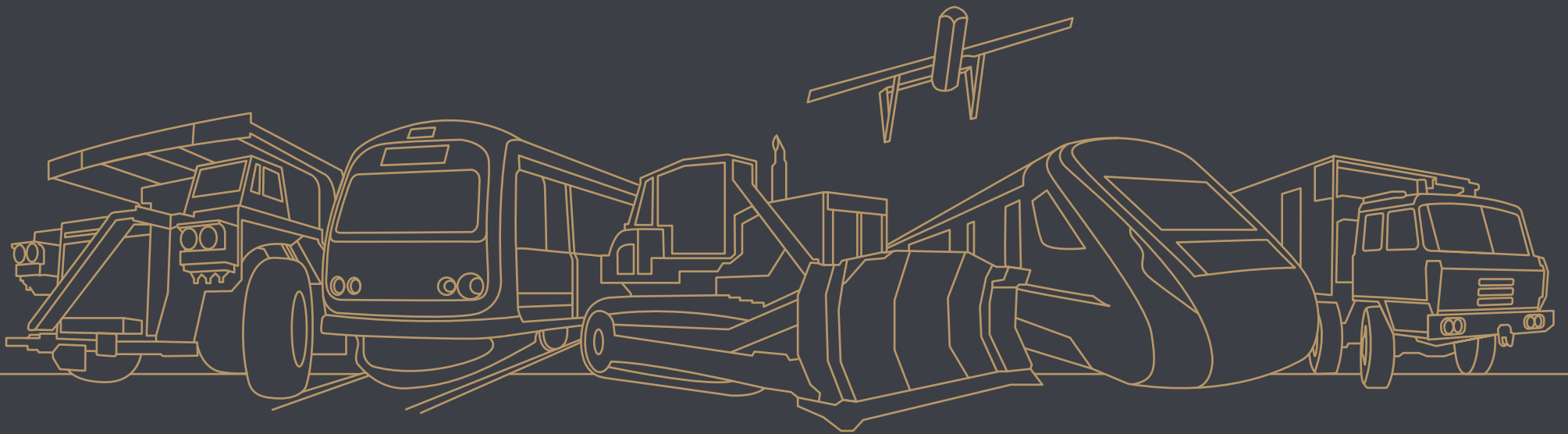




Building Bharat

The BEML Story





Acknowledgement

Ministry of Defence

Ministry of Railways

Ministry of Urban Development

Ministry of Coal

Conceptualised by Corporate Communications, BEML

Content & Design by Sunny Side Up

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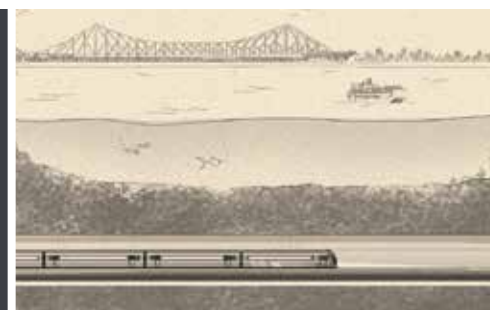


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BEML Ltd: New Dreams, New Frontiers

BEML Limited is a leading multi-technology 'Schedule A' company under the Ministry of Defence, and plays a pivotal role in serving India's core sectors such as Defence, Rail, Power, Mining and Construction by offering world-class products.

It has four state-of-the-art facilities located at Bangalore, Kolar Gold Fields (KGF), Mysore, Palakkad, and a very strong R&D infrastructure and a nationwide network of sales and services.

From its modest beginnings manufacturing and supplying rolling stock to the Indian Railways manufactured at its Rail Coach Factory back in 1965, to designing and manufacturing sophisticated metro rail coaches and hi-tech equipment for the Indian Army, and mining and infra businesses, BEML Ltd. has made important contributions in making India self-reliant in heavy machinery and hi-tech equipment. BEML Ltd's goals are aligned with India's 'Make In India' campaign that aims to empower the country to achieve a significant growth in GDP and transform India into a global economic power.

The guiding principles of trust, truth and transparency, while fostering technological solutions that are creative, climate-friendly, based in values of simplicity and delivered with speed—have endeared BEML Ltd. to its client base across the world.

The Company has undergone many transformations in order to remain competitive, and grow, by developing the capability, design know-how, investing in Research & Development, and systematically developing new products and indigenising and upgrading products over the years. BEML has strengthened and established itself as a major player in a domain that is dominated by MNCs, and R&D and Indigenisation have

been the key factors in this growth. Indigenisation of Indian railway products, defence products, dozers, dumpers, excavators is as high as 90 per cent. BEML has a diverse portfolio of products and has exported its products to over 70 countries.

BEML has a dominant presence in the mining machinery sector in the country with more than 50% of the coal production coming through BEML machines.

Over the years, BEML Ltd. has taken many steps to strengthen the knowledge and skill base of R&D engineers. Centers of Excellence have been established to constantly update and upgrade the technical skills of the manpower.

Sustainability is a guiding force for BEML, and through its various initiatives in the power sector it is on track to meet 100% of its electricity consumption requirements with renewable energy, positioning itself as a leading "Green Company" contributing to a cleaner and more sustainable future.

This book is a tribute to the foresight of its captains, and the hard work and creativity of the people of BEML Ltd. that has scripted this story of a self-confident institution that plays a pivotal role in making India self-reliant and strong.

Our Vision, Mission, Values



VISION

Become a market leader, as a diversified company, supplying quality products and services to Defence & Aerospace, Mining & Construction, Rail & Metro and to emerge as a prominent international player.



MISSION

- Improve competitiveness through collaboration, strategic alliances and joint ventures.
- Grow profitably by aggressively pursuing business opportunities in domestic and international markets.
- Adoption of state-of-the-art technologies and bring in new products through Transfer of Technology and in-house R&D.
- Continue in diversified growth in new products and markets.
- Attract and retain people in a rewarding and inspiring environment by fostering creativity and innovation.
- Offer technology and cost effective total solutions for enhanced customer satisfaction.



Value Statement 'BEML FIRST'

- F** - Focus on customer
- I** - Innovation and Technology
- R** - Reliability and Quality
- S** - Speed and responsiveness
- T** - Trust and Teamwork

Principles of Transformation



Trust



Truth



Technology



Transparency



Compassion



Creativity



Climate



Self Confidence



Simplicity



Speed



Message from Defence Minister



सत्यमेव जयते
भारत सरकार
रक्षा मंत्रालय
Government of India
Ministry of Defence



It gives me immense pleasure to share my thoughts for the Coffee Table Book of BEML Ltd on the occasion of its 60th year of Foundation Day celebrations.

BEML has been at the forefront of Bharat's defence manufacturing

industry for six decades, playing a pivotal role in strengthening our armed forces and enhancing our national security. From designing and producing cutting-edge military vehicles to providing critical infrastructure for our defence establishments, BEML has consistently demonstrated its commitment to excellence and innovation.

The recent milestones achieved by BEML, including the indigenous development of a 1500 horsepower engine for futuristic combat vehicles, the manufacturing of India's inaugural Vande Bharat sleeper cars to bolster our transportation infrastructure, and the introduction of ground breaking electric shovels for the mining sector, show BEML's remarkable technological prowess and valuable journey towards self-reliance.

The Coffee Table Book beautifully encapsulates BEML's rich legacy, showcasing its achievements, milestones and the dedication of its workforce. It is a testament to BEML's unwavering dedication to quality, reliability and indigenous manufacturing, which align perfectly with our vision of "Make in India", "Make for the world".

I commend the leadership, employees, and stakeholders of BEML for their unwavering dedication and contribution to the defence and security of our country.

Shri. Rajnath Singh
Minister of Defence of India

Message from Defence Secretary



भारत सरकार
रक्षा मंत्रालय
Government of India
Ministry of Defence



As we commemorate BEML's remarkable 60-year journey, we celebrate not just the evolution of a company, but the narrative of a nation's progress. Since its inception in 1964, BEML has been at the forefront of India's heavy engineering landscape,

shaping critical industries and bolstering national infrastructure.

BEML's inception was rooted in a pivotal purpose: to support the land security at the borders and to meet the mobility needs of the nation's Army. Over the decades, this initial mandate expanded into a dynamic portfolio spanning defence, mining, construction, rail, metro, and aerospace sectors. Today, BEML stands as a beacon of indigenous engineering prowess, reflecting our nation's capability to innovate and excel on the global stage.

It has undergone remarkable growth, showcasing resilience and adaptability amidst ever changing circumstances. From the historic rollout of the nation's inaugural standard gauge Metro car to pioneering the development of a 1500 horsepower engine for futuristic combat vehicles, culminating in the indigenous manufacturing of Bharat's Vande Bharat sleeper cars, and the introduction of ground breaking high-end electric shavers in the mining sector, BEML has etched significant milestones in India's engineering landscape.

Moreover, BEML's dedication to sustainability, exemplified through initiatives like Green BEML, underscores its responsibility towards future generations.

BEML's journey is not merely about milestones; its a saga of excellence, propelled by a relentless pursuit of quality, innovation, and customer satisfaction. As we look ahead, BEML's trajectory is defined by a commitment to excellence and a steadfast focus on sustainable development.

On this momentous occasion, I extend my heartfelt congratulations to BEML on completing 60 glorious years. May this milestone serve as a catalyst for even greater achievements, as BEML continues to forge ahead, shaping the destiny of our nation and inspiring generations to come.

Giridhar Aramane, IAS,
Defence Secretary, Ministry of Defence,
Government of India

Message from CMD



It's a matter of great pride for me to launch this special commemorative coffee table book, dedicated to honouring the illustrious journey of BEML, as it proudly marks six decades of extraordinary contributions to India's engineering domain. From its

humble origins to evolving into a cornerstone of innovation and indigenization, BEML's narrative embodies qualities of resilience, vision, and unwavering commitment to the nation's progress.

BEML's inception in 1964, stemming from the imperative to bolster our national defence post the India-China war and to become self-reliant in infrastructure building, laid the foundation for a journey marked by relentless pursuit of excellence. Born out of Hindustan Aeronautics Limited (HAL), we have swiftly established ourselves as a pioneer in manufacturing earthmoving equipment.

Over the decades, BEML has evolved exponentially, diversifying its portfolio to cater to critical sectors such as national security, infrastructure, and core industries. From ground-breaking projects for the Indian Army to revolutionizing the coal sector to inaugurating first-of-its-kind rail projects, BEML's indigenously developed solutions have left an indelible mark on the nation's landscape.

At the heart of BEML's success lies its unwavering commitment to innovation and indigenization. Through dynamic research and development initiatives, BEML continues to push the boundaries of engineering excellence, designing futuristic products

that address the evolving needs of the nation.

As we look ahead, BEML remains steadfast in its resolve to emerge as India's premier global engineering company. With a focus on diversification into new sectors such as naval & maritime, shipping & coastal, and road infrastructure, BEML is poised to compete on a global scale while upholding the highest standards of quality and safety.

Central to BEML's ethos is its commitment to nurturing talent and fostering a culture of inclusivity and innovation. Through revamped policies and a people-friendly environment, BEML empowers its workforce to realize their full potential, ensuring a steady pipeline of leaders for the future.

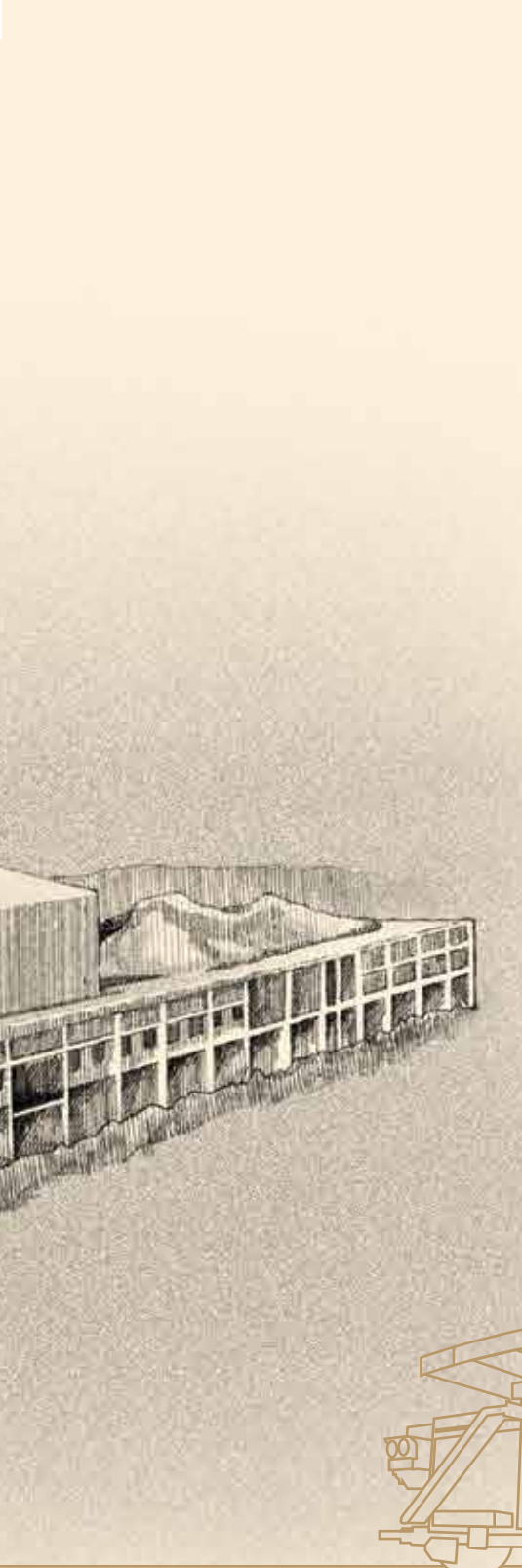
As we venture into the next chapter of our odyssey, sustainability emerges as our paramount focus. BEML is committed to constructing an energy-efficient enterprise, one that not only addresses present demands but also ensures a legacy of stewardship for generations yet to come.

As BEML embarks on its journey towards becoming a Navratna and Maharatna company, we reaffirm our commitment to engineering excellence, innovation, and nation-building. Together, let us celebrate 60 years of unparalleled achievements and look forward to a future filled with even greater triumphs.

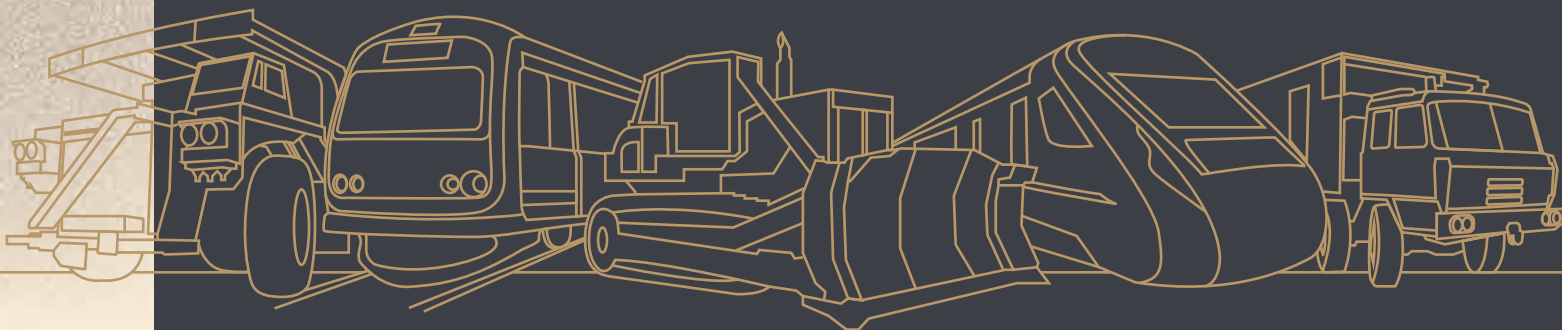


Shantanu Roy,
CMD, BEML





The **BEML** Growth Story



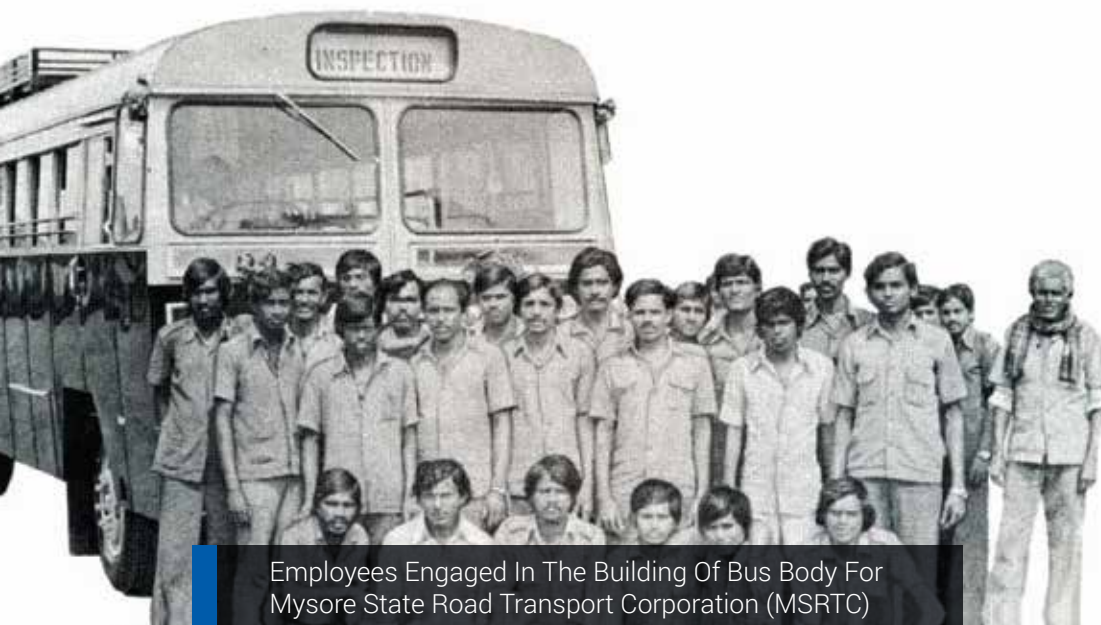
BEML's Pivotal Role in Making India Self Reliant

BEML Limited (formerly Bharat Earth Movers Limited) was established in May 1964 as a Public Sector Undertaking for manufacture of Rail Coaches & Spare Parts and Mining Equipment at its Bangalore Complex. It was set up as a 'Schedule 'A' Company under Ministry of Defence, Government of India, and gradually grew into a multi-technology and multi-location Mini Ratna Category-I company offering high-quality products for diverse sectors such as coal, mining, steel, cement, power, irrigation, construction, road building, aviation, defence, metro and railways.

Today the Company plays a pivotal role in serving India's core sectors such as Defence and Aerospace, Rail and Urban Commuting, Power, Mining and Infrastructure along with High Power Diesel Engine and Heavy Duty Aggregates. Its focus on research and development in nurturing indigenous innovation has helped it garner a turnover of more than Rs 4,300 Cr from its modest beginning with a capital of Rs. 5 Cr.



Smt & Shri Lalchand Hirachand, one of the founders of HAL, inside A III Class Rail Coach



Employees Engaged In The Building Of Bus Body For Mysore State Road Transport Corporation (MSRTC)

BEML Ltd. has charted an upward course, from building basic rail coaches to designing the latest Vande Bharat Sleeper trainsets and driverless Metro trains, from basic Dozers to state-of-the-art heavy earth moving machinery, rocket/missile launchers and Unmanned Aerial Vehicles. In pursuing its vision to become a market leader supplying products and services to core sectors for economic growth, BEML Ltd. furthers our nation's goals of achieving self-reliance and excellence in engineering and manufacturing.

Milestones in Nation Building

In the 1960's, BEML took over production of rolling stock at the Rail Coach Division in Bangalore. The Rail coach Factory also undertook building of bus body for the Mysore State Road Transport Corporation (MSRTC).

It also established India's first manufacturing unit for mining and construction at Kolar Gold Fields and manufactured its first scraper & crawler tractor—machines that were used in building some of India's key infrastructure projects like Bhakra Nangal Dam and the Hirakud Dam. BEML's equipment also played a critical role in the construction of highways, airports, and railway projects across the country.

Expanding its manufacturing capabilities, BEML established manufacturing units at Mysore and Palakkad, building a diverse and state-of-the-art product portfolio. The focus on R&D, innovation and



A View Of Rail Coach Assembly

design led to the establishment of a full-fledged R&D at KGF, which paved the way for development of various products for the core sector of the Indian economy, and rolled out a set of indigenously developed products and heavy machinery for the Indian Army.

At the turn of the century, BEML Ltd. began manufacturing Metro coaches and has been providing a rolling supply to most of the Metro Rail Corporations including Delhi, Mumbai, Kolkata, Jaipur and Bengaluru. It also entered the power generation sector with windmill project,



Metro Cars For Namma Metro

Impact across key sectors

A torchbearer of 'Atmanirbhar Bharat', BEML Ltd's impact on driving Indian engineering and excellence in core sectors of infra, urban mobility and defence is immense. It exports to 70 countries across the world.

It has built 32,500 mining and construction equipment, providing indigenously built high-quality equipment to this sunrise sector.

BEML Ltd's impact on the Indian defence sector is invaluable, it provides indigenous solutions to the country's Forces, covering a range of products from its first set of heavy duty trucks in the 1980s to rocket and missile launchers, Armoured Recovery & repair Vehicles (ARRV), High Mobility All Terrain Vehicles for Radar, Communication and Aerospace and tactical Unmanned Aerial Vehicles (UAVs).



Beml Metro Rail Coach

“ So far, BEML Ltd. has manufactured and supplied 18,000 rail coaches and 900 EMUs (Electrical Multiple Units), and 1650 metro cars. ”



Armoured Recovery Vehicle



Mining Boom





**Leading the
Future:
R&D Trends and
Evolution**

BEML Ltd.'s focus on R&D has led to the design and development of products that are uniquely Indian with global quality standards. With conscious application of eco-friendly tech and engineering design that provides end-to-end solutions, BEML has been striving towards building sustainable mobility products and systems with its own and networked expertise in Engineering, Technology and Manufacturing.

The Company is at the forefront of MSME procurement and is leveraging the latest development in public procurement policies of the government, viz. Government e-market place (GEM Portal) to realise the Aatmanirbhar Bharat mission.



CAD Centre



Gear Pump Test



Research & Development Centre, KGF

Sustainable Urban Mobility Solutions



Driverless Metro Car

BEML Ltd. is a pioneer of indigenously manufactured Rail and Metro Coaches. Driverless Metro coaches with state-of-the-art tech and in-built intelligence, validate its engineering excellence nurtured locally. The sustainable system set up for the driverless Metro Trains helps in reduction of carbon footprint through efficient energy management. It offers real-time track management and enhanced safety measures and has a carrying capacity of 2280 passengers.

BEML has set up a dedicated office at MMRDA's Mumbai Depot to support testing and commissioning, maintenance and after-sales support for the delivered Metro Trains.

BEML Develops India's First Vande Bharat Sleeper Trainset

The Vande Bharat trains are a feather in the cap for the Indian Railways. In March 2024, Union Minister for Railways, Shri. Ashwini Vaishnaw, marked a historic moment as he inaugurated the car body structure of India's pioneering Vande Bharat Sleeper trainset, manufactured by BEML Ltd at its Bangalore-based rail unit. Senior officials from the Ministry of Railways, ICF, and the Chairman and Managing Director of BEML Ltd, Shantanu Roy, graced the occasion.

The Vande Bharat Express was launched in 2019 as a medium-distance superfast express service connecting cities that are less than 800 km apart. Now the Vande Bharat Sleeper trains mark a significant milestone as India embarks on the journey of introducing sleeper variants within the acclaimed

Vande Bharat platform. These trainsets set a new benchmark in passenger comfort and convenience, boasting world-class facilities and best-in-class interiors. Praising the efforts of BEML's advancements that provide a global standard of manufacturing, the Railway Minister said that the much-awaited Vande Bharat Sleeper version would provide easy mobility and comfort to passengers.

The carbody structure is crafted with high-grade Austenitic stainless steel, featuring crashworthy elements integrated into the crash buffers and couplers. Complying with stringent safety standards, all materials and aggregates in the trainset adhere to the Fire Standard requirements as per EN45545 HL3 grade.



Designed and engineered with meticulous attention to detail by BEML, the Vande Bharat Sleeper Trains prioritize both aesthetic appeal and functionality in their interiors, sleeper berths, and exteriors. Every element is meticulously designed—from the front nose cone to interior panels, seats, berths, interior lights, couplers, gangways, and beyond—meet the exacting standards of the sleeper trainset.

“ *The much-awaited Vande Bharat Sleeper version would provide easy mobility and comfort to passengers.* **”**

Shri. Ashwini Vaishnaw
Union Railway Minister

BEML has spearheaded the development of critical systems including the electrical, propulsion, bogie, exterior plug doors, brake systems, HVAC, and more, ensuring seamless integration and optimal performance throughout the trainset. The entire manufacturing and assembly process is undertaken at BEML, underscoring a commitment to quality and precision.

The Integral Coach Factory (ICF), Chennai, placed an order with BEML Limited in May 2023 for the design,



manufacture, and commissioning of 10 Rakes of 16 cars Vande Bharat Sleeper version trainsets. These trains will undergo necessary modifications to seamlessly transition from chair car variants to sleeper versions, ensuring compliance with crashworthiness and fire safety requirements.

The success of this project hinges on the meticulous design of aesthetically appealing interiors and the selection of competent GFRP panels, demonstrating BEML's unwavering commitment to excellence and innovation in rail transportation.

“ *We are delighted to be a part of creating this milestone that will facilitate comfort and world-class facilities while minimizing travel time. Our production is operating at full capacity, and the entire manufacturing and assembly process is undertaken at BEML, emphasizing our commitment to quality and precision by a specialised team of engineers and staff.* **”**

Shantanu Roy,
CMD, BEML

Special features of **Vande Bharat** sleeper trainsets



Car formation:

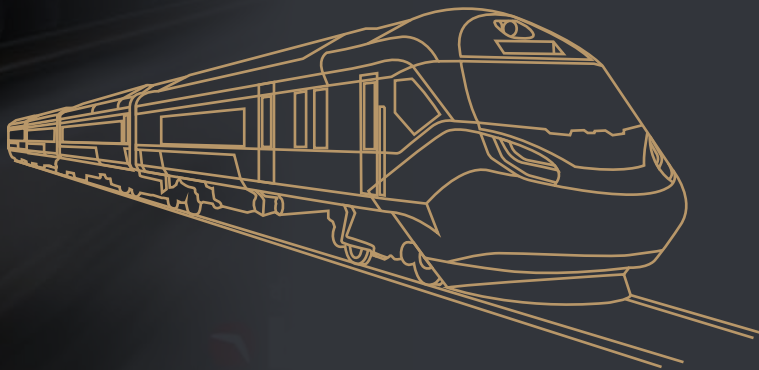
Total cars per Trainset: **16**

Performance of Train:

- Maximum operational speed during service: **160 kmph**
- Maximum operational speed during testing: **180 kmph**
- Minimum deceleration during full service braking following jerk limit: **0.8 m/s²**
- Maximum deceleration at any speed: **1 m/s²**
- Broad Gauge **1676 mm**

Passenger capacity:

Each train has 11 coaches of AC 3 tier, with a total of 611 berths. There are 4 coaches of AC 2 tier with 188 berths, and one coach of First Class AC with 24 berths, totalling 823 berths on the train.



Salient features:

- Austenitic Stainless steel carbody
- Crash worthy features in carbody for Passenger safety
- Best-in-class interiors with GFRP panels
- Aerodynamic exterior looks
- Modular pantry
- Fire safety as per EN 45545, Hazard Level: O3
- Special berths and toilets for differently abled
- Automatic exterior passenger doors
- Sensor based inter communication doors
- Remotely operated Fire barrier doors at end wall
- Ergonomically designed odour free toilet system
- Toilet for driving crew
- Shower with hot water in 1st AC car
- Integrated Reading light with USB Charging provision
- Public announcement and visual information system
- Modern passenger amenities
- Spacious luggage room

India's first Indigenous Electric Shovel Developed at BEML's KGF Complex

A first-of-its-kind indigenously manufactured electric rope shovel (model - BRS-21) was developed at BEML's Earth Moving Manufacturing Division in Kolar Gold Fields (KGF). This marks a major leap towards modernization of heavy equipment in India. What makes it significant is that by leveraging indigenous manufacturing capabilities, BEML can provide tailored solutions that meet the specific requirements of India's coal mining industry, while also aligning with the nation's broader sustainability objectives.

Electric shovels play a crucial role in modern mining operations. They are known for their efficiency in digging and loading materials such as Coal, Ore, and Overburden in open-cast mines. The BEML BRS21 is designed and equipped to meet the production demands of large mining operations, leveraging advanced AC electrical technology for optimal

performance. Its versatility allows it to be paired with various sizes of haul trucks, tailored to individual mining plans.

Featuring a robust structure engineered with the latest design tools, the BRS21 ensures optimum material selection and minimal stress levels at critical structural points. With an increased operating weight for enhanced stability during operations and larger dipper capacities, the machine promises heightened efficiency in material movement. Dual independent propel motor drives, elevated drive sprockets, and well-balanced counterweights further enhance its operational capabilities.

The inclusion of a rack and pinion arrangement provides positive crowd force, ensuring operational comfort during digging and loading tasks. BEML's



Shri Amrit Lal Meena, IAS,
Secretary, Ministry of Coal, flagged-off the handing over of a first-of-a-kind indigenously manufactured Electric Rope Shovel developed at BEML's KGF manufacturing division. Shantanu Roy, Chairman and Managing Director of BEML Limited, Dr. B. Veera Reddy, Director (Technical) of Coal India Limited and senior officials of BEML were present at the occasion.



Electric Shovel

relentless commitment to innovation and indigenous manufacturing has propelled India into a new era of mining equipment technology, driving efficiency, sustainability, and self-reliance in the sector.

The 21 CuM Electric Rope Shovel model BRS21 is the largest indigenously manufactured mining equipment in India. Aligned with the Government's initiative of "Make in India/Atmanirbhar Bharat," BEML has pioneered the development and manufacturing of this high-capacity mining equipment, integrating cutting-edge technologies. The BRS21 Electric Rope Shovel will be deployed in the Nighai project of Northern Coalfields Limited (NCL).

“The design of this green energy machine adheres to global standards in safety, operator comfort, and low maintenance. This mega equipment showcases advanced IGBT-based AC drives integrated with predictive maintenance, production monitoring systems, safety red line lighting systems for dumper proximity, and remote monitoring. The equipment is poised to significantly meet the escalating coal demand for mining companies, particularly Coal India, as it strives for higher coal production targets.”

Shantanu Roy,
CMD, BEML

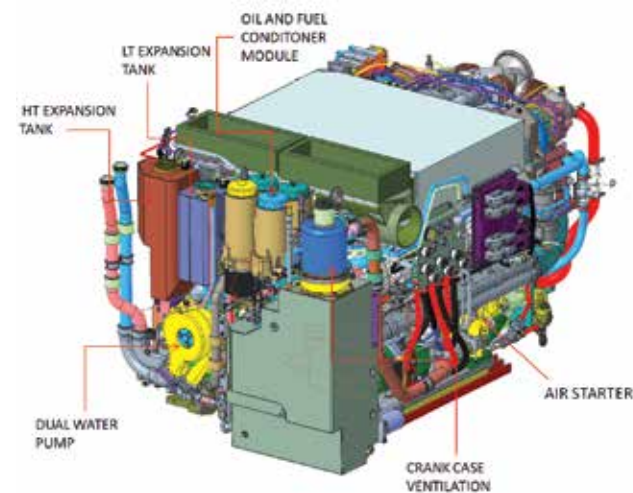
“The new BEML BRS-21 rope shovel has been designed and developed indigenously by BEML under 'Atmanirbhar Bharat,' reflecting India's commitment to self-reliance. This project not only fosters national self-sufficiency in this product category but also contributes significantly to saving considerable foreign exchange outflows.”

Shri. Amrit Lal Meena, IAS,
Secretary, Ministry of Coal



Development and Maiden test-firing of India's First indigenously made 1500 hp engine for Main Battle Tanks

BEML Limited has secured an order for the design, development, and supply of 1500hp engines for Main Battle Tanks. These engines mark a significant advancement in military propulsion technology, boasting state-of-the-art features such as a high power-to-weight ratio and operability in extreme conditions, including altitudes of up to 5000 m, temperatures ranging from -40°C to +55°C, and desert environments. Equipped with cutting-edge technologies like electronic control with CRDi fuel injection systems, self-cleaning air filters and electronic warning control, these engines rival the most advanced engines globally.



Defence Secretary, Giridhar Aramane Inaugurates The First Firing Of 1500 Hp Engine For New Generation Main Battle Tanks

In March 2024, the successful completion of the first firing marked a milestone achievement for BEML Ltd. Furthermore, BEML anticipates the ongoing development of engine variants tailored to meet the diverse needs of the Indian Military and, using this engine platform, other engines suitable for Arjun MBT and FICV are being planned. This commitment underscores BEML's dedication to realizing the vision of Aatmanirbhar Bharat—India's self-reliance and a renewed positioning as a leader in defence production.

This accomplishment solidifies BEML's position as a key contributor to defence production in the country, underscoring its commitment to serving the nation's needs in this critical sector

Shantanu Roy,
CMD, BEML



The 1500hp engine development project represents a significant stride towards realizing the vision of an Atmanirbhar Bharat

Giridhar Aramane, IAS,
Defence Secretary, Ministry of Defence,
Government of India



Diversification in Manufacturing of 'Sunrise' Metro cars

In 2002, BEML ventured into the manufacturing of Metro cars, recognizing the growing potential of the Metro Transportation System in India. Anticipating the future demand, the company proactively acquired cutting-edge technology for Metro coaches from Hyundai Rotem, South Korea, and established essential manufacturing infrastructure at its Bangalore complex.

This strategic move paved the way for BEML Ltd. to secure prestigious orders from various Metro Rail Corporations, starting with Delhi Metro Rail Corporation (DMRC), followed by subsequent orders from Bangalore Metro Rail Corporation Limited, Jaipur Metro, Kolkata Metro and ongoing Mumbai Metro. To date, BEML has supplied over 1800 metro cars to these corporations.

An outstanding achievement in this journey is the indigenous development of Intermediate cars for the DMRC RS4 project. These Intermediate cars enhance the 4-car formation of metro trains to a 6-car formation, thereby increasing passenger capacity. Notably, this product received the Raksha Mantri's Award for 'Design Effort – Design and Development of Intermediate Cars for DMRC RS4 Project' for the year 2008-09 (Group Award), showcasing BEML's commitment to innovation and excellence in the field of metro transportation.



BEML Metro Cars

Achieving Self-reliance in Production of High Mobility Trucks in India

In 1986, BEML Limited initiated a collaboration with M/s. Tatra, marking a pivotal moment in providing High Mobility Trucks for various national programs in India. Since 1987, BEML has consistently manufactured and delivered these High Mobility Trucks to the Ministry of Defence (MoD) and Defence Public Sector Undertakings such as DRDO and BrahMos Aerospace. BEML is designated as the Nodal Production Agency responsible for production and supply of all variants of High Mobility Trucks to these organisations.

These versatile vehicles fulfil a range of roles—including all-terrain operations such as bridge laying, field artillery towing, medium and heavy recovery, pontoon bridge systems, crash fire response, and mobile mast deployment. Additionally, BEML

contributes significantly to the country's Integrated Guided Missile Development projects by supplying ground support vehicles. It also contributes to export deals of these High Mobility vehicles as base vehicles for missile systems.

Over the years, BEML has made remarkable progress in increasing indigenous content, from approximately 5% in 1987 and to 97% today. This reflects BEML's unwavering commitment for promoting self-reliance in defence manufacturing and reducing imports, thereby strengthening India's strategic capabilities and industrial prowess. To date, BEML Ltd. has supplied approximately 9000 trucks, underlining its substantial contribution to the defence sector in India and beyond.



High Mobility Trucks

Commencement of manufacturing of Mining & Construction Products in India

During the 1970s, India experienced a significant boom in the mining & construction equipment industry, largely facilitated by the participation of major private sector companies. These companies sought to capitalise on the growing demand for mining & construction machinery in the country. To meet this demand, they often relied on collaborations with international partners to access cutting-edge designs and technologies.

In 1979, BEML Limited, entered into a collaboration with M/s. Komatsu, a renowned global supplier of mining and earthmoving equipment. This collaboration marked a significant milestone for BEML, as it provided access to advanced technology and expertise in the production of mining and earthmoving machinery. Over the next two decades, the partnership between BEML and Komatsu flourished, leading to the expansion of BEML's product portfolio and significant increase in sales.

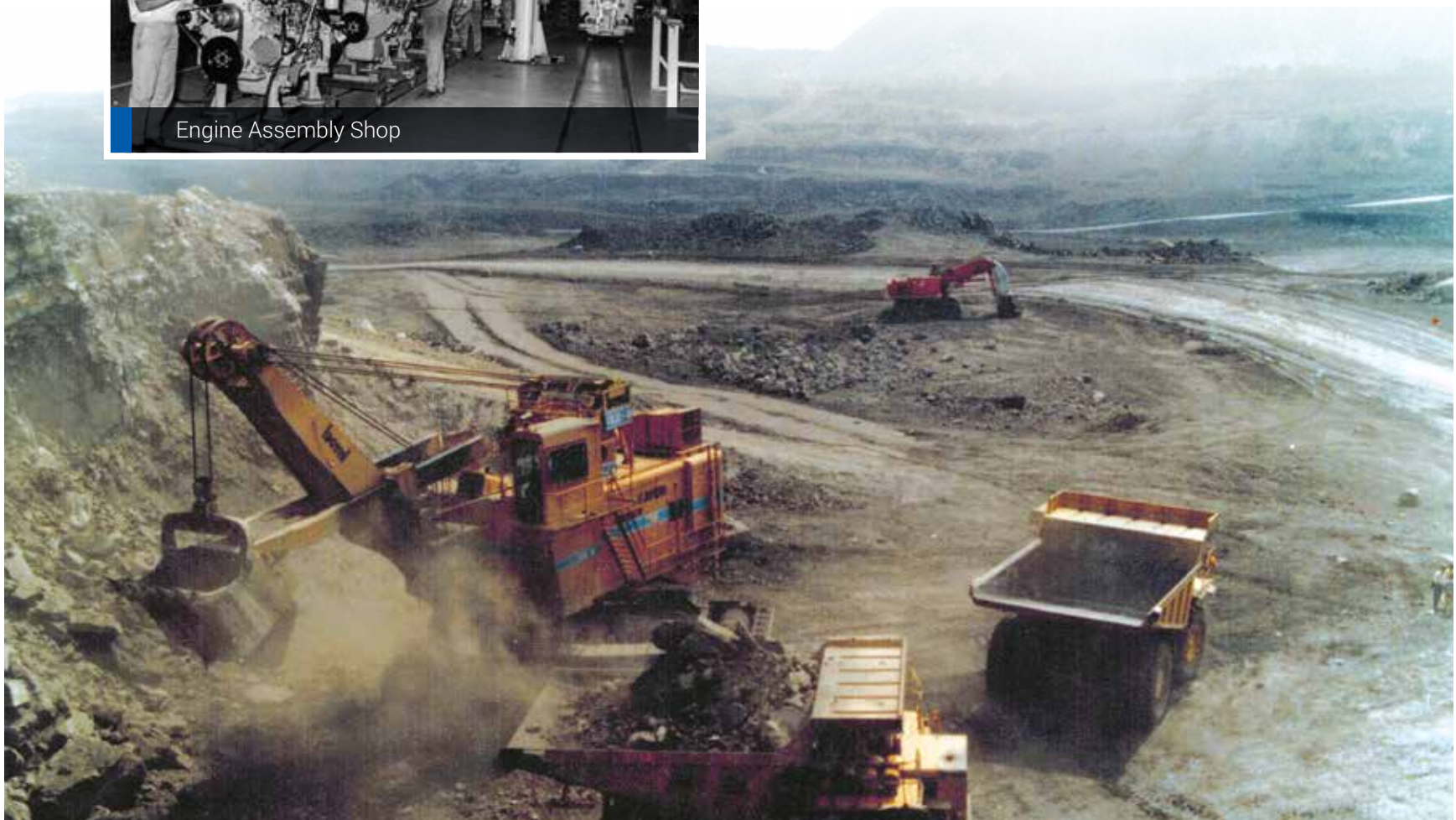


During this period of collaboration, BEML successfully diversified its product range to include a variety of machinery essential for mining and construction activities. This expansion resulted in the development and manufacturing of various models of equipment such as Dozers, Excavators, Motor graders, Dump Trucks and Wheel Loaders. These machines played a crucial role in supporting India's rapidly growing infrastructure development projects and contributed significantly to the nation's industrial progress.

The localization efforts undertaken by BEML in collaboration with Komatsu further strengthened India's position in the global mining & construction equipment market. By establishing manufacturing facilities and sourcing components locally, BEML reduced dependency on imports and enhanced the availability of high-quality mining & construction machinery within the country. This localization initiative not only boosted domestic manufacturing capabilities but also created employment opportunities and fostered technological advancement in India's Mining & Construction sector.



Engine Assembly Shop

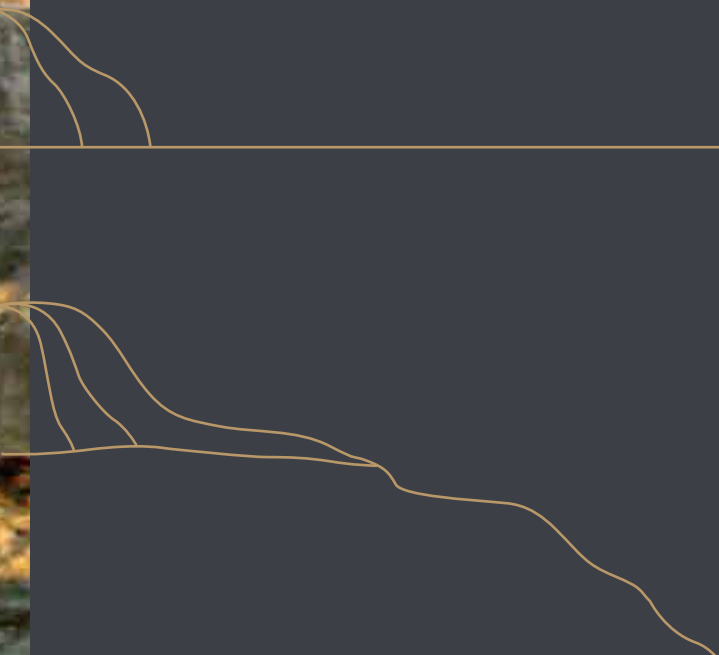




 **bhel**
BE1250



Going Global:
Partnerships for
Progress



BEML Ltd. began actively exporting its products in 1984-85, and has since established a significant presence in both domestic and international markets. In the domestic arena, it boasts a substantial market share with over 11,350 Defense vehicles, 18,000 Railway rolling stock, 1650 Metro Coaches, and more than 30,000 units of mining and construction equipment. On the global front, BEML has exported over 1300 units of mining and construction equipment to 71 countries across multiple continents, with a notable stronghold in Africa and the Middle East.

Expanding its reach, BEML has successfully exported diverse railway products to Sri Lanka and Bangladesh, as well as defense products to Bhutan, Suriname, Honduras, and Israel. With the current geopolitical tensions in Russia, the demand for mining and

construction equipment has surged, particularly, given Russia's status as one of the world's top five holders of mineral reserves, including iron, coal, gold, nickel, and diamonds.

Recognizing this opportunity, BEML has appointed M/s KAMSS Group in Russia as its representative to promote BEML's mining and construction products in the Russian market. Initial orders have been secured, including 6 units of bulldozers and 2 units of motor graders, amounting to USD 3.49 million (approximately Rs. 28 Crores). Furthermore, BEML has received a Letter of Intent (LOI) for the supply of 45 units of bulldozers and various other mining equipment, such as motor graders and excavators, which are currently in the final stages of processing.

Major Export orders Executed:

Tunisia:

Since 1994-95, BEML has been supplying mining equipment consisting of Dump Trucks, Bulldozers, Motor Graders, Water Sprinklers, Tyre Handlers to CPG, Tunisia which is under the Ministry of Mines and Energy, Government of Tunisia. BEML has supplied more than 120 units of mining equipment worth Rs 200 Cr which are deployed in the Phosphate Mines of CPG, Tunisia.

Syria:

BEML has supplied mining and construction equipment consisting of Dump Trucks, Bulldozers, Motor Graders, Water Sprinklers, Tyre Handlers to Syria, since 1998. Till date BEML has exported more than 180 units of equipment to the country. The Syrian market has been strategic to BEML which has garnered a business volume of Rs. 400 crores with Syria.



Thailand:

BEML had exported 21 units of BH100 Dump trucks to the Electricity Generating Authority of Thailand valuing Rs. 55 Cr in 2010-11 and all the 21 units have been successfully deployed in the coal mines of Thailand.



Saudi Arabia:

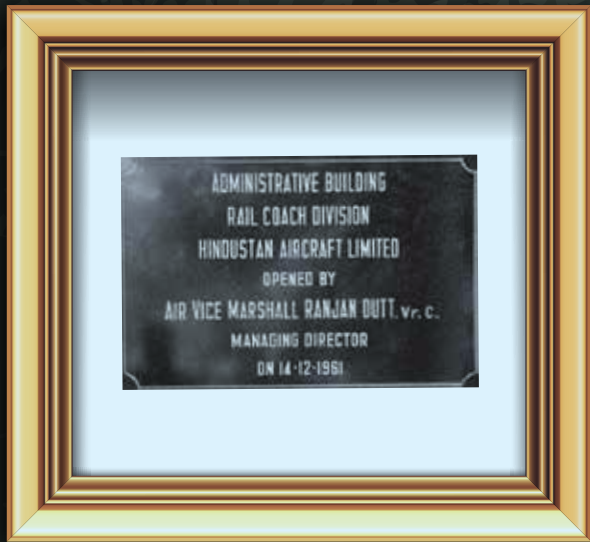
BEML supplied a fleet of mining equipment valuing Rs.68 Cr to Rio Trading, Saudi Arabia in 2012-13. The fleet of equipment comprises Dump Trucks, Bulldozers, Motor Graders, which have been deployed in Limestone mining.

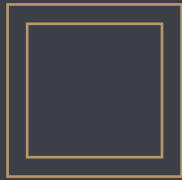
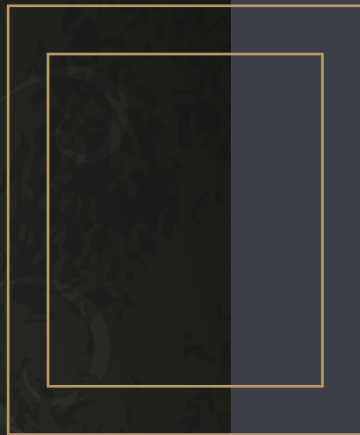


Zimbabwe:

BEML has supplied a fleet of equipment to Hwange Colliery Company Limited mines, which is under the Ministry of Mines, Government of Zimbabwe, valued at Rs. 80 Cr under EXIM Bank Buyer's Credit Scheme during 2014-15. The fleet of equipment comprise Excavator, Dump Trucks, Bulldozers, Motor Graders, Water Sprinklers, Tyre Handlers that have been deployed successfully in Hwange Coal Mines.







60 Years of Making India Self-Reliant

1964

BEML LIMITED (Formerly Bharat Earth Movers Limited) was incorporated under Companies Act 1956, under Ministry of Defence, Government of India with its headquarters in Bangalore, Karnataka.

The new company began with an initial capital of Rs. 5 Cr, and took over production of rolling stock at Rail Coach Factory in Bangalore. Amidst its sophisticated product-mix, the Rail Coach Factory also undertook building of bus body for Mysore State Road Transport Corporation (MSRTC). BEML had earlier built bus bodies for HAL & ISRO.



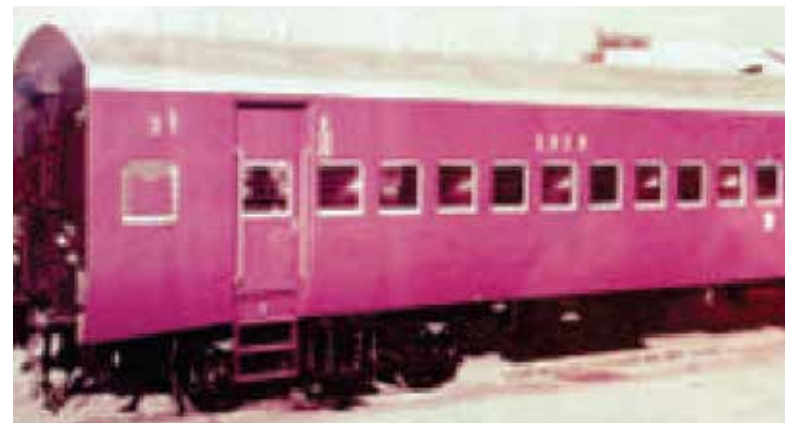
1967

- BEML made 1st Scrapper rolled out from KGF



1968

- Heavy Earth Mover Division established at Kolar GoldFields (KGF).
- BEML diversified into other rail products by introducing Sleeper Coaches and Postal Vans.



1969

- BEML manufactured 1st Motor Grader under testing.



1970

- BEML began exporting Earth Moving equipment.
- The 1st consignment of Scraper and Crawler Tractors exported to Nepal and Bhutan.



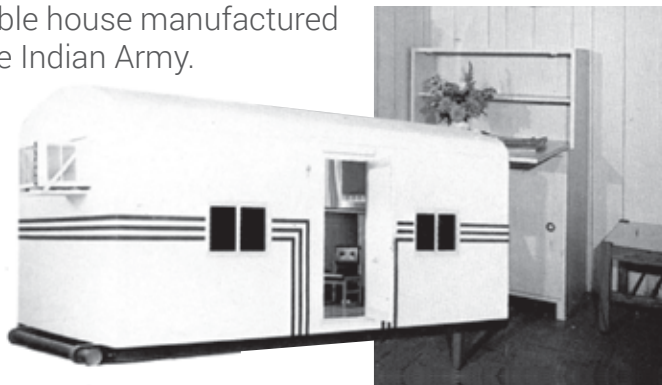
1978

- BEML expanded its portfolio to include Bharat 35 tons Rear Dumpers.



1983

- Portable house manufactured for the Indian Army.



1985

- Dump truck division goes into the stream at Mysore.



- BEML launched an in-house R&D Aircraft Towing Tractor for IAF, Telescopic Boom Excavator for SAIL.



1986

- BEML extends its product range of wheel loaders and excavators.

1987

- An exclusive Hydraulics and Power Line Division and full-fledged R&D Centre set-up at KGF.



1988

- First set of heavy-duty trucks rolled-out for the Indian Army.



1989

- BEML celebrates its silver jubilee year. Entered the 120-Ton Dump Truck market. Launched pipe layer and rope shovels. Handed the first set of in-house R&D 8-Wheeler OHE Car to the Indian Railways.



- Enter the Giant: the 120-ton Electric Rear Dump Truck.



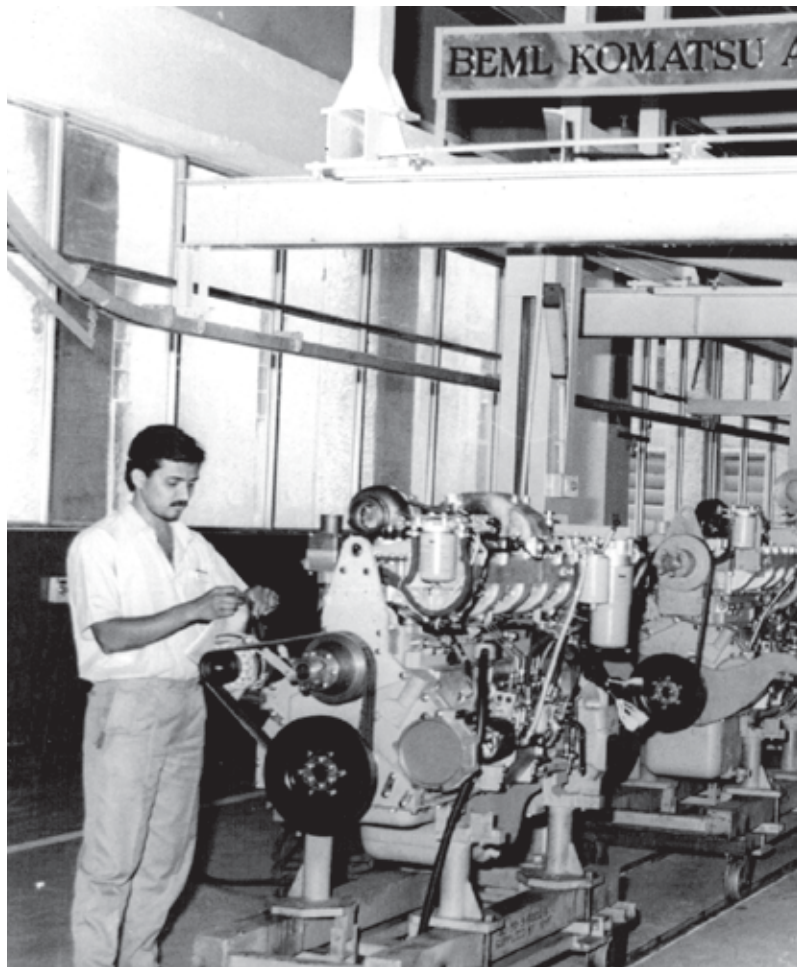
1990

- BEML HQ moved to the new corporate office 'BEML SOUDHA'. Dedicated full-fledged Sports complex at KGF.
- BEML sales cross Rs 700 Cr mark.



1991

- Former Prime Minister Shri. Chandra Shekhar dedicates the Engine Division to the nation.
- Commissioned Manufactured Hydraulic Excavator.



This factory is the
symbol of efficiency,
modernism and
skill of our engineers
and workers. I fully
appreciate the efforts
and devotion to duty
exhibited by the
management. I wish
them a very bright
future.
Chandra Shekhar
19.4.91

1992

- Launched India's biggest Dozer BD355.



1993

- Receives ISO-9000 Certification.

1994

- First mammoth equipment- Walking Dragline launched.
- First set of DU-EMU dedicated to Indian Railways. BEML'S public issue.



1995

- Annual sales turnover crosses Rs 1000 Cr.

2001

- Launched Mil-Rail Coaches for the Indian army.



2002

- Indigenously developed Weapon Loading Equipment 'Bheema-1000' rolled out.
- Mammoth 160 Ton Hydraulic Excavator BE1600 was launched.
- Enters into agreement with M/s. Rotem to manufacture Metro Coaches.



2004

- Delivers first metro car set for Delhi Metro Rail Corporation limited.



2005

- Railway & heavy fabrication units opened at KGF. Test-track for Battle Tanks commissioned at KGF.



2006

- BEML crowned 'Mini-Ratna'. Launches B-FAT Wagons.
- Crosses sales turnover of Rs 2000 Cr.



2007

- Rail Coach Unit - II takes off.



2008

- Enters the Power Generator Sector with the Windmill Project.



2009

- Country's first stranded SG Metro car & Aluminium Wagon flagged off.



2010

- Inauguration of BEML Palakkad complex.



2011

- Delivers first set of Metro Coaches to BMRCL.



2012

- Rolls out India's first Stainless Steel Electrical Multiple Unit (SSUMU).



2013

- Introduces Dumper Driver Simulator.



2014

- Launches 'Make-in-India' BH150 Dump Truck.
- Rollout of 750th Metro Car.
- Celebrates 'Golden Jubilee'.
- Launched the biggest 'Made in India' pollution free Electric Excavator BE1800E.



2015

- BEML launched BE205E India's biggest Electric Drive Rear Dump Truck for large-scale coal mining application. BEML touched another milestone in its R&D efforts in achieving self-reliance, in line with 'Made in India' policy.
- BEML is the first DPSU company to establish an office in Leh to extend after-sales services for its machines working with DGBR & E-IN-C.



2017

- Handed over the first prototype Arjun Armored Repair & Recovery vehicle (ARRV) to CVRDE.
- BEML commissioned a third line Metro manufacturing facility to increase the Metro production capacity.
- BEML opened Warehouse at Pune to cater to the needs of the Indian Army.



2017 contd.

- Unveiled indigenously designed & developed BE1800D-180 Ton Hydraulic Excavator.



- Defence Minister Shri. Arun Jaitley launched one of the world's biggest Dozers with Ripper attachment - BD475-1.



2018

- CMD, BEML & DG, OFB jointly unveiled the 155 mm 52 Caliber Mounted Gun System manufactured in collaboration with OFB.



- Delivers first set of Car Unit to Bangalore Metro ahead of schedule.



2018 contd.

- 1st Metro Car unit delivered to Kolkata Metro Rail Corporation Ltd.
- The state-of-the-art metro trains are indigenously designed & developed by BEML, truly realizing the objectives of Design in India' & 'Skill India' initiatives of the Government.



2019

- Shri. Narendra Modi, Hon'ble Prime Minister inspects the indigenously built state-of-the-art BEML's Metro Mock-up Coach for Mumbai Metro.
- Bags single largest order for supply of Metro Cars for Mumbai Metro.
- Hands over the first set of Sarvatra Bridge Systems to the Indian Army.



2020

- Shri. Rajnath Singh, Hon'ble Raksha Mantri virtually inaugurated the Industrial Design Centre to promote 'Atma-nirbharta.' The Center focuses on enhancing the look & feel of BEML products, operator comfort as per global standard and is integrated with R&D & manufacturing. IDC will harness the latest technologies like AI & Gesture Recognition and engineering resources for self-reliance.
- Launched advanced versions of Medium Bullet Proof Vehicle (MBVP) MK-II 'Gaur' under 'Make in India'.
- First state-of-the-art Heliportable Hydrostatic Drive Crawler Dozer unveiled by the Defence Minister.
- Launched Artificial Intelligence Powered Medical Health Diagnostic Systems. A first of its kind in India.



2021

- Shri. Rajnath Singh, Hon'ble Raksha Mantri, dedicates India's first indigenously developed driverless Metro car.

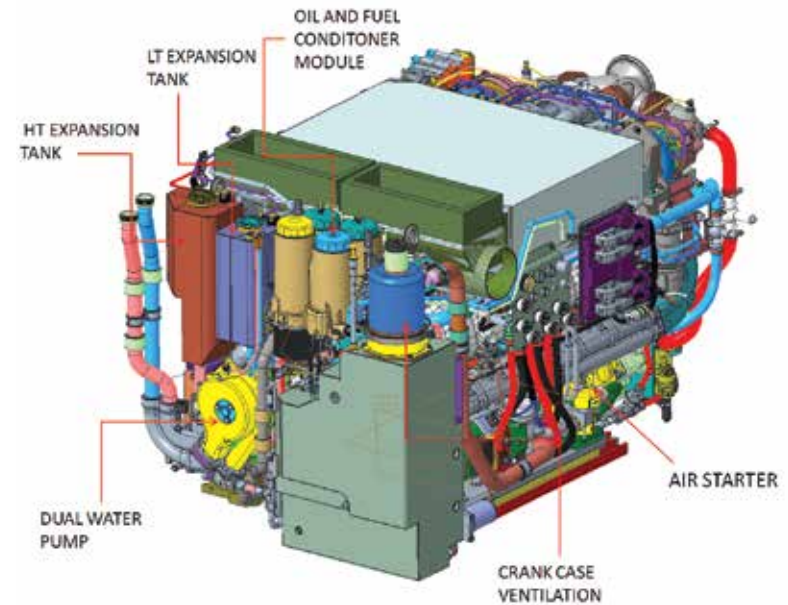


2023

- Receives an order from Vikram Sarabhai Space Center (VSSC), ISRO for manufacture and delivery of seven types of Light Alloy Structures for Launch Vehicle Mk-3 (LVM3).



- Developed and rolled out the carbody structure of Vande Bharat Sleeper Trainset. These trainsets set a new benchmark in passenger comfort and convenience, boasting world-class facilities and best-in-class interiors. The Vande Bharat Sleeper version would provide easy mobility and set a global standard of manufacturing.
- BEML Limited has secured an order for the design, development, and supply of 20 numbers of 1500hp engines for Main Battle Tanks. These engines mark a significant advancement in military propulsion technology, boasting state-of-the-art features such as a high power-to-weight ratio and operability in extreme conditions, including altitudes of up to 5000 m, temperatures ranging from -40°C to $+55^{\circ}\text{C}$, and desert environments.



2024 contd.

- A first-of-its-kind indigenously manufactured electric rope shovel (model - BRS-21) was developed at BEML's EarthMoving Manufacturing Division in Kolar Gold Fields (KGF). This marks a major leap towards modernization of heavy equipment in India.







Sustainability:
Progress for the
People & the
Planet



BEML Ltd. is aligned with the sustainability goals of the nation, and the Company's commitment to sustainability extends beyond mere compliance and reflects its dedication to environmental stewardship and responsible corporate citizenship. With renewable energy programmes and green initiatives implemented across its facilities, BEML's efforts align with the

National Green Energy Mission's goal of increasing renewable energy capacity. Emphasizing the need to attain energy efficiency across all its units, it is striving to minimize energy consumption through comprehensive efforts, and emerging as a leading "Green Company".



Rooftop Solar Panels at Mysore Complex

Natural Resource Management:

BEML Ltd. has been consistent about improving the green cover in and around its facilities and townships. Over 18 lakh saplings have been planted till date, and this initiative has resulted in the mitigation of 19,361 tonnes of carbon emissions.

Eco Parks and Navagraha Vanas have been set up to improve the biodiversity of green spaces across its complexes and around BEML Townships.

Recognising the need to implement sustainable water management practices, BEML Ltd. has implemented rainwater harvesting and also contributed to the rejuvenation of Bethamangala and Ramasagar lakes in Kolar district, Karnataka, by desilting and cleaning up the lakes which serve as vital source of drinking water for local villages.



BEML Environment Park



Rejuvenated lakes and ponds help to recharge ground water

Renewable Energy projects:

BEML has invested in renewable energy projects, including a 18 MW windmill project in Karnataka and solar projects to meet its energy needs. These initiatives have allowed the company to fulfill over 90% of its energy requirements through green sources, significantly reducing its carbon footprint.

The windmill projects collectively produce an average of 360 lakh units of electricity annually, benefiting manufacturing plants in Kolar Gold Fields, Bangalore, and Mysore. These projects mitigate approximately 25,000 tons of carbondioxide emissions annually.

BEML's Mysore and Palakkad complexes are equipped with 250 KWp solar panels, further enhancing the company's energy efficiency and green credentials.



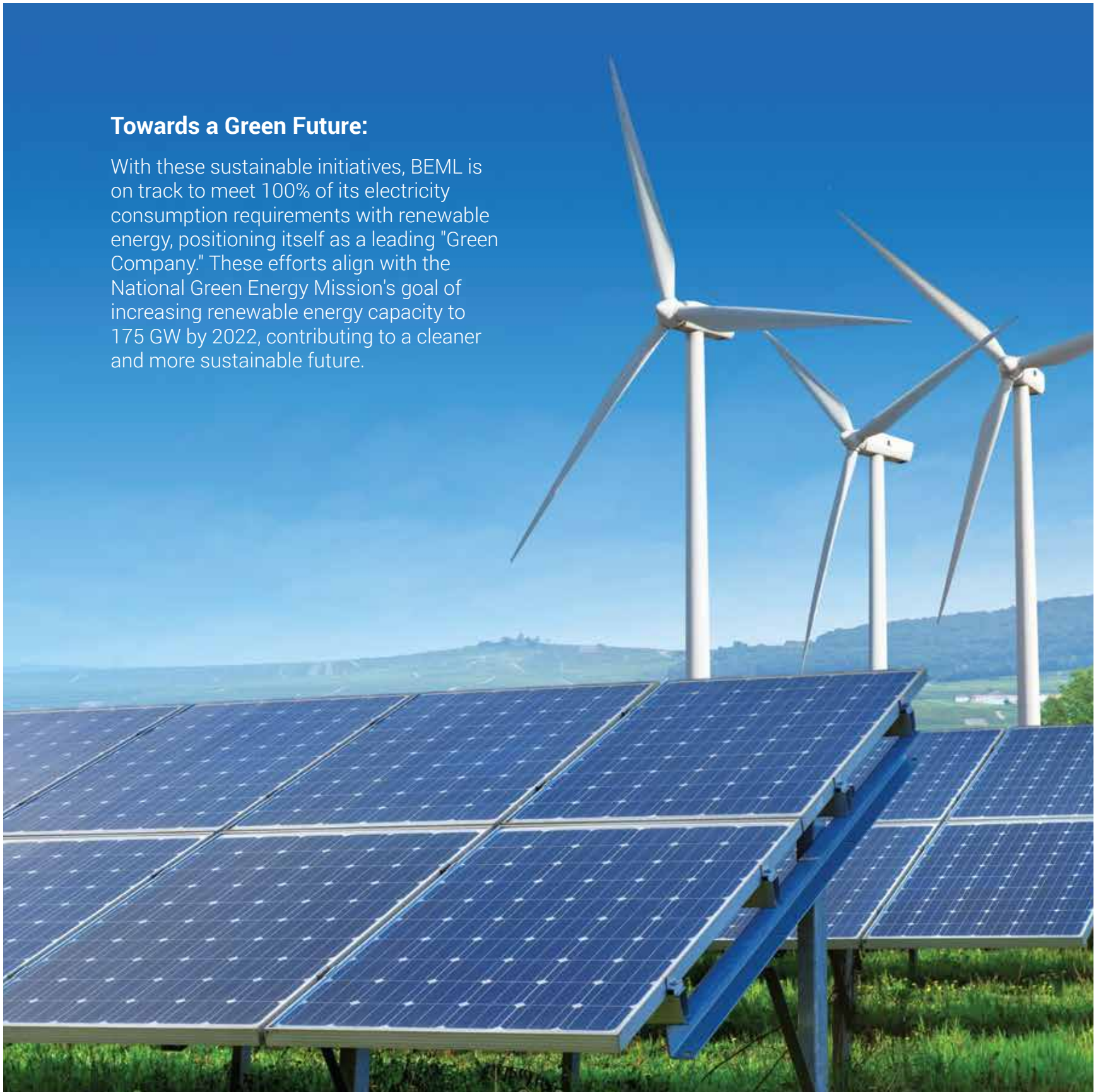
Wind Power Generation project, at Gadag, Karnataka.

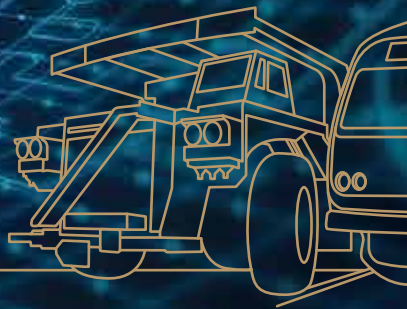


With a 200 KW solar panel, Mysuru Complex is energy-friendly

Towards a Green Future:

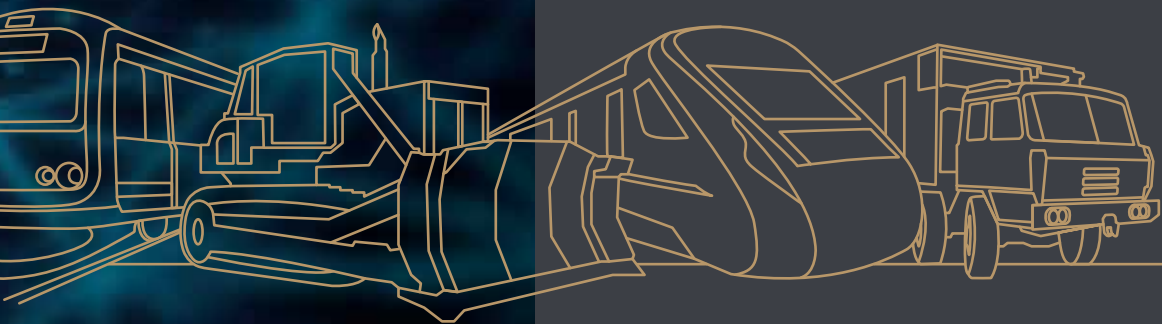
With these sustainable initiatives, BEML is on track to meet 100% of its electricity consumption requirements with renewable energy, positioning itself as a leading "Green Company." These efforts align with the National Green Energy Mission's goal of increasing renewable energy capacity to 175 GW by 2022, contributing to a cleaner and more sustainable future.







Designing Solutions for the Future



Intelligent design and sustainable technology promise to bolster India's growth path. BEML Ltd. has drawn from its strong thrust to R&D and innovative product design, and built an R&D division comparable with state-of-the-art facilities globally. The R&D division provides the company with a technological base for growth and coupled with indigenisation, have been key to BEML's business.

Research and development in all the three major business verticals of Mining & Construction, Defence & Aerospace, and Rail & Metro are carried out at the various complexes dedicated for their design development, engineering, manufacture and testing.

BEML spends 2-3% of its turnover on R&D, in line with the best industry standards. The company exports to nearly 70 countries across the globe, and competes with multinationals in procuring orders against tough competition. As a result of robust R&D, over 70% of turnover comes from R&D products and 85% of indigenisations across all verticals. The Innovative element in R&D products have been patented and 200 patents have been filed and six have been registered till date.



Research & Development Centre, KGF

R&D: The Driving Force

Acknowledging the role BEML Ltd. would play in making India self-reliant in heavy machinery used in core economic sectors, investments in R&D began way back in the mid 1970s, with a mandate to design and develop new products and support indigenisation efforts.

R&D in Mining and Construction

A full-fledged R&D centre was established at Kolar Gold Fields in the 80s, with state-of-the-art laboratories in Structural Engineering and Power Line, along with Fluid Power Laboratory, Material Science Laboratory and computer-aided Design centre.

This R&D centre has a comprehensive range of facilities to promote new product design, including aggregate level design involving design of Transmissions, Axles, Hydraulics, and Electronics. The R&D facilities are one of the best in the country and enable aggregate-level and equipment-level testing and evaluation through the extensive infrastructure available in the laboratories and test tracks.



R&D in Rail and Metro

The R&D at Bangalore Complex was established in 1979-80 with an objective to be self-sufficient with regard to design & development of new products. Over the years, a number of products have been designed, developed and productionized here to meet the requirements of the Indian Railways and various Metro corporations across the country. The design, analysis, technical documentation and development and testing is carried out meticulously.

Over the years, BEML R&D has developed and successfully launched as many as 100 new products. These include Asia's biggest 205E Electric driven Dump Truck among other models, 180 ton Hydraulic Excavators, Motor Grader, Loader, Backhoe Loader, Pipe Layer, High-end Dozers of various capacities and

Armoured Repair and Recovery Vehicles, Pontoon Main Bridge System, Medium Bullet Proof Vehicles, AI-Based medical system, Aircraft Towing Tractor, Weapon Loading Systems, Disaster Management Equipment, Ultramodern Driverless Metro Coaches etc.



BG405A Motor Grader



R&D in Defence Segment

Under its Defence segment, BEML offers High Mobility & Recovery Vehicles, Bridge Systems, Vehicles for Missile Projects, Tank Transportation Trailers, and Aircraft Weapon Loading Trolley etc. among other products.

BEML has achieved 100% indigenisation level in Pontoon Bridge System, Aircraft towing tractor, Aircraft Weapon Loader, 50T Trailer, Wagons, BMP Transmission and Ejector Air Cleaner Assembly (EJ & AC) and over 80% indigenous capability achieved in respect of High Mobility Heavy Duty Trucks.

It has achieved capabilities for in-house development of products such as Arjun Armoured Repair Recovery Vehicle and 6/16 Truck Mounted Crane vehicle. Recent products offered through collaboration include the Track Width Mine Plough with indigenous content.



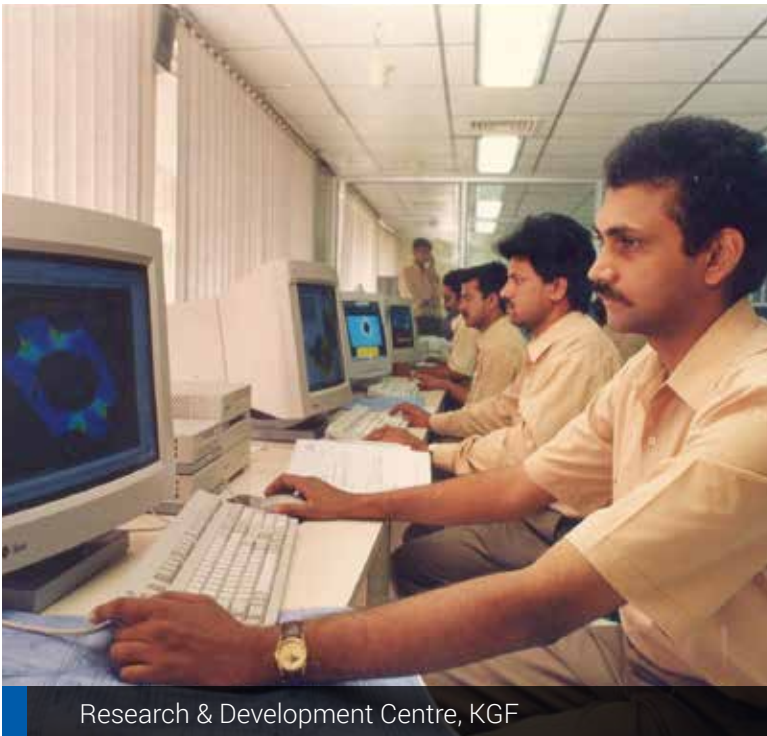
Arjun Armoured Recovery And Repair Vehicle



Sarvatra Bridge System

Atmanirbharta: Supporting the Indian Dream

BEML Ltd.'s R&D infrastructure is also being used as a national facility by other players in the manufacturing sector who are accredited by NABL and contributing towards the overall development of the sector in the country. Nurturing India's engineering capabilities, a team of more than 225 R&D engineers are working on design, development of new products, up-gradation of current products, and also on indigenisation of products manufactured under technology licensing agreements.



Research & Development Centre, KGF

Supporting Industry-Academia Interface

BEML works closely with leading science and technology institutions such as IITs and IISc to help improve the products in complex domains like torsion, vibrations, noise reduction etc. International collaborations and consultants are engaged in developing certain high value products, where domain expertise is not available within the country.



Bangalore Complex

The oldest among all the facilities, BEML Ltd. (formerly Bharat Earth Movers Limited) was set up in 1964 with the Bangalore Complex as the mother unit. It was established by hiving off the then Rail Coach Factory which had been in existence since 1947 as a part of Hindustan Aircraft Factory (currently Hindustan Aeronautics Limited). It was the first Rail Coach Factory in the Indian subcontinent and helped BEML consolidate its status as a major supplier of integral rail coaches to meet the demands of the Indian Railways. While initially, the division was manufacturing Rolling Stock producing various models of Broad Gauge Coaches, subsequently, research, development and manufacturing of metro coaches and some defence products has been added in this complex.



Robotic Assembly of Metro Coaches



Robotic welding Metro

R&D for Rail and Metro at Bangalore Complex

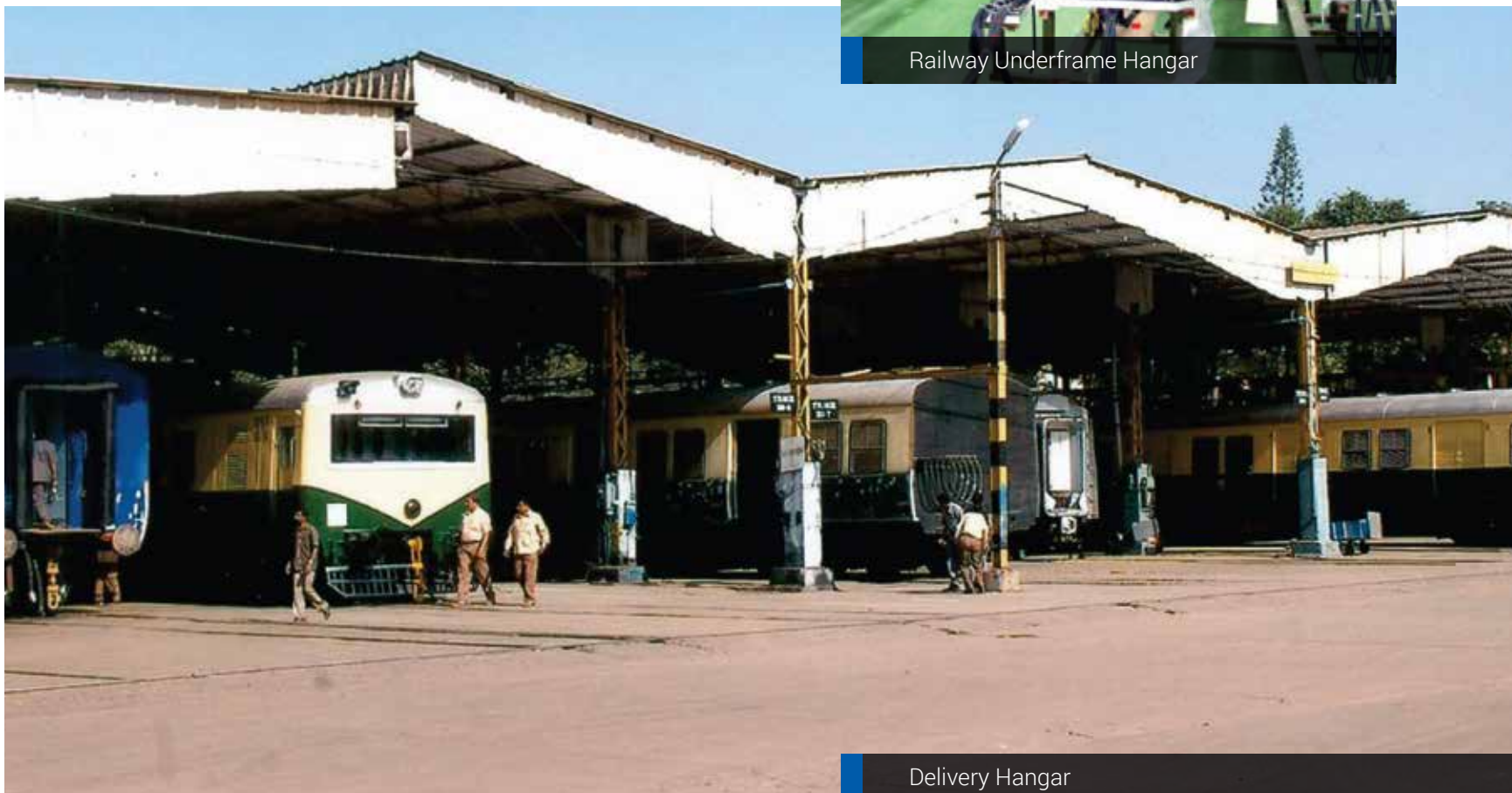
The R&D team is very well established and has acquired the domain skill sets / technology over the years. Expert teams are built-up for various systems like Carbody & Structures, Bogie and Vehicle dynamics, Brake, interiors/outfitting aggregates, propulsion, vehicle control circuit, communication, train management, system integration & interfacing. Computer simulation and Analysis techniques are used extensively, to optimise the design and reduce the development cycle time.

- From integral rail coaches, this manufacturing complex has produced diversified products such as Standard gauge and Broad gauge overhead inspection cars, track laying equipment, Spoil Disposal Unit, Electric Multiple Units—Stainless steel EMU, DC EMU, AC EMU, DEMU, MEMU, Rail bus, Sky bus, Mil Rail Coaches, Treasury, postal and parcel vans.

- The Bangalore complex executes Metro Rolling Stock for Delhi, Mumbai, Bangalore, Jaipur and Kolkata Metro Rail Corporations
- The Complex was upgraded in step with global manufacturing standards and is an exclusive hub for rolling out Driverless Metro Trains.
- Expertise in acquiring sophisticated technology enabled to produce and supply intermediate Metro Cars.



Railway Underframe Hangar

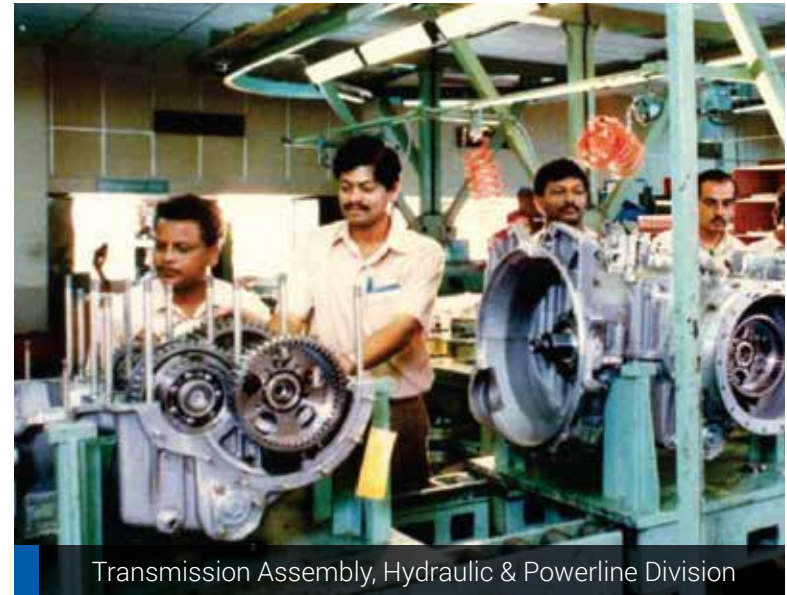


Delivery Hangar

Kolar Gold Fields Complex

The state-of-the-art manufacturing unit at the KGF Complex is located about 100 km from Bengaluru. It has a Hydraulics and Powerline Division, Earth Movers Division, Heavy Fabrication unit and a Rail Coach Unit-II.

KGF's skilled workforce produces hi-tech bulldozers, hydraulic excavators, rope shovels, wheel loaders, Walking Drag Lines, among other equipment for the mining and construction industry. Multi-utility vehicles, Mine Plough and Armoured Repair and Recovery Vehicles for the Army are also manufactured here.



- The exclusive Hydraulics and Powerline Division makes precision assemblies and critical aggregates. State-of-the-art Gear Pumps, Control Valves, suspensions, cylinders, Heavy Duty Axles and Automatic Transmission are manufactured here.
- A Heavy Equipment and Heavy Fabrication unit to handle major fabrication jobs with a capacity of 500 MT per annum was set up at the KGF Complex
- It has a international standard Test Track for testing defence equipment and vehicles
- A second Rail Unit and Fabrication unit was set up here for manufacture of conventional coaches

The KGF Complex is a modern-day complex complete with housing, school, medical centre and sports facilities, providing all amenities to its workforce.



Excavator Assembly Line



Dozer Assembly In Progress

Mysore Complex

As technological advancements sweep across various sectors, BEML has strived to keep pace with global practices and protocols with its R&D and innovation. The Mysore Complex houses India's biggest dump truck factory established by BEML. The unit produces a range of Dumpers from 35 ton to 150 tonnes, using cutting edge technology to build these indigenously designed machines.

The Mysore Complex has produced India's first and Asia's biggest Electric Drive Dump Truck of 205 ton capacity for large scale coal mining operations. Over the years, the Mysore Complex has expanded to add other hi-tech manufacturing divisions for energy efficient diesel engines and Aerospace Manufacturing Unit for production and supply of Aircraft Towing Tractor, Weapon loaders and Aerospace components at the Mysore Complex.



View of Mysore Complex

Engine division at Mysore Complex

BEML channelled its expertise into the priority sector of energy with the manufacture of fuel-efficient diesel engines. Established in the year 1991 in Mysuru with technical know-how from Komatsu Japan, BEML diesel engines are built for maximum reliability, high performance and lasting value. The Engine Division was established to manufacture Diesel Engines of 100-1000 HP through a flexible manufacturing system. These engines are backed by the facility of application engineering, multi-location sales & service network and rehabilitation facility.

The heavy duty Diesel Engines find application in a wide variety of Earth Moving, Mining and Construction Machinery and Defence Equipment, and are capable of operations over a wide terrain—from sea level to high altitude and sub zero conditions. Apart from these, the

engines are also offered for other industrial applications as well as diesel generator sets. BEML Engines are used on Bull Dozers, Dump Trucks, Motor Graders, Wheel Loaders, Pipe Layers, Hydraulic Excavators, Loading Shovels, C Crane, Aircraft Towing Tractors, Backhoe Loaders, Water Sprinklers and Heavy Duty Trucks.



Shri. Chandra Shekar, Prime Minister Of India, Dedicating Engine Division To The Nation At Mysuru



Engine Assembly Line

Truck Division

The BEML Truck division, one of the manufacturing divisions of BEML Limited, is located about 13 Km from the city of Mysore, and designed as a township spread over an area of 452 acres.

From its origins in 1985 when it assembled 170 dumpers annually, the division has increased its turnover manifold and grown into a multi-technology production center with addition of Defence, Aerospace and Dredging equipment & components. The division has also widened its mining & construction product portfolio to include motor graders, water sprinklers, weapon loading equipment, aircraft towing trucks apart from varieties of dump trucks.

Green Initiatives at Mysore Complex:

The thriving Complex has led several green initiatives, with planting of 4.68 Lakh saplings, development of gardens, Vermicomposting, Rainwater harvesting and development of ponds and a lake at the township. It has a 200 Kwp solar power plant.



The Mysore Complex has integrated robotised manufacturing capabilities on the shop floor, and installed an Arc Welding Robot to carry out accurate welding of major structures of Dumpers.



Fabrication of Exotic Alloys



Dumper Final Assembly

Palakkad Complex

The fourth and latest BEML manufacturing complex—the green field project at Palakkad, Kerala—was put on stream on 16th May 2010, in record time of less than 6 months with an outlay of Rs 260 crore.

The Palakkad Complex caters to the requirements of the Defence Ministry & Indian Railways. Since inauguration the Palakkad complex has supplied 150 Rail coach Shells and Bogie Frames and 500 HMV Trucks. The unit has successfully indigenised Back Bone Tube Assemblies for BEML's Tatra Trucks.

For the Armed Forces, the Complex manufactures heavy, medium and light Recovery Vehicles, 50T Trailer for Tank Transportation and Mil Rail Coaches and Mil wagons, among other products.



Truck Assembly Line



Palakkad Complex

Future Areas of Expansion: New Frontiers, New Dreams

Aerospace

BEML inaugurated its Aerospace Division at the Mysore Complex in 2011, marking a significant milestone in its journey. Since then, the division has been actively engaged in various manufacturing activities, including Aircraft Towing Tractors, as well as the assembly of different structures for the Su-30 and Mirage 2000 aircraft. Additionally, it has contributed to the fabrication of rocket motor casings for missiles like Akash and QRSAM, along with the design and development of Ground Handling Equipment (GHE) and Ground Support Equipment (GSE) for the LCA Mk 1 Aircraft.

Building upon this foundation, BEML expanded its aerospace operations by establishing another division at its Bengaluru complex in 2020. This expansion aimed at catering to the growing demand in the sector, particularly focusing on the production of light alloy

structures for launch vehicles like GSLV, as well as the manufacturing and supply of GHEs and GSEs for the LCA Mk1 Aircraft.

Looking ahead, BEML's Aerospace Division is poised to capitalize on emerging opportunities, with a strategic focus on several key areas. These include the development of light alloy structures for a range of space launch vehicles such as SSLV, PSLV, and LVM-3. Additionally, the division aims to venture into the manufacturing of structural assembly modules for helicopters like LUH, along with the integration of Fuselage Modules for LCA and Missile Modules for advanced missile systems like LRSAM, QRSAM, and Akash NG.

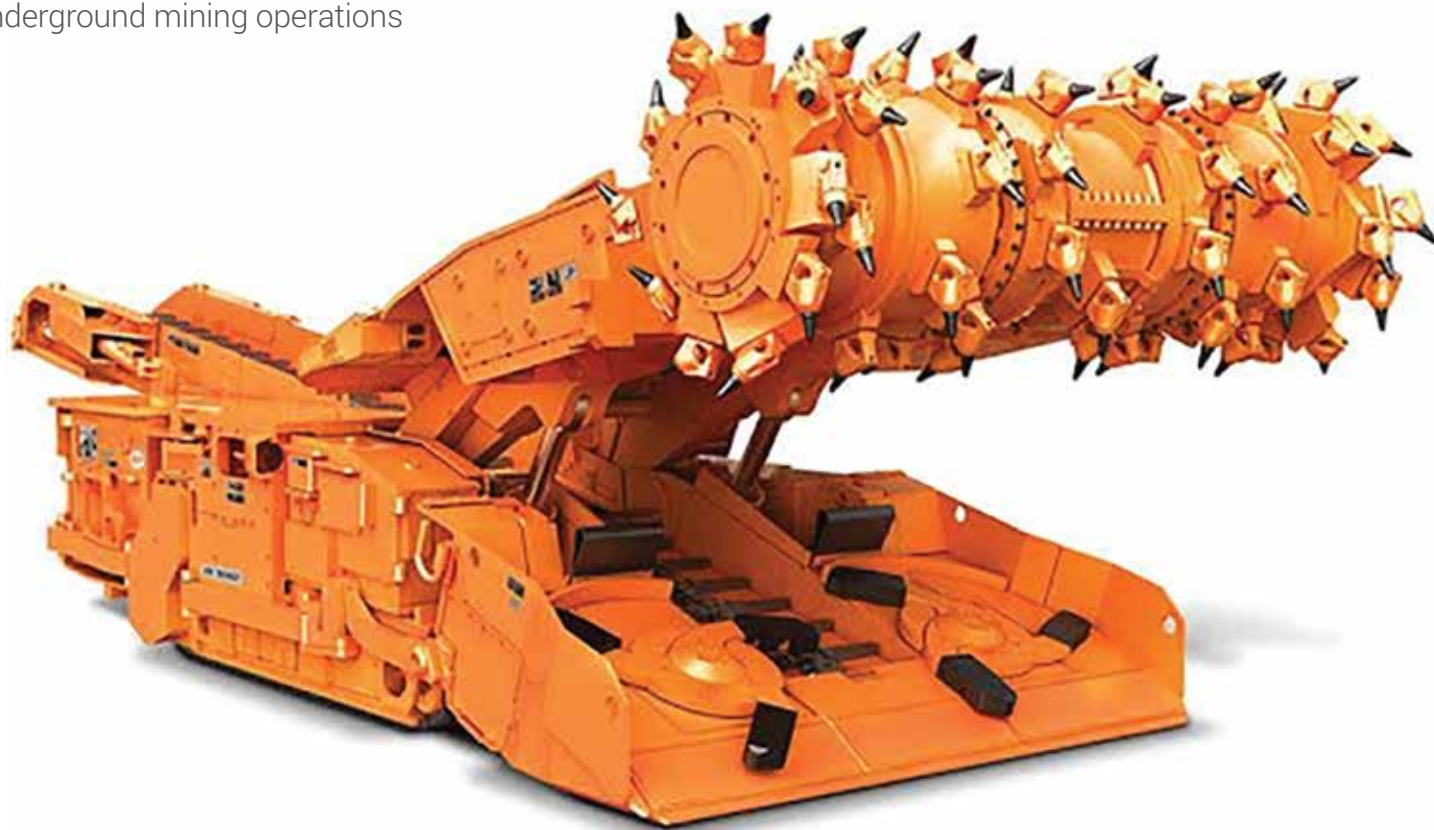
Through its continued innovation and commitment to excellence, BEML is poised to play a pivotal role in shaping the future of aerospace technology in India and beyond.



Underground Mining:

BEML is actively preparing to seize opportunities in the underground mining sector. Among the key equipment for this endeavour are Continuous Miners, robust machines designed for demanding underground mining applications. These machines perform the crucial task of cutting or ripping coal and other materials from the earth's surface, seamlessly transferring them onto conveyors or shuttle cars in a continuous operation.

Equipped with a large rotating steel drum fitted with tungsten carbide picks, Continuous Miners efficiently scrape coal from seams, enhancing productivity and safety in underground mining operations. Moreover, these machines often feature roof bolters, further reinforcing the stability and safety of underground tunnels. They are typically deployed in conjunction with shuttle cars, roof bolters, and feeder breakers, forming a comprehensive system to maximise efficiency and safety in underground mining operations.



Continuous Miners

Redefining Leadership and Innovation

In a strategic masterstroke, BEML is set to redefine its future with a comprehensive restructuring aimed at harnessing emerging market opportunities and driving unparalleled growth. By transitioning from traditional business verticals to 11 Strategic Business Units (SBUs) and 2 Micro SBUs, BEML is positioning itself for enhanced efficiency, expedited decision-making, and the cultivation of a robust leadership pipeline. This agile structure is precisely what BEML needs to stay ahead in today's rapidly evolving market landscape.

The company's revitalized approach to innovation and technology development is equally commendable. BEML's Research & Development (R&D) division is now meticulously organized into three distinct layers, tailored to meet diverse customer requirements and cement the company's status as a world-class technology leader. This reorganization reflects a deep understanding of the critical role R&D plays in driving sustainable growth and maintaining competitive advantage.



Transforming Future Avenues for Growth and Innovation

In our forward-looking agenda, we recognize the paramount importance of identifying and seizing opportunities in emerging sectors and industries to propel our growth and reinforce our status as a leading global entity. Starting with the promising prospects within the Marine and Naval sector, the evolving dynamics of global trade and security necessitate advanced maritime solutions including engines.

Following the production of India's inaugural Vande Bharat Sleeper trains, our next endeavour involves extending our expertise into the high-speed rail sector, aiming to revolutionize the passenger rail journey. By investing in cutting-edge design and technology, our goal is to set unprecedented standards in comfort and efficiency, thereby enhancing our standing as foremost providers of transportation services. Moreover, the development of Medium Speed EMUs, High-speed trains, Light Rail systems, and maintenance and track equipment open new avenues for expansion and

diversification, and position ourselves as industry pioneers, unlocking fresh sources of revenue and value creation.

Additionally, our Aerospace Business and collaboration with ISRO hold vast potential for growth and innovation. By positioning ourselves at the forefront of this industry, we aim to tap into lucrative opportunities and drive substantial revenue growth. Moreover, the proliferation of unmanned ground and aerial vehicles presents us with exciting avenues for diversification.

Furthermore, the increasing demand for high-end Electric Drive Dump Trucks, Excavators, and Bulldozers underscores our commitment to sustainability. Embracing electric vehicle technology not only reduces our carbon footprint but also ensures alignment with market trends and consumer preferences. Incorporating AI and robotics-enabled systems into our operations holds immense potential for enhancing productivity and efficiency.



New Uniform Colors to Enhance Unity and Distinctiveness

In a move that symbolizes both change and continuity, BEML has updated its official uniform colors from cream yellow to a combination of steel grey and graphite black for men and women, and Steel grey sarees for women, across all its plants. These new colors embody the freshness and agility that define BEML's culture, reflecting the company's enduring commitment towards indigenization. This visual transformation not only underscores BEML's dedication to the global ecosystem but also fosters a sense of unity and distinctiveness among its workforce.

Enhancing Indigenous engineering capabilities to strengthen Naval & Maritime technology:

BEML Ltd. is strategically diversifying its business portfolio to capitalise on emerging opportunities and support the nation's quest for self-reliance. Embracing initiatives such as Maritime Amrit Kaal Vision 2047 and Swavalamban 2.0 by the Government of India, along with the Indigenization Plan of the Indian Navy, BEML recognizes the significance of entering the Maritime and Naval sectors.

Aligned with the national agenda and the imperative to bridge technological gaps and enhance indigenous capabilities in the Indian Navy, BEML is committed to venturing into Maritime and Naval business domains. By doing so, the company aims to contribute to initiatives of national importance while fulfilling the technology and indigenization requirements of the Indian Navy.



Recent projects under Naval & Maritime:

1. In FY 2015, BEML undertook the complete design, development, manufacturing, and engineering of 30T Class Excavators tailored for Grab Dredgers, fulfilling the requirements of the Mazagon Dock Shipbuilders Limited (MDL).
2. During FY 2018, BEML replicated its success by delivering two 30T Class Excavators designed, developed, manufactured, and engineered specifically for Backhoe dredgers, commissioned by M/s Lakshadweep Harbor Works in Kavaratti.
3. In addition to excavators, BEML supplied a range of essential dredge spares, including Drag heads, Dredge Pump Impellers, Gimbal rings, Fork arms,

Suction slides, Suction bends, Stand pipes, Straight pipes, Trunnion glands, Bottom Door Valves, and more, as part of an agreement with the Dredging Corporation of India (DCI).

4. BEML also contributed to the dredging sector by providing Hydraulic cylinders to Indian Rare Earths Limited and Cochin Port Trust, ensuring the smooth operation of their dredging equipment.
5. Furthermore, BEML supplied Cutter tooth points to M/s Marcator Limited, enhancing the performance and durability of their dredging machinery.



Industrial Design Centre: Making Better Products

The Industrial Design Centre was added to the R&D of BEML at the Bangalore Complex, as a hub for exchange of creative ideas and concepts, to focus on modernisation of infrastructure, improve the aesthetic appeal, operator's ease, productivity, efficiency and safety of products on par with global standards. A design-edge provides better user acceptance and improves market prospects, making BEML products world-class. The designers at the Centre carried out a global bench-marking study through various research.

The IDC harnesses the latest technologies like AI and gesture recognition and engineering resources for self-reliance while being sensitive towards green and sustainable concepts. The manufacturing implementations of these strategies will be made possible with the in-house capabilities available with BEML, as well as through the company's network of MSMEs.



Centres of Excellence

Five Centers of Excellence have been established to constantly update and upgrade the technical skills of the BEML manpower resource, and strengthen the knowledge and skill base of R&D engineers.

The vision is to become a state-of-the-art centre for Technical Training and Skill Development activities and help the organisation achieve technological excellence in the products being manufactured.

Five CoEs have been set up so far for the following areas of research:

- Hydraulics at KGF Complex
- Structural Welding at KGF Complex
- Electrical & Electronics at Mysore Complex
- Stainless Steel welding & Electrical and Wire Harnessing at Bangalore Complex









Captains of BEML
Along its 60 year
Journey



Shri. K.P.V. Menon
13.05.1964 to 16.08.1964



Brig. P.R. Kumar
14.03.1965 to 15.11.1968



Maj. O.M. Mani
16.11.1968 to 08.11.1978



Brig. G.K. Gokhale
09.11.1978 to 16.01.1980



Shri. V.P. Sarma
17.01.1980 to 30.11.1980 (As In-charge)



Maj. Gen. S.N. Baskar
01.12.1980 to 30.11.1984



Shri. B.R. Srinivasmurthy
27.12.1984 to 30.06.1985



Shri. M.B. Ajwani
18.07.1985 to 30.11.1991



Shri. T.V.S. Sastry
05.02.1992 to 02.11.1995



Dr. K. Aprameyan
03.11.1995 to 30.11.2002



Shri. V.R.S. Natarajan
01.12.2002 to 11.06.2012



Shri. P. Dwarakanath
12.06.2012 to 30.06.2016



Dr. Deepak Kumar Hota
01.07.2016 to 31.01.2021



Shri. Amit Banerjee
27.08.2021 to 31.07.2023

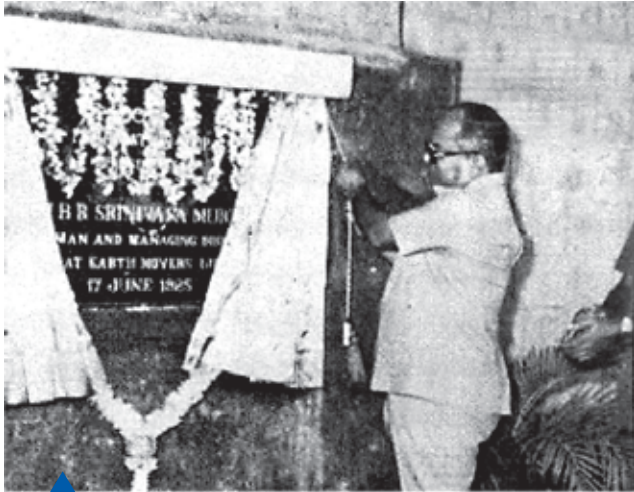


Shantanu Roy
01.08.2023 to Present





Memories and Milestones



Shri. B R. Srinivas Murthy, Former CMD Inaugurating BEML's Mysore Complex



Former Railway Minister, Shri. C.K. Jaffer Sharief Handing Over The Keys Of DCEMU unit to Member (Mech.) Railway,



Handing Over The First Set of In-house R&D 8 Wheeler OHE Car to Indian Railways



Handing Over Of First Set of 15 nos. Sarvatra Bridge Systems To Indian Army



Shri. Arun Jaitley, Hon'ble Raksha Mantri launched One Of The World's Biggest Dozers With Ripper Attachment BD475-1



Handing Over The Key Of Bheema-1000 To IAF

Dignitaries Inside The Metro After Launching The Standard Guage Metro Car



The Exuberant Gathering At The BE 1600 Launch in KGF





India's first underwater metro project – Kolkata metro



Indian Engineering: BEML Products Built for the Nation



Defence and Aerospace



Gun Mounted System



Pontoon Mainstream Bridge System



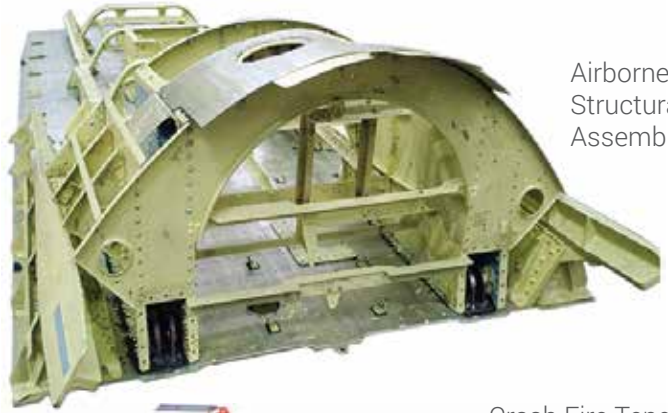
High Mobility Vehicle



Heavy Recovery Vehicle



Tank Transportation Trailer



Airborne
Structural
Assemblies



Aircraft Towing
Tractor



Crash Fire Tender



Engineering Mineplough



Armoured Repair and Recovery Vehicle



UAV



Pinaka Rocket Launchers

Rail & Metro



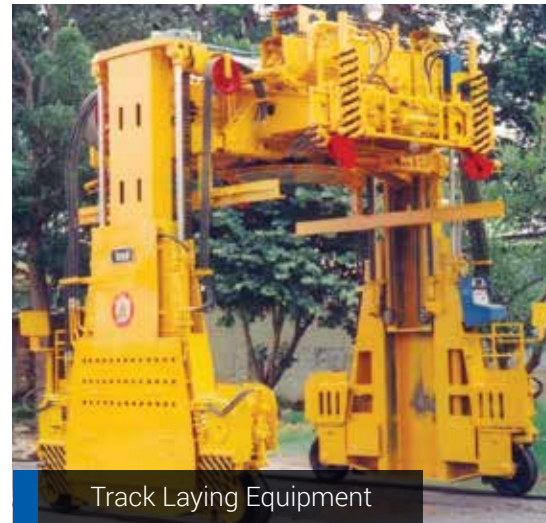
AC EMU



Stainless Steel Electric Multiple Unit



OHE Inspection Car



Track Laying Equipment



Standard Gauge Metro car



Rail Bus



BEML DEMU



Sleeper Coach

Mining and Construction



Dozer



Pipelayer



Excavator



Motor Grader



Dumptruck



Side Discharge Loaders



Electric Shovel



Snow Cutter



Tyre Handler



Water Sprinkler



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