



# SECTOR IN FOCUS

## Aerospace and Defence

# R&D is important > R&D is imperative > R&D is critical

- Govt is now walking the talk but a lot more can be done

## Current defence R&D budget

- Under Demand No 21, the current budget for **capital R&D stands at Rs 11,981 crore (~2% of total defence budget)** – much lower than what China or US spend on R&D (high single digit or low double digit %). The capital component with respect to R&D is 7.9% of the capital component of the Ministry of Defence's budget.
- The revised budget for 2021-22 was less than the allocations for the year** possibly due to under-utilization of the budgeted amount.

## How to make R&D a win-win

- Leveraging the private sector**, the recent announcement of reserving 25% of the defence R&D budget for industry, startups and academia is a positive step in that direction
- Actively pursuing buying of IP rights** for few technologies that transcend sectors
- Having a **result-oriented, time-bound approach** towards investing in R&D
- An **open mind towards failures** in R&D, provided it was a considered and thought through investment decision
- Identifying the right talent** for each R&D project currently being pursued or still in the planning stage
- Incentives for private sector** to invest in R&D

## Case for more R&D investments

- The Russia-Ukraine crisis has reiterated the importance of having indigenous capabilities thereby ensuring a **cushion to supply chain shocks** and **reducing dependence on foreign nations** for strategic requirements.
- Self reliance and more effective indigenous R&D will **also enable defence exports** which while adding to forex, also helps in geopolitical relations.

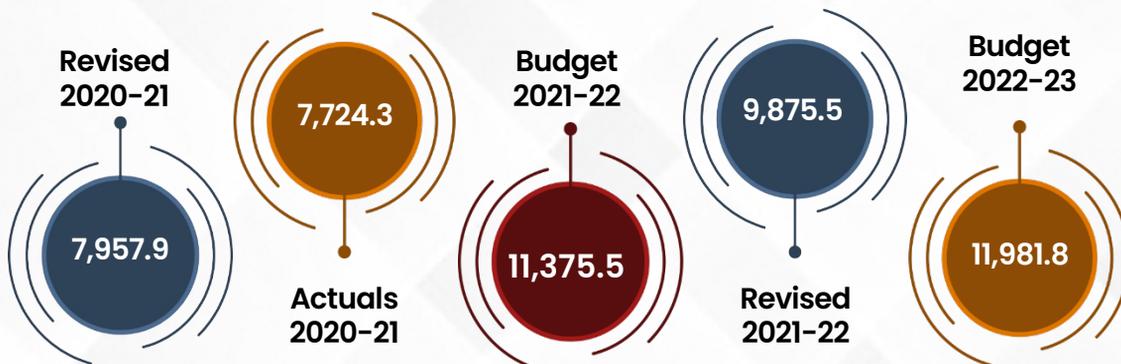
## Execution challenges

- The **challenges of meeting immediate short-term requirements** tends to take the long term R&D plans to the backfoot
- Skilled workforce and the know-how** especially when it comes to **critical technology**
- Ability of industry to absorb and scale in the short term.**

## Steps being taken

- There are a lot of activities happening both on the policy as well as the execution front. However, the results would possibly be reflected over a 5-10-year timeline as some of these initiatives start playing out.

## India defence R&D budget under capital outlay in numbers (in Rs crore)



The R&D budgets indicate an under-utilization of budget allocations which is not ideal given the R&D allocations are already below global levels

# The case for indigenous self sufficiency in defence is building up globally

– Investments in R&D were never more important for India as they are today

The global military expenditure in 2020, according to SIPRI, stood at almost \$2tn with the US, China, India, Russia and the UK being the top 5 spenders and together accounting for almost 60% of the total outlay. It was a 2.6% YoY rise in global defence budgets during a year when GDPs of many countries shrank and / or when GDP growth assumptions witnessed a significant downgrade, and trade faced much insecurity with broken supply chains largely due to the impact of COVID-19.

This spending was almost 2.4% of the global GDP in 2020, reportedly the highest military spending to GDP ratio since the global financial crisis (GFC) in 2008-09. **Globally, especially between NATO countries, a standard feature has been to maintain a defence budget of 1-2% of GDP, and very few countries surpass the norm.**

It appears that when trade gets impacted, insecurities potentially result in more vigorous defence preparedness. It was apparent during the 2008-09 GFC timeline and is also evident now during the pandemic. Off course there are other strategic reasons for increasing defence budgets - Ukraine's invasion by Russia (just when COVID-19 seemed to wane off) has also again brought defence budgets to the fore.

Germany, with its current defence spending of around \$55bn, has announced a policy shift and plans to increase its defence spending beyond 2% of economic output. While more clarity is awaited on the modalities, close to \$112bn of the 2022 budget has been committed for armed forces, largely to enhance investments and armament projects. France has also suggested increasing defence spending with

President Macron saying that Europe as a continent must accept the "price for peace, freedom and democracy" and must "invest more to depend less on other continents." In both cases, **the objective has been to invest significantly more in the security of one's own country and resources, and not as a group.**

India is also working on the Atmanirbhar Bharat initiative with respect to policy progressions.

Some of the key elements include the negative list, Indigenous content, earmarking procurement from industry, industry-friendly revisions in the DAP 2020 etc, and in the latest budget, an industry-specific scoping from within the R&D budget, formally providing for SPV-based partnerships between industry and DRDO.

The policy is in place and the next steps include providing funding and infrastructure push to implementation. Further, the move towards Atmanirbhar Bharat would be half-baked if it were just based on FOEMs setting up manufacturing facilities in India individually or jointly with Indian partners. It must grow further **to become organic growth in design and development activities, especially in the high technology areas.**

R&D is, therefore, a more crucial element for the Indian defence industry. China's investments in defence R&D estimated to be anywhere between 10% and 20% range of the defence budget, is an important benchmark for India. **A gradual and staggered approach to those levels should be planned in the coming 5 years by both public and private industries in India.**

## How R&D can be increased while making it economically feasible to incentivize participation from the private sector

- Encourage collaborations between academia and industry to enable fresh ideas and support in preparing a skilled workforce
- Leveraging the existing R&D and / or CoE setups by foreign companies
- Tax incentives for R&D investments to small, mid and large companies
- Tax holidays for startups working on critical and high-end technological innovations
- Part government funding for R&D projects with a clause to also support the private industry in case of an unsuccessful R&D effort
- Buying out a few global IPs which potentially have overlaps across sectors and segments

# Analyzing performance of listed DPSUs in the Indian aerospace and defence ecosystem

Many of the listed public defence companies have seen a significant increase in shareholder value creation since the beginning of this decade with the likes of HAL, BEML and BEL witnessing more than 50% increase.

What the prices indicate are a mix of fundamentals as well as the expected growth that investors believe makes the company a good buy at its current valuation.

Name	Last closing price (14 Mar 2022)	Price as on 01 Jan 2022	YTD change	Price as on 01 Jan 2021	Change vis-à-vis 01 Jan 2021
Hindustan Aeronautics Limited	<b>1380.5</b>	1233.7	11.9%	856.8	61.1%
Bharat Dynamics Limited	<b>503</b>	391.45	28.5%	348.1	44.5%
BEML Limited	<b>1529.55</b>	1635.85	-6.5%	975.45	56.8%
Mishra Dhatu Nigam Limited	<b>169.5</b>	181.4	-6.6%	199.45	-15.0%
Garden Reach Shipbuilders and Engineers Ltd	<b>226.7</b>	223.75	1.3%	201.85	12.3%
Bharat Electronics Limited	<b>209.5</b>	211.25	-0.8%	126.4	65.7%
Mazagon Dock Shipbuilders Ltd	<b>246.7</b>	283.65	-13.0%	227.65	8.4%

With indigenization further coming to the fore in the backdrop of the Ukraine crisis, HAL and BDL are two of the key companies that stand to gain the most due to their niche areas of work - HAL being the integrator for military aircraft (including LCA Tejas aircraft and attack and utility helicopters) and BDL being a key company in the missiles segment.

Both are important segments for India while also reportedly being significantly indigenized. Hence a good percentage of the supply chain rests in India.

With almost 60% indigenization content in the LCA Tejas for example, currently the more important parts or components being imported like the IFF probe, radome, radar and engine are also being worked upon to find an indigenous equivalent.

When it comes to missiles, courtesy the IGMPD program and various other missiles systems development including that of the BrahMos (with 70% IC) have enabled the growth of a significant vendor base to ensure self reliance.

**An industry which is expected to grow leaps and bounds in this decade is surely a focus area for both the government and the private sector**

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