RESEARCH REPORT

BOOTES®
A NET-ZERO COMPANY

AlphaStrat
Research

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About Bootes

Introduction

Bootes Impex Ltd, a technology EPC (Engineering, Procurement, and Construction) execution and consulting company, is emerging as a leader in India's sustainable infrastructure movement. Founded by the visionary Deepak Rai, who boasts two decades of international experience in EPC and sustainable construction planning, Bootes is committed to achieving net-zero construction practices. Mr. Rai's leadership places Bootes at the forefront of a crucial shift towards sustainable building methods, aligning perfectly with India's national goal of carbon neutrality by 2070.

Bootes aims to revolutionize India's infrastructure landscape by introducing cutting-edge, eco-friendly practices across all regions. Their expertise spans the entire project lifecycle, from design and procurement to implementation. This comprehensive approach is demonstrably successful, as evidenced by their construction of the Jhansi library – which they claim is the world's first truly net-zero company. They remarkably completed the project in a record-breaking 90 days.

Beyond technical prowess, Bootes fosters strategic partnerships with experienced architectural firms, both domestic and international. Their collaborations coupled with in-house team of engineers and scientists, ensures exceptional quality control and adherence to aggressive project timelines. The Jhansi library project stands as a testament to this efficiency, showcasing not only sustainable construction but also remarkable speed of execution.

Founded on the principles established during the Paris Conference of UNFCCC (United Nations Framework Convention on Climate Change) on sustainability and carbon neutrality, Bootes operates with a deep commitment to environmental responsibility. Looking ahead, Deepak Rai and his team envision an *Atmanirbhar Bharat*, where sustainable technology is not just adopted but also indigenously developed, remaining deeply rooted in the cultural fabric of the nation.

Bootes boasts an impressive order book of over INR 1160 crores in just 3 years. From a single library project, they now tackle diverse infrastructure mega-structures, all while pioneering net-zero construction methods. This focus on sustainability positions Bootes as a leader in the Indian construction industry.

PM Sangrahalay, New Delhi



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About Bootes

A Brief History

Bootes was founded in the year 2021 by Deepak Rai in Gurgaon. Prior to Bootes, Rai's entrepreneurial spirit was evident by bringing in Muse International from UK in 2017. It is a company focused on innovative museums that blend technology with art, history, and science. Rai's first foray into Indian heritage preservation was his proposal for the PM Sangrahalaya (PM Museum) in 2019. The flawless design and concept of the museum proved to be immensely successful. The industry recognized his mettle, and Rai earned his reputation in the infrastructure space.

This experience fueled Rai's determination, and Bootes emerged in 2021. The company is now a leader in sustainable infrastructure. Bootes claims the distinction of being India's first truly net-zero construction company, aligning perfectly with India's goals of carbon neutrality. Deepak Rai's story showcases the complexities of implementing a net-zero agenda in India, particularly when leveraging traditional architectural and construction methods.



Jhansi Library



Gandhi Smriti Museum



Jyotisar Museum



Jhansi Exhibition Center



345 Hudson Street, New York



Haryana International Habitat Center

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About Bootes

Current Operations:

Bootes is a Gurgaon-based company. They offer end-to-end solutions for developing net-zero buildings, a concept gaining traction due to its ecological and economic benefits. Adding to the company's unique vision, is the added factor of innovation and optimal execution.

The company has a strong track record in government projects. Bootes has completed five net-zero projects currently under assessment for certification by IFC Edge. One notable example is the Jhansi Library, recognized by the Chief Minister of Uttar Pradesh and setting a high bar for sustainable development in the construction industry. Bootes has also earned recognition and awards from Asia Book of Records to complete this project in a record time of 90 days.

Bootes started by focusing on niche infrastructure projects like museums, libraries, malls, hospitals and exhibition centers. This niche focus served as a strategic entry point, allowing them to showcase their expertise and attract attention within the highly competitive infrastructure market dominated by large players.

Beyond the Jhansi Library, Bootes has a portfolio that includes prestigious projects like the Jyotisar Museum in Haryana, Exhibition Center in Uttar Pradesh, and the India Habitat Center in Haryana. The company is also committed to innovation. Bootes holds patents for building and construction applications, including their water-saving ECOLOO product and advancements in radiant cooling systems. Their current research focuses on cold storage innovation, with contracts secured to design and build net-zero warehouses in Chennai and Gurgaon. This highlights their expansion beyond niche segments into cold storage and warehousing. As part of the future roadmap, the company will also be foraying into revamping administrative buildings for the Indian Defense.

Bootes has ambitious plans for future growth. They aim to enter the commercial and residential real estate sectors while solidifying their presence in government projects across India. Their international reach extends to consultation work on design and planning in the US and UK. The company claims a unique market position. Based on UN definitions for net-zero buildings, they claim that they are the only company in India with the capability to design and execute such projects, potentially capturing a 100% market share in this segment.

The company's financial performance reflects its growth trajectory. Bootes Impex recorded a revenue of INR 22 crores in FY24 and, based on their impressive turnaround time and order book value, is well-positioned for continued success in FY25. Strategic partnerships with Urbs AB, Univastu India, Generic Engineering and others, support their ability to secure large contracts. Additionally, the launch of their subsidiary, Bootes Cold Chain, demonstrates their commitment to developing the warehousing segment in India. The first year of operations for this subsidiary appears to be highly promising.

**Note: Revenue and profit from Univastu Bootes LLP is consolidated in the financial books of Univastu india Lta.*

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About Bootes

Board of Directors

Deepak Rai - *Founder & Managing Director*

Deepak Rai, capitalizing on his decade-long track record of delivering impressive projects for Fortune 500 companies globally, founded Bootes in 2021. Fueled by a vision to create a greener, healthier India, Rai set out to transform the construction industry, aligning it with the principles of Net-Zero and *Aatmanirbhar Bharat*. Rai, a passionate advocate for sustainable and innovative MEP Engineering, leads by seamlessly integrating cutting-edge technology, design, execution, and adept team management. This strategic approach pushes sustainable construction to new heights, benefiting both the environment and the community.

Manab Rakshit - *Director - Strategy*

Manab Rakshit is a seasoned professional with 20+ years of experience in banking, finance, construction, and family offices. He has experience at major companies like Infovision Group and ICICI Bank, and now leads sustainable construction efforts in India.

Oliver - *Chief Technical Officer*

A seasoned professional with 28+ years of experience across diverse projects (buildings, museums, infrastructure) in various regions. Notably led the successful opening of the Abu Dhabi Formula 1 Race Track in 2009.

Imad Agi - *Sustainability Head*

Imad Agi, a sustainability leader, uses his construction and renewable energy expertise to drive BOOTES towards net-zero goals. He's a global leader in sustainable sanitation with his award-winning ECOLOO toilets, recognized by the World Economic Forum. His motto "go green, grow rich" ties sustainability to business success.

Vishal Agarwal - *Executive Director*

Vishal Agarwal, Director at Bootes, brings over 12 years of financial expertise, steering projects exceeding INR 100 crores. He skillfully orchestrates finances, devises annual strategies, and champions robust cost management systems. His dedication to Bootes' mission drives sustainable construction with optimal execution, fostering a healthier, NetZero India

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About Bootes

Key Managerial Persons

Shagun Goel - Vice President - Finance

Shagun has joined Bootes Impex as the Vice President of Finance. A Chartered Accountant with over 18 years of experience in Treasury Operations, Finance & Accounts, and Commercial Operations, Shagun has a strong background in managing infrastructure projects. Her expertise, gained from working with some of the largest EPC companies, makes her well-suited to lead the financial operations at the company.

Heeresh Giridhar - Vice President - Human Resources

Heeresh has joined Bootes Impex Tech Ltd. as the Vice President of Human Resources. With 19 years of HR experience across diverse industries, including construction, logistics, and telecom, He is known for his strategic acumen and leadership in HR operations, talent development, and organizational transformation. His global HR expertise will significantly enhance Bootes' HR capabilities and drive organizational success.

Urvashi Agarwal - Resource Head

A multifaceted leader with 20+ years of experience combining computer science and business knowledge. Her expertise spans marketing, franchising, business development, and human resources. She plays a vital role in Bootes' strategic growth and workforce development

Gaurav Yadav - Senior Business Development Manager

A power engineering leader with 10+ years of experience. His research and industry experience drive Bootes' business development towards Net-Zero and Aatmanirbhar Bharat goals.

Shubhi Agarwal - Media Head

A former consultant at EY with an engineering background and 9+ years of experience in digital marketing, growth hacking, and omni-channel strategy. She leads marketing initiatives, manages teams, and drives growth for Bootes, aligning marketing efforts with the company's vision of *Aatmanirbhar* infrastructure development.

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About Bootes

Offices and Subsidiaries

Bootes Impex Pvt Ltd has four subsidiaries

1. Bootes Cold Chain Pvt Ltd
2. Ecobootes Sustainable Solutions Pvt Ltd
3. Bootes Cleantech Pvt Ltd
4. Bootes HVAC Solutions LLP

Bootes Impex Pvt Ltd
Registered Address:
Unit No. 109, 1st Floor, Magnum City Centre, Sector-63A,
Gurugram, Haryana-122011

Ecobootes Sustainable Solutions Pvt Ltd
Registered Address:
Unit No. 111, 1st Floor, Magnum City Centre, Sector-63A,
Gurugram, Haryana-122011

Bootes Cleantech Pvt Ltd
Registered Address:
Unit No. 110, 1st Floor, Magnum City Centre, Sector-63A,
Gurugram, Haryana-122011

Bootes Cold Chain Pvt Ltd
Registered Address:
Unit No 1208, 12th Floor, Tawer-B2, Palam Vihar, Sector 106,
Gurugram, Haryana - 122017

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Business Analysis

Bootes: A Unique Proposition

Bootes is emerging at the forefront of sustainable building solutions in India. Leveraging end-to-end Engineering, Procurement, and Construction (EPC) services, Bootes empowers clients to realize their vision for eco-friendly structures. The company's commitment to sustainability aligns strategically with India's target of carbon neutrality by 2070. Bootes operates through two distinct business segments: EPC services and consulting expertise, offering a comprehensive approach to cater to diverse project requirements.

End-to-End Sustainability Solutions through EPC

Bootes leverages the EPC model to deliver its comprehensive approach to sustainable development in India. This model allows them to manage all project phases – from design and planning to material procurement and construction – ensuring seamless execution and client satisfaction. Their focus is entirely on the Indian market, where they've established a strong presence in the 'niche segment of government-backed net-zero building' projects.

In the first two months of FY25, the company has managed to secure 7 contracts individually worth over 100 crores. This clearly showcases the company's and the industry's exponential demand. While it enjoys a near-monopoly within the nascent field of net-zero construction in India, they do face competition from established EPC players for similar construction projects (though not necessarily net-zero focused). Recognizing the vast potential of the Indian infrastructure market, Bootes is strategically expanding its portfolio beyond niche projects. This measured approach, positions them well for future ventures in large-scale commercial and residential real estate development. Bootes prides itself on exceptional efficiency, claiming to be one of the fastest contractors in the country. Their impressive track record boasts a 30 to 60% reduction in project turnaround time, compared to industry standards. This translates to significant cost savings and faster project completion for their clients.

Global Expansion through Consulting Expertise

Bootes' leadership boasts extensive knowledge in sustainable development, particularly within the emerging net-zero construction market. Leveraging this expertise, Bootes offers consulting services to international EPC entities. This strategic move allows them to share their knowledge of net-zero design, engineering, and architecture on a global scale, currently serving clients in the US and Europe. While their initial focus is on international consulting, Bootes ultimately aims to export its full EPC capabilities abroad. This phased approach allows them to establish strong partnerships with global construction players before undertaking complete project execution in overseas markets. By collaborating with experienced international entities, Bootes can ensure seamless project delivery and maintain its high standards for sustainable construction.

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Business Analysis

Strategic Alliances and Synergies

Bootes' story began with the government-backed PM Sangrahalaya project, spearheaded by founder Deepak Rai. This successful project established the company's credibility and paved the way for their first full-fledged EPC contract in 2023. The company also extended its net-zero consulting services to global clients within its first two years of operations.

Recognizing their initial limitations as a new company, Bootes' management strategically pursued collaborations to strengthen their position. Partnering with established infrastructure players like *Univastu India Ltd.* through the joint venture Univastu Bootes LLP allowed them to compete for government net-zero contracts. Bootes' strategy of creating alliances by means of joint ventures has been proven to be immensely successful, as these synergies have helped the company to tackle early challenges in qualifying for tenders due to compliance hurdles despite having the required technical and non-technical experience.

However, Bootes has showcased exceptional progress in the past two years, building a strong track record in delivering net-zero buildings. This success is largely attributed to their ability of forging strong synergies across the infrastructure industry. The collaboration with Swedish firm *Urbs AB*, is a prime example of this approach. With Urbs' strong reputation, Bootes has already entered the net-zero market in the USA by designing technical energy and modelling systems for the *New York Energy Research and Development Authority*.

Bootes will continue to form strategic alliances during the ongoing financial year. Discussions are underway with a large PSU (Public Sector Undertaking) for projects exceeding INR 500 crores. This potential joint venture could unlock even larger opportunities, with contracts valued at over INR 3000 crores in the next 18 months.

Bootes Impex boasts the lowest turnaround time for EPC projects. The company has managed to design and build standalone individual structures like libraries, museums and other niche buildings in record times, for which the company has been recognized and awarded by renowned agencies. Deepak and his team, apart from holding expertise in net-zero, are also proficient in planning and management. The company's reputation to lower turnaround time have earned the company a joint venture with Generic Engineering Construction and Projects Ltd. to build infrastructure projects. Bootes is also strategically expanding its business scope beyond its initial niche focus on museums, libraries, and experience centers. Their subsidiary, Bootes Cold Chain, leverages the credentials of *CargoPeople Logistics & Shipping Pvt Ltd.* to secure cold-storage contracts and is currently building net-zero cold storage and temperature-controlled warehouses in Chennai. Further proliferating the scope of net-zero, these alliances are enabling Bootes to further its development by revamping buildings in the defense sector.Bootes' management is confident that these strategic alliances and their own impressive track record will position them as a major domestic EPC player within the next five years. By cultivating strong partnerships and amassing independent credentials, Bootes is well on its way to achieving its ambitious goals.

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Business Analysis

Focus within the Infrastructure Industry

Bootes has carved out a niche for itself by focusing on specialized infrastructure projects. These include buildings dedicated to amusement (museums, experience centers), public welfare (libraries, gardens), education, and healthcare.

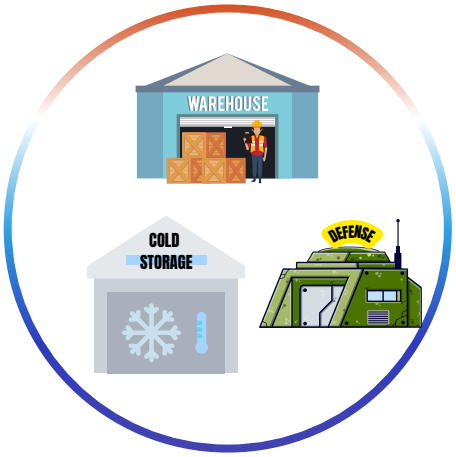
It's important to note that the market size varies significantly within these niche segments. Educational institutions, for instance, represent a much larger potential than museums due to their wider scale and societal importance.

This selective entry strategy was a deliberate choice by founder Deepak Rai. Recognizing the intense competition in the broader infrastructure space across major Indian cities, Bootes opted to target segments overlooked by established players. Rai acknowledges that secondary infrastructure like museums and libraries don't offer a vast market on their own. His initial objective wasn't to scale through these projects, but rather to establish Bootes' presence and build credibility.

This "bottom-up" approach is now shifting gears. Bootes is strategically transitioning its focus towards the core of primary infrastructure: commercial and residential real estate. This aligns with the significant growth witnessed in the warehousing segment over the past five years, driven by rising demand for temperature-controlled storage. Bootes' subsidiary, Bootes Cold Chain, exemplifies this move, currently constructing net-zero cold storage facilities in Chennai. Furthermore, Bootes is pushing the boundaries of innovation and execution by undertaking a net-zero hospital project in Mumbai alongside administrative buildings for military and defense authorities.



Bootes currently has over 7 different stand-alone projects which include Libraries, Museums, Habitat Centers, Exhibition Centers etc.



Bootes Cold Chain Pvt Ltd designs and builds net-zero cold storage and temperature-controlled warehouses. The company is currently executing its first project in Chennai, building 2 net-zero warehouses.



Bootes is gradually steering towards the growing market of Data Centers in India. In addition, the company will also focus towards building net-zero hospitals, healthcare centers and education institutions.

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Business Analysis

Niche Infrastructure

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Cold Storage & Warehousing

Bootes Cold Chain: A Pioneering Approach to Sustainable Warehousing in India

Bootes is strategically expanding its portfolio with the launch of Bootes Cold Chain. This dedicated subsidiary specifically targets the demand for temperature-controlled warehousing solutions in India.

Addressing a Critical Gap in India's Supply Chain

India boasts the world's third-largest supply chain network, yet faces a significant challenge in efficiently storing and distributing temperature-sensitive goods, particularly food and dairy products. This is largely due to the lack of robust cold storage infrastructure. India's equatorial location further necessitates advanced refrigeration solutions to combat high ambient temperatures that can lead to spoilage.

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Business Analysis

Sustainable Innovation at the Forefront

Bootes Cold Chain differentiates itself by leveraging its parent company's expertise in sustainable engineering. Their proprietary cold storage technology, meticulously researched and developed with a focus on radiant heat exchange, is believed to offer a superior alternative to existing methods. This innovative system not only surpasses existing sustainable solutions but also consistently maintains the globally recognized standard of -22°F for frozen storage environments. Moreover, the technology boasts exceptional stability and reliability, ensuring long-term performance.

A Multifaceted Strategy for Growth

Bootes Cold Chain has adopted a multifaceted approach to maximize its impact. They capitalize on their proven track record in net-zero construction by employing the EPC model. This allows them to construct temperature-controlled facilities for both public and private sector entities, seamlessly integrating their cutting-edge cold chain solutions into the building process.

Beyond construction, Bootes Cold Chain plans to build and operate its own self-owned warehouses. This expands their service offerings and provides businesses with a flexible Cold-Storage-as-a-Service (*Cold-SaaS*) model. Companies can lease temperature-controlled storage spaces, eliminating the upfront investment burdens associated with traditional infrastructure development.

Unlocking Potential and Shaping a Sustainable Future

Bootes Cold Chain sees a significant opportunity to improve India's cold storage infrastructure. Despite a strong economy, India's technology lags behind. They believe their innovative and sustainable solutions can propel India towards efficient and eco-friendly food and beverage storage. Bootes Cold Chain already has INR 140 crores in orders for net-zero warehouses and is bidding for an additional INR 460 crores this year.

Data Centers

Bootes Extends Expertise: Sustainable Solutions for High-Energy Infrastructure

Bootes is strategically broadening its field of expertise to encompass high-energy consuming infrastructure. This expansion acknowledges the ever-increasing strain data centers place on global electricity grids, prompting the company to develop solutions that address this critical challenge.

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Business Analysis

The Growing Demand for High-Performance Computing: A Looming Energy Crisis

The exponential growth of artificial intelligence (AI), machine learning (ML), and cloud computing necessitates a significant increase in Graphics Processing Unit (GPU) utilization. While these powerful processors are instrumental in these rapidly evolving technologies, their operation comes at a substantial cost – immense energy consumption.Data centers, housing vast quantities of GPUs and other computing hardware, are becoming a major contributor to the global energy crisis.

Bootes Takes a Proactive Stance

Recognizing this growing concern, Deepak Rai, Bootes' visionary founder, has taken a proactive approach. Leading his dedicated R&D team, they are actively engaged in developing a groundbreaking solution – self-sustaining net-zero data centers.

Innovation at the Forefront of Sustainability

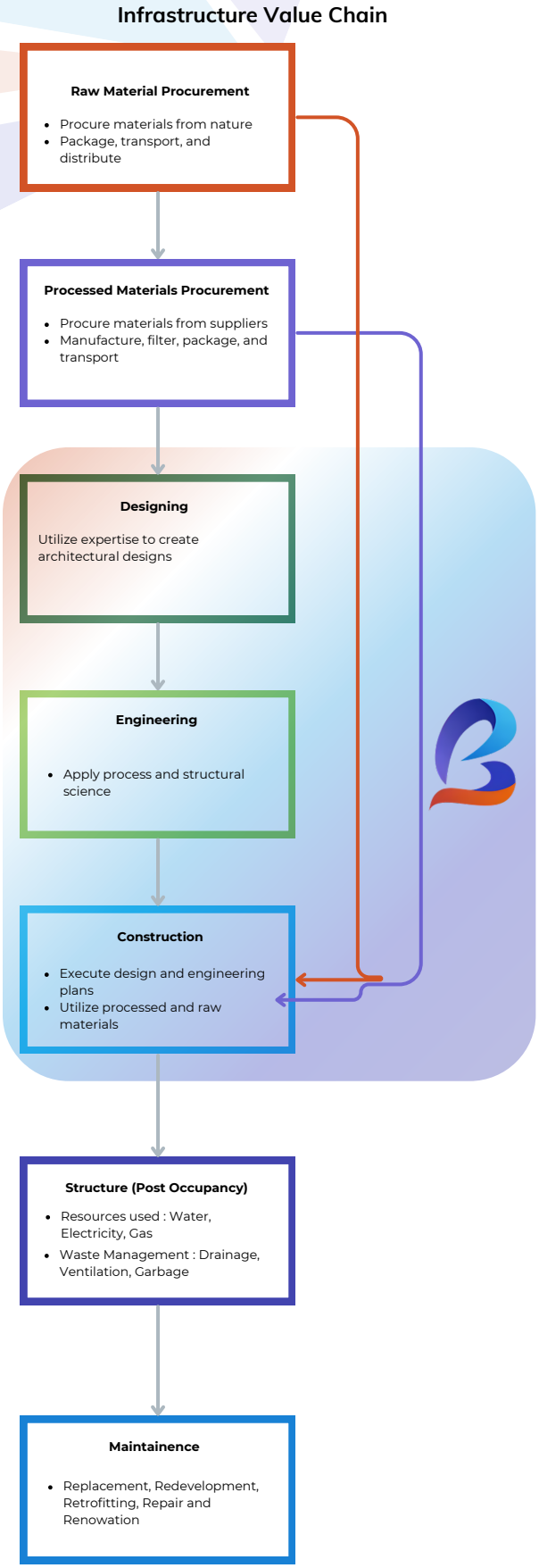
The specifics of Bootes' net-zero data center technology remain confidential, strategically safeguarding their competitive edge. However, their proven track record in pioneering sustainable solutions across various building processes positions them as a frontrunner in this crucial arena. The potential for self-sustaining data centers to revolutionize the technology sector by minimizing environmental impact is truly transformative.

A Commitment to a Sustainable Future

Bootes' venture into sustainable data center development underscores their unwavering commitment to tackling the world's most pressing infrastructural challenges. As global data demands continue to surge, Bootes' innovative spirit positions them as a leader in shaping a more sustainable future for the digital age.Their dedication to research and development ensures they remain at the forefront of sustainable infrastructure solutions, paving the way for a future where technological progress and environmental responsibility go hand-in-hand.

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Business Model



Complete breakdown of Business Model

Bootes generates over 90% of its business from the EPC model. Currently the value chain of the construction and infrastructure industry can be broadly categorized in seven different stages, as represented in the diagram on the left. From procuring sediment rocks for cement manufacturing to retrofitting buildings with new-age technology.

For better understanding of sustainability, the entire industry has to adapt to sustainable alternatives using efficient processes to procure or execute in order for the industry to reduce about 97% of the carbon footprint. The company currently covers three major segments of infrastructure development: - Designing, Engineering and Construction.

Designing includes inculcating scientific processes and meticulous planning for seamless execution. Engineering involves all processes required at the time of execution. These are largely industry driven and evolve across the industry. Construction is the stage where Designing and Engineering are implemented in a set manner using Raw Materials and Processed Raw Materials/Equipment.

Based on the information available on the projects developed by the company, it will focus on these three segments and further increase R&D, to cover all classes of buildings and infrastructure. The management is actively working to innovate efficient engineering processes during construction to reduce the wastage and usage of water and diesel, generate on-site electricity, reduce carbon emissions to a large extent.

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Business Model

Business Model Analysis of Bootes

Bootes operates a dual revenue stream model, with EPC contracts forming the primary source of income. Currently, EPC contracts generate approximately 92% of the company's revenue, while the remaining 8% comes from their consulting services.

It's important to note that both EPC and consulting currently operate under the same legal entity, Bootes. However, for the cold storage business, the company operates from its subsidiary, Bootes Cold Chain Pvt Ltd. This subsidiary will handle EPC contracts and service contracts related to cold storage projects.

This strategic move suggests the management's intention to potentially expand the cold storage segment beyond just construction and potentially offer ongoing maintenance or management services, opening up new revenue and diverse revenue streams. Similar to building net-zero infrastructure earlier, Bootes will build cold storage and temperature-controlled warehouses for both private and public players. Mr. Rai says that firm will also build and operate self-owned net-zero warehouses in the near future. Bootes will distriburte Cold Storage-as-a-Service (CSaaS) to customers of all kind and sizes.

EPC Model

Bootes' primary focus has been securing EPC contracts from government agencies for the development and delivery of net-zero buildings since its inception 3 years ago. This model allows them to manage the entire project lifecycle, from design and engineering to procurement and construction.

A key element of their strategy is the joint venture (JV) with Univastu India Ltd., called Univastu Bootes LLP. This partnership allows Bootes, with its 49% stake, to qualify for high-value government tenders that might otherwise be out of reach. Through this JV, Bootes has secured four contracts and delivered one project as of FY24. Management indicates a continued focus on executing niche segment projects for both government and private clients through this partnership.

Bootes is also exploring new avenues for growth through a potential JV with a large Public Sector Undertaking (PSU). While details remain confidential, management anticipates this partnership to significantly expand their operations. Their target is to secure an order book exceeding INR 7000 crores within the next two years through this JV.

In contrast, Bootes Cold Chain, their subsidiary dedicated to cold storage, will primarily target private players in the warehousing business over the long term. Initially, however, Bootes has leveraged its existing credentials in net-zero infrastructure development to secure warehousing contracts in Chennai and Gurgaon. This demonstrates their ability to adapt their approach to secure contracts in new market segments.

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Business Model

Bootes' impressive growth trajectory must be viewed within the context of its relatively young age, having just completed three years of operation since its establishment on March 4th, 2024. As a new company entering the net-zero construction space, Bootes faced initial challenges in qualifying for government tenders, which often require a proven track record and experience.

To overcome this hurdle, Bootes entered into a strategic joint venture (JV) with Univastu India Ltd., a well-established and compliant company. This partnership, named Univastu Bootes LLP, leverages the expertise and experience of Univastu India (holding a 51% stake) to qualify for tenders that Bootes (with a 49% stake) might not be able to secure independently. The revenue generated by this JV is consolidated with Univastu India due to their majority ownership.

For all the projects undertaken by the JV, Bootes transfers the execution, operational and administration costs to the JV. This partnership has proven instrumental in acquiring valuable experience and building a strong track record. Recognizing the importance of such strategic alliances, Bootes anticipates forming similar JVs in the future to manage ongoing and potential projects. However, the company's leadership is confident in Bootes' ability to transition towards independent project execution. As of this date, the company has about INR 70 crores worth of orders, which it is executing independently without any partnership. As the company takes on progressively larger and more complex projects, it will build its own credentials and establish a strong reputation in the market. The management will be further bidding for orders worth over INR 1000 crores in the ongoing financial year. This will ultimately allow Bootes to secure contracts and operate independently without the need for JVs in the majority of future endeavors.

Consulting Model

Bootes' foray into the infrastructure space began in 2021 with a focus on net-zero consulting services. Recognizing the growing importance of sustainable building practices, the company invested heavily in designing and securing patents for innovative eco-friendly products and technologies.

Leveraging Deepak Rai's international network, Bootes was able to secure design contracts abroad. The successful completion of the PM Museum project significantly uplifted Deepak's reputation and established him as a pioneer in the net-zero space. This newfound recognition played a crucial role in securing the Jhansi library project, further solidifying Bootes' capabilities.

To expand their consulting reach beyond India, Bootes has established strategic partnerships with international firms. Collaborations with Innenco and Urbs AB allow them to compete for net-zero consulting contracts in the US and European markets. This global approach positions Bootes as a thought leader and solution provider for sustainable infra-structure development on a broader scale.

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Innovation

Leveraging innovation to achieve net-zero outcomes, Bootes distinguishes itself within the EPC contractor landscape. They champion sustainable alternatives across a broad spectrum of building processes, including water-saving technologies like their ECOLOO toilets and energy-efficient solutions like radiant cooling systems. This dedication to pioneering practices extends beyond individual projects, as Bootes strives to influence a broader industry-wide shift towards environmental responsibility. Furthermore, they are actively designing end-to-end solutions for net-zero cold storage facilities, addressing the growing demand for sustainable refrigeration. The company's relentless commitment to innovation positions it as a frontrunner in shaping a more sustainable infrastructure future.

ECOLOO

Bootes addresses the global sanitation challenge with their innovative SAFE (Sustainable Affordable Flexible Ecological) Toilets. Developed through a strategic partnership with ECOLOO, these bio-sanitization toilets represent a revolutionary leap forward in sustainable waste management. Aligning with the Swachh Bharat Mission's vision of safe and environmentally friendly sanitation for all, SAFE Toilets offer a decentralized and on-site solution that eliminates dependence on water or electricity. This translates to a multitude of environmental and economic benefits:

- ***Unmatched Water Conservation:*** Each SAFE Toilet unit boasts the potential to save over 150,000 liters of water annually, a critical advantage in regions facing water scarcity.
- ***Waste Reduction and Resource Recovery:*** The ingenious system transforms human waste into valuable fertilizer through a 24-hour biological process. This not only reduces landfill burden but also generates over 500 kg of nutrient-rich fertilizer per year.
- ***Minimized Contamination Risks:*** By eliminating the need for sewer lines, SAFE Toilets significantly reduce the risk of contamination often associated with traditional sanitation methods.
- ***Versatile Design Solutions:*** These toilets offer adaptable designs that cater to diverse applications, from high-end settings to disaster relief scenarios, ensuring a wider reach and impactful solutions.
- ***Alignment with Global Sustainability Goals:*** SAFE Toilets directly support the Swachh Bharat Mission and the UN Sustainable Development Goals for sustainable sanitation, aligning with the company's commitment to global environmental responsibility.

Beyond core functionality, SAFE Toilets offer a range of additional advantages:

- ***Circular Economy Champion:*** The bio-sanitization process exemplifies a closed-loop system, transforming waste into a valuable resource – organic fertilizer – thus minimizing environmental impact.

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Innovation

- ***Carbon-Negative Solution:*** By eliminating the need for energy-intensive wastewater treatment plants and reducing methane emissions, SAFE Toilets contribute to a negative carbon footprint, actively combating climate change.
- ***Holistic Impact:*** These toilets address critical issues like water scarcity, waste management, energy consumption, and even food security through organic fertilizer production, creating a ripple effect of positive environmental and agricultural outcomes.
- ***Livelihood Opportunities:*** The decentralized model fosters local entrepreneurship by creating opportunities in the production, marketing, and distribution of organic fertilizers, empowering communities and promoting economic growth.

Important Considerations:

- Bootes currently integrates SAFE Toilets within their EPC projects and does not currently offer them for individual sale.
- Imad Agi, Bootes' sustainability lead, is the designer and patent holder for the innovative ECOLOO toilets.
- The system boasts the flexibility to retrofit existing toilets with the appropriate fittings and connections, facilitating wider adoption.
- Bootes' commitment to sustainable sanitation with SAFE Toilets paves the way for a cleaner, healthier future. By promoting environmental responsibility, community well-being, and economic empowerment, Bootes establishes itself as a leader in pioneering sustainable sanitation solutions.

Radiant Cooling

Bootes is taking a leading role in popularizing radiant cooling, a method of space cooling that utilizes cool surfaces of buildings (walls, ceilings, floors) to regulate temperature. This approach offers several advantages:

Energy Efficiency: Radiant cooling boasts significant energy savings compared to traditional air conditioning systems.

Health Benefits: Studies suggest radiant cooling can create a more comfortable and healthier environment for building occupants.

The Technology Behind Bootes' System: Similar to a car radiator, radiant cooling utilizes a liquid coolant (often water or an eco-friendly water-glycol mix) circulating through embedded pipes to absorb heat from the space. This heat exchange lowers the overall room temperature.

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Innovation

While the core concept has existed for over a decade, Bootes recognized the under-appreciated benefits of radiant cooling and took the initiative to refine the technology. Through collaboration with scientists and external professionals, they have developed a proprietary system focusing on:

- Optimized Materials: Identifying the ideal surface materials to maximize heat transfer efficiency.
- Strategic Pipe Network: Designing an intricate network of pipes for optimal heat exchange throughout the space.
- Advanced Fluid Management: Selecting the most effective coolant composition and developing methods for efficient fluid circulation and temperature regulation.

Innovation with Sustainability in Mind:
Bootes emphasizes the use of environmentally friendly coolants, eliminating harmful CFCs (Chlorofluorocarbons) commonly found in traditional air conditioning systems. Additionally, their approach minimizes energy consumption by operating at lower and fluctuating power levels.

Maintaining a Competitive Edge:
It's important to note that specific details regarding Bootes' radiant cooling technology remain confidential, strategically safeguarding their competitive advantage. By championing radiant cooling innovation, Bootes positions itself as a frontrunner in sustainable building practices. Their dedication to energy efficiency and occupant well-being paves the way for a future where comfort and environmental responsibility go hand-in-hand.

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India's Environmental Challenge: Rising Carbon Emissions and the Path Towards Sustainability

India, a nation experiencing rapid economic growth, faces a significant challenge – curbing its rising carbon emissions.Here's a closer look at the situation and the potential solutions:

The Problem: A report by the Global Carbon Project reveals that India contributes a staggering 8.2% of global carbon emissions, translating to 3.1 billion metric tons of CO2 annually. Construction and related activities within the infrastructure sector are responsible for a substantial portion (22%) of these emissions. India's emission growth rate of 8.2% is the highest among the top 10 emitting countries, placing it as the third-largest emitter globally, behind China and the USA.

The Cost of Progress: The economic boom comes at an environmental cost.Industrial activities, while propelling growth, are significantly impacting the environment.

Addressing the Issue: India has recognized the urgency of the situation. At COP21, they pledged a commitment to achieve net-zero emissions by 2070. However, a universally agreed-upon definition of "net-zero" remains elusive.Broadly, it signifies replacing non-renewable fuels and high-emission processes with sustainable alternatives that maintain or even increase output.

The Rise of Sustainable Solutions: Against this backdrop, numerous companies are actively seeking ways to minimize their carbon footprint. This shift towards sustainable alternatives has spurred innovation and adaptation among scientists and researchers worldwide. Their focus lies on developing processes with a lower environmental impact.

GLOBAL CARBON project

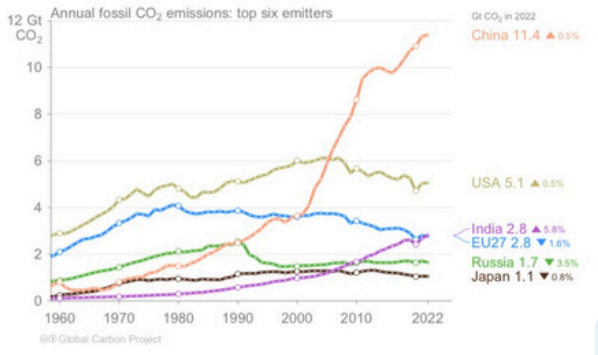
Summary of fossil CO_2 emissions in 2022 and 2023

Region / Country	2022 emissions (billion tonnes/yr)	2022 growth (percent)	2023 projected emissions growth (percent)	2023 projected emissions (billion tonnes/yr)
China	11.4	+0.5%	+4.0%	11.9
USA	5.1	+0.5%	-3.0%	4.9
India	2.8	+5.8%	+8.2%	3.1
EU27	2.8	-1.6%	-7.4%	2.6
International bunkers*	1.0	+15.6%	+11.9%	1.2
All others	15.1	+0.0%	-0.4	14.0
World	37.1	+0.9%	+1.1%	37.5
World (incl. cement carbonation)	36.4	+0.9%	+1.1%	36.8

*Emissions from use of international aviation and maritime shipping bunker fuels are not usually included in national totals.
Cement carbonation sink only included in global (World) estimate.
Source: Friedlingstein et al 2023; Global Carbon Project 2023

Top emitters: Fossil CO_2 emissions to 2022

The top six emitters in 2022 covered 67% of global emissions
China 31%, United States 14%, India 8%, EU 7%, Russia 4%, and Japan 3%



International aviation and maritime shipping (bunker fuels) contributed 2.8% of global emissions in 2022.
Source: Friedlingstein et al 2023; Global Carbon Project 2023

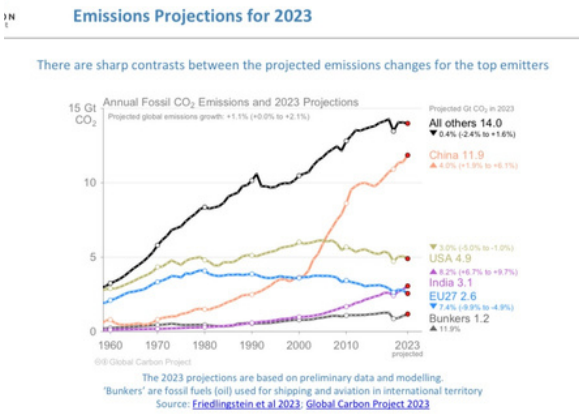
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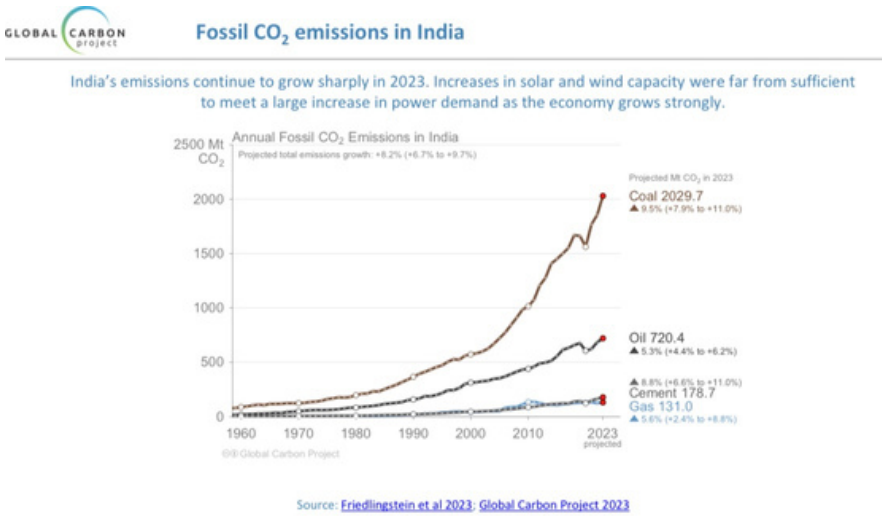
India's Environmental Challenge: Rising Carbon Emissions and the Path Towards Sustainability

A Gradual Shift: Transitioning to a fully sustainable world will undoubtedly be a long-term endeavor. However, taking the initial steps towards sustainable development holds the potential to heal the planet from the environmental damage caused by human progress.

ESG Policies Gain Traction: ESG (Environmental, Social, and Governance) policies, established at conferences like those held by powerful organizations like the US, are gaining traction. While these policies existed earlier, their recent emphasis signifies a tangible shift towards environmental responsibility.

In conclusion, India's fight against rising carbon emissions necessitates a multi-pronged approach. Government initiatives, corporate commitment to sustainability, and continuous innovation in eco-friendly technologies are all crucial aspects of this battle. By embracing sustainable practices, India can navigate its path towards economic prosperity while protecting its environment for future generations.





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Global and Domestic Protocols

The Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on December 12, 2015. It entered into force on November 4, 2016. The agreement's primary objective is to limit the increase in the global average temperature "*well below 2°C above pre-industrial levels*" and strive to restrict the temperature rise to "*1.5°C above pre-industrial levels.*" However, recent years have seen world leaders emphasize the criticality of limiting global warming to 1.5°C by the end of the century. This emphasis stems from findings by the UN's Intergovernmental Panel on Climate Change, which suggests that exceeding the 1.5°C threshold risks triggering far more severe climate change impacts, including more frequent and intense droughts, heatwaves, and rainfall events. To achieve the 1.5°C target, greenhouse gas emissions must peak before 2025 at the latest and decline by 43% by 2030.

Recognizing the significance of Article 4, Paragraph 19 of the Paris Agreement, India submitted its long-term low-carbon development strategy to the United Nations Framework Convention on Climate Change (UNFCCC) in November 2021, during the 26th Conference of the Parties (COP26). This strategy reaffirms India's ambitious target of achieving net-zero emissions by 2070. The development strategy is grounded in the principles of equity, climate justice, and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC).

India’s long-term low-carbon development strategy rests on seven key transitions to low-carbon development pathways. These include:

1. **Low-carbon development of electricity systems consistent with development**
2. **Develop an integrated, efficient and inclusive transport system**
3. **Promote adaptation in urban design, energy and material efficiency in buildings, and sustainable urbanization**
4. **Promoting economy-wide decoupling of growth from emissions and development of an efficient, innovative low emission industrial system**
5. **Development of carbon dioxide removal and related engineering solutions**
6. **Enhancing forest and vegetation cover consistent with socioeconomic and ecological considerations**
7. **Economic and financial needs of low-carbon development**

With respect to each of these transitions, India’s low-carbon development strategy document has elaborated the international and national context as relevant, the current policies and programmes already being implemented as well as the key elements for each transition, potential benefits and challenges.

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Net-Zero is an Economic Game-Changer

The infrastructure and real estate industry has a powerful opportunity to make a positive impact on the planet by embracing net-zero emissions. Here's how achieving net-zero benefits everyone involved:

Leading the Charge on Environmental Responsibility:
Buildings are a major source of greenhouse gasses. By prioritizing net-zero, the infra industry can directly combat climate change. This commitment translates to a focus on energy efficiency, renewable energy sources, and sustainable practices, significantly reducing the industry's environmental footprint.

Turning Green into Greenbacks:
Net-zero buildings often boast lower operating costs thanks to reduced energy consumption. This translates to financial benefits for building owners. Furthermore, these buildings can command higher rental rates and property values as tenants and investors increasingly prioritize sustainability.

Staying Ahead of the Curve:
Governments worldwide are tightening regulations to curb carbon emissions. Net-zero buildings put real estate owners in a proactive position, ensuring compliance with evolving regulations and avoiding potential penalties or restrictions on non-compliant properties.

Future-Proofing Investments:
Transitioning towards net-zero isn't just about the present; it's about safeguarding the future. As the world progresses towards sustainability, buildings that don't comply with net-zero standards may become less desirable and face challenges in terms of marketability and financing. By embracing net-zero now, real estate companies are making their portfolios future-proof.

Innovation and Industry Leadership:
Committing to net-zero positions real estate companies as frontrunners in sustainability. This enhances brand reputation, attracts environmentally conscious tenants and investors, and fosters a culture of innovation within the industry, driving the development of even more sustainable solutions.

In essence, net-zero isn't just an environmental imperative; it's a smart business decision. By embracing net-zero, the real estate industry can secure a more sustainable future for the planet, while simultaneously positioning itself for financial success and industry leadership.

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Challenges and Approaches

The concept of "net-zero" energy emissions in infrastructure holds significant promise for mitigating climate change. However, achieving true net-zero remains a complex challenge due to the following factors:

- *Lack of a Universal Definition:*

Currently, there is no single, universally accepted definition of net-zero. This ambiguity creates difficulties in measuring and verifying progress towards this goal.

- *Emissions Throughout the Lifecycle:*

Infrastructure projects generate emissions throughout their entire lifecycle - from material sourcing and construction to operation and eventually, demolition. Accurately accounting for all these emissions stages is crucial.

- *Addressing the Challenges:*

Despite these challenges, significant efforts are underway to define and achieve net-zero in infrastructure

- *Global Conventions:*

International organizations like the UNFCCC establish protocols to encourage nations to transition from conventional, high-emission development practices to more sustainable alternatives.

- *Sustainability Rating Systems:*

Organizations like LEED (Leadership in Energy and Environmental Design) create frameworks for sustainable construction. These frameworks provide guidelines and metrics to measure and promote environmentally responsible practices throughout the infrastructure lifecycle.

By acknowledging these complexities and leveraging existing frameworks and protocols, the infrastructure sector can move towards a more objective and achievable definition of **net-zero**.

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Market Potential for Net-Zero Infrastructure

Niche Infrastructure:

Niche infrastructure encompasses a diverse range of specialized buildings, distinct from residential, commercial, or industrial spaces. This includes hospitals, hotels, museums, educational institutions, and more. India's unique demographics and wealth distribution create a complex infrastructure landscape, with varying qualities across regions. For instance, hospitals in metropolitan areas far outclass those in remote locations. This makes it challenging to quantify the total addressable market for each niche segment.

However, with India's ambitious goal of achieving net-zero emissions by 2070, a significant opportunity emerges. This report estimates the combined market value for constructing new and replacing existing niche infrastructure to meet this target. Factors considered include ease of conversion to net-zero standards, government and private investments, and Bootes' estimated project turnaround times for various niche segments.

This focus on sustainability positions Bootes well to capitalize on this growing market. By offering innovative and efficient net-zero solutions, Bootes can contribute significantly to India's infrastructure development while minimizing environmental impact.

This infographic shows the scope of financial opportunity in some of the niche construction segments, along with the number of years estimated to turnover the segment entirely to net-zero



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Industry Analysis

Evaluating the infrastructure landscape based on the mentioned parameters, India offers over INR 4200 billion worth of opportunities for the niche sgements as mentioned above. This report does not include other independent structures, hence it is safe to assume that the market potential will certainly be much higher than estimated.

Defense:

India's defense infrastructure faces a multitude of challenges hindering operational efficiency and environmental responsibility. This one-pager highlights these issues and proposes a roadmap for improvement:

Current Issues:

- Fossil Fuel Dependence: High reliance on fossil fuels for electricity and heating creates substantial energy costs and a significant environmental footprint.
- Renewable Energy Underutilization: Limited adoption of clean energy solutions like rooftop solar panels, wind turbines, and hybrid grids further exacerbates the situation.
- Inefficient Building Management: Outdated practices like conventional HVAC systems, lack of energy-efficient lighting, and the absence of regular building audits lead to excessive energy consumption.
- Challenges in Remote Areas: Remote locations often depend heavily on fossil fuels, creating logistical difficulties and environmental concerns.
- Limited Monitoring and Control: The scarcity of Building Management Systems (BMS) and the absence of water and electricity metering make it difficult to optimize resource utilization.
- Wastewater Issues: Inefficient wastewater treatment plants and overflowing water tanks pose environmental and health risks.
- Extreme Climate Challenges:
    - Cold Regions: Personnel stationed in frigid areas like Jammu & Kashmir and Ladakh struggle with inadequate heating solutions, often resorting to environmentally harmful kerosene oil heaters.
    - Hot Regions: Personnel deployed in scorching regions like the Rajasthan deserts face discomfort due to inefficient and expensive cooling systems.
- India spends approximately INR 2,600 crores out of INR 13,000 crore annual budget towards electricity bills alone, which is a significant cost to the Indian Army.

Bootes' solutions to the Defence:

- Passive Design Strategies: Bootes designs energy-efficient buildings that leverage natural ventilation and insulation for passive temperature regulation. The company says that this approach can achieve up to 40% energy savings compared to conventional structures.

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- Space Conditioning: Advanced HVAC systems from Bootes significantly reduce energy consumption. Additionally, they integrate net-zero microgrids that combine solar, wind, battery storage, and even geothermal energy sources (where feasible) to minimize dependence on fossil fuels. This holistic approach can reduce HVAC energy requirements by more than 50%.
- Sustainable Materials and Construction Practices: The company prioritizes eco-friendly materials and construction methods, minimizing environmental impact throughout the building lifecycle.

Benefits for the Indian Armed Forces:

- Reduced Operational Costs: Energy-efficient solutions from the firm may significantly decrease energy bills, freeing up valuable resources for other priorities.
- Enhanced Troop Well-being: Comfortable environments tailored to specific climates ensure optimal health and performance for troops.
- Environmental Responsibility: Sustainable infrastructure minimizes the environmental footprint of defense operations.

The potential for net-zero defense infrastructure is quite large. The company is currently servicing orders worth INR 50 crores in this regard. In addition, further orders from the defence forces to the tune of INR 600 crores will be allocated this year towards net-zero infrastructure. Bootes makes a strong claim that it is the only entity in the country, even among other EPC contractors, to execute these orders.

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Peer Analysis

Business Analysis of Bootes' Listed Peers in EPC

in INR Crores

Name of the Company	Sales FY24	PAT FY24	P/E Multiple	D/E Ratio	Order Book	Order Book to FY24Sales
Waaree Renewables	876	148	141	0.81	1500	1.71
Bondada Engineering	801	46	140	0.39	2707	3.38
Oriana Power	383	54	100	1.26	2200	5.74
Gensol Engineering	963	53	104	4.63	1783	1.85
KPI Green Energy	1024	162	89	1.24	3500	3.42
SW Solar	3035	-211	-85	0.53	8084	2.66
Waaree Tech	29	-1.09	-215	4.77	150	5.25
Bootes	**22**	**9.0**	**--**	**0**	**1960**	**80.0**

Bootes is an emerging net-zero infrastructure company. India's landscape of listed companies on NSE and BSE do not have net-zero infrastructure companies. For the scope of analysis, this report draws a parallel of Bootes with listed companies, based on their involvement in sustainable engineering and development followed under the EPC model. Bootes generated about 90% of its business (Self and JVs combined) under the EPC model of operations.

Bootes' growth in project execution is largely attributed to its swift turnaround time. Generic Engineering Construction and Project Ltd has a strategic tie-up with Bootes to enhance its project execution and improve the company's orderbook churn.

Analysis reveals that EPC contractors specializing in niche infrastructure take about 270 to 400 days to build structures spanning 100,000 square feet. Bootes completed the Jhansi library project in under 90 days (verified and certified claim). Bootes has a much lower turnaround time. The management says that it has strong expertise in planning and management of selective infrastructure.

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The Need for Cold Storage

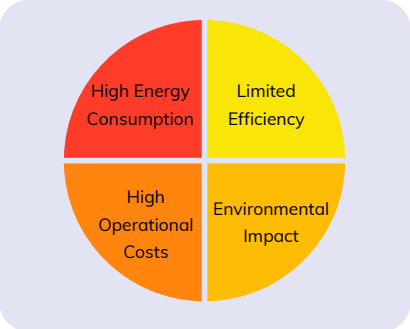
India faces a paradox: Despite producing enough food to nourish its entire population, millions go hungry each night. This disparity stems from a massive 40% of produce being wasted annually. The culprit? Perishability. Fresh fruits, vegetables, and other food items have a short shelf life, requiring a temperature-controlled supply chain – a cold chain – to ensure efficient storage, transportation, and distribution. This cold chain infrastructure plays a critical role in the agriculture and allied sectors by extending the shelf life of food grains, vegetables, livestock products, and more. Unfortunately, due to lack of usage of proper cold storage systems in our country, a significant portion of fruits and vegetables spoil, leading to immense losses estimated at ₹1.12 lakh crore annually, and this number continues to rise. Clearly, there's an urgent need for widespread adoption of cold storage facilities to bridge this gap and ensure food security for all.

On the contrary, according to a report by Grand View Research, the global cold storage warehouse market is experiencing significant growth, with estimates suggesting a market size of USD 119.8 billion in 2022. This momentum is expected to continue, with projections reaching as high as USD 409.4 billion by 2032 at a CAGR of 12.15%.

Several factors driving this expansion include, the rising demand for perishable goods and international food trade, increasingly stringent regulations around temperature-sensitive products, and the growth of organized retail sectors in developing economies. The global cold storage warehouse sector is poised for continued expansion, presenting exciting opportunities for innovation and investment.

The High Price of Freshness: *Is Cold Storage Too Expensive?*

While there's a pressing need for cold storage facilities, many startups, small businesses, and even established companies haven't yet adopted them completely yet cold storage warehouses do contribute to greenhouse gas (GHG) emissions from their electricity use and refrigerant leaks during construction and operation.



1. High Energy Consumption:

Traditional facilities rely heavily on fossil fuel-powered refrigeration systems. The global cold chain industry is estimated to consume roughly 15% of global electricity consumption, according to a 2020 report by the International Institute of Refrigeration (IIR). This translates to a significant carbon footprint, contributing to greenhouse gas emissions and climate change.

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2. Limited Efficiency:
Traditional systems often lack features for energy optimization. Inefficient insulation and outdated equipment can lead to significant energy waste. A 2019 study by the Rocky Mountain Institute found that cold storage facilities in the United States have the potential to achieve 30-50% energy savings through operational improvements and technology upgrades.

3. High Operational Costs:
The dependence on fossil fuels exposes traditional cold storage facilities to fluctuating energy prices. A 2021 report by the Freedonia Group projects the global market for industrial refrigeration equipment to reach $38.2 billion by 2028, highlighting the significant investment required to maintain these systems.These high energy costs can be a major burden on operational budgets for cold storage businesses.

4. Environmental Impact:
Beyond the direct emissions from energy consumption, traditional cold storage can have a broader environmental impact. Leakage of refrigerants, which are often potent greenhouse gases, can further contribute to climate change.

In 2020, industrial refrigeration, which includes cold storage, accounted for over 20% of the total emissions within the refrigeration sector.Hence, to eliminate these harmful impacts and provide sustainable solutions to the same, Bootes has come up with Net-Zero Cold Storage Warehouses. The net-zero cold storage warehouses lower the operational cost by 50%, increases efficiency, produces negligible green house gases and does not rely on fossil fuels at all. Hence, forming a sustainable and affordable way for cold storage.

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Bootes Cold Chain

Bootes' Net-Zero Cold Storage Warehouses

Bootes' net-zero cold storage warehouses represent a sustainable evolution in the cold chain industry, aiming to balance the energy required to maintain low temperatures with the production of clean, renewable energy. Bootes is the only company in India building net-zero cold-storage warehouses. These facilities emphasize energy efficiency through the use of high-performance insulation materials, upgraded refrigeration systems, and heat recovery techniques to reuse waste heat. In addition to saving energy, they incorporate renewable energy sources such as solar panels, wind turbines, and geothermal systems to generate the electricity needed to power their operations. The primary benefits of net-zero cold storage include significantly reduced greenhouse gas emissions, lower long-term operational costs due to energy efficiency and self-generated power, and potential financial incentives from government programs supporting sustainable technology adoption. Bootes has been awarded tenders by the Tamil Nadu government to develop net-zero warehouses in Chennai with a total value of approximately ₹140 crore. This project is divided into two parts: ₹60 crore for cold storage and ₹80 crore for temperature-controlled warehouses. These projects will serve as a proof of concept for Bootes, enabling them to secure and scale larger, high-value projects in the future. In addition to the Tamil Nadu project, Bootes is also undertaking the construction of a cold storage unit in Gurgaon, with a project value exceeding ₹200 crore. Furthermore, companies can enhance their brand image by demonstrating a commitment to environmental responsibility, appealing to increasingly eco-conscious consumers. However, the transition to net-zero cold storage presents challenges, including higher upfront costs for implementing advanced technologies and renewable systems, potential variability in the reliability of renewable energy sources in different locations, and the need for additional infrastructure to integrate these systems with the existing power grid. Despite these challenges, net-zero cold storage warehouses offer a promising path to reducing the environmental impact of cold storage while providing potential long-term economic benefits.

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Financial Analysis

in INR Lakhs

Balance Sheet	FY24	FY23
Equity & Liabilities		
Shareholders' Funds		
Shareholders Capital	710.63	1.00
Reserves & Surplus	1,226.67	37.60
Non-Current Liabilities		
Long-Term Borrowings	29.81	--
Deferred Tax Liabilities	--	--
Other Long Term Liabilities	--	--
Long Term Provision	--	--
Current Liabilities		
Short-Term Borrowings	52.41	125.99
Trade Payables	386.82	6.60
Other Current Liabilities	37.49	260.67
Short-Term Provisions	319.43	25.24
Total Equity and Liabilities	**2,763.27**	**457.1**
Assets		
Non-Current Assets		
Property Plant & Equipment & Intangible Assets	56.49	12.43
Intangible Assets	--	--
CWIP (Capital Work in Progress)	--	--
Intangible Assets Under Developments	--	--
Non-Current Investments	1.49	1.49
Deferred tax Assets (Net)	1.22	0.02
Long-Term Loans & Advances	--	--
Other Non-Current Assets	--	--
Current Assets		
Current Investments	--	--
Inventories	--	--
Trade Receivables	1,625.23	268.91
Cash & Cash Equivalents	460.96	4.12
Short-Term Loans & Advances	503.62	168.32
Other Current Assets	114.27	1.86
Total Assets	**2,763.27**	**457.15**

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Financial Analysis

in INR Lakhs

Income Statement	FY24	FY23
Revenue		
Revenue from Operations	1,910.71	414.69
Other Income	289.45	23.60
Total Revenue	**2,200.16**	**438.29**
Expenses		
Cost of Material Consumed	527.79	70.68
Personnel & Employee Benefits Expenses	326.14	169.74
Finance Costs	1.34	--
Depreciation & Amortisation	16.76	4.97
Other Expenses	187.18	157.94
Total Expenses	**1,059.21**	**403.33**
Profit Before Tax	**1,140.96**	**34.96**
Tax	238.11	9.09
Profit/ Loss After Tax	**902.85**	**25.87**
Profit for the Period	**902.85**	**25.87**

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Financial Analysis

Balance Sheet & Income Statement

- The balance sheet size of the company has experienced significant growth from FY23 to FY24, expanding from ₹4.57 crore in FY23 to ₹27.63 crore in FY24 portraying growth of over 600%.
- The company's financial performance improved significantly in FY24. They successfully raised ₹9.36 crore in new capital, which bolstered their reserves and surplus. In FY23, their reserves and surplus stood at ₹ 0.38 crores. By the end of FY24, this amount had grown considerably to ₹12.26 crore. It's important to note that the company utilized the entirety of their ₹6.5 crore general reserve to distribute bonus shares to shareholders.
- Bootes' trade payables have seen a significant increase in FY24. These payables represent the company's short-term obligations to suppliers for goods or services received on credit. On the contrary, the trade receivables have seen a significant growth from INR 2.68 crores in FY23 to INR 16.25 crores in FY24 which reflects to approximately 800% increase in trade receivables as compared to the previous year.
- Boosted by its revenue growth, Bootes' EBITDA margin has surged from 9.11% in FY23 to an impressive 52.68% in FY24.
- The company paid a tax of INR 9.11 lakhs in FY23. In the consequent year, Bootes paid a tax of INR 2.39 crores.
- The company's profitability has shown a remarkable improvement in FY24. While Profit After Tax (PAT) stood at just INR 25.87 lakh in the previous year, it has surged to INR 9.02 crore in FY24.
- The PAT Margin of the company was 41.04% in FY24, which is a significant growth of approximately 800% in the bottom line of the company as compared to the 5.90% margin in FY23

General Analysis

- The company has managed to increase it's EBITDA and PAT margin significantly as it recognises it's project execution cost such as on-sight labor, architecture and design to it's JV Univastu Bootes LLP.
- Bootes has a major contribution towards the JV Univastu Bootes LLP. Bootes has a mutual agreement with the company Univastu India Ltd where Bootes owns 49% of the JV and UniVastu India hold 51% of the JV.
- Revenue recognition for all the projects executed under Univastu Bootes LLP is consolidated and recognised in the financial books of Univastu India Ltd.

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Financial Analysis

Financial Ratios	FY24	FY23
Return Ratios		
RoA	41%	8%
RoE	59%	91%
RoCE	58%	91%
Profitability Ratios		
EBITDA Margin	53%	9%
EBIT Margin	52%	8%
NPM	41%	6%
Inventory Ratios		
DSO	270	224
DPO	136	9
Liquidity Ratios		
Current	3.40	1.06
Quick	3.40	1.06
Acid Test	3.40	4.40
Cash Ratio	0.58	0.01
Debt to Equity	0.43	10.84
Other Ratios		
Asset Turnover	1.37	1.92
Other Income/ Total Revenue	0.13	0.05
Payables/ Receivables	0.24	0.02
Receivables/Revenue	0.74	0.61
Payables/ Revenue	0.18	0.02

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Financial Analysis

Analyzing Financial Performance

Return Ratios

- Return ratios of the company have significantly increased across the board. The RoA of the company has jumped from 8% in FY23 to 41% in FY24.
- The company has posted an RoE of 59% in the current year which has halved from 91% in the previous year. This is largely because the total equity of the company was relatively much smaller leading to a ballooning effect. Bootes mainly executed consulting-based orders which have a much higher margin.
- RoCE of the company has also halved from 91% to 58% in the present year. This is also largely due to a high denominator effect. The company's asset size has considerable increased after raising equity capital.

Profitability Ratios:

- Bootes has largely executed its projects through its JV. About 90% of the business carried out in FY24 was generated from the Joint Venture. As part of the agreement with Univastu India Ltd, Bootes charges all its major expenses including operational and administration costs on the JV, there by lowering the expenditure of the company.
- EBITDA margins are at a stellar 53% against previous year's 9%.
- EBIT margins are nearly similar to EBITDA margins, indicating that the company has very less tangible and intangible assets. With little to no depreciation on interest cost, the company's EBIT margins are solid.
- Large transfer of costs to Univastu Bootes LLP, has resulted in the NPM rise from 6% in FY23 to 41% in FY24.

Liquidity Ratios:

- The company's current ratio has seen a sharp increase from 1.06 in FY23 to 3.40 in FY24, indicating a healthy improvement.
- Bootes' quick ratio and acid-test ratios are the same as the company's current ratio, indicating that the company's entire record of current assets does not include inventory or any illiquid assets. A healthy 3.4 current ratio indicates that the company maintains a seamless balance with its credit obligations.
- The company's cash ratio has increase from 0.01 in FY23 to 0.58 in FY24, which indicates that the company is sufficiently liquid to tender its short-term obligations.
- Bootes raised about INR 9.36 crores as per its provisional financial statements for FY24. This significantly boosted the companies reserves, resulting in a large drop in its debt-to-equity ratios.

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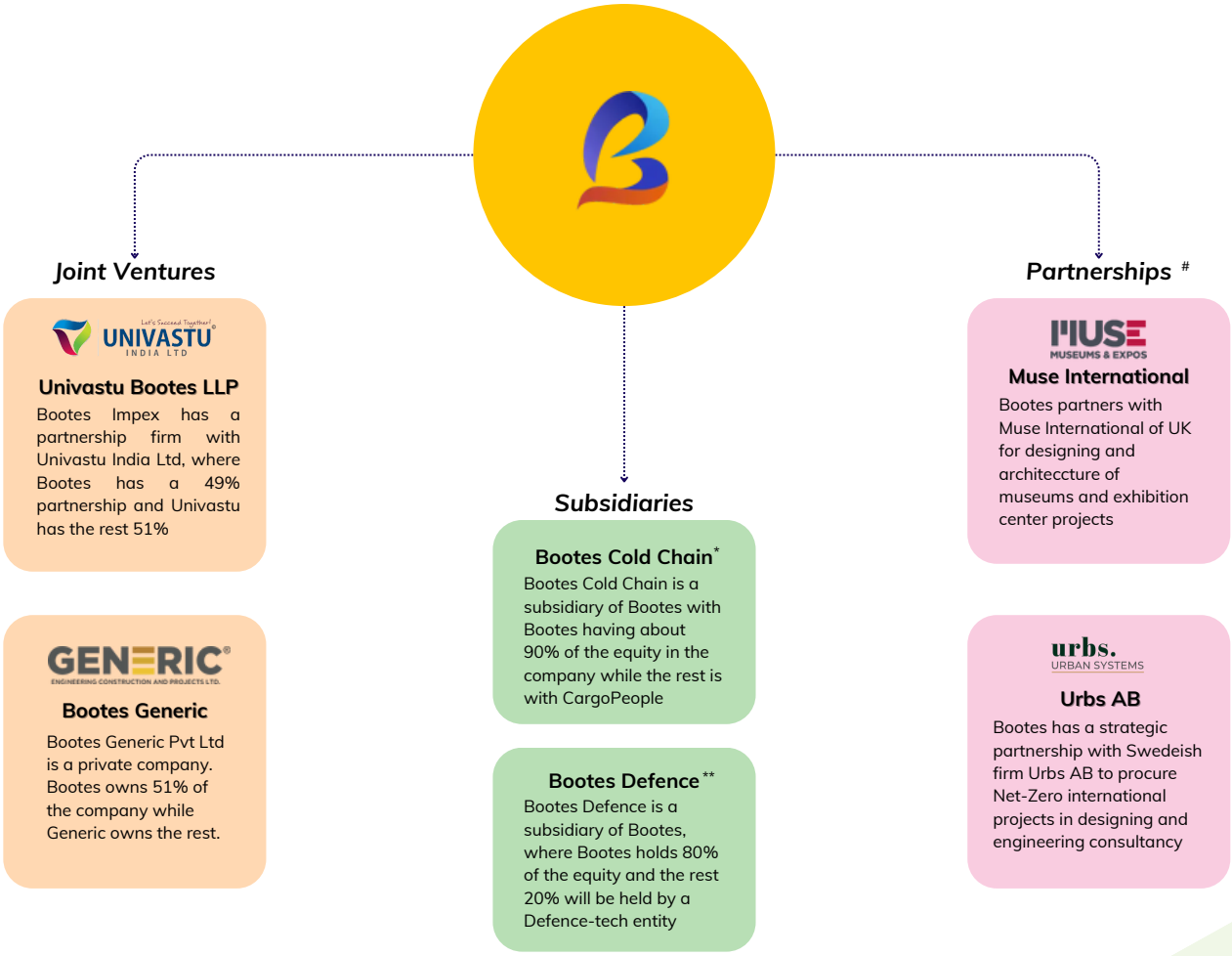
Financial Analysis

Analyzing Financial Performance

Other Ratios

- Bootes' asset turnover ratio has declined from 0.96 in FY23 to 0.80 in FY24. This decline can be attributed to a much smaller asset base in the previous year.
- Other Income of the company saw a substantial rise from 5.39% of the total revenue to 13.16% of the total revenue in FY24.
- Payables/Receivables have increased drastically from 0.02 in FY23 to 0.24 in FY24.
- Receivables accounted for 61.35% in FY23, which has increased to 73.87% in FY24. Similarly, Payables have escalated from 1.75% in FY23 to 17.58% in FY24.
- Employee margin has declined significantly from 38.73% in FY23 to 17.58% in FY24, indicating that the turnover per employee has improved.
- Raw material margin has increased from 16.13% in FY23 to 23.99% in FY24.

Bootes' Corporate Structure and Partnerships



Note:
* *Bootes Cold Chain - Bootes Impex* is in the midst of finalizing the structure as of the date of this report
** *Bootes Defence - Bootes Impex* is in the midst of finalizing the structure as of the date of this report
# Partnerships with *Urbs AB* & *Muse India* are highly confidential, the nature of the agreement between Bootes and these entities is kept discrete by the management of Bootes Impex

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Bootes' Orderbook

Bootes' Current Orderbook

(including JVs, Subsidiaries and Partnerships)

Bootes has about **INR 1960 crore worth of confirmed projects**, including those of its joint ventures and subsidiaries. The order book is an even mix of government and private contracts.

Bootes Generic JV - *Total 1430 Cr.*

- University — ***INR 700 Cr.***
- IT Park — ***INR 430 Cr.***
- Resi Complex — ***INR 272 Cr.***
- Hospital — ***INR 28 Cr.***

Bootes Impex - *Total 170 Cr.*

- Museum — ***INR 100 Cr.***
- Temple — ***INR 50 Cr.***
- Library — ***INR 20 Cr.***

Univastu Bootes JV - *Total 170 Cr.*

- Govt Project — ***INR 120 Cr.***
- Exhibition Center — ***INR 50 Cr.***

Bootes Cold Chain - *Total 140 Cr.*

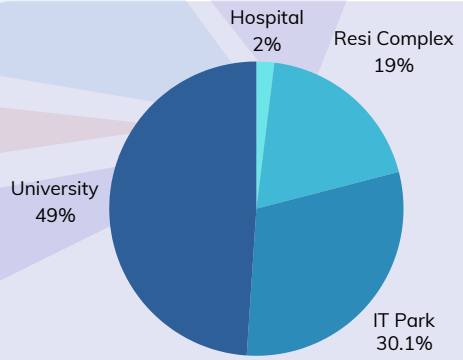
- Temp-Cont Warehouse — ***INR 80 Cr.***
- Cold Storage — ***INR 60 Cr.***

Bootes Defence - *Total 50 Cr.*

- Buildings & Bunkers — ***INR 50 Cr.***

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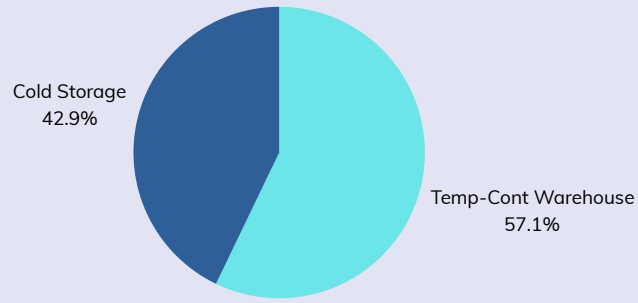
Bootes' Orderbook



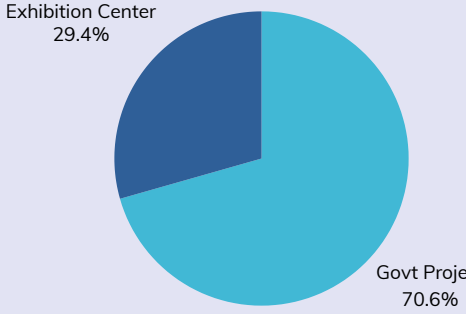
Distribution of Contracts from Bootes Generic JV

Bootes' orderbook in hand as of 30th June 2024 (H1-CY2024) has grown significantly in the last 3 months. Deepak says that the company has secured over 90% of the orderbook with the help of its strategic partnerships and joint ventures. As evident from the infographic, Bootes' 73% of the orders are with the Joint Venture with Generic Engineering Construction & Projects Ltd (GECPL).

Bootes Cold Chain will be executing orders worth about INR 140 crores in Phase 1 of the project to develop a net-zero cold storage and a temperature-controlled warehouse. Both these projects are to be developed in Chennai. As per the management, these figures are for the first phase of the project. The company is confident to receive further orders in the same geography. These projects will act as "Proof-of-Work" to secure further contracts in the country.



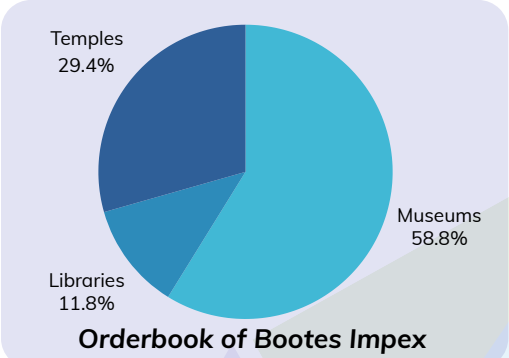
Distribution of Contracts from Bootes Cold Chain



Distribution of Contracts from Univastu Bootes JV

Univastu Bootes LLP is the first JV that Bootes Impex established in its 3 year history. The partnership firm has received several contracts, including Bootes' first project - Jhansi Library. The current synergy is now producing net-zero buildings for the government and focusses majorly on niche infrastructure projects.

Bootes Impex has managed to secure about 170 crores worth of orders in buildings niche infrastructure. The company has a well diversified portfolio including libraries, museums and temples. Bootes is targetting to build complete off-grid structures that are self-sustainable with 100% carbon neutrality.



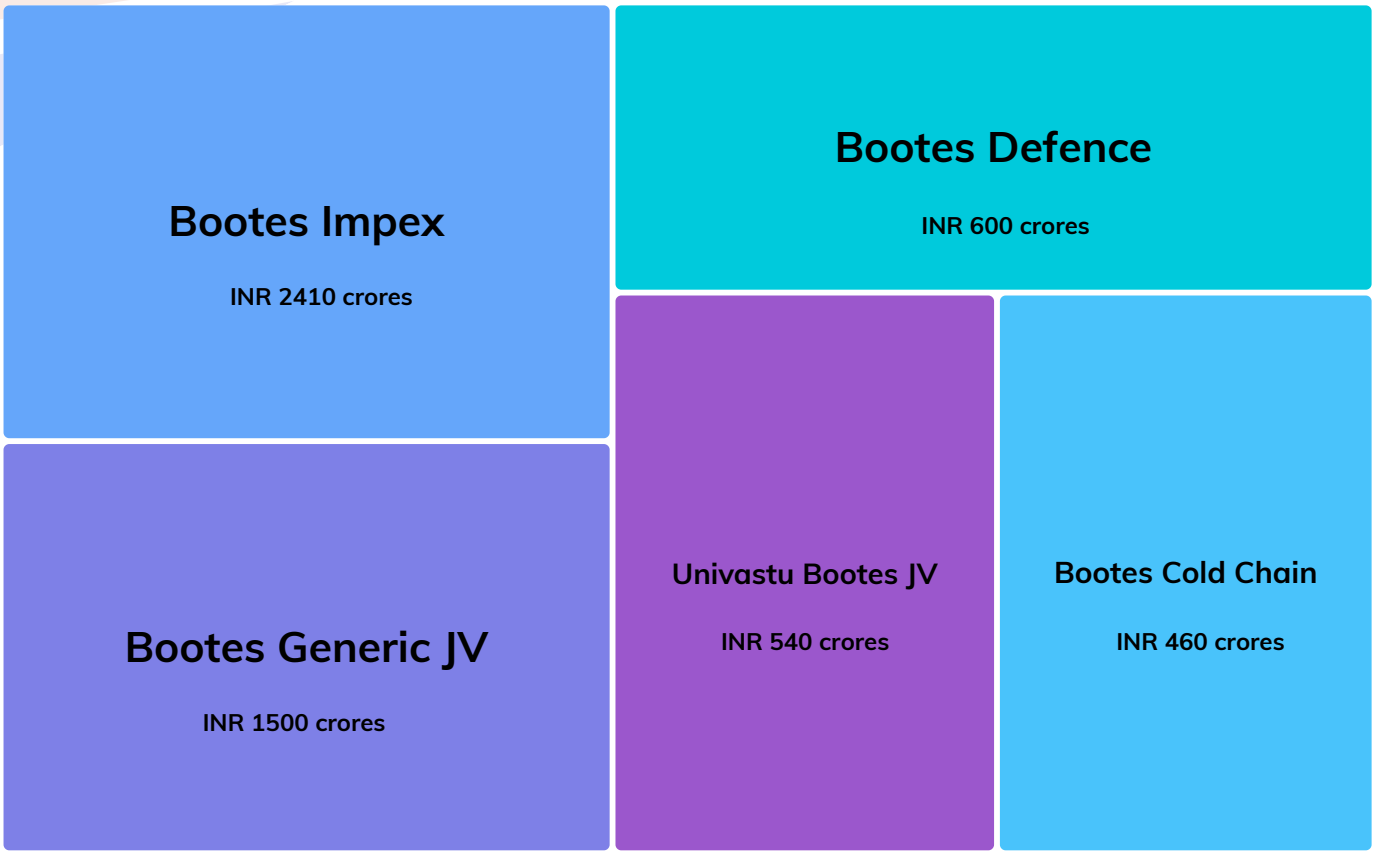
Orderbook of Bootes Impex

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Bootes' Orderbook

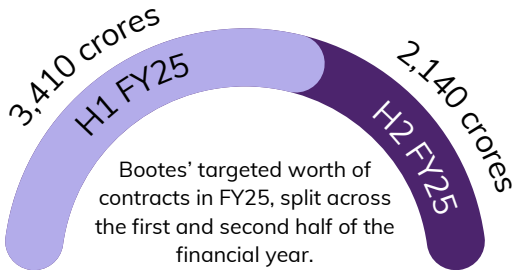
Bootes' Potential Orderbook

(including JVs, Subsidiaries and Partnerships)



Bootes, along with its shared operations, is targeting potential orders worth about INR 5510 crores in the ongoing financial year. The company has received confirmed orders worth INR 1960 crores in Q1 FY25. The company's management is diligently diversifying its portfolio and concentration of projects across different segments, partnerships and even geographic locations. Large scale diversification such as this, reduces the overall risk associated with the company's execution hurdles. Deepak says that Bootes is equally involved across all its projects in the pipeline. The company has structured the orderbook by prioritizing niche infrastructure projects which require a lower turnaround time. This boosts the company's cash cycle and maintains higher liquidity.

Based on the company's developing credentials and its strategic partnerships, Bootes may likely propel its topline in the ongoing financial year to over INR 1,000 crores.



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Bootes' Orderbook

Bootes' Potential Orderbook

(including JVs, Subsidiaries and Partnerships)

Defense:
Bootes has secured an initial order worth INR 50 crores from the defense sector and is actively bidding for additional projects totaling INR 650 crores. These projects involve replacing aging administrative buildings and constructing net-zero bunkers, showcasing Bootes' commitment to both sustainability and national security.

Net-Zero Cold Storage:
Through its subsidiary, Bootes Cold Chain, the company is executing INR 140 crores worth of cold storage projects in Phase 1 and has set its sights on securing an additional INR 460 crores in combined orders from public and private entities in the ongoing financial year. This focus on net-zero cold storage solutions addresses a critical gap in India's supply chain infrastructure.

Museums:
Bootes boasts a strong presence in the museum construction sector, with current orders valued at INR 100 crores. They are further aiming to secure an additional INR 500 crores worth of projects in FY25, solidifying their position as a trusted partner for cultural institutions.

Large-Scale Infrastructure:
Marking a significant expansion, Bootes is venturing into large dwelling infrastructure projects. This includes developing net-zero IT parks, hospitals, residential complexes, and more. They have secured INR 730 crores in orders to date and are ambitiously targeting an additional INR 2230 crores, representing approximately 33% of their overall order book target for the year.

Joint Ventures:
Bootes' joint venture with Univastu India Ltd is contributing to their growth. They are currently executing projects worth INR 170 crores and are bidding for an additional INR 540 crores in the ongoing financial year.

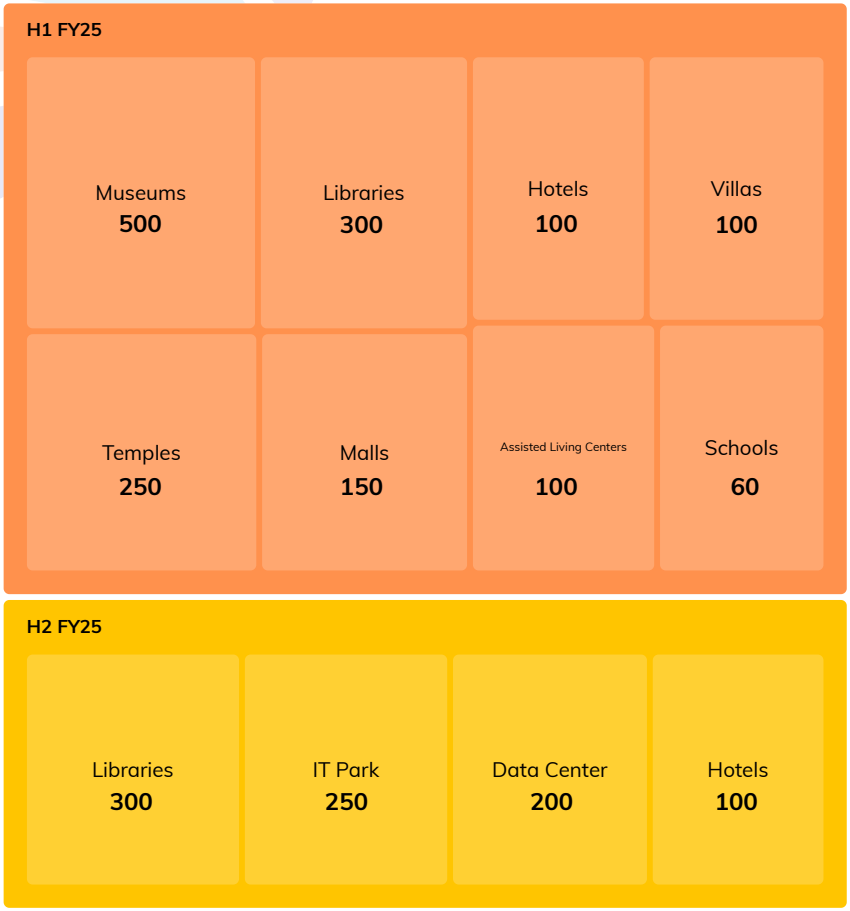
Independent Bidding:
Leveraging their successful completion of four net-zero projects in FY24, Bootes is confidently taking center stage. They will be independently bidding for a diverse range of projects valued at INR 1060 crores, encompassing an old-age home, hotels, a school, an IT park, and notably, India's first net-zero data center in Gurgaon. India's First Net-Zero Data Center: Bootes is at the forefront of data center sustainability, with a specific focus on securing the contract to build India's first net-zero data center in Gurgaon, a project valued at over INR 200 crores.

Financial Year Outlook:
Bootes' current order book stands at a robust INR 1960 crores, and their bidding target for the ongoing financial year is a staggering INR 5510 crores.The diversification of project types and scale signifies a pivotal year for Bootes as they solidify their position as a leading innovator in the construction industry.

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Bootes' Orderbook

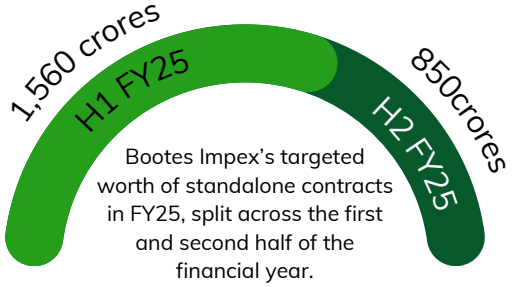
Potential Orderbook under Bootes Impex (standalone)



The management has projected procuring orders exceeding INR 2,410 crores within the current fiscal year. According to Deepak, Bootes stands as the sole company in India with the capacity to construct net-zero or entirely off-grid infrastructure. It is noted that all identified projects, with the exception of museums, libraries, and temples, pertain to non-governmental private ventures.

Furthermore, the management emphasizes that the prospective order book undergoes internal assessment by the team, considering inquiries, initial proposals, and Letters of Intent (LoIs).

The company's confirmed order book currently amounts to approximately INR 170 crores, necessitating a substantial infusion of capital for project execution. By enhancing its operational efficiency and project delivery timelines, the company aims to optimize its working capital cycle. Management exhibits a strong commitment to capital management and plans to raise funds solely through equity issuance. Deepak asserts that the company will refrain from leveraging debt, a strategic decision aimed at fortifying its position amidst the challenges prevalent in India's infrastructure sector. Timely project completion is expected to yield significant cash flows. Moreover, niche infrastructure projects offer superior profit margins compared to conventional commercial and residential projects.



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Media Coverage & Relevant Articles

CONSTRUCTION WEEK

BOOTES builds net-zero library for the Jhansi Development Authority

ManufacturingToday

BOOTES and Cargo-People unveil net-zero cold storage initiative

THE TIMES OF INDIA

PM museum glimpse of path to New India: Modi

Forbes INDIA

Deepak Rai: Spearheading India's net zero construction revolution with BOOTES

India's first net zero construction tech company

BOOTES India And Swedish Company URBS Launch Cooling-As-A-Service To Cut India's Energy Costs Up To 50%

Indian Company Bootes And Swedish Company Ecoloo Group Launch Net Zero Solution To Save 97% Of Annual Water Wastage, Resulting In Significant Tax Savings Annually

UNI
BREVITY ACCURACY SPEED

Bootes, CargoPeople to launch net-zero cold storage

Venture aims for $1 billion net-zero cold storage projects in five years

INDIAN TRANSPORT & LOGISTICS NEWS

EXPRESS mobility

Why do the National Logistic Policy and other government initiatives need to focus on the cold supply chain?

The National Logistic Policy (NLP) and other policies need to prioritise cold chains to strengthen the overall food and pharma supply chains, in our country.

The logistics sector is growing exponentially and has demonstrated exceptional resilience during the pandemic. With the government rolling out favorable policies, the logistics sector has only become more robust. The logistics industry is poised to increase to an astounding $380 billion by 2025, at a healthy 10-12% year-on-year growth rate. Cold chain logistics is expected to grow from $9.75 billion in 2023 to $12.85 billion by 2028, at a CAGR of 5.67%. The significance of the cold supply chain further increased during and after the pandemic. Safe transportation of vaccines and medicines requires robust cold chain facilities. The need for cold chain facilities became more apparent during the pandemic due to the large-scale transportation of vaccines to different parts of the country.

SUPPLYCHAINBRAIN
ONE FORUM • ONE FOCUS • MANY MINDS

Four Benefits of Automating a Cold Storage Facility

Cold-storage operators today are looking for sustainable, long-term investments that can satisfy changing consumer demands, while complying with strict regulations. Automation is playing a key role in making that possible. Following are the benefits to be derived from adopting modern-day technology.

THE ECONOMIC TIMES | Rise

How technology is transforming cold chain logistics into an intelligent and efficient machine

INVEST INDIA

Improving the cold chains and post-harvest infrastructure will significantly reduce waste, create a surplus for exports, and enhance the income of farmers. This will also go a long way in achieving the **Sustainable Development Goal of zero hunger**, which aims to end all forms of hunger and malnutrition and double the agricultural productivity and incomes of small-scale food producers.

अमर उजाला जोश! सच का!

मोदी बोले- दुनिया को तेजी से बदलते भारत की तस्वीर दिखाएगा प्रधानमंत्री संग्रहालय

ET Energyworld.com

From The Economic Times

Transition capex and R&D spending crucial for Indian oil & gas companies net zero goals: Report

The analysis suggests that the Indian O&G sector's ambitious goals, set for the years 2035 to 2046, are challenging given the current lower allocations of capital expenditure (capex) towards the green transition, which is mainly focused on reducing process emissions.

United News of India

Brevity Accuracy Speed

BOOTES India And Swedish Company URBS Launch Cooling-As-A-Service To Cut India's Energy Costs Up To 50 per cent

MAERSK

Cold chain efficiency in India: Tackling fragmentation and improving visibility

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Company Information

Company Name & Code

Legal Name	BOOTES IMPEX TECH LIMITED
CIN	U51909HR2021PLC093355
PAN	AAJCB6841Q
GSTIN	06AAJCB6841Q1Z2

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Unit No. 109B, 110, 111 & 112, 1st Floor, Magnum City Center
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Gurgaon, Haryana 122011

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Contact Details

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KM Gaurav & Company (FRN No.: 018618C)

Bankers

ICICI Bank

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Sources & Disclosures

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3. NetZeroIndia.org
4. Leadership in Energy & Environmental Design (LEED)
5. Press Information Beaureau
6. Ministry of Statistics & Programme Implementation (MoSPI)
7. Statista
8. News Articles/ Editorials/ Blogs on Digital and Social Media

Disclosures

This detailed research report is made by AlphaStrat, a fully-owned proprietorship of Aniket Nerkar (SEBI Registered Research Analyst – INH000009162).

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Subject Company: Bootes Impex Tech Ltd.

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