A.	172,437	390	1419	N.A.	N.A.	168	11	99.8%
17	Sterlite Power Transmission Limited	N.A.	13,945	38	0	N.A.	N.A.	2	15	99.8%

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Wealth Management & Family Office Solutions	We provide a unique client-centric advisory platform offering bespoke solutions for wealth management and family office management, under the brand and entity of Trust Plutus Wealth Managers (India) Private Limited.

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Equity

Real Estate

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