

April 2025

Sector Report

# Defence

## SITREP: Time to Engage



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## Initiating Coverage

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*Self-reliance is the first condition for a strong economy; giant strides are being made to realise PM Modi's vision of 'Aatmanirbhar Bharat':*

*—Shri Rajnath Singh, Defence Minister, Government of India*

#### **Explosive opportunity**

- **Defence production target of INR3tn by FY29E versus INR1.3tn in FY24**
- **Defence exports target of INR500bn by FY29E versus INR211bn in FY24**
- **~USD130bn defence opportunity over next five years with a skew towards Air Force and Navy**

*Private Defence companies to outpace industry with a CAGR of 25–40% while DPSUs shall clock a 15–18% CAGR*

*We prefer the Defence Electronics sub-segment, which is expected to zoom ahead at 1.5–2x of defence budget outlay (7–8% CAGR over next five years)*

## Executive Summary

### **Battlefield layout: How big is the landscape?**

India has set forth ambitious plans to transition from being the world's second-largest defence importer (**8.3% of global imports in 2020–24 as per SIPRI**) to becoming a global defence arms powerhouse. This hinges not only on meeting the humongous domestic demand to modernise/expand existing defence systems and fleet (**production target of INR3tn by FY29E versus INR1.3tn in FY24**), but would also entail expanding exports (**target of INR500bn by FY29E versus INR217bn in FY24**).

To be sure, this is no mean ask, and certainly not a short-term one. It calls for a paradigm shift to value-added manufacturing—contingent on creating a resilient supply chain—supported by policy push. **We envisage a USD130bn defence opportunity over the next five years.** Air Force and Navy would account for the bulk of it due to the need for modernisation drives for their arsenals and larger programs/systems (LCA Mk-IA & Mk-II, AMCA, IMRH, QRSAM, Astra Mk-I & Mk-II, P-75I, etc). This makes up a substantial part of **DPSUs' pipeline of ~INR8.7tn.**

### **Double-barrelled opportunity: Domestic and exports**

#### **Domestic**

Given India's strong military and diplomatic relations with the US, Israel, Russia and France, we anticipate strategic partnerships and transfer of technology (ToT) agreements growing in the near future. Conversely, global defence majors too cannot afford to sideline or overlook India, one of the most promising defence markets, particularly considering that strategic agreements now could be a future goldmine, opening the floodgates to India's private defence sector.

**We reckon private defence companies' EPS CAGR of 25–40% shall beat hands down the defence public sector undertakings' (DPSUs') EPS CAGR of 15–18%.** High-tech defence manufacturing in the country is likely to improve over coming decades as domestic production ramps up (localisation efforts) spurred by greater focus on JVs/ToT partnerships with foreign OEMs for debottlenecking supply chains.

#### **International**

**NATO has been pitchforked into expanding its defence-spending plan to EUR800bn for the next three–four years** in the wake of President Trump's policy moves that cut back military support to NATO. **This opens up export opportunities for India (60–65% by private defence comps)** as **NATO has underinvested in defence for the past two–three decades; it has no option but to fend for itself in the absence of US's fledgling military support.** Meanwhile, chronic underinvestment in defence implies Europe's defence manufacturing capabilities are limited and rusted, skilled work force is scarce, and vendor/supplier base is non-existent, inefficient or subscale. These short-to-medium term handicaps amid a war raging at its doorstep means Europe shall lean on friendly countries' shoulders for meeting its demand while it scrambles to expand in-house production.

### **Defence Electronics: Hardwired to grow 1.5–2x of defence capex**

The Indian Air Force (IAF) faces a critical shortfall in its fleet due to delays in delivery/timelines of LCA Mk-IA, LCA Mk-II, MRFA and AMCA (**refer to Nuvama scenario analysis**), even as the defence technology one-upmanship from the China-Pak duo is increasing by the day. In fact, slower induction of LCA Mk-IA Tejas into IAF's fleet may have a ripple effect on other major aircraft programs in India in the near/medium term, in our view. It shall disadvantage IAF; hence, **modernisation of existing squadrons** (~31 currently versus the need of ~42) remains the only viable and fast-track option.



Alongside, the GoI/MoD continues to focus on other programs/options doggedly with an eye on self-reliance. Ongoing modernisation programs for Su-30, MiG-29 and Mirage-2000 are focused on upgrading avionics, high-power/AESA radars, upgraded missiles (Astra, BrahMos, etc), electronic warfare suites and engines, among others.

***We prefer the sub-segment Defence Electronics, which is expected to grow 1.5–2x of defence budget outlay (7–8% CAGR over next five years) given ongoing modernisation efforts (major reforms expected in CY25) and larger programs in the pipeline for Air Force and Navy ([Exhibit 16](#)).***

#### **Nuvama Defence sector top picks**

**Bharat Electronics — m-cap: INR2.15tn; CMP: INR294; TP: INR385**

**Data Patterns — m-cap: INR105bn; CMP: INR1,874; TP: INR2,300**

#### **Growth ground zero: USD130bn spend skewed towards IAF, Navy**

India is the fourth-largest military spender in the world with second-largest standing army (1.5mn active personnel). While the nation's defence spending (*~2.3% of GDP*) is lower than global defence majors (*3–5% of GDP*), we expect defence capital outlay to grow 7–8% annually over the next five years, potentially translating to USD130bn-plus of procurement given dynamic geopolitical and regional scenarios.

Hence, the Indian defence market would be a significant opportunity for both foreign and domestic players given the GoI's intent to promote indigenisation via a fresh dose of sector reforms, initiatives, etc. We envisage **a pipeline of ~INR8.7tn for DPSUs over the next four–five years (demand enablers – refer to [exhibit 15](#)).**

#### **The launch pad: Make in India, For India and For World**

Historically, India's defence needs have been largely met by imports (60–70%); however, a dramatic shift spurring a domestic ecosystem has curbed defence imports to 35–40%.

We believe *four key drivers* are paving the way for India's defence sector: i) import embargo; ii) exports-led growth; iii) modernisation efforts of existing fleet across Indian armed forces; and iv) in-house R&D on new tech opening floodgates for small private industry players. India's [defence production](#) has fired up 3x since 2014–15 (*private sector contributing 20–30%*), whereas exports have skyrocketed 30x over a similar time frame (*private sector contributing 60–65%*).

#### **Private sector growth strategy: Delicensing/partnerships key**

To encourage greater private sector participation, the GoI/MoD has taken several initiatives, including—but not limited to—Defence Procurement Process, FDI framework, creation of defence corridors (Uttar Pradesh, Tamil Nadu), positive indigenisation lists for major platforms as well as sub-systems and iDEX, Offset Policy and Agnipath Scheme.

The BJP-led government's manifesto explicitly envisages India as a net exporter of defence equipment over this decade. This decade, hence, presents a significant opportunity to develop the domestic defence industry, not only for self-reliance, but also as an avenue to tap into the larger exports market.

The US, Russia, Israel and France are at the forefront of developing cutting-edge/modern tech advanced weapon systems given their steep learning curves in defence technologies beginning from the use of offsets, kamikaze drones (Turkey, for instance), etc. We believe any further delicensing of key defence items by the GoI shall provide a meaningful push to India's private defence industry.



**Meanwhile, NATO is left with few options, but to accelerate defence spending to EUR800bn over the next three–four years.** This opens up export opportunities for India (60–65% by private defence comps) since NATO has historically relied on USA's hitherto military supremacy and thus underinvested in defence for the past two–three decades.

With the turn in geopolitics and US making clear its intention of cutting back on its share of defence spending w.r.t. NATO, Europe is scrambling to beef up its security. It faces chinks in its defence manufacturing capabilities, skilled work force, vendor/supplier base, etc. Accordingly, Europe will have to rely on co-operation from friendly countries such India even as it expands in-house production on a war footing over this decade.

### Lookout tower: Challenges, hindrances to India's defence goals

**Nascent industry, teething issues:** While some projects in the past failed to meet deadlines due to design/testing flaws, supply chain constraints, operational inefficiencies, etc (LCA Mk-IA), we believe such issues would get hammered out as the domestic ecosystem builds up over this decade.

**Immediate import needs:** Given India's pressing need to expanding its defence arsenal, *imports may rise in the near term (fast-track of MRFA etc), although growth rates may well decelerate.*

**Steep learning curve:** Defence systems/production is a sophisticated process. Accidents due to technical failures underscore system inefficiencies and signals *critical gaps (operational, training, maintenance) that need to be filled in terms of indigenous production* (ALH, LCH, Do-228 grounding instances in past).

**Political landscape and policy:** Any changes in the political landscape can lead to shifts in defence policies and budget allocations, which would create uncertainty and potentially disrupt ongoing projects. Conversely, improved co-ordination/co-operation between the public and private sector players may enhance output and maximise the sector's potential beyond limits.

### Sector valuation/recommendations (BEL, Data Patterns top picks)

Indian defence stocks across the spectrum have **re-rated explosively over the past two–three years** (although underperformed Nifty over last nine months). The ammo came from the GoI/Mod's indigenisation drive and exports-focused growth. This showed up in robust ordering momentum (across value chain) and better execution (not yet broad-based).

We believe India's defence growth story is structurally transformative, notwithstanding some snags (*execution delays, supply chain logjams, stock price corrections*) along the way.

In our view, **2025 is going to be a pivotal year for India** given orders for some larger programs (QRSAM, six P-75I, 97 LCA Mk-IA, etc) are likely. We reckon the industry shall grow steadily with a skew towards Air Force and Navy. Supply chains, meanwhile, remain the key variable amid global uncertainty unfolding in Bangladesh, Syria, Myanmar, etc on top of the ongoing Russia-Ukraine war and the precarious Middle East situation (Israel-Palestine, Yemen). That said, with the change in regime in the US and the Trump administration now calling the shots, the India-US defence co-operation shall improve in our view.

**Most private defence stocks are trading at a premium to DPSUs** given: i) higher top-line-driven earnings growth (25–40%+ EPS CAGR); and ii) superior RoEs/RoCEs. In our view, there is still a high possibility of further earnings re-rating across the value chain from the option value of large-ticket size programs in the pipeline (**~INR8.7tn DPSUs' pipeline over next two–three years**).

**In this note, we are initiating coverage on:**

- **Hindustan Aeronautics:** 'BUY' with a TP of INR5,150; m-cap: INR2.8tn
- **Bharat Dynamics:** 'BUY' with a TP of INR1,650; m-cap: INR516bn
- **Data Patterns:** 'BUY' with a TP of INR2,300; m-cap: INR105bn

**Nuvama Defence sector top picks:**

- **Bharat Electronics:** The DPSU has been consistently beating its revenue/OPM guidance, providing strong visibility of better execution and elevated margins on the back of greater indigenisation. A favourable product mix and better cost efficiencies give it an edge.
- **Data Patterns:** This private sector R&D-focussed player's strategy is push-demand driven. It is marching towards being a full-systems integrator.

## Case study

We compare long-cycle gestation businesses with short-cycle ones, and notice a trend of deviating valuations.

Given Bharat Electronics is a relative short-cycle player in defence electronics than the mighty Hindustan Aeronautics (large systems integrator), we argue BEL should continue to trade at a premium to HNAL's valuation.

**Why has HNAL been trading at a premium to BEL until now?** In short, because of realisation of large-ticket size order intake over the past two–three years (which we expect to continue) and MRO mix (margin-accretive, lower working capital and faster conversion rate) touching ~50% of revenue. This helped HNAL's cash balance balloon (INR270bn-plus) and, hence, led to higher other income (accounting for 30–35% of adjusted PAT over last two–three years).

Given an enormous pipeline of ~INR4.4tn for HNAL and INR1.1tn for BEL, we envisage that, as products' execution picks up, HNAL's OPMs/RoEs/RoCEs shall slip with products business's contribution rising to 60–65% of revenues. On the other hand, any further delay in execution of large projects (LCA Mk-IA, Mk-II, AMCA, IMRH, etc) due to supply chain constraints would imply delayed growth for HNAL.

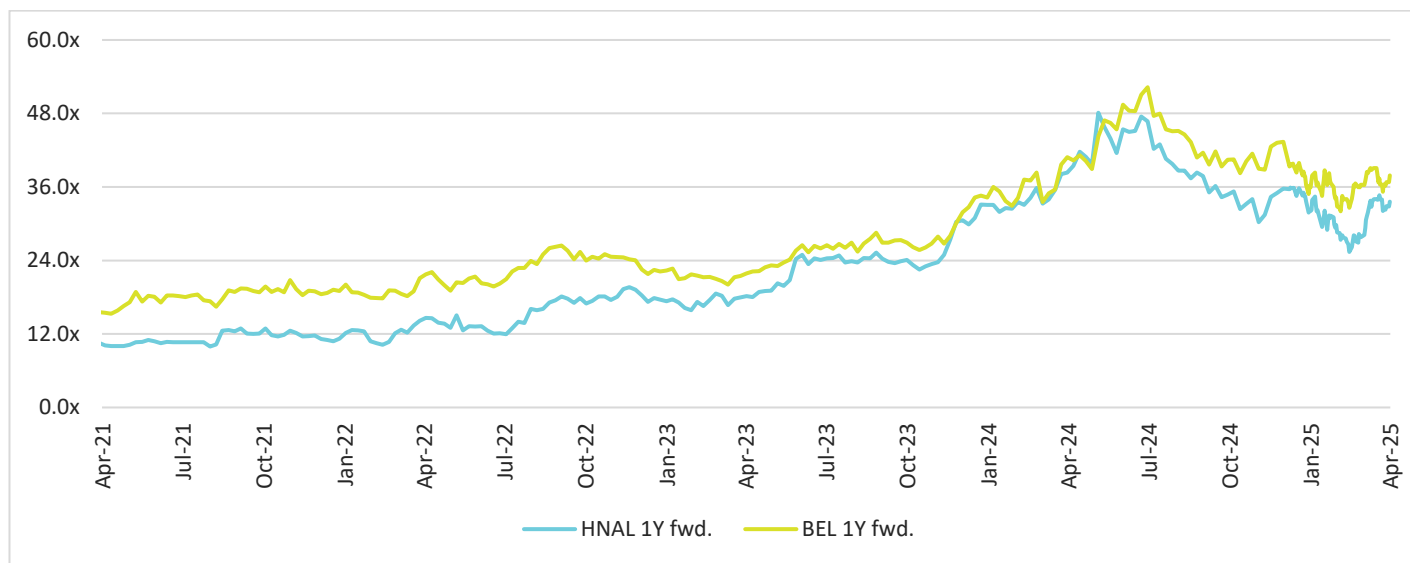
**All in all, we prefer BEL (over HNAL)** given its better execution, higher OPM/RoE, faster cash conversion and higher asset turns going forward, and lower risks too.

**Exhibit 1: BEL versus HNAL – A financial snapshot**

|                            | Bharat Electronics |          |          |          |          | Hindustan Aeronautics |          |           |           |           |
|----------------------------|--------------------|----------|----------|----------|----------|-----------------------|----------|-----------|-----------|-----------|
| Particulars (INR mn)       | FY23               | FY24     | FY25E    | FY26E    | FY27E    | FY23                  | FY24     | FY25E     | FY26E     | FY27E     |
| Order inflows              | 2,03,440           | 3,54,134 | 1,87,150 | 5,00,000 | 3,50,000 | 2,59,906              | 4,05,069 | 12,00,000 | 9,00,000  | 5,00,400  |
| Order book                 | 6,06,900           | 7,59,340 | 7,16,490 | 9,48,862 | 9,78,521 | 8,17,840              | 9,41,290 | 18,40,000 | 23,74,667 | 23,95,889 |
| Book to bill rate          | 3.4x               | 3.8x     | 3.1x     | 3.5x     | 3.0x     | 3.0x                  | 3.1x     | 6.1x      | 6.4x      | 5.0x      |
| Revenues                   | 1,76,462           | 2,01,694 | 2,33,774 | 2,71,515 | 3,24,345 | 2,69,279              | 3,03,808 | 3,04,000  | 3,68,552  | 4,83,300  |
| Gross margin (%)           | 44.4%              | 47.6%    | 49.7%    | 48.8%    | 48.8%    | 62.4%                 | 63.5%    | 58.8%     | 53.8%     | 52.7%     |
| EBITDA margin (%)          | 22.9%              | 24.8%    | 27.2%    | 26.5%    | 27.0%    | 27.0%                 | 32.1%    | 29.7%     | 26.5%     | 26.4%     |
| PAT margin (%)             | 17.0%              | 19.9%    | 21.6%    | 21.0%    | 21.6%    | 21.6%                 | 25.0%    | 26.0%     | 22.5%     | 20.4%     |
| Receivable days            | 202                | 130      | 124      | 132      | 138      | 180                   | 184      | 180       | 180       | 180       |
| Payable days               | 142                | 121      | 122      | 130      | 138      | 103                   | 108      | 100       | 100       | 100       |
| Inventory days             | 223                | 239      | 243      | 233      | 230      | 478                   | 418      | 420       | 500       | 500       |
| Cash conversion cycle      | 282                | 248      | 245      | 236      | 230      | 556                   | 494      | 500       | 580       | 580       |
| Cash from operations (CFO) | 10,866             | 46,480   | 57,494   | 40,362   | 50,207   | 88,355                | 82,257   | 67,410    | -38,505   | -25,526   |
| ROE                        | 23.5%              | 27.1%    | 29.1%    | 28.4%    | 30.2%    | 27.2%                 | 28.9%    | 25.1%     | 22.6%     | 22.9%     |
| ROCE                       | 31.3%              | 36.0%    | 38.9%    | 38.0%    | 40.4%    | 22.8%                 | 29.0%    | 25.2%     | 22.7%     | 23.0%     |
| Fixed asset turn (x)       | 6.8x               | 7.4x     | 7.9x     | 8.4x     | 9.6x     | 3.0x                  | 3.4x     | 3.2x      | 3.4x      | 3.8x      |
| Sale of services           | 9.9%               | 9.9%     | 9.4%     | 8.9%     | 8.2%     | 51.1%                 | 47.0%    | 54.5%     | 44.6%     | 39.7%     |

Source: Company, Nuvama Research

**Exhibit 2: HNAL versus BEL one-year forward PE**



Source: Bloomberg, Nuvama Research



## The Story in Charts

Exhibit 3: Ten largest exporters of major arms and their main recipients (2020–24)

| Exporter       | Share of global arms exports (%) | Main recipients and their share (%) of exporter's total exports (2020–24) |                |                 |  |
|----------------|----------------------------------|---------------------------------------------------------------------------|----------------|-----------------|--|
|                |                                  | 1st                                                                       | 2nd            | 3rd             |  |
| United States  | 43.0                             | Saudi Arabia 12                                                           | Ukraine 9.3    | Japan 8.8       |  |
| France         | 9.6                              | <b>India 28</b>                                                           | Qatar 9.7      | Greece 8.3      |  |
| Russia         | 7.8                              | <b>India 38</b>                                                           | China 17       | Kazakhstan 11   |  |
| China          | 5.9                              | Pakistan 63                                                               | Serbia 6.8     | Thailand 4.6    |  |
| Germany        | 5.6                              | Ukraine 19                                                                | Egypt 19       | Israel 11       |  |
| Italy          | 4.8                              | Qatar 28                                                                  | Egypt 18       | Kuwait 18       |  |
| United Kingdom | 3.6                              | Qatar 28                                                                  | USA 16         | Ukraine 10      |  |
| Israel         | 3.1                              | <b>India 34</b>                                                           | USA 13         | Philippines 8.1 |  |
| Spain          | 3.0                              | Saudi Arabia 24                                                           | Australia 18   | Türkiye 13      |  |
| South Korea    | 2.2                              | Poland 46                                                                 | Philippines 14 | <b>India 7</b>  |  |

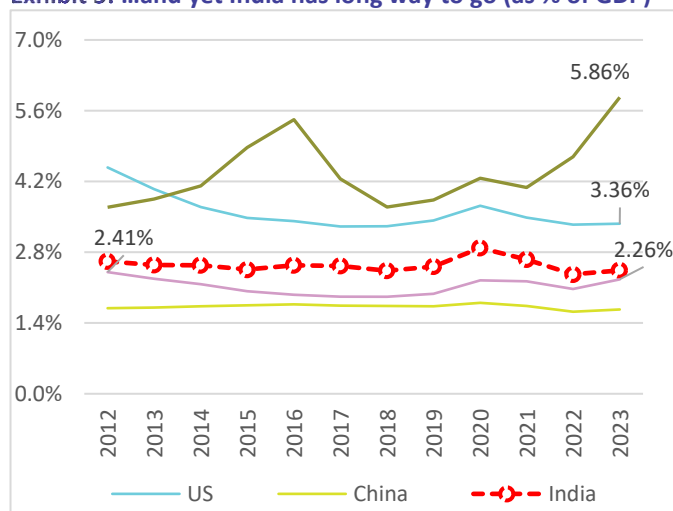
Source: SIPRI, Nuvama Research

Exhibit 4: India's defence spending among the fastest...

| Country      | Defence Spending (USD bn) |           |           |           | CAGR (%)    |              |             |
|--------------|---------------------------|-----------|-----------|-----------|-------------|--------------|-------------|
|              | 1993                      | 2003      | 2013      | 2023      | 1993-03     | 2003-13      | 2013-23     |
| USA          | 317                       | 441       | 679       | 916       | 3.4%        | 4.4%         | 3.0%        |
| China        | 12                        | 33        | 164       | 296       | 10.4%       | 17.3%        | 6.1%        |
| Russia       | 8                         | 17        | 88        | 109       | 8.1%        | 17.9%        | 2.2%        |
| S. Arabia    | 16                        | 19        | 67        | 76        | 1.3%        | 13.6%        | 1.2%        |
| France       | 36                        | 39        | 52        | 61        | 0.8%        | 3.0%         | 1.7%        |
| Japan        | 41                        | 42        | 49        | 50        | 0.3%        | 1.4%         | 0.2%        |
| UK           | 38                        | 52        | 64        | 75        | 3.2%        | 2.0%         | 1.6%        |
| <b>India</b> | <b>8</b>                  | <b>16</b> | <b>47</b> | <b>84</b> | <b>7.1%</b> | <b>11.2%</b> | <b>5.8%</b> |
| Israel       | 8                         | 8         | 16        | 27        | 0.6%        | 7.0%         | 5.4%        |
| Pakistan     | 3                         | 4         | 8         | 9         | 1.2%        | 7.5%         | 1.1%        |

Source: SIPRI, Nuvama Research

Exhibit 5: ...and yet India has long way to go (as % of GDP)



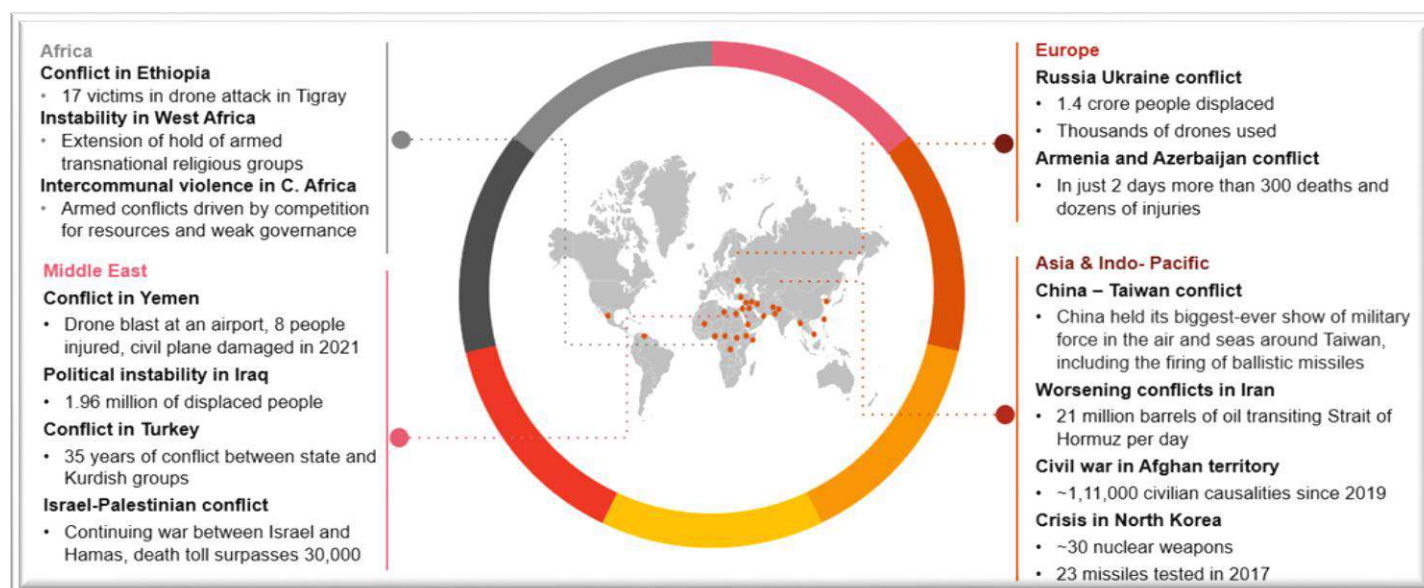
Source: SIPRI, Nuvama Research. Note: Nominal GDP is considered.

Exhibit 6: India's neighbouring countries and relations thereof — A military perspective

| Country                    | India                     | Afghanistan       | Pakistan                  | Sri Lanka                         | Nepal            | China          | Bangladesh                           | Bhutan                 | Myanmar                 |
|----------------------------|---------------------------|-------------------|---------------------------|-----------------------------------|------------------|----------------|--------------------------------------|------------------------|-------------------------|
|                            |                           |                   |                           |                                   |                  |                |                                      |                        |                         |
| Govt type                  | Democratic Republic       | Islamic Republic  | Parliamentary Republic    | Democratic Republic               | Federal Republic | Communist      | Democratic Republic                  | Parliamentary Monarchy | Constitutional Republic |
| Relation with India        | -                         | Friendly          | Hostile                   | Friendly                          | Friendly         | Hostile        | Friendly                             | Friendly               | Friendly                |
| Border issues              | -                         | None              | Pending                   | None                              | Pending          | Pending        | Pending                              | None                   | None                    |
| Active military ('000)     | 1,456                     | NA                | 654                       | 346                               | 95               | 2,035          | 163                                  | 8                      | 150                     |
| Def. Spend: 2023 (USD bn)  | 83.6                      | 0.3*              | 8.5                       | 1.2                               | 0.4              | 296.4          | 4.2                                  | NA                     | 2.5                     |
| Def. Spend (% of GDP)      | 2.4%                      | 1.8%*             | 2.8%                      | 1.6%                              | 1.1%             | 1.7%           | 1.0%                                 | NA                     | 3.8%                    |
| Internal Security Scenario | Militancy & Maoist issues | Taliban dominance | Faces threat of terrorism | Stable after LTTE conflict (2009) | Maoist issues    | Broadly Stable | Unstable given recent adverse events | Stable                 | Broadly Stable          |

Source: SIPRI, Nuvama Research

**Exhibit 7: Multiple incidents of geopolitical issues and armed conflicts in recent years around the world**



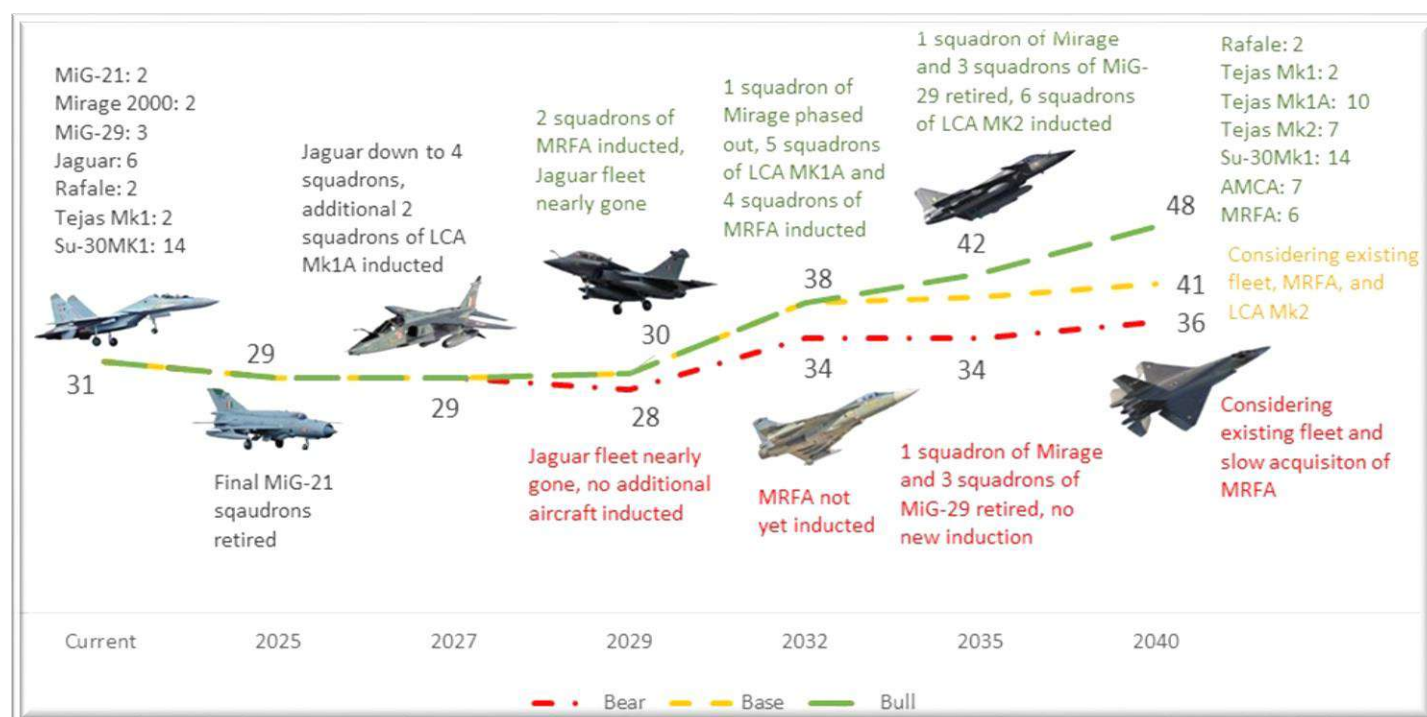
Source: Industry report, Nuvama Research

**Exhibit 8: Military strength profile of top defence nations**

| (Nos)                      | China     | Pakistan | India     | Russia    | USA       | Israel   |
|----------------------------|-----------|----------|-----------|-----------|-----------|----------|
| Active Frontline Personnel | 20,35,000 | 6,54,000 | 14,55,550 | 13,20,000 | 13,28,000 | 1,70,000 |
| <b>Land System</b>         |           |          |           |           |           |          |
| Tanks                      | 6,800     | 2,627    | 4,201     | 5,750     | 4,640     | 1,300    |
| Armoured Vehicles          | 1,44,017  | 17,516   | 1,48,594  | 1,31,527  | 3,91,963  | 35,985   |
| Self-Propelled Artillery   | 3,490     | 662      | 100       | 5,168     | 671       | 352      |
| Towed Artillery            | 1,000     | 2,629    | 3,975     | 8,505     | 1,212     | 171      |
| Mobile Rocket Projectors   | 2,750     | 600      | 264       | 3,005     | 641       | 183      |
| <b>Air Power</b>           |           |          |           |           |           |          |
| Total Aircraft             | 3,309     | 1,399    | 2,229     | 4,292     | 13,043    | 611      |
| Fighter Aircraft           | 1,212     | 328      | 513       | 833       | 1,790     | 240      |
| Dedicated Attack           | 371       | 90       | 130       | 689       | 889       | 38       |
| Transport                  | 289       | 64       | 270       | 456       | 918       | 13       |
| Trainer Aircraft           | 402       | 565      | 351       | 611       | 2,647     | 159      |
| Special Mission Aircraft   | 112       | 27       | 74        | 141       | 647       | 19       |
| Helicopters                | 913       | 373      | 899       | 1,651     | 5,843     | 147      |
| Attack Helicopters         | 281       | 57       | 80        | 557       | 1,002     | 48       |
| <b>Naval Power</b>         |           |          |           |           |           |          |
| Total Naval Fleet Strength | 754       | 121      | 293       | 419       | 440       | 62       |
| Aircraft carriers          | 3         | -        | 2         | 1         | 11        | -        |
| Helicopter Carriers        | 4         | -        | -         | -         | 9         | -        |
| Submarine                  | 61        | 8        | 18        | 63        | 70        | 5        |
| Destroyers                 | 50        | -        | 13        | 10        | 81        | -        |
| Frigates                   | 47        | 9        | 14        | 12        | -         | -        |
| Corvettes                  | 72        | 9        | 18        | 83        | 23        | 7        |
| Patrol Vessel              | 150       | 69       | 135       | 123       | 0         | 46       |
| Mine Warfare               | 36        | 3        | -         | 47        | 8         | -        |

Source: Global Firepower, Nuvama Research

**Exhibit 9: Nuvama scenario analysis of Indian Air Force's combat aircraft fleet**



Source: Nuvama Research

**Bear case:** Slow MRFA induction; AMCA and LCA Mk2 fail to materialise

**Base case:** No AMCA; assuming MRFA and LCA Mk2 materialise

**Bull case:** Assuming all major programs—MRFA, AMCA, LCA Mk2—execute timely

**Exhibit 10: Current and planned combat aircraft fleet size of Indian Air Force**

| Aircraft                           | Procured from         | Generation | Type            | Engine         | Fleet size | Phase out plan    |
|------------------------------------|-----------------------|------------|-----------------|----------------|------------|-------------------|
| <b>IAF Fighter fleet (Current)</b> |                       |            |                 |                |            |                   |
| MiG-21                             | Soviet Union          | 3rd Gen    | Fighter         | Tumanskii R-25 | 36         | 2025              |
| Mirage 2000                        | France                | 4th Gen    | Multirole       | SNECMA M53     | 36         | 2040              |
| MiG-29                             | Russia                | 4th Gen    | Multirole       | Klimov RD-33   | 54         | 2035              |
| Jaguar DARIN III                   | United Kingdom        | 4th Gen    | Ground Attack   | Adour 804E/811 | 108        | 2030              |
| Dassault Rafale                    | France                | 4.5 Gen    | Multirole       | Safran M88     | 36         | -                 |
| HAL Tejas Mk1                      | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 36         | -                 |
| Sukhoi Su-30MKI                    | Russia                | 4.5 Gen    | Multirole       | AL-31 FP       | 260        | -                 |
| <b>Total</b>                       |                       |            |                 |                | <b>566</b> |                   |
| Aircraft                           | Procured from         | Generation | Type            | Engine         | Fleet size | Induction         |
| <b>IAF Fighter fleet (Planned)</b> |                       |            |                 |                |            |                   |
| HAL Tejas Mk1A                     | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 83         | 2025 onwards      |
| HAL Tejas Mk1A                     | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 97         | 2032 onwards      |
| HAL Tejas Mk2                      | Indigenous production | 4.5 Gen    | Multirole       | GE-414         | 120        | 2035 onwards      |
| AMCA                               | Indigenous production | 5th Gen    | Stealth fighter | -              | 126        | 2035 onwards      |
| MRFA (SU-57/F-35)                  | US/Russia             | 5th Gen    | Stealth fighter | -              | 110        | Ordering 2025/26E |
| <b>Total</b>                       |                       |            |                 |                | <b>536</b> |                   |

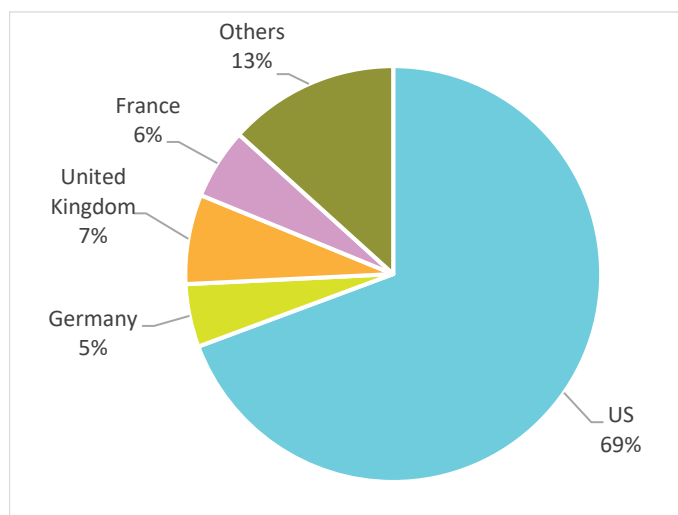
Source: Nuvama Research

**Exhibit 11: Average defence spending by NATO members as % of GDP (2014–24E)**



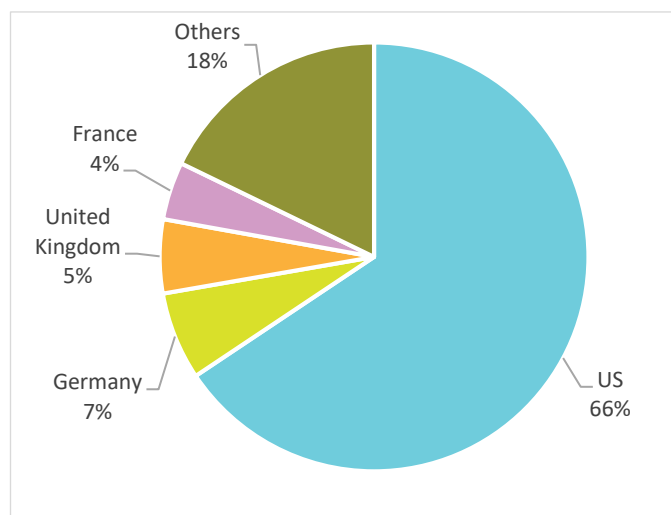
Source: Nuvama Research

**Exhibit 12: NATO nations' defence spending mix (2014)**



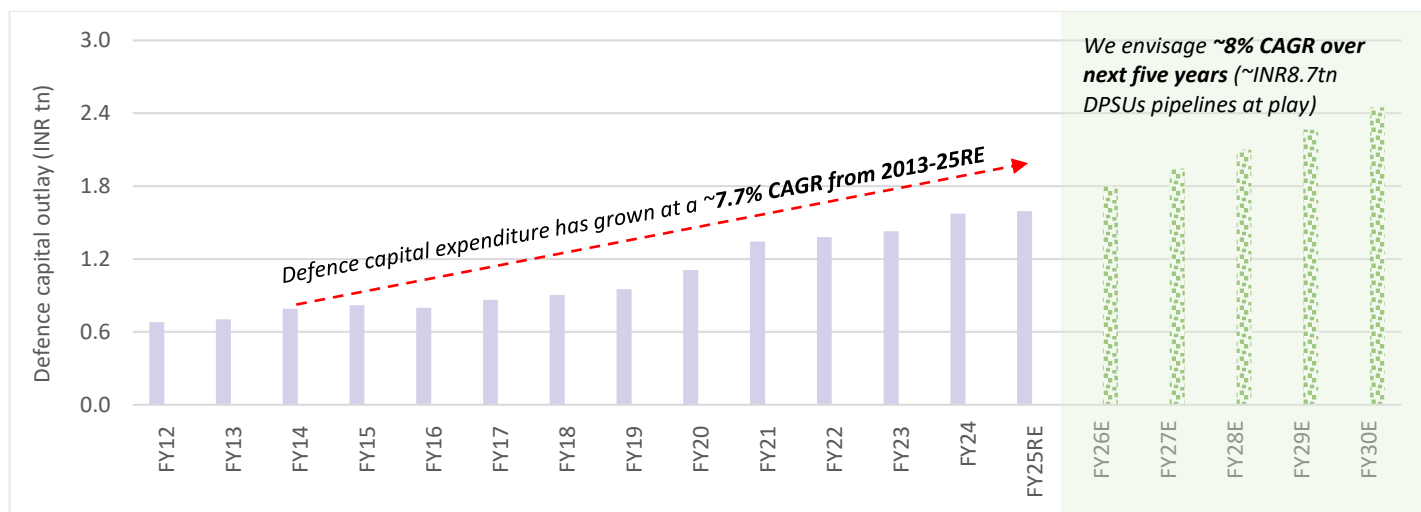
Source: Company, Nuvama Research

**Exhibit 13: NATO nations' defence spending mix (2024E)**



Source: Company, Nuvama Research

**Exhibit 14: ~USD130bn opportunity size over next five years (envisaging 7–8% CAGR in defence capital outlay)**



Source: Nuvama Research.

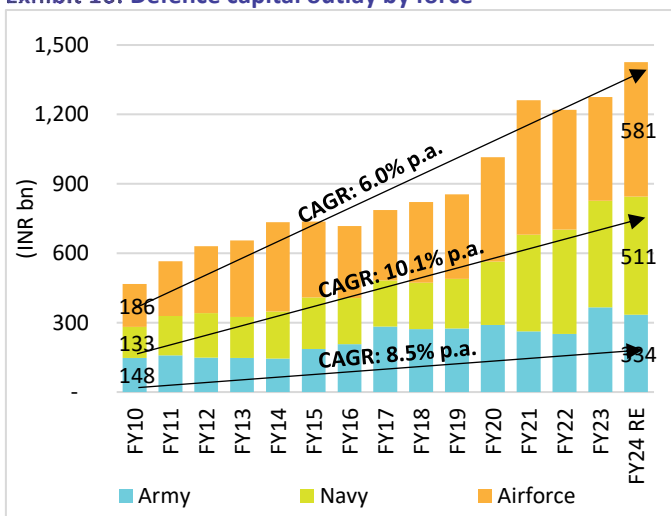
Note: We included HNAL, BEL, BDL, MDL and CSL pipelines in our thesis. Modelled in USD/INR at 84.

Exhibit 15: Defence capital outlay sensitivity

| USDbn                                      | Defence capex as a % of GDP |       |       |       |       |
|--------------------------------------------|-----------------------------|-------|-------|-------|-------|
|                                            | 1.5%                        | 2.0%  | 2.5%  | 3.0%  | 4.0%  |
| Defence capex as % of central capex outlay |                             |       |       |       |       |
| 15.0%                                      | ☆ 101                       | ☆ 115 | ☆ 130 | ★ 144 | ★ 172 |
| 17.5%                                      | ☆ 111                       | ★ 125 | ★ 139 | ★ 154 | ★ 182 |
| 20.0%                                      | ☆ 120                       | ★ 135 | ★ 149 | ★ 163 | ★ 192 |
| 22.5%                                      | ☆ 130                       | ★ 144 | ★ 159 | ★ 173 | ★ 201 |
| 25.0%                                      | ★ 140                       | ★ 154 | ★ 168 | ★ 183 | ★ 211 |

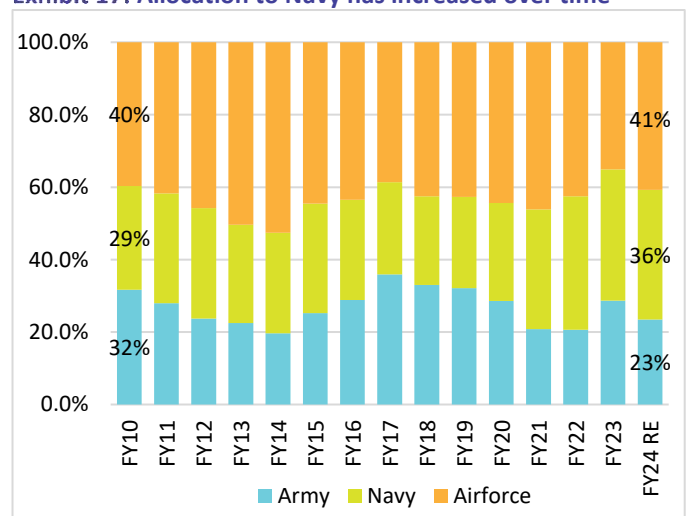
Source: Budget Docs, Nuvama Research

Exhibit 16: Defence capital outlay by force



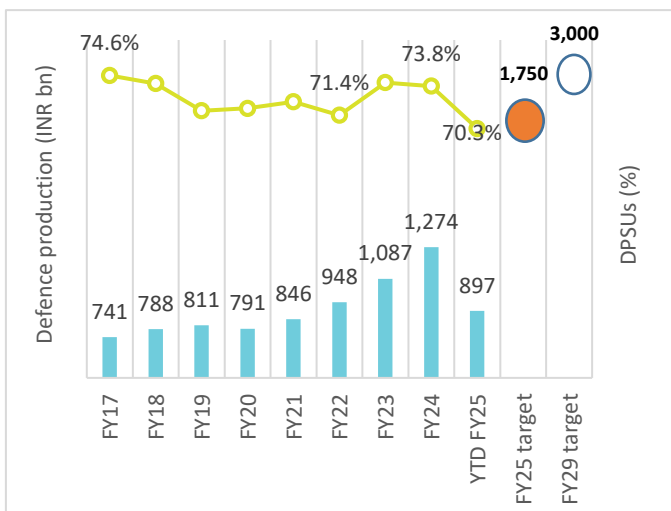
Source: Ministry of Defence, Nuvama Research

Exhibit 17: Allocation to Navy has increased over time



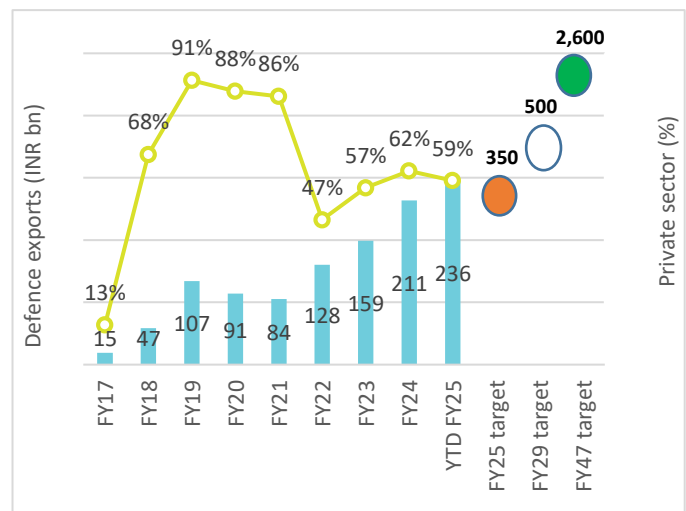
Source: Ministry of Defence, Nuvama Research

Exhibit 18: DPSUs dominate India's defence production



Source: Ministry of Defence, Nuvama Research

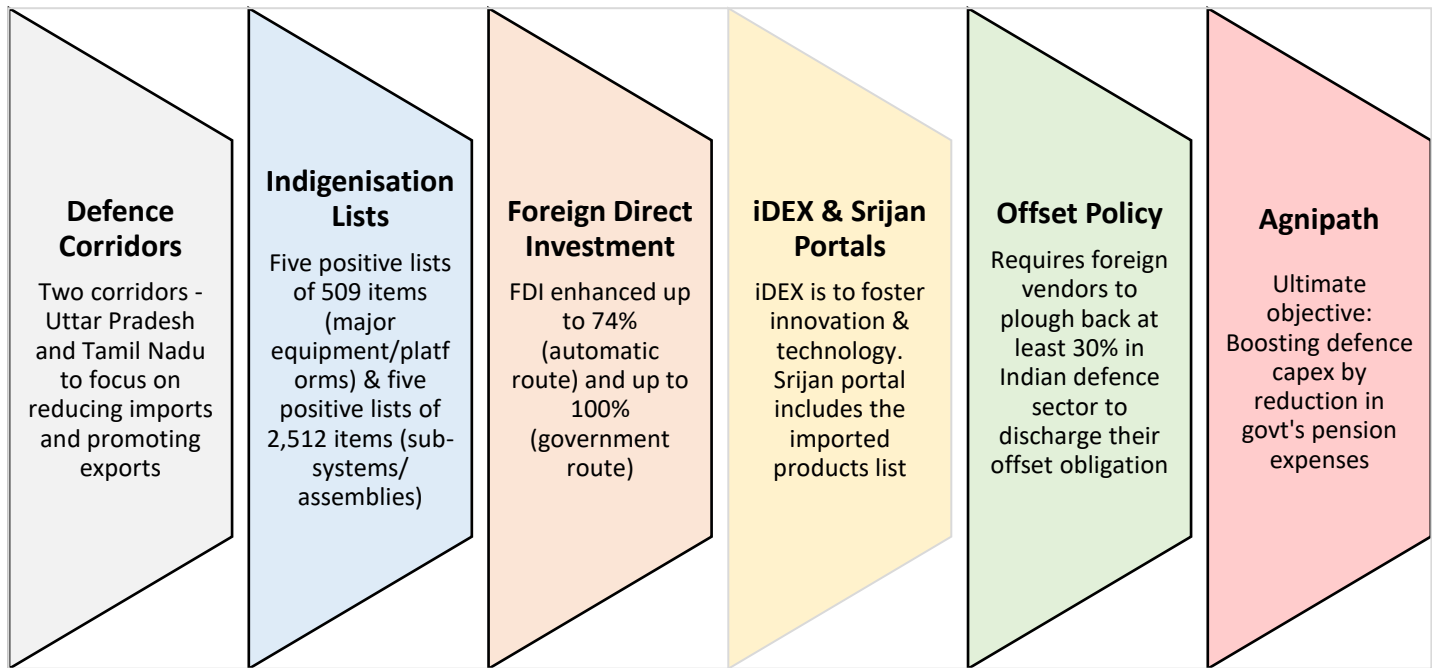
Exhibit 19: Ambitious export targets (private sector-led)



Source: Ministry of Defence, Nuvama Research



Exhibit 20: Key initiatives taken by GoI/MoD



Source: Nuvama Research

Exhibit 21: INR8.5–9tn – DPSUs’ pipeline likely to materialise over next five–seven years

| Hindustan Aeronautics Limited (2025-35)             |       |              |                      |
|-----------------------------------------------------|-------|--------------|----------------------|
| Platforms                                           | Units | Cost (INRbn) | Expected Timeline    |
| <b>Helicopters</b>                                  |       |              |                      |
| Light Utility Helicopters (LUH)                     | 213   | 266          | Spread over a decade |
| Light Combat Helicopters (LCH) *                    | 156   | 627          | Order received       |
| Advanced Light Helicopter (ALH)                     | 37    | 88           | FY26-27              |
| Naval Utility Helicopter (NUH)                      | 111   | 217          | FY25-26              |
| Indian Multi-Role Helicopter (IMRH)/ DBMRH          | 314   | 942          | FY28-29              |
| <b>Aircrafts</b>                                    |       |              |                      |
| Light Combat Aircraft (LCA) Mark 1A                 | 97    | 650          | FY25-26              |
| Light Combat Aircraft (LCA) Mark 2                  | 120   | 960          | FY29-30              |
| Sukhoi-30 MKI *                                     | 12    | 135          | Order received       |
| Dornier-228 Mid Life Upgrade *                      | 25    | 29           | Order received       |
| Advanced Medium Combat Aircraft (AMCA)              | 126   | 1,134        | FY34-35              |
| Twin Engine Deck Based Fighter (TEDBF)              | 45    | 140          | FY32-33              |
| <b>Engine</b>                                       |       |              |                      |
| AL-31 FP *                                          | 240   | 260          | Order received       |
| <b>Total opportunity</b>                            |       | <b>4,397</b> |                      |
| Bharat Electronics Limited (2025-27)                |       |              |                      |
| Base orders (upgrades, maintenance, spares etc.)    | -     | 200          | INR200bn p.a.        |
| Weather radar                                       | -     | 25           | FY26-28              |
| EW Suite for MI-17                                  | -     | 20           | FY26-28              |
| Atulya radar                                        | -     | 20           | FY26-28              |
| Ashwini radar *                                     | -     | 25           | Order received       |
| Shakti Phase-4                                      | -     | 20           | FY26-28              |
| QRSAM (weapon system)                               | -     | 250          | FY26-28              |
| MFR-X radar for NGME ships                          | -     | 20           | FY26-28              |
| GBMES system                                        | -     | 20           | FY26-28              |
| Mountain radar                                      | -     | 20           | FY26-28              |
| MRSAM                                               | -     | 70           | FY26-28              |
| MF STAR variants for NGC (P75-I)                    | -     | 70           | FY26-28              |
| Other large programs                                | -     | 400          | FY26-28              |
| <b>Total opportunity</b>                            |       | <b>1,135</b> |                      |
| Mazagon Dock Shipyards Limited (2025-27)            |       |              |                      |
| Next Generation Corvettes                           | 8     | 360          | FY26-27              |
| Next Generation Destroyers                          | -     | 800          | FY26-27              |
| P-75I Submarines                                    | 6     | 600          | FY25-26              |
| Project 17B stealth frigates                        | 7     | 700          | FY26-27              |
| <b>Total opportunity</b>                            |       | <b>2,460</b> |                      |
| Bharat Dynamics Limited (2025-29)                   |       |              |                      |
| Base orders (SAMs, torpedos, spares, refurbishment) | -     | 20           | INR20bn p.a.         |
| Astra Mk I                                          | 750   | 113          | FY25-29              |
| Astra Mk II                                         | 15    | 3            | FY26-27              |
| MRSAM *                                             | 70    | 30           | Order received       |
| QRSAM                                               | 144   | 88           | FY27-28              |
| LBRM                                                | 1200  | 48           | FY25-26              |
| SAAW                                                | -     | 10           | FY25-26              |
| NAG/Helina ATGM                                     | 500   | 5            | FY25-26              |
| Spike ER2                                           | -     | 3            | FY25-26              |
| <b>Total opportunity</b>                            |       | <b>288</b>   |                      |
| Cochin Shipyard Limited (2025-28)                   |       |              |                      |
| Vessels to foreign clients (Commercial)             | -     | 65           | -                    |
| Vessels for Domestic clients (Commercial)           | -     | 11           | -                    |
| Government Projects (RFP stage)                     | -     | 2            | -                    |
| Other project proposals - RFI/Mid Stage             | -     | 300          | -                    |
| <b>Total opportunity</b>                            |       | <b>378</b>   |                      |

Source: Company, Nuvama Research

**Exhibit 22: India's defence landscape**

| Listed players                        | Unlisted players                  | Foreign OEMs                  |
|---------------------------------------|-----------------------------------|-------------------------------|
| Aimtron Electronics                   | Adani Defence & Aerospace         | Boeing Co                     |
| Apollo Micro Systems                  | Advanced Weapon Equipment India   | Lockheed Martin Corp          |
| Ashok Leyland                         | Armoured Vehicles Nigam           | Raytheon Technologies Corp    |
| Astra Microwave                       | Artemon Aerospace                 | Northrop Grumman Corp         |
| Avantel                               | Gliders India                     | General Dynamics Corp         |
| Azad Engineering                      | Goa Shipyard                      | L3Harris Technologies Inc.    |
| BEML Ltd.                             | Hindustan Shipyard                | Huntington Ingalls Industries |
| Bharat Dynamics                       | India Optel                       | Axon Enterprise Inc.          |
| Bharat Electronics                    | Munitions India                   | Elbit Systems                 |
| Bharat Forge                          | Raychem RPG                       | Moog Inc-Class A              |
| CFF Fluid Control                     | Reliance Naval and Engineering    | Airbus SE                     |
| Cochin Shipyard                       | Sagar Defence Engineering Private | Safran SA                     |
| Data Patterns                         | Tata Advanced Systems             | Dassault Aviation SA          |
| DCX Systems                           | Troop Comforts                    | Bae Systems Plc               |
| DEE Development Engineers             | Vijayan Trishul Defence Solutions | Thales SA                     |
| Droneacharya Aerial Innovations       | Yantra India                      | MTU Aero Engines AG           |
| Dynatomic Technologies Ltd            |                                   | Rolls-Royce Holdings Plc      |
| Garden Reach Shipbuilders & Engineers |                                   | Rheinmetall AG                |
| Godrej Industries                     |                                   | Leonardo Spa                  |
| HFCL                                  |                                   | Saab Ab-B                     |
| High Energy Batteries (India)         |                                   | Babcock Intl Group Plc        |
| Hindustan Aeronautics                 |                                   |                               |
| ideaForge Technology                  |                                   |                               |
| Krishna Defence & Allied Industries   |                                   |                               |
| Larsen & Toubro                       |                                   |                               |
| Mahindra & Mahindra                   |                                   |                               |
| Marine Electricals (India)            |                                   |                               |
| Mazagon Dock Shipbuilders             |                                   |                               |
| Mishra Dhatu Nigam                    |                                   |                               |
| MTAR Technologies                     |                                   |                               |
| Lokesh Machines                       |                                   |                               |
| Nibe                                  |                                   |                               |
| Paras Defence and Space Technologies  |                                   |                               |
| Premier Explosives                    |                                   |                               |
| Rossell India                         |                                   |                               |
| Sansera Engineering                   |                                   |                               |
| Sika Interplant Systems               |                                   |                               |
| Solar Industries India                |                                   |                               |
| Swan Energy                           |                                   |                               |
| Swaraj Engines                        |                                   |                               |
| Taneja Aerospace and Aviation         |                                   |                               |
| Walchandnagar Industries              |                                   |                               |
| Zen Technologies                      |                                   |                               |

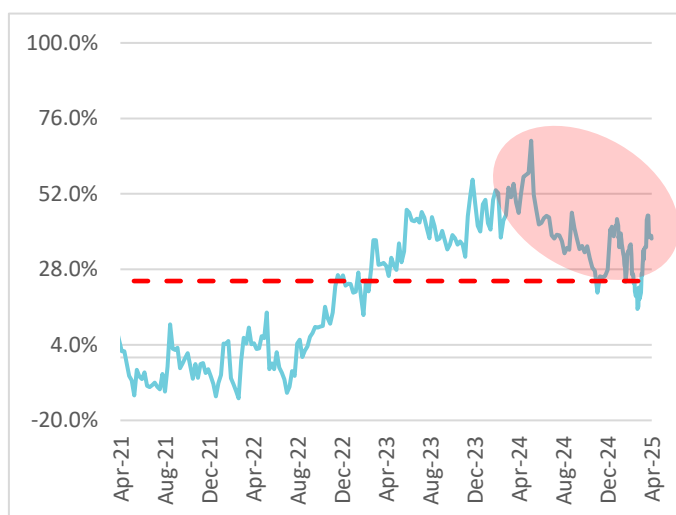
Source: Nuvama Research

**Exhibit 23: What does Defence Electronics include?**

| Company                | Radars - Tracking & Surveillance | Radars (Multi-mission) | Radars - Specialized (Stealth detection etc.) | Seekers & Electronics for Missiles/Torpedoes/Sonbuys | EW | Communications & SDR | Satcom | Ground stations | Fire control systems | Avionics | Nano & micro satellites | Testing |
|------------------------|----------------------------------|------------------------|-----------------------------------------------|------------------------------------------------------|----|----------------------|--------|-----------------|----------------------|----------|-------------------------|---------|
| Data Patterns          |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| L&T                    |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| BEL                    |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Paras Def.             |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Mahindra Def. Sys.     |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Tata                   |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Astra Microwave        |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Godrej & Boyce         |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Centum Elect.          |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Alpha Design           |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Adani Aerospace & Def. |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| CoreEL Tech.           |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Mistral Solutions      |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |

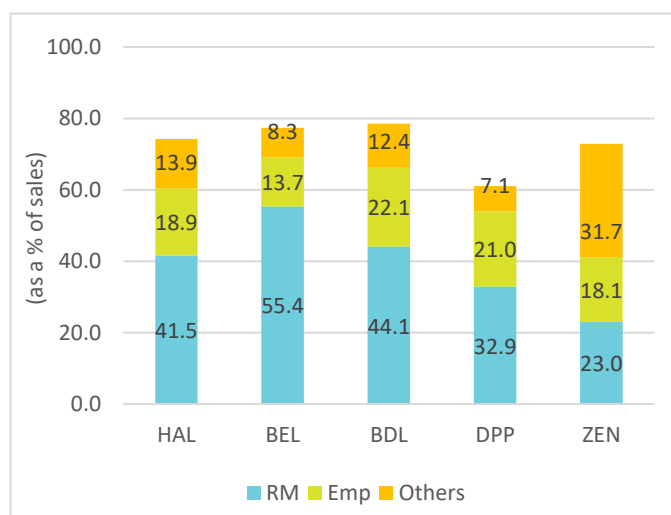
Source: Company, Nuvama Research. Note: L&T – Defence Engineering revenues

**Exhibit 24: HNAL: Premium/discount to BEL on 1Y forward PE**



Source: Bloomberg, Nuvama Research

**Exhibit 25: Cost breakdown analysis (average of FY20–24)**



Source: Company, Nuvama Research

**Exhibit 26: Valuation snapshot**

| Company Name              | Market Cap<br>(INR bn) | Reco | TP (INR) | Revenue (INR bn) |       |       |       | EBITDA margins (%) |        |       |       | EPS (INR) |        |       |       | P/E (x) |       |       |       | RoE (%) |       |       |       |
|---------------------------|------------------------|------|----------|------------------|-------|-------|-------|--------------------|--------|-------|-------|-----------|--------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|
|                           |                        |      |          | FY24             | FY25E | FY26E | FY27E | FY24               | FY25E  | FY26E | FY27E | FY24      | FY25E  | FY26E | FY27E | FY24    | FY25E | FY26E | FY27E | FY24    | FY25E | FY26E | FY27E |
| Nuvama Estimates          |                        |      |          |                  |       |       |       |                    |        |       |       |           |        |       |       |         |       |       |       |         |       |       |       |
| Bharat Electronics        | 2,147                  | BUY  | 385      | 202              | 234   | 272   | 324   | 24.8               | 27.2   | 26.5  | 27.0  | 5.5       | 6.9    | 7.8   | 9.6   | 53.4    | 42.5  | 37.7  | 30.6  | 27.1    | 29.1  | 28.4  | 30.2  |
| Zen Technologies          | 135                    | BUY  | 1,850    | 4                | 8     | 12    | 17    | 41.2               | 34.3   | 33.0  | 33.0  | 15.1      | 27.4   | 34.1  | 46.2  | 98.8    | 54.5  | 43.7  | 32.3  | 33.5    | 23.1  | 16.8  | 19.2  |
| Solar Industries India    | 1,081                  | BUY  | 13,750   | 61               | 74    | 92    | 121   | 22.6               | 26.3   | 26.0  | 27.0  | 92.4      | 132.8  | 173.0 | 249.6 | 129.3   | 89.9  | 69.1  | 47.9  | 28.3    | 31.4  | 30.0  | 32.2  |
| Bharat Dynamics           | 515                    | BUY  | 1,650    | 24               | 33    | 55    | 79    | 22.6               | 21.0   | 22.0  | 23.0  | 16.7      | 19.6   | 33.5  | 47.2  | 84.4    | 72.0  | 42.2  | 29.9  | 17.9    | 18.5  | 26.8  | 30.9  |
| Hindustan Aeronautics     | 2,813                  | BUY  | 5,150    | 304              | 304   | 369   | 483   | 32.1               | 29.7   | 26.5  | 26.4  | 113.6     | 118.0  | 124.0 | 147.1 | 37.0    | 35.7  | 33.9  | 28.6  | 28.9    | 25.1  | 22.6  | 22.9  |
| Data Patterns             | 105                    | BUY  | 2,300    | 5                | 5     | 6     | 9     | 42.6               | 43.0   | 42.0  | 42.0  | 32.4      | 32.6   | 39.2  | 50.9  | 57.8    | 57.5  | 47.8  | 36.8  | 14.6    | 13.1  | 14.1  | 16.2  |
| Bloomberg Estimates       |                        |      |          |                  |       |       |       |                    |        |       |       |           |        |       |       |         |       |       |       |         |       |       |       |
| Astra Microwave Products  | 71                     | -    | 886      | 9                | 11    | 13    | 16    | 21.1               | 24.3   | 25.8  | 24.8  | 12.9      | 17.1   | 20.8  | 26.1  | 46.4    | 43.9  | 36.1  | 28.7  | 15.1    | 14.7  | 15.5  | 16.5  |
| Cochin Shipyard           | 380                    | -    | 1,386    | 36               | 46    | 54    | 62    | 24.0               | 22.0   | 19.6  | 19.6  | 30.9      | 30.3   | 31.8  | 38.8  | 29.3    | 47.7  | 45.4  | 37.2  | 17.2    | 15.1  | 14.4  | 15.9  |
| Dcx Systems               | 27                     | -    | 339      | 14               | 14    | 17    | 19    | 5.6                | 2.5    | 5.1   | 6.1   | 7.6       | 4.7    | 7.8   | 10.5  | 38.7    | 50.9  | 30.7  | 22.9  | 9.0     | 4.5   | 7.0   | 8.5   |
| Garden Reach Shipbuilders | 195                    | -    | 1,307    | 36               | 50    | 67    | 73    | 6.5                | 6.8    | 7.3   | 7.6   | 31.2      | 39.5   | 55.4  | 59.9  | 24.5    | 43.0  | 30.6  | 28.4  | 23.1    | 23.3  | 26.3  | 23.5  |
| IdeaForge Technology      | 16                     | -    | 444      | 3                | 2     | 3     | 4     | 31.0               | (21.6) | 12.9  | 17.7  | 10.8      | (10.0) | 5.0   | 10.2  | 62.7    | -     | 72.9  | 35.7  | 9.2     | (6.7) | 3.4   | 6.5   |
| MTAR Technologies         | 42                     | -    | 2,066    | 6                | 7     | 10    | 13    | 19.7               | 20.5   | 23.1  | 24.6  | 18.2      | 24.8   | 42.1  | 65.8  | 92.3    | 55.3  | 32.5  | 20.8  | 8.7     | 11.0  | 15.6  | 20.0  |
| Mazagon Dock Shipbuilders | 1,074                  | -    | 2,402    | 95               | 134   | 165   | 184   | 14.9               | 19.9   | 19.7  | 20.4  | 48.0      | 68.1   | 113.1 | 124.9 | 19.4    | 39.1  | 23.5  | 21.3  | 37.9    | 42.0  | 36.5  | 29.8  |
| Mishra Dhatu Nigam        | 52                     | -    | 375      | 10               | 13    | 15    | 19    | 18.8               | 19.1   | 21.9  | 23.1  | 4.9       | 7.7    | 10.6  | 14.0  | 80.5    | 36.5  | 26.3  | 19.9  | 7.0     | 10.2  | 13.1  | 15.5  |
| Paras Defence & Space     | 42                     | -    | 1,329    | 3                | 3     | 4     | 5     | 20.1               | 25.7   | 25.7  | 25.6  | 8.2       | 14.6   | 17.5  | 21.4  | 74.4    | 70.8  | 59.1  | 48.3  | 7.5     | 12.1  | 13.2  | 14.1  |

Source: Bloomberg, Nuvama Research

## Military superpowers: Where India stands?

The global defence industry is undergoing seismic transformations due to a confluence of factors. Increasing geopolitical tension, escalating armed conflicts and swelling defence budgets are among the key catalysts. We are seeing governments' worldwide prioritising strengthening of their military capabilities with the most advanced technologies.

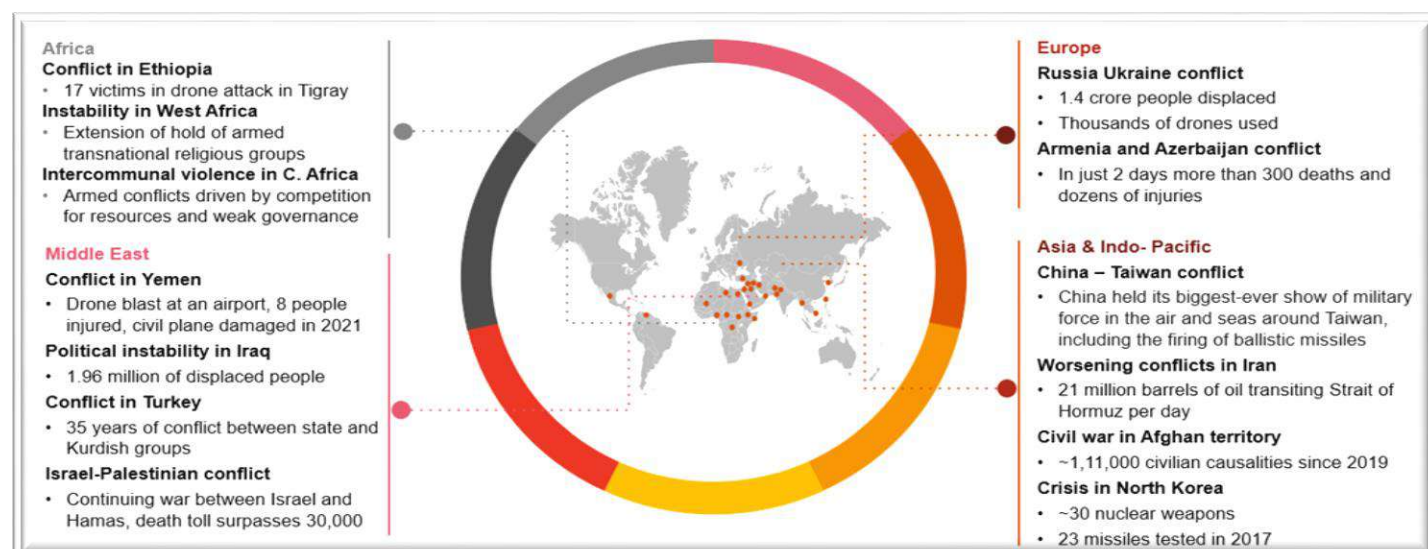
Countries across the world are prioritising defence not only because of rising conflicts, but also the changing nature of conflicts. And the world has seen many over the last few years, particularly in the Middle East, Europe/Central Asia and Indo-Pacific regions. Examples include the Russia-Ukraine, Armenia-Azerbaijan and Israel-Hamas conflicts, which have reverberated globally. These recent conflicts bear out one thing: **extensive use of drones**.

*In fact, drones have been used to hit targets hundreds of kilometres away from the frontline using long-range Unmanned Aerial Vehicles (UAVs).* Applications of drone technology in conjunction with weaponry emerged as the next-generation warfare tactics. Given so many conflicts going on in the world, we argue there's only one victor/winner—defence companies. Defence is the bedrock of any nation's economy and growth as it fosters macroeconomic stability through deterrence, facilitates favourable foreign policies, and promotes peacekeeping and also humanitarian relief missions.

Additionally, conflicts between civil and militant groups are escalating in the Middle East and African regions. Incidents of piracy and drone attacks have also been reported in the Indian Ocean region over the past year.

The evolving geopolitics dovetails with India's ambitious plan to become a net exporter of defence from currently being the world's second-largest defence importer (~8.3% of total global imports in 2020–24 as per SIPRI). The purpose is to create a local defence ecosystem in order to cater to domestic demand as well as the exports market. We believe GoI's/Mod's focus on high capital allocation in conjunction with an embargo on defence imports, and investments in technology upgradation and design & development, partnerships, etc would be key catalysts going forward.

**Exhibit 27: Geopolitical reality: Multiple incidents and armed conflicts in recent years around the world**



Source: Industry report, Nuvama Research



**Exhibit 28: Military strength ranking across top defence nations**

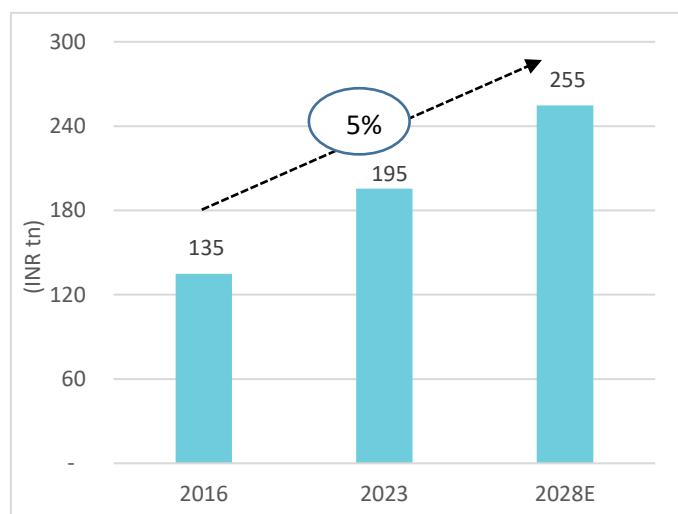
| (Nos)                      | China     | Pakistan | India     | Russia    | USA       | Israel   |
|----------------------------|-----------|----------|-----------|-----------|-----------|----------|
| Active Frontline Personnel | 20,35,000 | 6,54,000 | 14,55,550 | 13,20,000 | 13,28,000 | 1,70,000 |
| <b>Land System</b>         |           |          |           |           |           |          |
| Tanks                      | 6,800     | 2,627    | 4,201     | 5,750     | 4,640     | 1,300    |
| Armoured Vehicles          | 1,44,017  | 17,516   | 1,48,594  | 1,31,527  | 3,91,963  | 35,985   |
| Self-Propelled Artillery   | 3,490     | 662      | 100       | 5,168     | 671       | 352      |
| Towed Artillery            | 1,000     | 2,629    | 3,975     | 8,505     | 1,212     | 171      |
| Mobile Rocket Projectors   | 2,750     | 600      | 264       | 3,005     | 641       | 183      |
| <b>Air Power</b>           |           |          |           |           |           |          |
| Total Aircraft             | 3,309     | 1,399    | 2,229     | 4,292     | 13,043    | 611      |
| Fighter Aircraft           | 1,212     | 328      | 513       | 833       | 1,790     | 240      |
| Dedicated Attack           | 371       | 90       | 130       | 689       | 889       | 38       |
| Transport                  | 289       | 64       | 270       | 456       | 918       | 13       |
| Trainer Aircraft           | 402       | 565      | 351       | 611       | 2,647     | 159      |
| Special Mission Aircraft   | 112       | 27       | 74        | 141       | 647       | 19       |
| Helicopters                | 913       | 373      | 899       | 1,651     | 5,843     | 147      |
| Attack Helicopters         | 281       | 57       | 80        | 557       | 1,002     | 48       |
| <b>Naval Power</b>         |           |          |           |           |           |          |
| Total Naval Fleet Strength | 754       | 121      | 293       | 419       | 440       | 62       |
| Aircraft carriers          | 3         | -        | 2         | 1         | 11        | -        |
| Helicopter Carriers        | 4         | -        | -         | -         | 9         | -        |
| Submarine                  | 61        | 8        | 18        | 63        | 70        | 5        |
| Destroyers                 | 50        | -        | 13        | 10        | 81        | -        |
| Frigates                   | 47        | 9        | 14        | 12        | -         | -        |
| Corvettes                  | 72        | 9        | 18        | 83        | 23        | 7        |
| Patrol Vessel              | 150       | 69       | 135       | 123       | 0         | 46       |
| Mine Warfare               | 36        | 3        | -         | 47        | 8         | -        |

Source: Global Firepower, Nuvama Research

Global defence spending is expected to expand at a CAGR of 5% from USD2.4tn in CY23 to USD3.2tn in CY28, as per an industry report. The main reasons behind the increase in military spending include a nation's efforts to improve or reinforce military strength through modernisation programs.

Additionally, there is a trend towards localising and developing industries, more investment in modern technologies and better training methods such as simulation-based training to make operations more efficient. Many countries worldwide, including the UAE, Indonesia, Saudi Arabia, Korea, Kuwait, India, and Oman are focusing on developing their local industries and strengthening their armed forces.

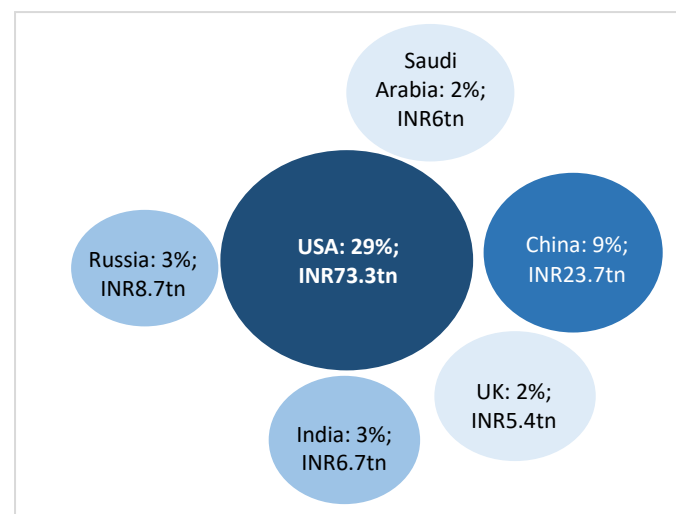
**Exhibit 29: Global defence outlay compounding at ~5%**



Source: Industry report, Nuvama Research

Note: Figures converted at USDINR @ 80

**Exhibit 30: Top six nations: ~63% of global defence spend**



Source: Industry report, Nuvama Research

Note: Figures converted at USDINR @ 80

According to the FY25 budget, Indian defence spending stands at 2%-plus of its GDP, equivalent to ~INR6.2tn (FY26BE capex outlay: INR1.8tn)

US remains the world's largest defence spending nation, allocating ~3.5% of its GDP on the sector. Before the Russia-Ukraine war, India was the third-largest defence spender globally, whereas it holds the fourth position now.

Since FY20, India's defence budget has expanded at a 7–8% CAGR. However, according to the FY25 budget, Indian defence spending stands at ~2%-plus of its GDP, equivalent to ~INR6.2tn (FY26BE capex outlay: INR1.8tn). The US-China bilateral competition, particularly in the naval and aerospace systems, has driven increased spending by both nations. Europe spending on defence increased ~13%, primarily due to heightened Russian and Ukrainian expenditures.

Ukraine's defence budget now accounts for ~34% of its GDP, reflecting the exigencies of war. Saudi Arabia's defence spending has shot up to ~16% of its GDP, surpassing that of the UK. Globally, the real-term increase in military spending in CY24 was hampered by inflation, which was exceptionally high in many countries.

As part of achieving self-reliance, various countries are taking initiatives towards localisation of their defence industries. We have outlined below some of the initiatives by Turkey, Saudi Arabia, Canada and India.

**Exhibit 31: Strategic initiatives by certain countries**

|                |  |  |  |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Direct imports share mix has fallen to 12% from 98% since the 1990s.                            | 2030 target to increase local procurement to 48%.                                  | Localisation push coupled with exports focus.                                       | Focus on domestic SMEs to push exports.                                             |
| Domestic production share increased to 68% currently vs 25% in 2003.                            | Promoting JVs with foreign OEMs whereas 100% FDI in defence is allowed.            | Positive indigenization lists, defence industrial corridors, FDI upto 74% etc.      | Foreign trade zone allowing for setting up businesses without restrictions.         |
| Strategically involved in co-production & co-development projects.                              | Govt. pushing foreign OEMs to participate in tenders with domestic firms.          |                                                                                     |                                                                                     |
| Government prefers local or co-procurement while having no restrictions on foreign contractors. |                                                                                    |                                                                                     |                                                                                     |

Source: Nuvama Research

Being the fourth-largest defence spending country, India is also one of the fastest growing defence markets. As part of the Gol's "Viksit Bharat 2047", which envisions India as a developed nation by 2047, India shall develop multifarious capabilities across the board, including defence. This would involve huge capital allocation by Gol, inviting foreign and private investments and easing the regulatory landscape.

About 13% of India's total national budget is allocated to the defence sector with 25–30% earmarked for capital expenditure

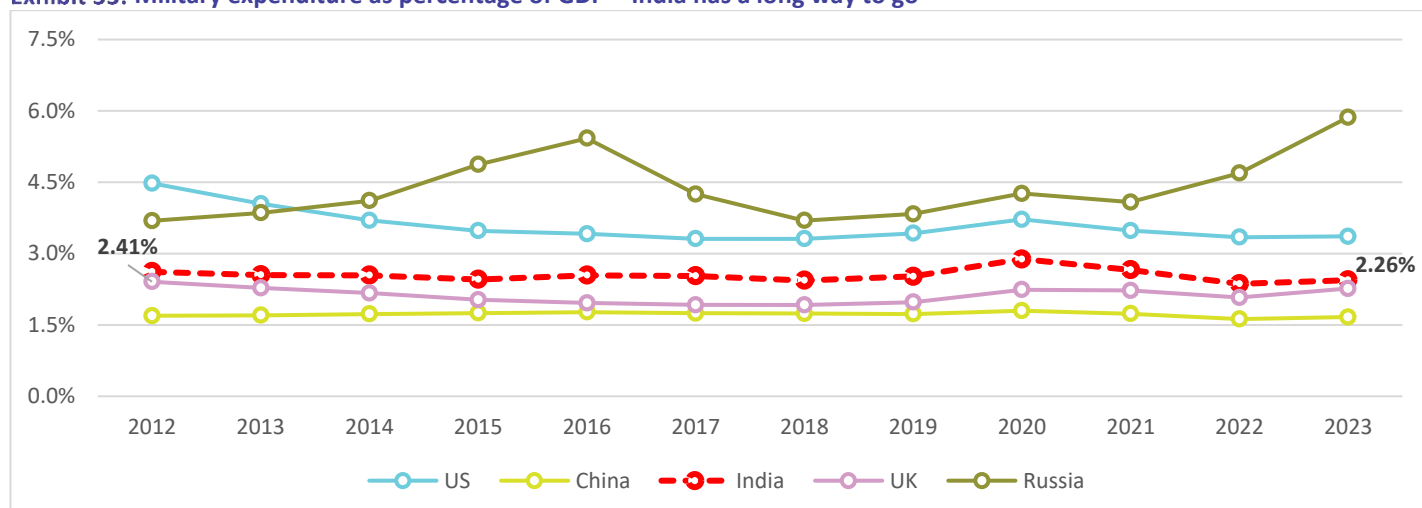
About 13% of India's total national budget is allocated to the defence sector with 25–30% earmarked for capital expenditure. For FY26, capex budgetary allocation for defence stands at USD21bn (USDINR rate of INR84). This allocation aligns with the Long-Term Integrated Perspective Plan (LTIPP) of the three Services (Indian Army, Indian Air Force, Indian Navy) aimed at addressing critical capability gaps through the modernisation of the Armed Forces by executing significant acquisitions. The augmented budgetary allocation will facilitate equipping the armed forces with cutting-edge, niche technology, lethal weapons, fighter aircraft, ships, platforms, UAVs/drones, specialist vehicles, and more.

**Exhibit 32: India's defence spending among fastest-growing**

| Country      | Defence Spending (USD bn) |           |           |           | CAGR (%)    |              |             |
|--------------|---------------------------|-----------|-----------|-----------|-------------|--------------|-------------|
|              | 1993                      | 2003      | 2013      | 2023      | 1993-03     | 2003-13      | 2013-23     |
| USA          | 317                       | 441       | 679       | 916       | 3.4%        | 4.4%         | 3.0%        |
| China        | 12                        | 33        | 164       | 296       | 10.4%       | 17.3%        | 6.1%        |
| Russia       | 8                         | 17        | 88        | 109       | 8.1%        | 17.9%        | 2.2%        |
| S. Arabia    | 16                        | 19        | 67        | 76        | 1.3%        | 13.6%        | 1.2%        |
| France       | 36                        | 39        | 52        | 61        | 0.8%        | 3.0%         | 1.7%        |
| Japan        | 41                        | 42        | 49        | 50        | 0.3%        | 1.4%         | 0.2%        |
| UK           | 38                        | 52        | 64        | 75        | 3.2%        | 2.0%         | 1.6%        |
| <b>India</b> | <b>8</b>                  | <b>16</b> | <b>47</b> | <b>84</b> | <b>7.1%</b> | <b>11.2%</b> | <b>5.8%</b> |
| Israel       | 8                         | 8         | 16        | 27        | 0.6%        | 7.0%         | 5.4%        |
| Pakistan     | 3                         | 4         | 8         | 9         | 1.2%        | 7.5%         | 1.1%        |

Source: SIPRI, Nuvama Research

**Exhibit 33: Military expenditure as percentage of GDP – India has a long way to go**



Source: SIPRI, Nuvama Research

As per a study in CY22, top 2,500 aerospace and defence spenders globally, from both private and public sectors, invested a combined ~USD23bn in R&D. The US accounted for about USD10bn and the EU ~USD9bn. Boeing is the top spending firm in defence R&D globally.

**Exhibit 34: Tech trends in defence R&D**

|                                                                                                                                                             |                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Artificial Intelligence</b></p> <p>AI in surveillance, AI for quick decision-making, threat detection</p>                                             | <p><b>Space</b></p> <p>Militarization of space to acquire relevant data to aid defence forces in conducting terrestrial, aerial and marine activities</p>                       |
| <p><b>Cyber</b></p> <p>Cyber warfare, weaponising operational technology, radiofrequency analyzers, acoustic sensors, cyber takeover systems for drones</p> | <p><b>Advanced technology</b></p> <p>Anti-drone technology/counter-Unmanned Aerial System (UAS) technology, Hypersonic, directed energy weapon, advanced electronic jammers</p> |

Source: Nuvama Research

India shares land borders of diverse topography with seven neighbouring countries—Pakistan, Afghanistan, Bangladesh, Bhutan, Nepal, Myanmar and China. It also counts Sri Lanka as a neighbour in the South. The Indian sub-continent is among the world's most unstable areas because of terrorism, civil war and internal security issues.

For historical perspective, India faced an attack from China in 1962 and three wars from Pakistan: 1965, 1971 and 1999. With respect to Pakistan, concerns persist due to undiminished activities of terrorist organisations functioning on its territory. Meanwhile, the long-standing border issue with China continues to create disturbances. Furthermore, China's drive towards modernisation of its large armed forces along with rapid infrastructure development in Tibet and the Xinjiang region has raised eyebrows in the Indian armed forces. India continues to be conscious and watchful of the implications of China's military expansion, particularly in its neighbourhood.

Exhibit 35: Salient features of neighbouring countries and relations with India

| Country                    | India                                                                             | Afghanistan                                                                       | Pakistan                                                                          | Sri Lanka                                                                         | Nepal                                                                             | China                                                                              | Bangladesh                                                                          | Bhutan                                                                              | Myanmar                                                                             |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                            |  |  |  |  |  |  |  |  |  |
| Govt type                  | Democratic Republic                                                               | Islamic Republic                                                                  | Parliamentary Republic                                                            | Democratic Republic                                                               | Federal Republic                                                                  | Communist                                                                          | Democratic Republic                                                                 | Parliamentary Monarchy                                                              | Constitutional Republic                                                             |
| Relation with India        | -                                                                                 | Friendly                                                                          | Hostile                                                                           | Friendly                                                                          | Friendly                                                                          | Hostile                                                                            | Friendly                                                                            | Friendly                                                                            | Friendly                                                                            |
| Border issues              | -                                                                                 | None                                                                              | Pending                                                                           | None                                                                              | Pending                                                                           | Pending                                                                            | Pending                                                                             | None                                                                                | None                                                                                |
| Active military ('000)     | 1,456                                                                             | NA                                                                                | 654                                                                               | 346                                                                               | 95                                                                                | 2,035                                                                              | 163                                                                                 | 8                                                                                   | 150                                                                                 |
| Def. Spend: 2023 (USD bn)  | 83.6                                                                              | 0.3*                                                                              | 8.5                                                                               | 1.2                                                                               | 0.4                                                                               | 296.4                                                                              | 4.2                                                                                 | NA                                                                                  | 2.5                                                                                 |
| Def. Spend (% of GDP)      | 2.4%                                                                              | 1.8%*                                                                             | 2.8%                                                                              | 1.6%                                                                              | 1.1%                                                                              | 1.7%                                                                               | 1.0%                                                                                | NA                                                                                  | 3.8%                                                                                |
| Internal Security Scenario | Militancy & Maoist issues                                                         | Taliban dominance                                                                 | Faces threat of terrorism                                                         | Stable after LTTE conflict (2009)                                                 | Maoist issues                                                                     | Broadly Stable                                                                     | Unstable given recent adverse events                                                | Stable                                                                              | Broadly Stable                                                                      |

Source: SIPRI, Nuvama Research

Countries across the world have been increasing defence expenditures in order to strengthen their capabilities as part of modernisation programs. The global defence sector is rising steadily and, therefore, estimates indicate this trend shall persist with anticipated spending reaching USD3.2tn by CY28E as per an industry report.

In CY23, global defence expenditure reached an all-time high of USD2.4tn, increasing consecutively since CY16. From CY20 to CY23, global defence spending expanded at a CAGR of ~7%, rebounding from the covid-19 pandemic and fuelled by international conflicts. *Based on the ongoing geopolitical scenarios, we believe global defence spending is expected to maintain a similar growth rate if geopolitics does not change for better.*

*India's defence production aggregated INR1.3tn in FY24 versus INR741bn in FY17; of this INR1.3tn, PSUs accounted for 70–80% and private firms 20–30% (having risen steadily since FY17)*

India is among the top five defence spending nations in the world, top three for foreign raw material procurement (imports) and a rising exports giant (exports to 84 countries). The country's defence production aggregated INR1.3tn in FY24 versus INR741bn in FY17. Of this, PSUs made up a larger mix (70–80%), and private firms' share has steadily risen to 20–30% currently.

The government plans to spend USD130bn on defence modernisation over the next four–five years in our view while also working towards reducing import dependency and ramping up exports to friendly nations. India's defence capex budget for FY26BE is INR1.8tn versus INR1.4tn in FY22 as defence capex (actuals) rose at a 7–8% CAGR over the last five–six years. Breaking down the capital outlay, Indian air force accounted for 42–45%, followed by the navy at 30–35% over the past five years.

Over FY17–22, defence production expanded at a strong ~8.2% CAGR from INR741bn in FY17 to INR938bn in FY22. The government has set the defence production target of INR3tn by FY29E in sync with its aggressive approach towards import embargo of defence equipment.

On the other hand, indigenous expenditure as a percentage of total expenditure under capital acquisition budget increased from ~55% in FY13 to ~65% in FY21 (61% for 9MFY22), and that too alongside rising defence expenditure on the whole. In terms of indigenous expenditure, air force imports ~47%, followed by the navy at ~41%. India's defence exports have surged at a whopping ~53% CAGR over the past five years, showing the government's clear intention behind 'Aatmanirbhar Bharat'.

**Exhibit 36: Global defence comps' comparison**

|                               |          |              | PE (x) |      |      | Revenue |        | EBITDA Margin (%) |      | EPS      |          | ROE (%) |       | ROA (%) |      |
|-------------------------------|----------|--------------|--------|------|------|---------|--------|-------------------|------|----------|----------|---------|-------|---------|------|
| Name                          | Currency | MCAP (\$ bn) | 2025   | 2026 | 2027 | 2025    | 2026   | 2025              | 2026 | 2025     | 2026     | 2025    | 2026  | 2025    | 2026 |
| US Defence Comps              |          |              |        |      |      |         |        |                   |      |          |          |         |       |         |      |
| BOEING CO/THE                 | USD      | 117.39       |        | 42.8 | 22.6 | 84.3    | 97.9   | 4.5               | 8.8  | (1.6)    | 3.6      | 9.1     | (9.8) | (0.3)   | 2.1  |
| LOCKHEED MARTIN CORP          | USD      | 110.94       | 17.3   | 15.9 | 14.9 | 74.3    | 77.2   | 14.2              | 14.2 | 27.3     | 29.7     | 95.1    | 96.1  | 11.4    | 11.7 |
| RAYTHEON TECHNOLOGIES CORP    | USD      | 173.04       | 21.2   | 19.1 | 17.5 | 84.2    | 89.1   | 16.2              | 16.5 | 6.1      | 6.8      | 13.0    | 13.9  | 4.3     | 5.0  |
| NORTHROP GRUMMAN CORP         | USD      | 77.05        | 19.0   | 18.4 | 17.2 | 42.4    | 44.3   | 14.6              | 14.3 | 28.1     | 29.0     | 25.7    | 25.0  | 8.1     | 8.4  |
| GENERAL DYNAMICS CORP         | USD      | 74.89        | 18.8   | 16.6 | 15.3 | 50.3    | 52.5   | 12.1              | 12.7 | 14.9     | 16.8     | 18.1    | 19.3  | 7.2     | 7.7  |
| L3HARRIS TECHNOLOGIES INC     | USD      | 41.99        | 19.8   | 17.9 | 15.9 | 21.9    | 22.9   | 18.1              | 18.4 | 11.3     | 12.5     | 10.0    | 11.7  | 4.8     | 5.7  |
| HUNTINGTON INGALLS INDUSTRIE  | USD      | 8.63         | 15.7   | 14.0 | 13.0 | 11.9    | 12.5   | 8.1               | 8.6  | 14.0     | 15.7     | 11.5    | 12.2  | 4.5     | 5.0  |
| AXON ENTERPRISE INC           | USD      | 44.39        | 94.2   | 76.9 | 65.6 | 2.6     | 3.2    | 25.2              | 26.2 | 6.1      | 7.5      | 19.8    | 19.1  | 10.7    | 12.0 |
| ELBIT SYSTEMS LTD             | USD      | 18.13        | 39.3   | 32.3 | 32.1 | 7.6     | 8.3    | 10.1              | 10.2 | 10.3     | 12.6     | 16.2    | 16.4  |         |      |
| MOOG INC-CLASS A              | USD      | 5.23         | 20.2   | 17.3 | 15.3 | 3.7     | 3.9    | 14.8              | 15.6 | 8.2      | 9.5      | 27.6    | 29.2  |         |      |
| European Defence Comps        |          |              |        |      |      |         |        |                   |      |          |          |         |       |         |      |
| AIRBUS SE                     | EUR      | 126.47       | 21.4   | 17.5 | 14.7 | 75.5    | 84.6   | 13.2              | 13.6 | 6.6      | 8.1      | 24.2    | 25.5  | 4.0     | 4.8  |
| SAFRAN SA                     | EUR      | 103.01       | 27.2   | 21.5 | 18.9 | 30.7    | 34.2   | 20.4              | 20.7 | 7.9      | 10.0     | 27.8    | 29.2  | 6.3     | 7.2  |
| DASSAULT AVIATION SA          | EUR      | 27.29        | 22.7   | 18.5 | 15.8 | 7.0     | 8.7    | 11.9              | 12.3 | 13.6     | 16.6     | 16.2    | 17.6  | 3.8     | 4.4  |
| BAE SYSTEMS PLC               | GBP      | 69.72        | 23.3   | 20.9 | 18.7 | 30.4    | 32.4   | 13.6              | 13.7 | 0.8      | 0.8      | 18.4    | 18.8  | 5.8     | 6.1  |
| THALES SA                     | EUR      | 60.69        | 27.0   | 23.6 | 20.8 | 22.1    | 23.7   | 18.0              | 18.4 | 9.6      | 11.0     | 25.2    | 25.6  | 5.2     | 5.6  |
| MTU AERO ENGINES AG           | EUR      | 16.70        | 17.1   | 15.5 | 13.7 | 8.6     | 9.4    | 18.0              | 18.0 | 16.0     | 17.7     | 22.9    | 21.8  | 6.6     | 7.0  |
| ROLLS-ROYCE HOLDINGS PLC      | GBP      | 82.21        | 30.9   | 26.2 | 22.3 | 19.2    | 21.0   | 19.0              | 19.4 | 0.2      | 0.3      | (354.2) | 755.4 | 5.3     | 5.7  |
| RHEINMETALL AG                | EUR      | 75.57        | 50.9   | 35.0 | 24.6 | 12.6    | 16.7   | 19.7              | 20.9 | 29.3     | 42.7     | 27.6    | 31.7  | 8.5     | 10.4 |
| LEONARDO SPA                  | EUR      | 30.26        | 26.0   | 21.9 | 18.5 | 18.9    | 20.4   | 12.3              | 12.8 | 1.8      | 2.1      | 11.0    | 12.2  | 3.2     | 3.7  |
| SAAB AB-B                     | SEK      | 24.72        | 44.5   | 35.6 | 29.1 | 73.7    | 85.5   | 14.0              | 14.5 | 10.0     | 12.5     | 14.2    | 15.7  | 5.2     | 5.7  |
| BABCOCK INTL GROUP PLC        | GBP      | 4.90         | 16.2   | 14.6 | 13.3 | 4.9     | 5.1    | 9.3               | 9.8  | 0.5      | 0.5      | 48.6    | 37.2  | 6.6     | 6.9  |
| Global Shipbuildings          |          |              |        |      |      |         |        |                   |      |          |          |         |       |         |      |
| YANGZIJANG SHIPBUILDING       | CNY      | 6.11         | 6.1    | 5.6  | 4.9  | 31.1    | 34.0   | 27.6              | 27.7 | 1.9      | 2.0      | 25.3    | 23.5  | 12.7    | 12.3 |
| KEPPEL CORP LTD               | SGD      | 8.32         | 11.5   | 10.9 | 10.0 | 7.1     | 7.4    | 22.2              | 22.0 | 0.5      | 0.6      | 8.4     | 8.6   | 3.7     | 3.5  |
| SEMBCORP MARINE LTD           | SGD      | 4.63         | 16.2   | 11.2 | 8.8  | 9.5     | 10.3   | 10.0              | 11.0 | 0.1      | 0.2      | 5.9     | 7.9   | 2.2     | 3.1  |
| CHINA SHIPBUILDING INDUSTRY-A | CNY      | 13.12        | 60.1   | 24.8 | 15.0 | 48.5    | 59.1   |                   |      | 0.1      | 0.2      | 2.0     | 4.5   | 0.9     | 1.9  |
| CHINA CSSC HOLDINGS LTD-A     | CNY      | 17.68        | 31.7   | 16.7 | 12.2 | 83.7    | 92.7   | 6.1               | 10.7 | 0.9      | 1.7      | 7.8     | 13.6  | 2.1     | 4.1  |
| CSSC OFFSHORE AND MARINE E-A  | CNY      | 3.41         | 33.3   | 20.7 | 12.8 | 21.7    | 24.2   | 8.6               | 11.3 | 0.7      | 1.2      | 5.5     | 8.2   |         |      |
| DAEWOO SHIPBUILDING & MARINE  | KRW      | 17.06        | 47.1   | 31.1 | 23.9 | 12,081  | 12,892 | 7.3               | 9.0  | 1,686.6  | 2,556.3  | 10.0    | 13.3  | 2.9     | 4.2  |
| KOREA SHIPBUILDING & OFFSHOR  | KRW      | 11.21        | 9.8    | 7.1  | 5.8  | 28,461  | 31,492 | 10.6              | 12.6 | 22,996.1 | 31,644.8 | 13.9    | 16.7  | 5.1     | 6.4  |
| SAMSUNG HEAVY INDUSTRIES      | KRW      | 8.97         | 25.0   | 15.7 | 12.4 | 10,994  | 12,292 | 9.2               | 11.3 | 581.7    | 926.9    | 12.8    | 17.2  | 3.0     | 4.8  |
| MITSUBISHI HEAVY INDUSTRIES   | JPY      | 60.53        | 32.6   | 27.6 | 23.9 | 5,011   | 5,380  | 10.8              | 11.2 | 78.6     | 92.7     | 11.3    | 12.1  | 4.5     | 5.0  |
| FINCANTIERI SPA               | EUR      | 3.82         | 29.1   | 19.2 | 14.3 | 9.0     | 9.6    | 7.2               | 7.8  | 0.4      | 0.5      | 13.4    | 17.6  | 13.7    | 14.3 |

Source: Bloomberg, Nuvama Research



## India's Defence Evolution: Global to Local

The Aatmanirbhar Bharat Abhiyaan or the Self-Reliant India campaign was launched on May 12, 2020 as a vision for the new India. The objective of this campaign is to achieve independence and self-reliance for the country and its citizens in all aspects. The campaign emphasises five pillars of *Aatmanirbhar Bharat*: Economy, Infrastructure, System, Vibrant Demography and Demand.

*Aatmanirbhar Bharat* aims to bolster India's national security by reducing dependence on imports for defence equipment and technologies. This initiative seeks to enhance indigenous defence production capabilities, fostering innovation and self-sufficiency in the defence sector. By promoting domestic manufacturing and R&D, Aatmanirbhar Bharat envisions a stronger and more resilient defence ecosystem, ensuring India's ability to meet its defence needs independently.

**Exhibit 37: Ten largest exporters of major arms and their main recipients (2020–24)**

| Exporter       | Share of global arms exports (%) | Main recipients and their share (%) of exporter's total exports (2020–24) |                |                 |  |
|----------------|----------------------------------|---------------------------------------------------------------------------|----------------|-----------------|--|
|                |                                  | 2020-24                                                                   |                |                 |  |
|                |                                  | 1st                                                                       | 2nd            | 3rd             |  |
| United States  | 43.0                             | Saudi Arabia 12                                                           | Ukraine 9.3    | Japan 8.8       |  |
| France         | 9.6                              | India 28                                                                  | Qatar 9.7      | Greece 8.3      |  |
| Russia         | 7.8                              | India 38                                                                  | China 17       | Kazakhstan 11   |  |
| China          | 5.9                              | Pakistan 63                                                               | Serbia 6.8     | Thailand 4.6    |  |
| Germany        | 5.6                              | Ukraine 19                                                                | Egypt 19       | Israel 11       |  |
| Italy          | 4.8                              | Qatar 28                                                                  | Egypt 18       | Kuwait 18       |  |
| United Kingdom | 3.6                              | Qatar 28                                                                  | USA 16         | Ukraine 10      |  |
| Israel         | 3.1                              | India 34                                                                  | USA 13         | Philippines 8.1 |  |
| Spain          | 3.0                              | Saudi Arabia 24                                                           | Australia 18   | Türkiye 13      |  |
| South Korea    | 2.2                              | Poland 46                                                                 | Philippines 14 | India 7         |  |

Source: SIPRI, Nuvama Research

### Key highlights of Aatmanirbhar Bharat

To promote *Aatmanirbhar Bharat*, the Ministry of Defence published a series of lists aggregating 509 items with import embargo. This is referred to as a negative import list or a positive indigenisation list. Imports will be embargoed in phases from FY20 to FY32. The list includes high-technology systems, including artillery guns, assault rifles, corvettes, sonar systems, transport aircraft, light combat helicopters, tanks, radars, AI-based satellite image analysis, and many other items.

**Exhibit 38: Key focus areas**

**Commitment to a time-bound defence procurement process and faster decision making**

- Setting up of a Project Management Unit (PMU) to support contract management
- Overhauling Trial and Testing procedures

**Focus on reducing imports:**

- Import of a total 509 weapons/ platforms banned with year wise staggered timelines
- Indigenization of imported spares;
- Separate budget would be allocated for domestic capital procurement

**An enabling framework for Aerospace:**

- Convergent framework for Civil & Defense MROs
- Civil helicopter manufacturing in India

**Manufacturing support:**

- Automatic FDI cap raised to 74% for greenfield
- SP programs and defence industrial corridors in UP & TN

**Focus on innovation:**

- Index and TDF
- Make I (Govt funded) & Make II (Industry funded) Projects
- Introduction of Make III in DAP 2020

**Defence Testing Infra Scheme:**

- INR 400 Cr Grant-in-aid to set up 6-8 defence testing labs
- Potential partnership between government, industry (private & public) and academia



Source: Industry report, Nuvama Research

*Indian firms can engage in manufacturing Make III category of items through collaboration or transfer of technology (ToT) with foreign OEMs—a win-win for both domestic defence and global defence majors*

This *Aatmanirbhar Bharat* initiative will provide impetus to the private sector in building capability/capacity in domestic defence manufacturing. The MoD also introduced the Make III category of defence procurement in FY20.

Such products are not necessarily designed or developed domestically, but they offer opportunities for manufacturing in India as import substitutes to support weapon systems and equipment. Indian firms can engage in manufacturing these items through collaboration or transfer of technology (ToT) with foreign original equipment manufacturers (OEMs). In this category, Indian vendors have the option to form JVs with foreign OEMs.

## Policies for boosting industry participation and defence production

Gol has implemented several policies in recent years to bolster defence production in the country. These policies also aim to foster increased partnerships with the private sector. Furthermore, the government is focused on enhancing transparency and industry-friendliness in the defence procurement process in India.

These initiatives collectively strive to promote indigenous defence manufacturing, encourage private sector participation and streamline procurement procedures, ultimately strengthening India's defence capabilities and self-reliance.

## Transformational decade (2022–32): Defence sector outlook

Consistent growth in India's defence budget, indigenisation initiatives under *Aatmanirbhar Bharat* (aided by supporting regulatory changes), export targets and the resultant creation of a domestic supply chain are the main drivers of industry growth. It is reflected in unprecedented growth in defence companies' order books and earnings growth acceleration over the past couple of years.

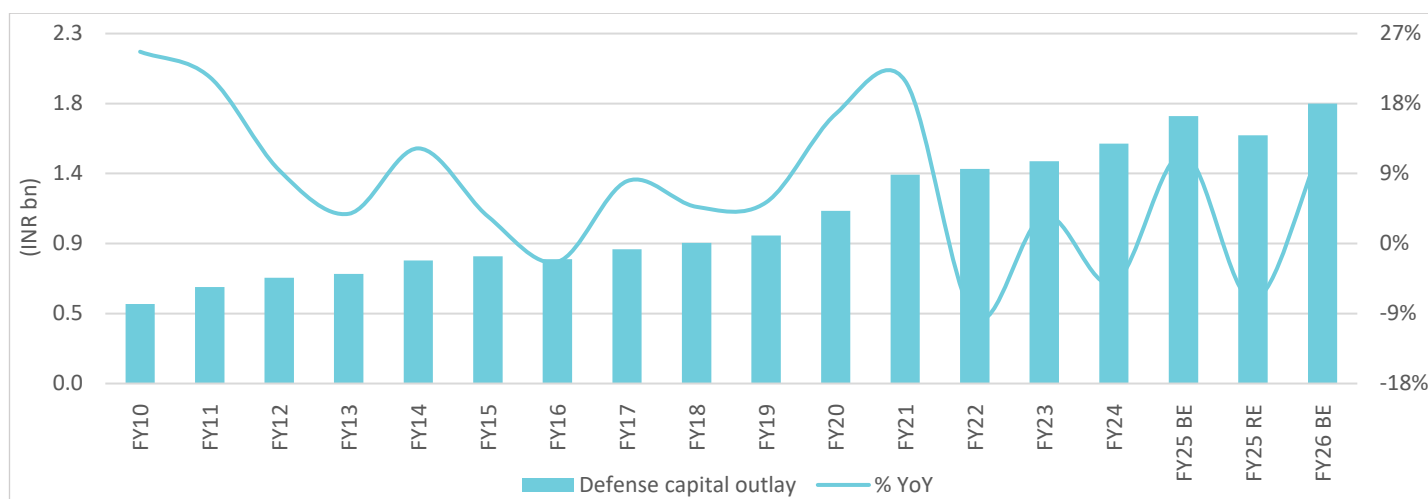
The defence budget is expected to expand to USD200bn-plus over the next decade (from USD21bn-plus annually at present) as the Indian economy grows to USD10tn, implying a long-term CAGR of 8–10% in defence spends. Combined with indigenisation and exports push, the overall industry growth is likely to be 7–8% over the long term in our view. Hence, we believe smaller firms involved in components or sub-assemblies are likely to outgrow the industry due to the Gol's focus on creating a resilient domestic supply chain.

Apart from being the *fourth*-largest defence spending country in the world, India is one of the fastest growing defence markets. As part of the “*Viksit Bharat 2047*” by the Gol to become a completely developed nation by 2047, India is developing capabilities in the defence sector along with other sectors. This involves huge capital allocation by the government inviting foreign and private investments, and easing the regulatory landscape.

## Key highlights of India's defence budget

- India's defence budget is increasing at a CAGR of 7–8%. The total defence capital outlay for FY26BE is INR1.8tn (increased ~13% on FY25RE).
- Private industry to be encouraged for design and development of defence platforms and equipment in collaboration with DRDO/SPV/other organisations.
- Impetus for local manufacturing by favourable regulatory policies, incentives and investments.

**Exhibit 39: India's defence capex steadily inching up**



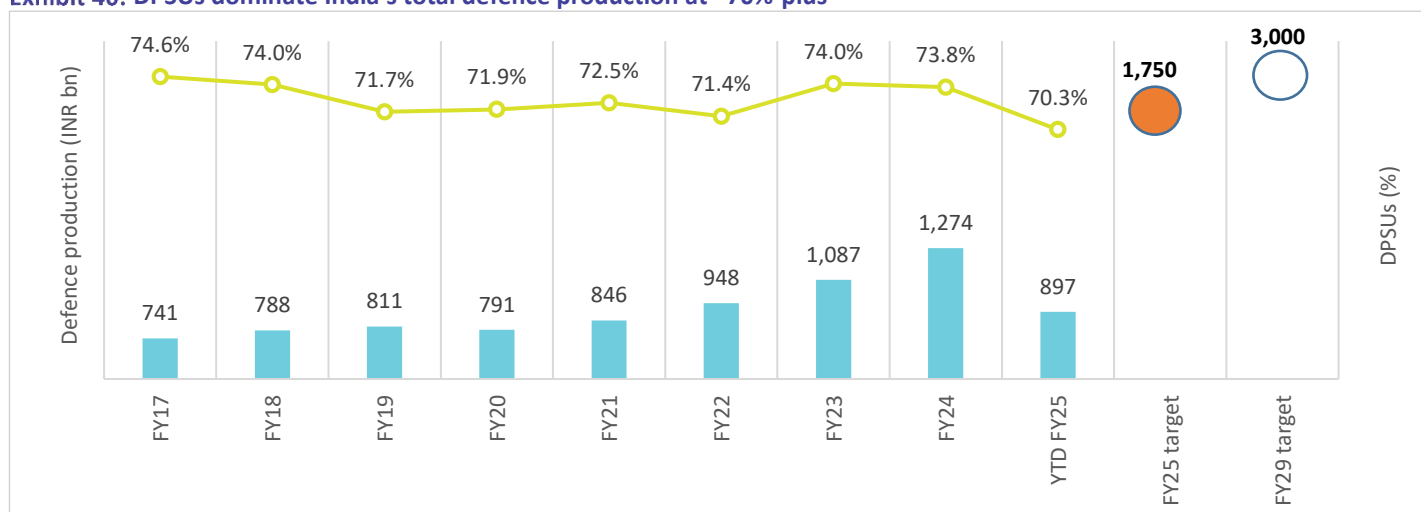
Source: Ministry of Defence, Nuvama Research

The government's plan ahead is to pare imports and step up exports. Concurrently, there is a shift from low value-add to full-systems manufacturing.

What is driving defence manufacturing in India?

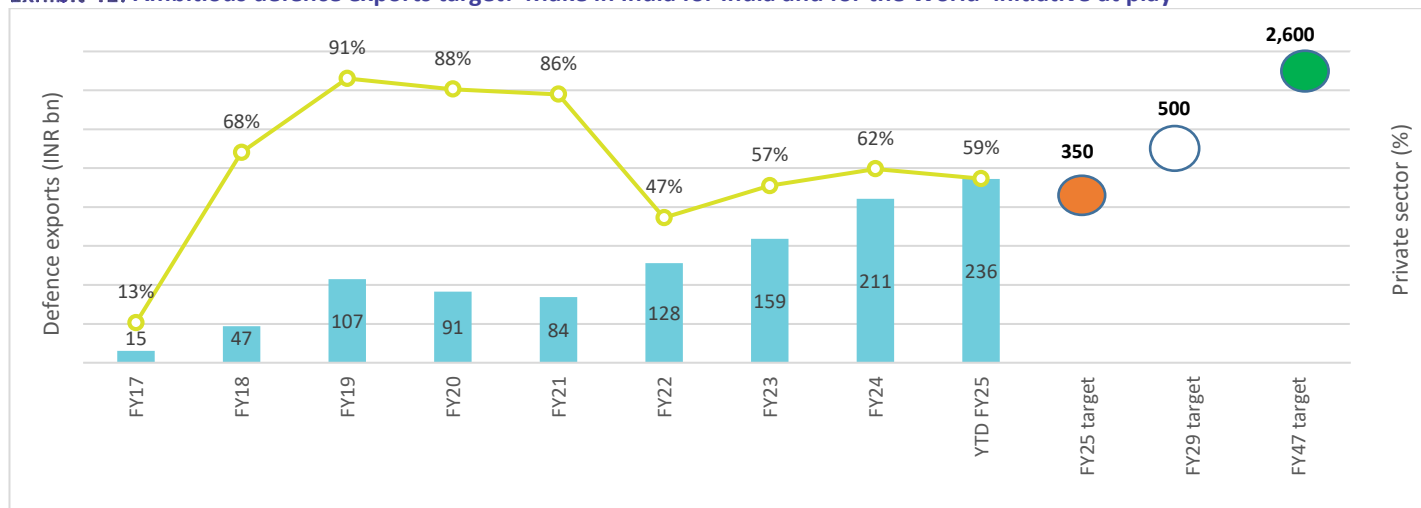
- **Growing demand and government support:** Geopolitical tensions and a troubled history with neighbours China and Pakistan would push the GoI to increase spending and attract more investments for the sector in order to: i) take care of national security; and ii) at the same time, increase competence by using technologically advanced systems/equipment.
- **Policies:** Favourable FDI policy, Defence Production and Export Promotion policy, Import embargo (8–10 lists), high budgetary allocation to the sector.
- **Self-sufficiency/reduced dependency:** With high external dependence in case of defence procurement (software, shipbuilding components, etc), the government plan's to improve the defence components' supply chain and turnaround given rising tensions with neighbour countries.

**Exhibit 40: DPSUs dominate India's total defence production at ~70%-plus**



Source: Ministry of Defence, Nuvama Research

**Exhibit 41: Ambitious defence exports target: 'Make in India for India and for the World' initiative at play**



Source: Ministry of Defence, Nuvama Research

**Exhibit 42: Some key partnerships with foreign OEMs**

| Company                   | Year  | Foreign OEM                                                                             | JV/MoU                                            | Details                                                                                                                                                         |
|---------------------------|-------|-----------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hindustan Aeronautics     | 2023  | Safran Helicopter Engines, France                                                       | Safran HAL Aircraft Engines Private Ltd           | Produce engine parts & components for Indian Multi Role Helicopter (IMRH) & Deck Based Multi Role Helicopter (DBMRH) projects.                                  |
|                           | 1993  | BAE Systems, UK                                                                         | BAe-HAL Software Ltd                              | Develop, Improve, Market, Sell, Lease or Loaning of Computer Softwares.                                                                                         |
|                           | 1994  | MIIG-MAPO, Russia                                                                       | Indo Avia Services Ltd                            | Overhaul & Repair of Aircraft, Engines.                                                                                                                         |
|                           | 2010  | Rolls-Royce                                                                             | International Aerospace Manufacturing Private Ltd | Manufacturing of compressed rings, turbine blades.                                                                                                              |
|                           | 2007  | Edgewood Ventures, LLC                                                                  | HAL Edgewood Technologies Private Limited         | Hi-tech aerospace & Defence Product Design, Development, manufacturing & Technology Transfer.                                                                   |
|                           | 2007  | Elbit Systems, Israel                                                                   | HALBIT Avionics Pvt. Ltd                          | Design, Develop, Market & Support (Operations & Maintenance) Products. Provide support and maintenance services.                                                |
|                           | 2010  | United Aircraft Corporation-Transport Aircraft (UAC-TA) & Rosoboronexport (ROE), Russia | Multirole Transport Aircraft Ltd                  | Preliminary & Detail Design of MTA MTA Prototypes Prod. Factory Testing of MTA Flight Aircraft Tests of MTA.                                                    |
| Bharat Dynamics           | 2016  | Safran Helicopter Engines, France                                                       | Helicopter Engines MRO Private Ltd                | To provide support, maintenance, repair and overhaul of Helicopter engines.                                                                                     |
|                           | 2024  | Rosoboronexport, Russia                                                                 | MoU                                               | Co-production of Pantsir air defence systems.                                                                                                                   |
|                           | 2020  | Javelin JV, a partnership of Raytheon Company & Lockheed Martin                         | MoU                                               | Co-production of the Javelin anti-tank missile system to fulfill potential future requirements of the Indian Ministry of Defence.                               |
|                           | 2023  | Thales, France                                                                          | MoU                                               | Manufacturing in India for precision-strike 70mm laser guided rockets (F2275 LGR).                                                                              |
|                           | 2024  | Ultra Maritime, US                                                                      | MoU                                               | Co-produce sonobuoys, used for detecting underwater movement.                                                                                                   |
| Bharat Electronics        | 2021  | MBDA, France                                                                            | MoU                                               | Establishing a facility for the Final Assembly, Integration and Test (FAIT) of Advanced Short Range Air-to-Air Missile (ASRAAM) missiles in India.              |
|                           | 2014  | Thales, France                                                                          | BEL-Thales Systems Ltd                            | To develop PHAROS, a fire control radar for both gun and missile systems.                                                                                       |
| Zen Technologies          | 2025E | IAI, Israel                                                                             | In progress to set up a JV                        | To provide Product Life cycle support for Weapon System Programs in India.                                                                                      |
|                           | 2024  | AVT Simulation, US                                                                      | MoU                                               | US expansion for simulation and training solutions for defense and security forces.                                                                             |
| Tata Advanced Systems     | 2009  | Sikorsky Aircraft Company, USA                                                          | Tata Sikorsky Aerospace Ltd                       | Manufacturing parts for the S-92 Helicopter Cabins and has expanded its capacity and capabilities.                                                              |
|                           | 2010  | Lockheed Martin Aerostructure Corporation, USA                                          | Tata Lockheed Martin Aerostructures Ltd           | Production and integration of aerostructures such as Centre Wing Box and Empennage and wings for Defence Aircrafts.                                             |
|                           | 2015  | Boeing, USA                                                                             | Tata Boeing Aerospace Ltd                         | Produces fuselages, secondary structures and vertical spar boxes of this multi-role combat helicopter.                                                          |
| Astra Microwave Products  | 2013  | Rafael Advanced Defense Systems Ltd, France                                             | Astra Rafael Comsys Pvt. Ltd                      | Develops, produces, and integrates high-end digital communication systems.                                                                                      |
| Reliance Defence          | 2018  | Thales, France                                                                          | Thales Reliance Defence Systems Ltd               | To develop Indian capabilities to integrate and maintain Radar and Electronic Warfare sensors.                                                                  |
|                           | 2017  | Dassault Aviation, France                                                               | Dassault Reliance Aerospace Ltd                   | Production of aero structures of Falcon-2000 business jets and sub assemblies of Rafale fighter jets.                                                           |
| Larsen & Toubro (L&T)     | 2017  | MBDA, France                                                                            | L&T MBDA Missile Systems Ltd                      | To develop and supply missile systems to the Indian armed forces.                                                                                               |
| Adani Defence & Aerospace | 2018  | Elbit Systems, Israel                                                                   | Adani-elbit Advanced Systems                      | To indigenize unmanned aerial platforms and operates India's first private UAV manufacturing complex and the only Hermes900 production facility outside Israel. |

Source: Nuvama Research

**Exhibit 43: MoD's capital acquisition proposals over last two–three years**

| Date      | Amount (INR bn) | USD bn | Main products                                                                                                                                                                                                                                                                                                                                 | Potential beneficiaries                                                                                   |
|-----------|-----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 20-Mar-25 | 540             | 6.4    | 350 HP engines for T-90 tanks, Varunastra Torpedoes & Airborne Early Warning & Control Aircraft systems                                                                                                                                                                                                                                       | BDL, BEL, BEML, Astra Microwave, Data Patterns, Apollo Micro Systems, Adani Defence & Aerospace           |
| 04-Dec-24 | 218             | 2.6    | New Water Jet Fast Attack Crafts, Fast Interceptor Craft (FIC-1), Electronic Warfare Suite (EWS) comprising External Airborne Self Protection Jammer pods, Next Generation Radar Warning Receiver and associated equipment for Su-30 MKI Aircraft, Advanced Light Helicopters, T-72 & T-90 tanks BMP-I/K, Engines of Sukhoi fighter aircraft. | GRSE, HNAL, BDL, BEL, Data Patterns, L&T                                                                  |
| 03-Sep-24 | 1,450           | 17.1   | Future Ready Combat Vehicles (FRCVs), Air Defence Fire Control Radars, Forward Repair Team (Tracked), Dornier-228 aircraft for ICG, Next Generation Fast Patrol Vessels and Next Generation Offshore Patrol Vessels for Indian Coast Guard (ICG).                                                                                             | Bharat Forge, L&T, BEL, Alpha Design, AVNL, HNAL, Goa Shipyard, GRSE, CSL, MDL                            |
| 29-Jul-24 | NA              | -      | Advanced Land Navigation System (ALNS) for Armoured Fighting Vehicles (AFVs), Interceptor boats.                                                                                                                                                                                                                                              | BEL, L&T, Goa Shipyard, GRSE                                                                              |
| 13-Mar-24 | 391             | 4.6    | RD-33 Aero-engines for MiG-29 aircraft, close-in weapon system (CIWS), procurement of High-Power Radar (HPR), BrahMos missiles, Ship borne BrahMos system.                                                                                                                                                                                    | HNAL, L&T                                                                                                 |
| 16-Feb-24 | 846             | 10.0   | Anti-tank mines, CALM system, tactical control radars, Dornier aircrafts, heavy weight torpedoes, flight re-fueller aircraft, software defined radios, etc.                                                                                                                                                                                   | HNAL, BDL, BEL                                                                                            |
| 30-Nov-23 | 2,230           | 26.2   | 97 nos. of LCA Tejas Mark-1A, 156 nos. of LCH Prachand, upgradation of 80 nos. of Su-30 Mark-1 and MRASM (surface to surface missiles).                                                                                                                                                                                                       | HNAL, BDL, BEL, L&T                                                                                       |
| 15-Sep-23 | 450             | 5.3    | LAMV, ISTS-S, HMT, Next Generation Survey Vessels, Avionic upgradation of Dornier Aircraft, Dhruvastra SR air-to-surface missiles) and Su-30 MKI aircrafts.                                                                                                                                                                                   | L&T, Tata Motors, Bharat Forge, Mahindra, IdeaForge, BEL, BEML, Ashok Leyland, GRSE, CSL, DPP, BDL, HNAL  |
| 24-Aug-23 | 78              | 0.9    | Electronic Warfare (EW) Suite on Mi-17 V5 Helicopters, Ground-Based Autonomous System for mechanised infantry and armoured regiments, 7.62x51 mm Light Machine Gun (LMG) and Bridge Laying Tank (BLT).                                                                                                                                        | BEL, AVNL                                                                                                 |
| 17-Mar-23 | 705             | 8.3    | BrahMos missiles, Shakti Electronic Warfare Systems, Utility Helicopters, Long-Range Stand-off Weapon, Su-30 MKI aircraft, 155mm/52 Caliber ATAGS, High Mobility & Gun Towing Vehicles.                                                                                                                                                       | BEL, DPP, HNAL, Solar, Bharat Forge, Tata Advanced Systems                                                |
| 10-Jan-23 | 43              | 0.5    | HELINA Anti-Tank Guided Missiles, launchers and associated support equipment, VSHORAD (IR Homing) missile system, Brahmos Launcher and Fire Control System (FCS) for the Shivalik class of ships & Next Generation Missile Vessels (NGMVs).                                                                                                   | BDL, BEL, Tata Advanced Systems, L&T, Adani Defence & Aerospace                                           |
| 22-Dec-22 | 843             | 9.9    | Futuristic Infantry Combat Vehicles, Light Tanks, Naval Anti-Ship Missiles, Multi-Purpose Vessels, new range of missile system, Long Range Guided Bombs & Next Generation Offshore Patrol Vessels.                                                                                                                                            | BDL, L&T, Paras Defence, Bharat Forge, BEML                                                               |
| 26-Jul-22 | 287             | 3.4    | Guided Extended Range Rocket Ammunition, Area Denial Munition Type I, Infantry Combat Vehicle, Swarm Drones, Bulletproof Jackets, Carbines, Marine Gas Turbine Generator and Fast Patrol Vessels (FPVs).                                                                                                                                      | Tata Advanced Systems, L&T, AVNL, New Space Research & Technologies (private), GE Marine, HNAL, GSL, GRSE |
| 06-Jun-22 | 764             | 9.0    | Rough Terrain Fork Lift Trucks (RTFLT), Bridge Laying Tanks (BLTs), Wheeled Armoured Fighting Vehicles (Wh AFVs) with Anti-Tank Guided Missiles (ATGMs), Weapon Locating Radars (WLRs), Next Generation Corvettes (NGC), Dornier Aircrafts, Su-30 MKI aero-engines.                                                                           | HNAL, BEML, Tata Motors, Mahindra, BDL, BEL, DPP, CSL                                                     |
| Total     | 8,845           | 104    |                                                                                                                                                                                                                                                                                                                                               |                                                                                                           |

Source: PIB, Nuvama Research. Note: Considered USD/INR @ 85

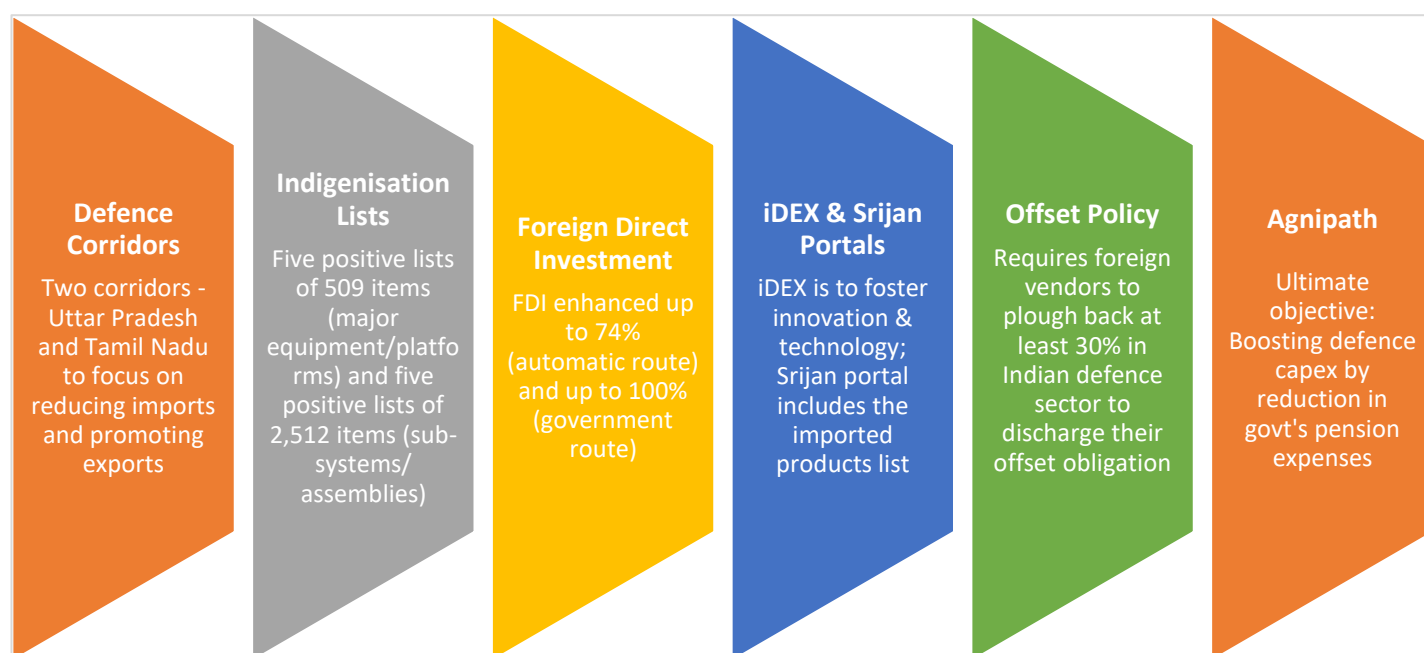
## Government-led initiatives driving growth

The government's 'Make in India' initiative in defence is boosted by the Defence Procurement Procedure (DPP) in order to meet the modernisation and operational needs of armed forces.

The Indian defence ecosystem is going through a complete transformation — it must not only cater to domestic requirements, but also capitalise on the nascent exports opportunity. The government's blessing is clear; it has taken several initiatives such as creating two defence corridors, five indigenisation lists for platforms/weapons/systems/equipment and five lists for sub-systems/assemblies.

Besides, the FDI (automatic and government route) policy, portals for innovation & technology, Offset Policy and the Agnipath Scheme dovetail with the defence push.

**Exhibit 44: Key government initiatives to promote domestic defence industry**



Source: Nuvama Research

## Defence offsets

India has pursued defence offsets aggressively since enacting an official policy in 2005; the previous policies did not focus on technology and R&D capability transfer from foreign to Indian defence firms.

The Defence Acquisition Policy (DAP) 2020 seeks to address these shortcomings, shifting focus away from “components” towards “technology investments” as well as “platform exports.” DAP 2020 has broadened the avenues for extending offsets, providing foreign businesses direct credit for transferring vital technologies to Indian defence comps. Though certain essential technologies such as electromagnetic rail guns and hypersonic flight-related technology were formerly only available to DPSUs and the DRDO, the large number of innovations utilised in defence equipment are now available to private entities.

Another significant improvement in India’s offset policy is the abolition of “offset banking,” which allowed foreign corporations to claim credits for undertaking regular business activities in the country. The government has attempted to strike a compromise between the interests of foreign investors in the country by allowing them to permit their vendors to discharge offsets on their behalf.

To give the Indian defence industry greater opportunities, the baseline indigenous component mandates for Buy (Indian) and Buy (IDDM) categories have been enhanced by ~10%. Overall, the new adjustments encourage indigenous firms’ technological advancements while also reserving a larger opportunity share for them in military contracts, thereby driving the expansion of India’s defence industry.

India signed as many as 21 defence offset contracts worth USD5.67bn over 2016–19. Details of OEMs with Offset contracts are in the next exhibit.

## Quantum and scope of offsets

- These provisions apply to all capital acquisitions such as ‘Buy (Global)’, ‘Buy and Make with Technology Transfer’. The estimated cost of the acquisitions proposal is likely to be over INR3bn. As a part of the “Buy (Global)” procurements, the provisions shall apply to JVs and Indian enterprises.

*To give the Indian defence industry greater opportunities, the Gol has enhanced baseline indigenous component mandates for Buy (Indian) and Buy (IDDM) categories by ~10%*



- The said value of the offset obligations is expected to account for ~30% of the acquisition cost in 'Buy (Global)' capital acquisition category.
- In special circumstances, the Defence Acquisition Council (DAC) may mandate variable offset obligations that exceed up to ~30% or pave the way by waiving the requirement for offset responsibilities. Factors such as acquisition type, the ability of the Indian defence industry to absorb the offset, and strategic importance or priority of the acquisition are some of the relevant attributes.

## Exhibit 45: Offset contracts (1/2)

| S. No. | OEM                                               | Offsets contracts description                                                | Estimated value (INR bn) | Offset value (~30%) |
|--------|---------------------------------------------------|------------------------------------------------------------------------------|--------------------------|---------------------|
| 1      | Airbus Defence and Space S.A                      | Procurement of 56 Transport Aircraft with Associated Equipment               | 200                      | 60                  |
| 2      | BAE Systems GCS International Limited             | 145 X 155 mm 39 calibre Ultra-Light Howitzers (M777A2)                       | 30                       | 9                   |
| 3      | Dassault Aviation                                 | 36 AIRCRAFT PACKAGE SUPPLY PROTOCOL OFFSET CONTRACT ( RAFALE EH/DH)          | 590                      | 177                 |
| 4      | Elbit System Ltd                                  | Thermal Imaging Fire Control Systems (TIFCS) for T-72 Tanks                  | 18                       | 5                   |
| 5      | Elbit System Ltd                                  | 12.7MM STABILISED REMOTE CONTROL CONTROL GUNS (SRCG) AND AMMUNITION WITH TOT | 12                       | 4                   |
| 6      | Elbit System Ltd                                  | Radio Sets (RS) Tadiran                                                      | 9                        | 3                   |
| 7      | Elbit System Ltd                                  | Upgrade Medium Lift Helicopters                                              | 2                        | 1                   |
| 8      | Elbit System SAR and Data Links-Elisra Ltd        | Search and Rescue Equipment (SAR)                                            | 3                        | 1                   |
| 9      | Elbit Systems Electro Optics ELOP Ltd             | TISK                                                                         | 2                        | 1                   |
| 10     | ELTA Systems Ltd                                  | 06 SETS of RADAR AMDR-2D                                                     | 3                        | 1                   |
| 11     | ELTA Systems Ltd                                  | Medium Power Radar (MPR)                                                     | 9                        | 3                   |
| 12     | ELTA Systems Ltd                                  | Air Route Surveillance Radar (ARSR)                                          | 6                        | 2                   |
| 13     | ELTA Systems Ltd                                  | 12 x Recce pods(Su-30)                                                       | 6                        | 2                   |
| 14     | Fincantieri - Cantieri Navalli Italiani S P A     | Fleet Tanker (Option)                                                        | 9                        | 3                   |
| 15     | Fincantieri - Cantieri Navalli Italiani S P A     | FLEET TANKER (MAIN)                                                          | 8                        | 2                   |
| 16     | Israel Aerospace Industries (IAI)                 | Two Troops Heron UAV (Indian Army)                                           | 8                        | 2                   |
| 17     | Israel Aerospace Industries (IAI)                 | UAV HERON                                                                    | 8                        | 2                   |
| 18     | Israel Aerospace Industries MBT Missiles Division | Augmentation of Barak System Repair Facility                                 | 112                      | 34                  |
| 19     | Israel Aerospace Industries MBT Missiles Division | HAROP                                                                        | 5                        | 1                   |
| 20     | Israel Aerospace Industries MBT Missiles Division | Air Defence Fire Control Radars                                              | 33                       | 10                  |
| 21     | James Fisher Defence Ltd                          | Deep Submergence and Rescue Vessel (DSRV)                                    | 14                       | 4                   |
| 22     | Lockheed Martin Corporation                       | C-130J-30 Aircraft (Main)                                                    | 560                      | 168                 |
| 23     | Lockheed Martin Corporation                       | Indian Navy 24 MRH                                                           | 165                      | 50                  |
| 24     | Lockheed Martin Corporation                       | C-130J Aircraft ( Option)                                                    | 24                       | 7                   |
| 25     | MBDA                                              | 36 RAFALE FIGHTER WEAPONS PACKAGE SUPPLY PROTOCOL (RAFALE EH/DH)             | 590                      | 177                 |
| 26     | MBDA                                              | MICA for M2000                                                               | 66                       | 20                  |
| 27     | MBDA UK LIMITED                                   | New Generation Close Combat Missile                                          | 21                       | 6                   |
| 28     | Nexter Munitions                                  | 20 MM Ammunition and associated equipment for ALH (WSI)                      | NA                       | NA                  |

Source: Nuvama Research

## Exhibit 46: Offset contracts (2/2)

| S. No.       | OEM                                                   | Offsets contracts description                                                      | Estimated value (INR bn) | Offset value (~30%) |
|--------------|-------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------|---------------------|
| 29           | Nexter Munitions                                      | 20 MM Gun Ammunition (Indian Air Force)                                            | NA                       | NA                  |
| 30           | Pilatus Aircraft Ltd                                  | Basic Trainer Aircraft Pilatus                                                     | 29                       | 9                   |
| 31           | Qinetiq Target Systems Ltd                            | MEAT                                                                               | 1                        | 0                   |
| 32           | Rafael Advanced Defence Systems Ltd                   | 164 LDPs                                                                           | 31                       | 9                   |
| 33           | Rafael Advanced Defence Systems Ltd                   | SDR GLOBAL LINK NETCOR                                                             | NA                       | NA                  |
| 34           | Rafael Advanced Defence Systems Ltd                   | SPICE-2000 NGPGM Weapon Systems (OPTION)                                           | 0                        | 0                   |
| 35           | Rafael Advanced Defence Systems Ltd                   | BARAK 1 SAM                                                                        | 3                        | 1                   |
| 36           | Rafael Advanced Defence Systems Ltd                   | Medium Altitude EO/IR Recce System for Jaguar                                      | 3                        | 95                  |
| 37           | Rafael Advanced Defence Systems Ltd                   | Spice 2000 Weapon Systems                                                          | 3                        | 1                   |
| 38           | Rafael Advanced Defence Systems Ltd                   | Medium Altitude EO/IR Recce System for Jaguar Option Clause                        | 2                        | 47                  |
| 39           | Rafael Advanced Defence Systems Ltd                   | Barak 1 (Option)                                                                   | 0                        | 0                   |
| 40           | RosoboronExport                                       | 80 Helicopters Mi-17V-5                                                            | 65                       | 20                  |
| 41           | RosoboronExport                                       | KAMOV 28 MID LIFE UPGRADE                                                          | 20                       | 6                   |
| 42           | Russian Aircraft Corporation "MIG" Russian Federation | Extension of service Life and Upgrade of MiG-29                                    | 72                       | 22                  |
| 43           | TEXTRON SYSTEMS CORPORATION                           | SENSOR FUZED WEAPONS (SFW)                                                         | 12                       | 3                   |
| 44           | Thales Air Systems SA                                 | Low Level Transportable Radar (LLTR)                                               | 13                       | 4                   |
| 45           | Thales Belgium S.A                                    | Procurement of 70 MM Rockets and Associated Equipment for ALH(WSI) for Indian Army | NA                       | NA                  |
| 46           | Thales Belgium S.A                                    | Procurement of 70 MM Rockets and Associated Equipment for ALH(WSI)                 | NA                       | NA                  |
| 47           | Thales Systemes Aeroportes                            | UPGRADE OF MIRAGE 2000 AIRCRAFT                                                    | 120                      | 36                  |
| 48           | The Boeing Company                                    | P-8I Training Solutions                                                            | 109                      | 33                  |
| 49           | The Boeing Company                                    | Four(04) P-8I LRMASW Aircraft                                                      | 67                       | 20                  |
| 50           | The Boeing Company                                    | AH-64E APACHE ATTACK HELICOPTERS (OPTION CLAUSE)                                   | 0                        | 0                   |
| 51           | The Boeing Company                                    | HARPOON MISSILES                                                                   | 5                        | 2                   |
| 52           | The Boeing Company                                    | AH-64E Apache Attack Helicopters                                                   | 60                       | 18                  |
| 53           | The Boeing Company                                    | CH-47F(I) Chinook Heavy Lift Helicopters                                           | 81                       | 24                  |
| 54           | The Boeing Company                                    | P-8I Main                                                                          | 1                        | 0                   |
| 55           | The Boeing Company                                    | C-17 Globemaster III Aircraft                                                      | 186                      | 56                  |
| 56           | Ultra Electronics Maritime Systems                    | New Torpedo Defence System                                                         | 5                        | 2                   |
| <b>Total</b> |                                                       |                                                                                    | <b>3,400</b>             | <b>1,160</b>        |

Source: Nuvama Research

**Exhibit 47: Evolution of Defence Procurement Procedure (DPP)**

| 2013                                                                                                                                                                                                                                                                                                                                                 | 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2020                                                                                                                                                                                                                                                                                                                                                                                                      | 2020 (amendments)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Preferred categorization in order of Priority - Buy (I), B&amp;M (I), Make, B&amp;M (G) with ToT and Buy (G). Justification required for any lower category.</p> <p>Indigenous content clarified and made more stringent. Buy (Indian) - 30% indigenous content on overall cost basis.</p> <p>Validity of AON reduced from 2 years to 1 year.</p> | <p>Introduced a new categorization of Buy (Indian - IDDM).</p> <p>Decreasing order of priority are categorized as: Buy (India - IDDM), Buy (I), Buy and Make (I), Buy and Make (G) and Buy (G).</p> <p>Requirement of indigenous content changed from 30% to 40% in the Buy (I) category and 50% in the Buy and Make (I) category.</p> <p>Govt funded "make" projects less than 10 Cr and industry funded of less than 3 Cr to be earmarked for MSMEs.</p> <p>AON validity reduced to 6 months from 1 year.</p> | <p>FDI in defence manufacturing permitted up to 100% (up to 74% under automatic route and beyond 74% under government route).</p> <p>Rationalization of trial and testing procedures.</p> <p>Make and innovation: Besides Make I/II/III which are govt. and industry-funded efforts towards achieving greater, IDEX was set up for incubation and infra support to startup enterprises in the sector.</p> | <p>Requirement of IPBG has been dispensed with. EMD will be taken as a bid security for all acquisition cases with acceptance of necessity cost &gt;INR100cr.</p> <p>Technically qualified bidders who haven't been awarded contracts will be issued certificate by services in order to facilitate vendors to explore other markets.</p> <p>Procurement process under IDEX procedure of DAP 2020 has been simplified. Time taken reduced to 22 weeks.</p> <p>Make-II procedure of DAP-2020 simplified with time taken reduced to 101-109 weeks from an existing 122-180 weeks.</p> |

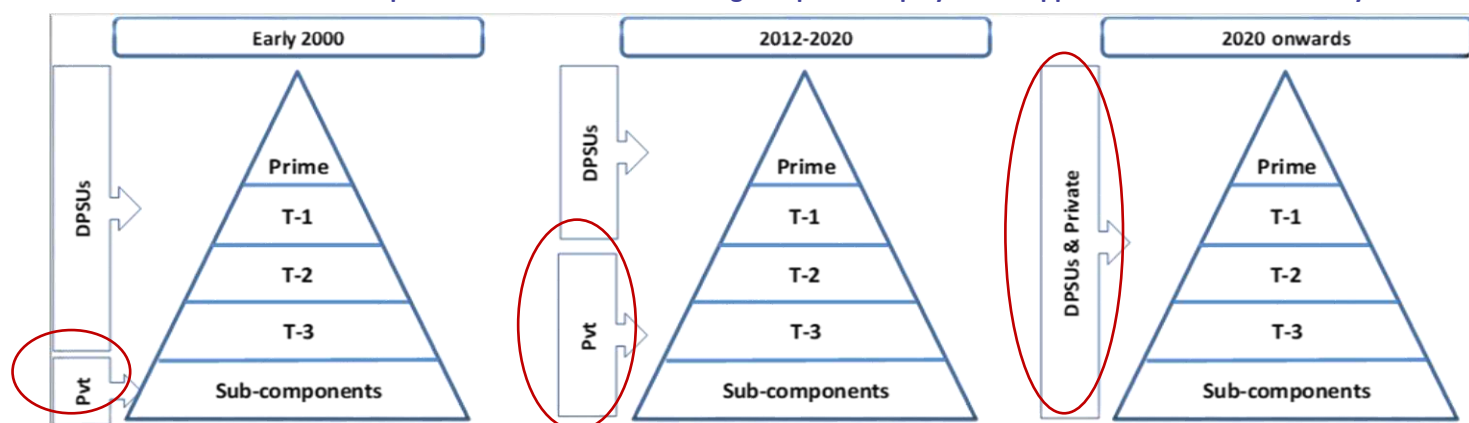
Source: Ministry of Defence, Nuvama Research

**Exhibit 48: Five big variables for defence over 2020–30**



Source: Nuvama Research

**Exhibit 49: Private defence comps have transitioned from being components' players to suppliers of value-added sub-systems**



Source: Nuvama Research

*'Positive indigenisation lists' and 'Negative import lists' for defence equipment signal the Govt's firm commitment to drive indigenisation efforts*

## Indigenisation push

The Ministry of Defence in India has unveiled a series of 'Positive indigenisation lists' and 'Negative import lists' for defence equipment, signalling a firm commitment to drive indigenisation efforts and realize the goals of 'Aatmanirbhar Bharat'. By restricting imports and encouraging domestic production, the government aims to bolster self-sufficiency of the defence sector while meeting the evolving requirements of armed forces.

### Positive indigenisation lists of sub-systems/assemblies

- DPSUs first list: 27<sup>th</sup> Dec 2021, 351 items
- DPSUs second list: 28<sup>th</sup> Mar 2022, 107 items
- DPSUs third list: 28<sup>th</sup> Aug 2022, 780 items
- DPSUs fourth list: 14<sup>th</sup> May 2023, 928 items
- DPSUs fifth list: 16<sup>th</sup> July 2024, 346 items

### Positive indigenisation lists of major equipment/platforms

- First list: 21<sup>st</sup> Aug 2020, 101 items
- Second list: 31<sup>st</sup> May 2021, 108 items
- Third list: 7<sup>th</sup> Apr 2022, 101 items
- Fourth list: 19<sup>th</sup> Oct 2022, 101 items
- Fifth list: 4<sup>th</sup> Oct, 2023, 98 items

As per the Ministry of Defence (MoD), investment target for the Uttar Pradesh (UP) defence corridor until 2024 is INR100bn, of which INR24bn has been invested so far. Further announcement for investments worth INR37bn have been made.

## Exhibit 50: Investments announced for UP Defence Corridor so far

| UP Defence Corridor |                                     |          |                                                                                                                                                                                                                                                                                                                     |
|---------------------|-------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S. No.              | Organisation                        | INR (bn) | Comments                                                                                                                                                                                                                                                                                                            |
| 1                   | Modernisation of ordnance factories | 10.8     | Modernisation of ordnance factory, Kanpur.                                                                                                                                                                                                                                                                          |
| 2                   | BEL                                 | 2.4      | Modernisation of BEL Ghaziabad; setting up of regional support centre at Agra/Kanpur.                                                                                                                                                                                                                               |
| 3                   | HNAL                                | 12.0     | Capacity enhancement of SI-30 MKI repair and overhaul; capacity enhancement of LCA manufacturing; capacity enhancement of SI-30 MKI ROH project and modernisation and maintenance of Korwa plant; enhancing manufacturing capacity of Civil Dornier 228 for supporting UDAAN scheme; upgradation of plant at Naini. |
| 4                   | MKU                                 | 9.0      | New facility at Noida for Electro Optics; upgradation and expansion of armour facility in Kanpur; small arms manufacturing in Kanpur; medium and large calibre arms manufacturing in Kanpur.                                                                                                                        |
| 5                   | PTC                                 | 1.2      | Manufacturing large propellers for submarines and ships.                                                                                                                                                                                                                                                            |
| 6                   | Bharat Forge                        | 2.0      | Setting up of ammunition factory.                                                                                                                                                                                                                                                                                   |
| Total               |                                     | 37.3     |                                                                                                                                                                                                                                                                                                                     |

Source: Ministry of Defence, Nuvama Research

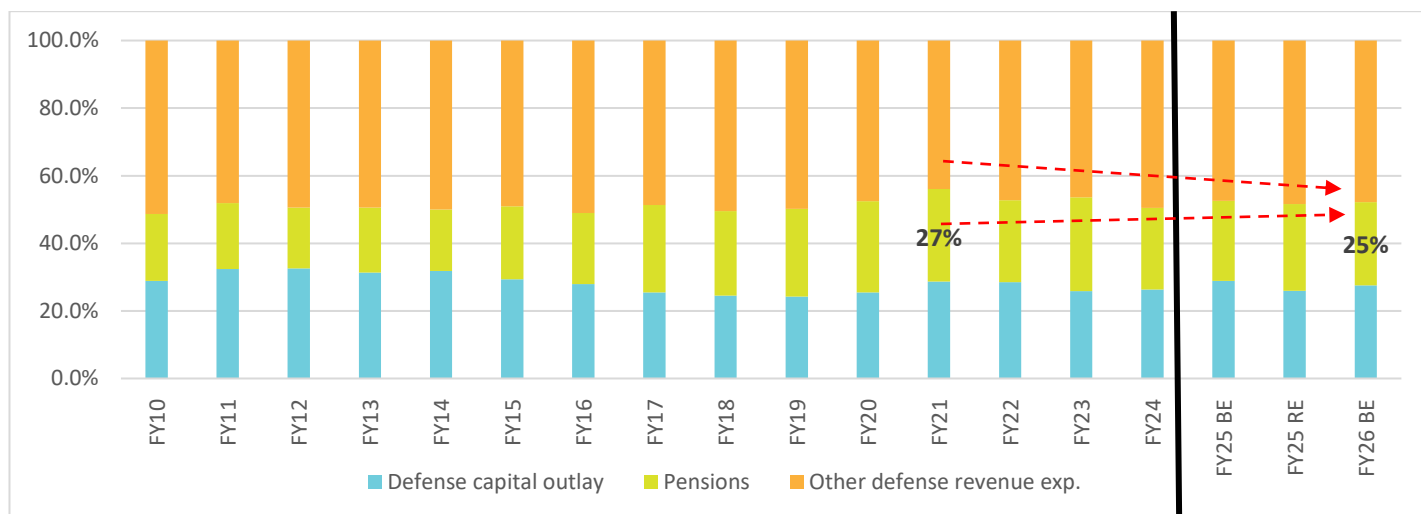
As per MoD, investment target for the Tamil Nadu Defence Corridor until 2024 is INR100bn, out of which INR38bn has been invested (announcement of INR31bn already made).

## Exhibit 51: Investments announced for Tamil Nadu Defence Corridor so far

| Tamil Nadu Defence Corridor |                                     |          |                                                                                                                                                                                                                          |
|-----------------------------|-------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S. No.                      | Organisation                        | INR (bn) | Comments                                                                                                                                                                                                                 |
| 1                           | Modernisation of ordnance factories | 23.1     | Modernisation of Heavy Vehicle Factory, Chennai, Engine Factory, Avadi, ordnance factory, Heavy Alloy Penetrator Project, Tiruchirappalli and ordnance factory Aruvankadu.                                               |
| 2                           | BEL                                 | 1.4      | Skill development and various facilities; setting up of Regional Product Support Centre at Sulur (INR388.1mn) and Clean Room facility at BEL, Chennai for indigenous production of next generation EO Pods (INR367.4mn). |
| 3                           | MDL                                 | 0.2      | AI-enabled product development for start-ups incubated at IIT, Chennai.                                                                                                                                                  |
| 4                           | BEML                                | 0.4      | Defence spare parts manufacturing at Coimbatore in JV with TATRA trucks from Czech.                                                                                                                                      |
| 5                           | BDL                                 | 1.5      | Outsourcing for Coimbatore Defence Corridor. Future orders of MILAN-2T and KONKURS-M ATGM.                                                                                                                               |
| 6                           | AIDAT                               | 1.6      | Promote and develop Aerospace and defence industry ecosystem in Tamil Nadu.                                                                                                                                              |
| 7                           | Alpha Design Technologies           | 1.0      | Plant and machinery for projects like FICV, FRCV, Fire Control systems for AFVs and infrastructure for Avionics, Electronic Warfare and Aero assemblies.                                                                 |
| 8                           | TVS Defence                         | 0.3      | Protective gears, Photonics, Thermal Imaging and Aerospace components.                                                                                                                                                   |
| 9                           | Data Patterns                       | 0.8      | In the field of radars. Plans to invest INR500mn over next one year.                                                                                                                                                     |
| 10                          | Aerospace Engineers                 | 1.1      | Proposal to invest INR600mn at Hosur and INR450mn at Salem for land building and machinery.                                                                                                                              |
| Total                       |                                     | 31.2     |                                                                                                                                                                                                                          |

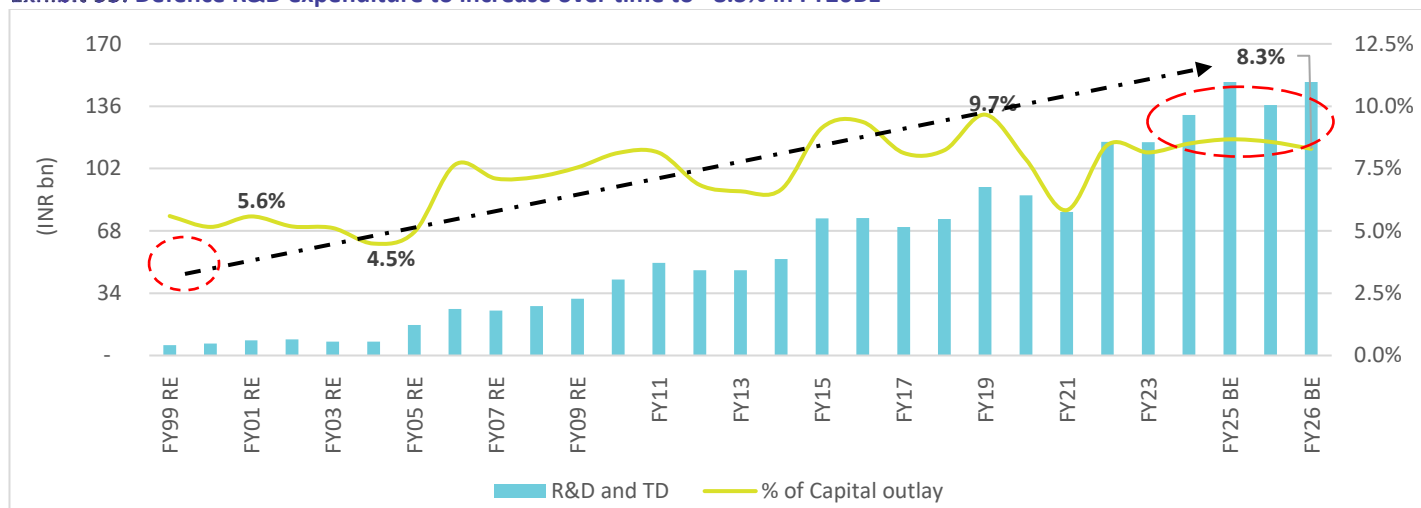
Source: Ministry of Defence, Nuvama Research

**Exhibit 52: Agnipath Scheme to increase defence capex allocation over coming years while pension mix falls**



Source: Ministry of Defence, Nuvama Research

**Exhibit 53: Defence R&D expenditure to increase over time to ~8.3% in FY26BE**



Source: Ministry of Defence, Nuvama Research

## Agnipath Scheme

The Government of India launched the Agnipath Scheme on 14<sup>th</sup> July 2022 to provide an entry point to aspiring soldiers for the Indian Army. These recruits go through advanced training with the help of simulators. This scheme, which enrolls soldiers for a tenure of four years, is attracting many youth and spurring the use of technology in the sector.

The scheme has had reverberations in the military training field as well as the military simulator industry. Total spending on the Agnipath program was about INR42.7bn in FY24.

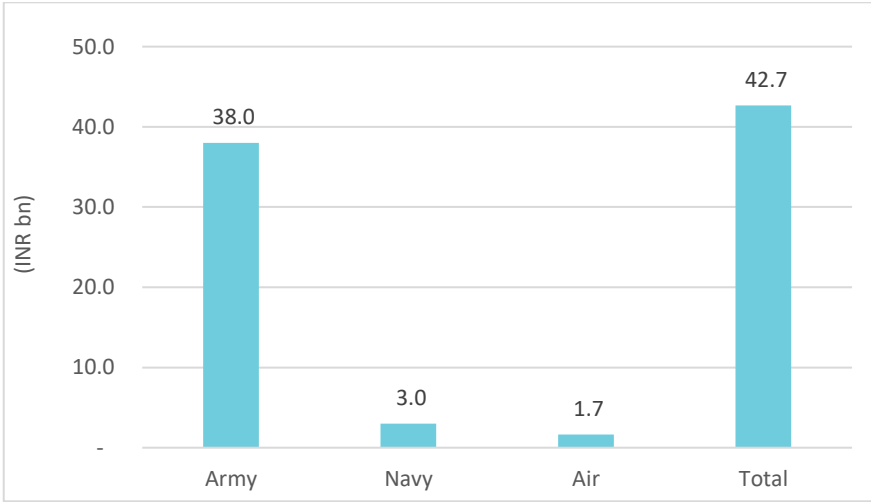


Exhibit 54: Agnipath Scheme and its reverberations

| Scheme                                                                            |                                                                                                  | Impact on military training                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Transformational shift towards more tech savvy armed forces                                      | <ul style="list-style-type: none"><li>• <b>Rigorous military training</b> will be imparted in existing training centres</li><li>• Training will be provided in the best institutions for skill enhancement</li><li>• Physical fitness, leadership qualities, military discipline will be imbibed</li><li>• Training period will be <b>reduced from 46 weeks to 24 weeks</b></li><li>• Present training pattern enables contemporary, <b>technology-based and tailor made for armed forces requirement</b></li><li>• Agniveers will serve nation in varied terrain from mountains to deserts on Land, sea or air</li><li>• Will lead <b>to larger demand for simulator-based training</b> for effectiveness &amp; speed</li><li>• The Agniveers will get <b>6 months of basic training and 3.5 years of advanced military training (on-job training)</b></li></ul> |
|  | Four-year tenure for soldiers                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | Attract young talent and adopt emerging technologies                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | Planned recruitment of 46,000 annually till FY26, 90,000 in FY27, and 1,25,000 from FY28 onwards |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | Improved battle preparedness with youth and experience                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | 25% Agniveers have permanent enrolment opportunity to forces                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Source: Industry report, Nuvama Research

Exhibit 55: Breakdown of Indian defence budget 2023–24 for Agnipath (INR bn)



Source: Industry report, Nuvama Research

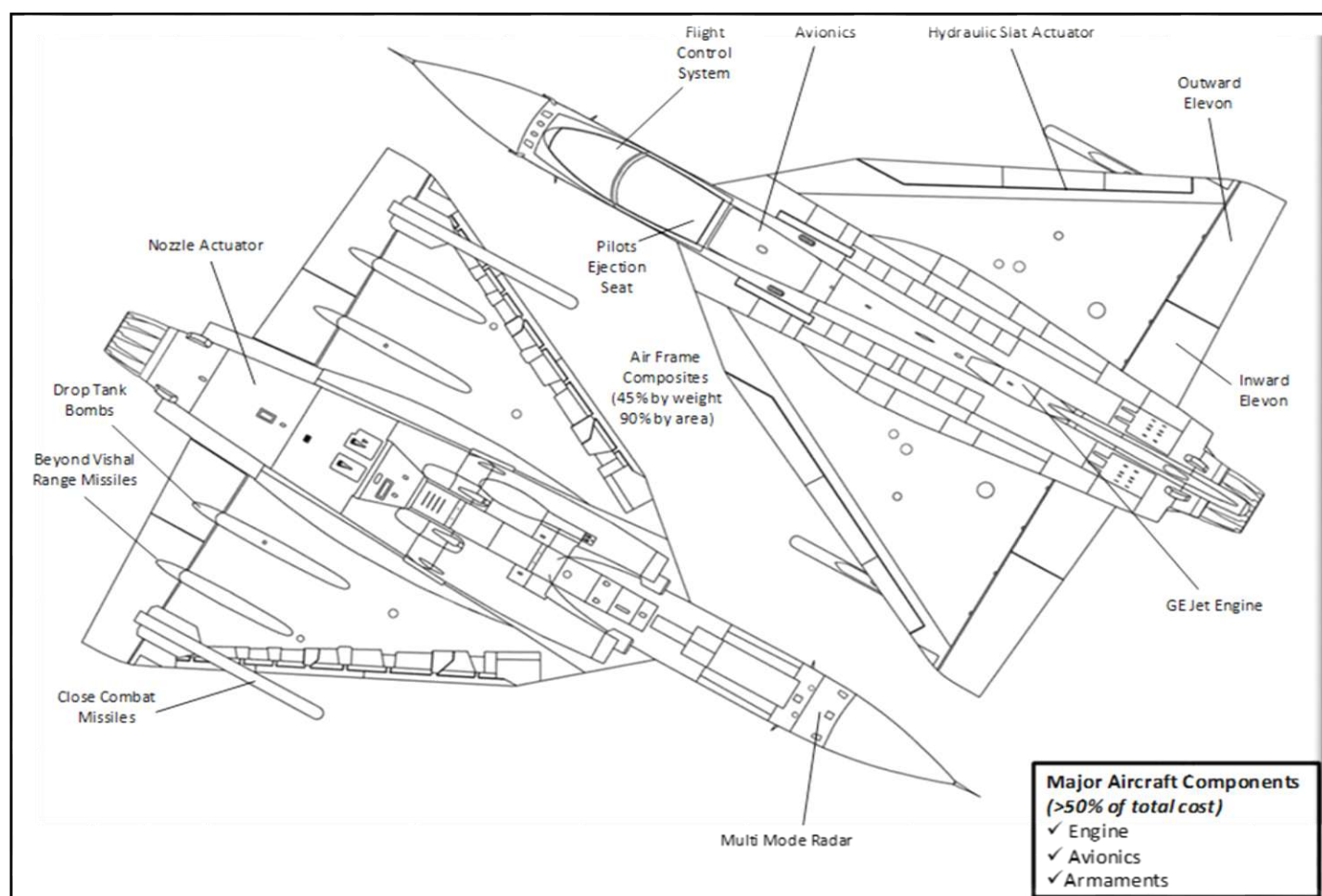
## Key Programs – LCA Mark1A

### LCA Tejas – Focus on indigenous fighter aircraft

Light combat aircraft Mark (Mk)-1 (Tejas) is a 4.5-generation single seat multirole fighter aircraft designed by the Aeronautical Development Agency (ADA) and manufactured by Hindustan Aeronautics Limited (HAL) for the Indian Air Force (IAF) and the Indian Navy.

LCA Tejas represents a significant achievement for India's defence ambitions as it highlights the success story of indigenous design, development, production and induction of a '4+ Generation Fighter' into the Indian Air Force (IAF). In July 2016, the IAF received the first two Tejas aircraft from HAL.

Exhibit 56: Main components of LCA Tejas



Source: Industry

About 85 vendors (private firms) are involved in the production of LCA. **Some major players are** Dynamatic Technologies, VEM Technologies, Alpha Tocol, L&T, National Aerospace Laboratory, Tata Advanced Materials, Martin Baker (UK), BEL, General Electric, Rafael Advanced Defence System and Saab AB.

**Exhibit 57: Major contractors involved in LCA Tejas programme**



Source: Nuvama Research

Initially, HNAL received an order for 40 LCA Tejas Mk-1, which comprised 20 IOC and 20 FOC standard aircraft. Of these, the IAF has inducted 36 aircraft from HNAL. Additionally, the government contracted HNAL to provide 83 Tejas aircraft—73 Tejas Mk-1A fighter aircraft and 10 Tejas Mk-1 trainer aircraft—at a value of INR480bn in Feb-21. HNAL has assured the delivery of all 83 aircraft by 2028–29.

In-line with making Tejas as one of the most important resources of the IAF, the Defence Acquisition Council (DAC) has awarded the acceptance of necessity for another 97 Tejas Mk-1A aircrafts.

**Exhibit 58: LCA Tejas MK-1A fighter jet**



Source: Defence & Aerospace Research Forum

Exhibit 59: Planned variants of Tejas

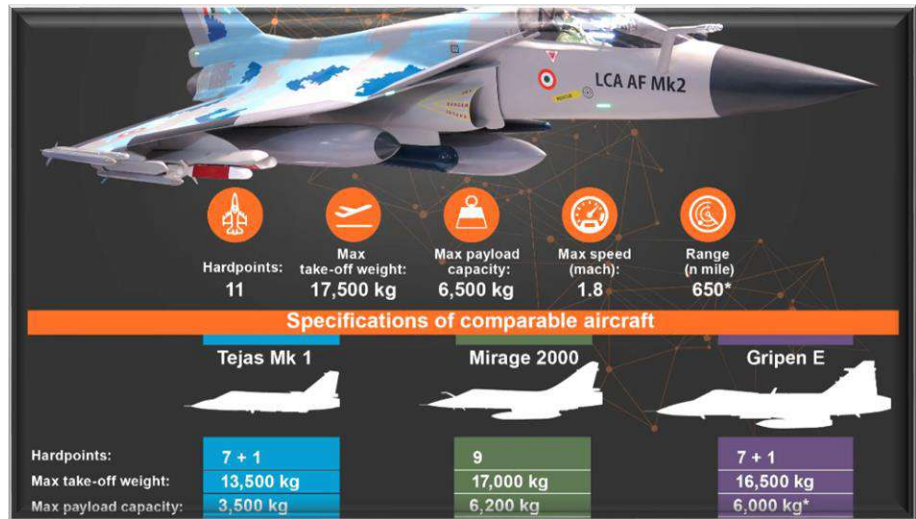
|                                                                                                     |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tejas Trainer:</b> 2-seater operational conversion trainer for training air force pilots.        | <b>LCA Navy:</b> Twin- and single-seat carrier-capable for the Indian Navy. However, the Navy has declared that the Tejas is too heavy for it to be operational from aircraft carriers (like INS Vikrant, INS Vikramaditya, etc.) |
| <b>LCA Tejas AF MK2:</b> This is an improvement over the LCA Tejas Mk1 with a higher thrust engine. | <b>LCA Tejas Navy MK2:</b> This is phase 2 of the LCA Navy variant.                                                                                                                                                               |

Source: Nuvama Research

Tejas Mark 2

The Medium Weight Fighter (MWF), alias The Tejas Mark 2, represents an advanced iteration of the original Tejas LCA. The Tejas Mk2 fighters are crucial for the IAF as they are set to replace India’s Jaguar, Mirage-2000, and MiG-29 fleets by 2030–35. Currently under the prototype phase, the IAF plans to induct approximately 108 aircraft for both defensive and offensive operations.

Exhibit 60: Tejas Mk 2



Source: Janes

Delays and challenges

The IAF is perturbed with the delays in the Tejas LCA Mk-1A programme as it could affect its fighting capabilities. The issue can be attributed to prolonged delays in receiving the F-404 engines from the US-based GE Aerospace used in these aircraft. The shipment of these engines, essential for LCA Mk-1A's functionality, has been postponed by more than two years now because of global supply chain problems in the aerospace sector. Moreover, the certification of new systems in the aircraft remains unresolved, making the delivery timeline more complex.

Earlier, we were expecting further delays in the delivery of LCA Mk-1A fighter jets due to Denmark blacklisting exports of the engine charge amplifier. The export restriction was likely due to the ongoing Russia-Ukraine conflict. HNAL has contracted a Bangalore-based firm to indigenise the charge amplifier. However, GE has now resumed supply of its F-404 engines, and we now expect a timely induction of LCA Mk1A to the IAF’s fleet.

Exhibit 61: General Electric's F-404 powers Tejas LCA Mk-1A



*Source: Company*

The core problem with the engine issue stems from the DRDO's inability to manufacture the indigenous Kaveri engine, which was supposed to originally power the Tejas. The Kaveri project, launched in the 1980s, faced multiple technical and funding challenges that led to its abandonment. Relying on foreign suppliers such as General Electric for a viable indigenous engine left India vulnerable to disruptions in the external supply chain.



## Key Programs – P75I Submarine

Project-75(I), one of India's biggest indigenous weapon acquisition programmes, is aimed at giving the Indian Navy's submarine arm even more teeth. The project aims to equip the Indian Navy with six conventional diesel-electric submarines. The project is an extension of Project 75 with improved design and technology.

### About Project-75

The Cabinet Committee on Security (CCS; part of MoD) initiated Project-75 in 1997 for building two domestic SSK submarines referred to as Type 1500. Mazagon Dock Shipbuilders Limited (MDL) was given the contract to construct the submarines in partnership with Thomson-CSF (TCSF) of France at an expenditure of INR7bn. However, the project failed to materialise and the Indian Navy chose to develop a newer submarine design—Scorpene (Kalvari-class) in 2001. A French naval company called Armaris (later DCNS, now Naval Group) offered the technology transfer (TOT) of Scorpene.

Though the MoD approved a plan to build 24 submarines over a period of 30 years, economic limitations led to sanctioning of only six submarines. Later, challenges related to technology transfer and delayed infrastructural augmentation led to extensive delays in project delivery.

The sixth and final Kalvari-class submarine named 'Vaghsheer' commissioned very recently on January 15, 2025. The Indian Navy has already commissioned the earlier five submarines in the class—Kalvari, Khanderi, Karanj, Vela and Vagir.

### Exhibit 62: Sixth and final Kalvari-class submarine 'Vaghsheer'



Source: Company, Nuvama Research



Under P-75I, the Indian Navy envisages to build six new conventional diesel-electric submarines, which will be equipped with air-independent propulsion (AIP) technology. This technology would allow the diesel-electric submarines to stay underwater for up to two weeks before being recharged, thereby reducing its vulnerability to detection.

P-75I has been finalised under the 'Strategic Partnership' model with four to be built at Mazagon Dock (MDL) and the remaining two by the foreign strategic partner. The first delivery is expected seven years after the contract is signed. Accordingly, if the deal is finalised in 2025, the first of the six submarines could be ready for deployment only by 2032.

The project is extremely crucial for the Indian Navy as only seven or eight out of its 15 submarines have been operational at any given time while the strategic requirement is estimated to be at least 24. Additionally, India does not operate any submarines with AIP while Pakistan already has two such submarines and has tied up with China for six more.

In Jun-21, the defence ministry released a tender for the construction of six conventional submarines at an estimated cost of about INR430bn, positioning it as India's largest acquisition project. MDL along with ThyssenKrupp Marine Systems (TKMS) of Germany and Larson & Toubro teaming with Navantia of Spain were the two contenders that bid for this project.

### Deal status

The P-75(I) submarine project, which is now valued at INR700bn, is on the cusp of being finalised. The defence ministry has rejected L&T & Navanita's bid on the basis of not being compliant with the Indian Navy's requirement. **This development has made MDL & TMKS the sole contender for the project.**

## Key Programs – QRSAM

The Quick Reaction Surface-to-Air Missile (QRSAM) programme, sanctioned in 2014, is an air defence system being developed indigenously by the DRDO in association with Bharat Electronics and Bharat Dynamics. With a range of 30km, 10km in altitude, and 360-degree in azimuth, QRSAM can tackle low-flying targets such as medium altitude UAVs, cruise missiles and helicopters.

QRSAM is crucial for the Indian Army, providing swift response capabilities through its functions to 'Search on Move', 'Track on Move' and 'Fire on Short Halts'. This feature enables rapid deployment and response to new threats without requiring a stationary position, making it well suited for fluctuating battlefield scenarios.

The system has an all-weather operational capability and is configured on a high mobility vehicle to enable movement in cross-country terrains such as plains, semi-deserts and deserts.

### Exhibit 63: Quick Reaction Surface-To-Air Missile (QRSAM)



Source: Company, Nuvama Research

### Features and capabilities of QRSAM

- **Search and track on the move:** QRSAM can detect and track enemy aircraft or missiles while in motion, a significant advancement over older systems, which required stationary operations.
- **Engagement at short halts:** It can fire at targets even during short halts, providing an essential tactical advantage during fast-moving combat situations.
- **Multiple target engagement:** The system is capable of engaging multiple aerial threats simultaneously such as aircraft, helicopters and unmanned aerial vehicles (UAVs).

### Configuration of QRSAM weapon system

The Indian Army is expected to order five QRSAM systems/regiments. Each regiment consists of one Regiment Command Post Vehicle (RCPV) and is connected with three battery units via satellite on the move. Each battery consists of one Battery Command Post Vehicle (BCPV), which is connected with one Battery Surveillance

Radar (BSR) and four combat groups via radio one move. A combat group comprises one Battery Multi-Function Radar (BMFR) and a Missile Launch Vehicle (MLV). The missile launch vehicle is capable of carrying six missiles. Hence, in totality, one weapon system will have 12 battery multifunction radars, three battery surveillance radars, 12 missile launch vehicles, and 72 ready-to-fire missiles.

**Exhibit 64: QRSAM weapon system configuration**



Source: Company, Nuvama Research

The cost of two regiments of QRSAM weapon system is anticipated to be INR250–300bn. The key beneficiaries of the programmes are:

- **Bharat Electronics** – Lead integrator and manufacturer of required radars
- **Bharat Dynamics** – Manufacturer of QRSAM missiles
- **Larson & Turbo** – Development of missile launch vehicles
- **Ashok Leyland/Tata Motors** – Production of 8x8 heavy mobility vehicles for mounting radars

**Exhibit 65: Regiment Command Post Vehicle (RCPV)**



Source: Company, Nuvama Research

**Exhibit 66: Battery Multi-Function Radar (BMFR)**



Source: Company, Nuvama Research



**Exhibit 67: Battery Surveillance Radar (BSR)**



*Source: Company, Nuvama Research*

**Exhibit 68: Battery Multi-Function Radar (BMFR)**



*Source: Company, Nuvama Research*

The Indian Army is expected to acquire five QRSAM weapon systems. The DRDO and the Indian Army had successfully completed six flight tests of QRSAM in Sep-22. During the trials, minor issues were reported with the Battery Multi-Function Radar's ability to engage helicopters flying at low altitudes and its minimum range.

In addition, the system was observed to be oversized and heavy, which hindered its ability to navigate uneven terrain alongside the armoured column. However, the DRDO has now confirmed that fresh trials would be completed by 2026 as the Army had suggested certain modifications to the QRSAM system based on operational requirements. The Indian Army will begin the procurement shortly after the trials are successful.

## Threat report: Challenges for industry

Indian defence market presents several challenges for industry players. Factors such as gaps and delays in policy implementation, procurement based solely on the lowest cost, and irregularities in order placement contribute to these challenges.

### Gaps and delays in policy/procedure implementation

The pace of defence modernisation has been slow due to multiple reasons such as:

- share of capital expenditure in the total defence budget is still low;
- process inefficiencies and delays in domestic production by PSUs/DPSUs;
- a report in CY18 by a parliamentary committee on estimates stated that DRDO failed to meet deadlines in 14 IAF mission projects, affecting its plans; and
- draft DPM 2021 and draft DPEPP 2020 published in CY21 and CY20, respectively, are yet to be promulgated.

### L1-based procurement (lowest-cost procurement)

Due to L1 criteria and the large size of the programs, there have been several instances of corruption in defence procurement in the past. As a single buyer, the government procures all its defence equipment through L1 evaluation of bids. Due to the L1 process, there is a high level of uncertainty about orders, making it difficult for the industry to forecast realistic demand.

### Access to capital by private industry

The monopsony nature of the defence sector coupled with irregularity of orders poses a significant deterrent to potential investors in defence sector companies. This dynamic creates hesitation among private sector investors, contributing to a sense of reluctance towards investment in the industry. Lenders avoid funding any defence projects unless a strong collateral is provided.

### High capex, IP restrictions and sectoral regulations key entry barriers

Majority of defence budgets are allocated to DPSUs and the DRDO, with relatively limited investment directed towards the private sector. Despite a gradual increase in the share of the private sector, its contribution remains low.

### Mitigation of challenges

The government is cognisant of the challenges faced by the defence sector industry. In recent years, various measures have been implemented to address these issues. The defence sector presents unique challenges due to its involvement in national security. Nevertheless, the MoD is actively working to introduce policy relaxations and incentives aimed at attracting investment and resolving the challenges encountered by the domestic industry. Various efforts have been made to improve the ease of doing business in India, fast-track the procurement process of armed forces, encourage investments, and provide access to critical technologies.

The GoI is actively engaged in efforts to bolster the landscape of defence industry in the country. Through the introduction of relevant domestic and foreign policies, it seeks to create a more conducive environment for industry growth.

## Valuations afresh: More bang for buck

Indian defence sector stocks have corrected 25–40% from their all-time highs over last nine months, underperforming Nifty due to slower-than-anticipated orders in 9MFY25—the reasons being the model code of conduct-induced slowdown pre-general elections and a delayed union budget, not to mention premium valuations.

Critically, execution by defence companies was largely unaffected for most names. Now, last few weeks' strong rally has been led by increased NATO defence spending (opening gateways for export opportunity), DAC-approved AoNs and other large ticket orders announced recently, all of which show robust optimism.

The defence sector has been the market darling for last two–three years, largely led by positive market sentiment towards a sunrise sector. We believe the structural growth story is intact as the opportunity is rather big from the domestic and exports perspectives. We continue to be positive on select pockets, preferring defence electronics as a sub-segment. India is slowly upgrading its ageing military hardware and desperately needs to buy new fighter jets, tanks, warships and artillery guns *as nearly two-thirds of its military equipment is classified as vintage*.

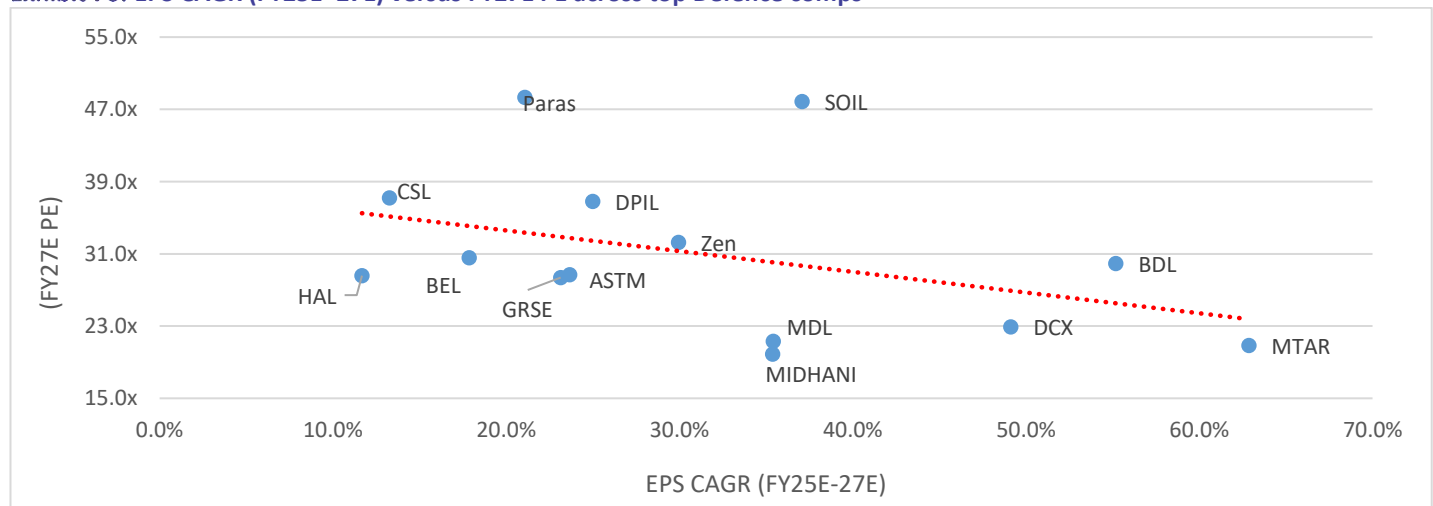
All in all, we argue the defence sector stocks shall re-rate again given a mounting growth story over and above the GoI's already known ambitious targets of INR500bn in defence exports and INR3tn in defence production by 2030.

**Exhibit 69: Price performance**

| Name                       | MCAP (\$ bn) | Price  |        |        |        |          |         | Price Performance (%) |      |      |       |          |         | PE (x) |      |      |
|----------------------------|--------------|--------|--------|--------|--------|----------|---------|-----------------------|------|------|-------|----------|---------|--------|------|------|
|                            |              | 1mth   | 3mth   | 6mth   | 12mth  | 52W High | 52W Low | 1mth                  | 3mth | 6mth | 12mth | 52W High | 52W Low | 2025   | 2026 | 2027 |
| HINDUSTAN AERONAUTICS LTD  | 32.79        | 3,440  | 3,823  | 4,656  | 3,751  | 5,675    | 3,046   | 22%                   | 10%  | -10% | 12%   | -26%     | 38%     | 35.7   | 33.9 | 28.6 |
| BHARAT ELECTRONICS LTD     | 25.03        | 280    | 268    | 286    | 233    | 341      | 221     | 5%                    | 10%  | 3%   | 26%   | -14%     | 33%     | 42.5   | 37.7 | 30.6 |
| BHARAT DYNAMICS LTD        | 6.00         | 1,107  | 1,134  | 1,196  | 917    | 1,795    | 875     | 27%                   | 24%  | 17%  | 53%   | -22%     | 61%     | 72.0   | 42.2 | 29.9 |
| MISHRA DHATU NIGAM LTD     | 0.61         | 256    | 316    | 374    | 411    | 541      | 217     | 9%                    | -11% | -25% | -32%  | -48%     | 29%     | 36.5   | 26.3 | 19.9 |
| COCHIN SHIPYARD LTD        | 4.42         | 1,296  | 1,396  | 1,589  | 1,099  | 2,979    | 1,044   | 11%                   | 3%   | -9%  | 31%   | -52%     | 38%     | 47.7   | 45.4 | 37.2 |
| GARDEN REACH SHIPBUILDERS  | 2.27         | 1,337  | 1,408  | 1,779  | 870    | 2,835    | 845     | 27%                   | 21%  | -5%  | 95%   | -40%     | 101%    | 43.0   | 30.6 | 28.4 |
| BEML LTD                   | 1.50         | 2,518  | 3,507  | 3,872  | 3,440  | 5,489    | 2,346   | 23%                   | -12% | -20% | -10%  | -44%     | 31%     | 44.1   | 29.9 | 22.5 |
| BHARAT FORGE LTD           | 5.98         | 1,076  | 1,184  | 1,475  | 1,193  | 1,826    | 919     | 0%                    | -9%  | -27% | -10%  | -41%     | 17%     | 41.5   | 32.9 | 26.7 |
| SOLAR INDUSTRIES INDIA LTD | 12.60        | 10,089 | 9,533  | 11,522 | 8,527  | 13,300   | 7,888   | 18%                   | 25%  | 4%   | 40%   | -10%     | 51%     | 89.9   | 69.1 | 47.9 |
| LAKSHMI MACHINEWORKS LTD   | 1.94         | 15,059 | 16,102 | 16,864 | 16,896 | 19,200   | 13,450  | 4%                    | -3%  | -8%  | -8%   | -19%     | 16%     | 178.6  | 81.2 | 58.1 |
| ASTRA MICROWAVE PRODUCTS   | 0.83         | 618    | 741    | 832    | 696    | 1,060    | 584     | 21%                   | 1%   | -10% | 8%    | -29%     | 28%     | 43.9   | 36.1 | 28.7 |

Source: Bloomberg, Nuvama Research

**Exhibit 70: EPS CAGR (FY25E–27E) versus FY27E PE across top Defence comps**



Source: Bloomberg, Nuvama Research. Note: \* Nuvama estimates

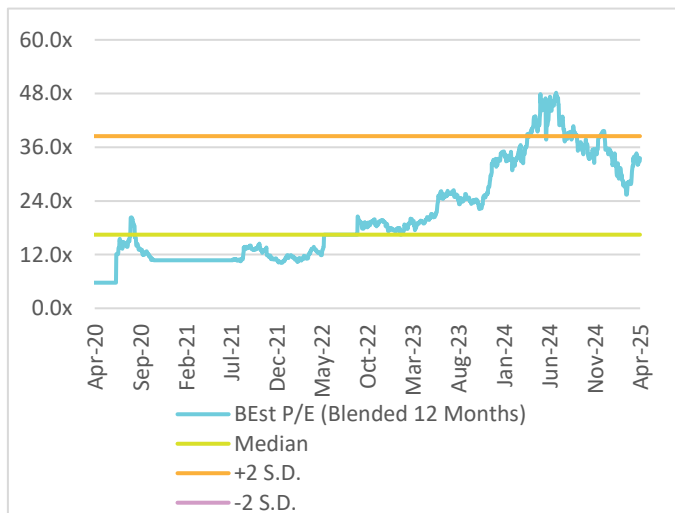


**Exhibit 71: Valuation snapshot**

| Company Name              | Market Cap (INR bn) | Reco | TP (INR) | Revenue (INR bn) |       |       |       | EBITDA margins (%) |        |       |       | EPS (INR) |        |       |       | P/E (x) |       |       |       | RoE (%) |       |       |       |
|---------------------------|---------------------|------|----------|------------------|-------|-------|-------|--------------------|--------|-------|-------|-----------|--------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|
|                           |                     |      |          | FY24             | FY25E | FY26E | FY27E | FY24               | FY25E  | FY26E | FY27E | FY24      | FY25E  | FY26E | FY27E | FY24    | FY25E | FY26E | FY27E | FY24    | FY25E | FY26E | FY27E |
| Nuvama Estimates          |                     |      |          |                  |       |       |       |                    |        |       |       |           |        |       |       |         |       |       |       |         |       |       |       |
| Bharat Electronics        | 2,147               | BUY  | 385      | 202              | 234   | 272   | 324   | 24.8               | 27.2   | 26.5  | 27.0  | 5.5       | 6.9    | 7.8   | 9.6   | 53.4    | 42.5  | 37.7  | 30.6  | 27.1    | 29.1  | 28.4  | 30.2  |
| Zen Technologies          | 135                 | BUY  | 1,850    | 4                | 8     | 12    | 17    | 41.2               | 34.3   | 33.0  | 33.0  | 15.1      | 27.4   | 34.1  | 46.2  | 98.8    | 54.5  | 43.7  | 32.3  | 33.5    | 23.1  | 16.8  | 19.2  |
| Solar Industries India    | 1,081               | BUY  | 13,750   | 61               | 74    | 92    | 121   | 22.6               | 26.3   | 26.0  | 27.0  | 92.4      | 132.8  | 173.0 | 249.6 | 129.3   | 89.9  | 69.1  | 47.9  | 28.3    | 31.4  | 30.0  | 32.2  |
| Bharat Dynamics           | 515                 | BUY  | 1,650    | 24               | 33    | 55    | 79    | 22.6               | 21.0   | 22.0  | 23.0  | 16.7      | 19.6   | 33.5  | 47.2  | 84.4    | 72.0  | 42.2  | 29.9  | 17.9    | 18.5  | 26.8  | 30.9  |
| Hindustan Aeronautics     | 2,813               | BUY  | 5,150    | 304              | 304   | 369   | 483   | 32.1               | 29.7   | 26.5  | 26.4  | 113.6     | 118.0  | 124.0 | 147.1 | 37.0    | 35.7  | 33.9  | 28.6  | 28.9    | 25.1  | 22.6  | 22.9  |
| Data Patterns             | 105                 | BUY  | 2,300    | 5                | 5     | 6     | 9     | 42.6               | 43.0   | 42.0  | 42.0  | 32.4      | 32.6   | 39.2  | 50.9  | 57.8    | 57.5  | 47.8  | 36.8  | 14.6    | 13.1  | 14.1  | 16.2  |
| Bloomberg Estimates       |                     |      |          |                  |       |       |       |                    |        |       |       |           |        |       |       |         |       |       |       |         |       |       |       |
| Astra Microwave Products  | 71                  | -    | 886      | 9                | 11    | 13    | 16    | 21.1               | 24.3   | 25.8  | 24.8  | 12.9      | 17.1   | 20.8  | 26.1  | 46.4    | 43.9  | 36.1  | 28.7  | 15.1    | 14.7  | 15.5  | 16.5  |
| Cochin Shipyard           | 380                 | -    | 1,386    | 36               | 46    | 54    | 62    | 24.0               | 22.0   | 19.6  | 19.6  | 30.9      | 30.3   | 31.8  | 38.8  | 29.3    | 47.7  | 45.4  | 37.2  | 17.2    | 15.1  | 14.4  | 15.9  |
| Dcx Systems               | 27                  | -    | 339      | 14               | 14    | 17    | 19    | 5.6                | 2.5    | 5.1   | 6.1   | 7.6       | 4.7    | 7.8   | 10.5  | 38.7    | 50.9  | 30.7  | 22.9  | 9.0     | 4.5   | 7.0   | 8.5   |
| Garden Reach Shipbuilders | 195                 | -    | 1,307    | 36               | 50    | 67    | 73    | 6.5                | 6.8    | 7.3   | 7.6   | 31.2      | 39.5   | 55.4  | 59.9  | 24.5    | 43.0  | 30.6  | 28.4  | 23.1    | 23.3  | 26.3  | 23.5  |
| IdeaForge Technology      | 16                  | -    | 444      | 3                | 2     | 3     | 4     | 31.0               | (21.6) | 12.9  | 17.7  | 10.8      | (10.0) | 5.0   | 10.2  | 62.7    | -     | 72.9  | 35.7  | 9.2     | (6.7) | 3.4   | 6.5   |
| MTAR Technologies         | 42                  | -    | 2,066    | 6                | 7     | 10    | 13    | 19.7               | 20.5   | 23.1  | 24.6  | 18.2      | 24.8   | 42.1  | 65.8  | 92.3    | 55.3  | 32.5  | 20.8  | 8.7     | 11.0  | 15.6  | 20.0  |
| Mazagon Dock Shipbuilders | 1,074               | -    | 2,402    | 95               | 134   | 165   | 184   | 14.9               | 19.9   | 19.7  | 20.4  | 48.0      | 68.1   | 113.1 | 124.9 | 19.4    | 39.1  | 23.5  | 21.3  | 37.9    | 42.0  | 36.5  | 29.8  |
| Mishra Dhatu Nigam        | 52                  | -    | 375      | 10               | 13    | 15    | 19    | 18.8               | 19.1   | 21.9  | 23.1  | 4.9       | 7.7    | 10.6  | 14.0  | 80.5    | 36.5  | 26.3  | 19.9  | 7.0     | 10.2  | 13.1  | 15.5  |
| Paras Defence & Space     | 42                  | -    | 1,329    | 3                | 3     | 4     | 5     | 20.1               | 25.7   | 25.7  | 25.6  | 8.2       | 14.6   | 17.5  | 21.4  | 74.4    | 70.8  | 59.1  | 48.3  | 7.5     | 12.1  | 13.2  | 14.1  |

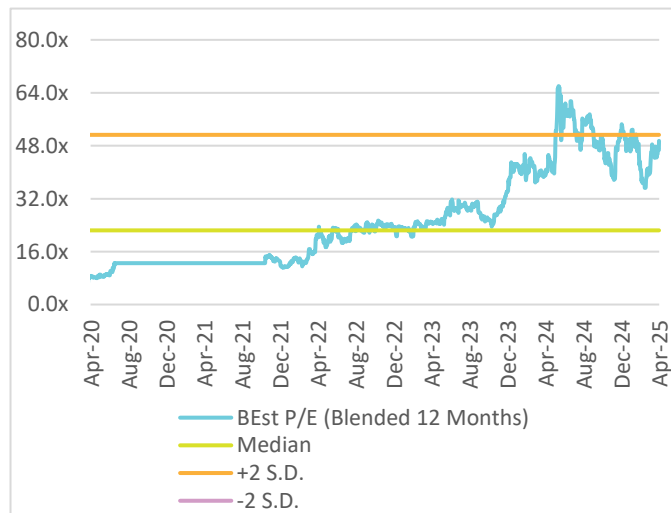
Source: Bloomberg, Nuvama Research

**Exhibit 72: HNAL: One-year forward PE**



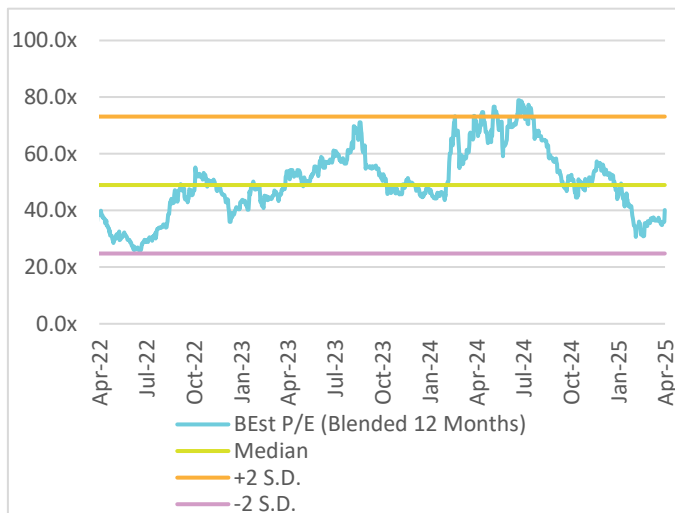
Source: Nuvama Research, Bloomberg

**Exhibit 73: BDL: One-year forward PE**



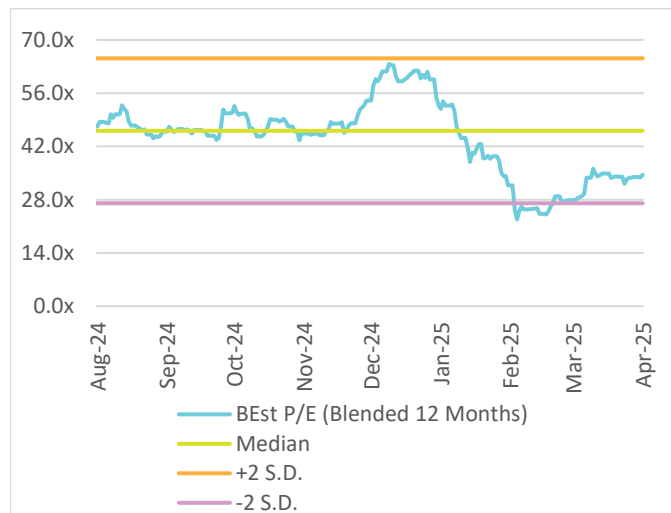
Source: Nuvama Research, Bloomberg

**Exhibit 74: Data Patterns: One-year forward PE**



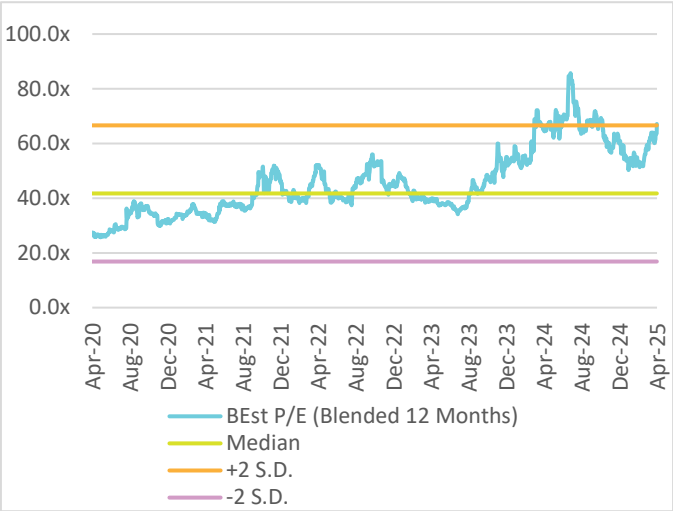
Source: Nuvama Research, Bloomberg

**Exhibit 75: Zen Technologies: One-year forward PE**



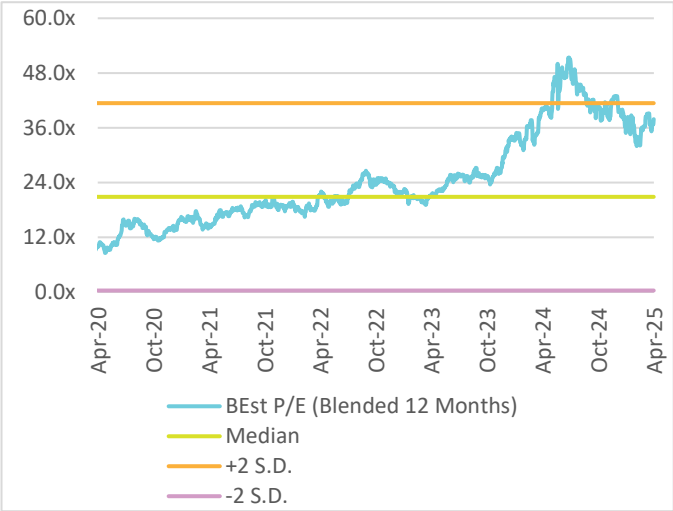
Source: Nuvama Research, Bloomberg

Exhibit 76: Solar Industries: One-year forward PE



Source: Nuvama Research, Bloomberg

Exhibit 77: BEL One-year forward PE



Source: Nuvama Research, Bloomberg

## Case Study

### Products versus projects business

We compare long-cycle gestation businesses with short-cycle ones, and notice a trend of deviating valuations.

Given Bharat Electronics is a relative short-cycle player in defence electronics than the mighty Hindustan Aeronautics (large systems integrator), we argue BEL should continue to trade at a premium to HNAL's valuation.

**Why has HNAL been trading at a premium to BEL until now?** Because of realisation of large-ticket size order intake over past two–three years (which we expect to continue) and MRO mix touching ~50% of revenue, which is not only margin-accretive but also requires lower working capital and has faster conversion rate. This helped HNAL's cash balance balloon (INR270bn-plus) and, hence, also led to higher other income (accounting for 30–35% of adjusted PAT over last two–three years).

Given an enormous pipeline of ~INR4.4tn for HNAL and INR1.1tn for BEL, we envisage that, as products' execution picks up, HNAL's OPMs/RoEs/RoCEs shall slip with products business's contribution rising to 60–65% of revenues. On the other hand, any further delay in execution of large projects (LCA Mk-IA, Mk-II, AMCA, IMRH, etc) due to supply chain constraints implies delayed growth for HNAL.

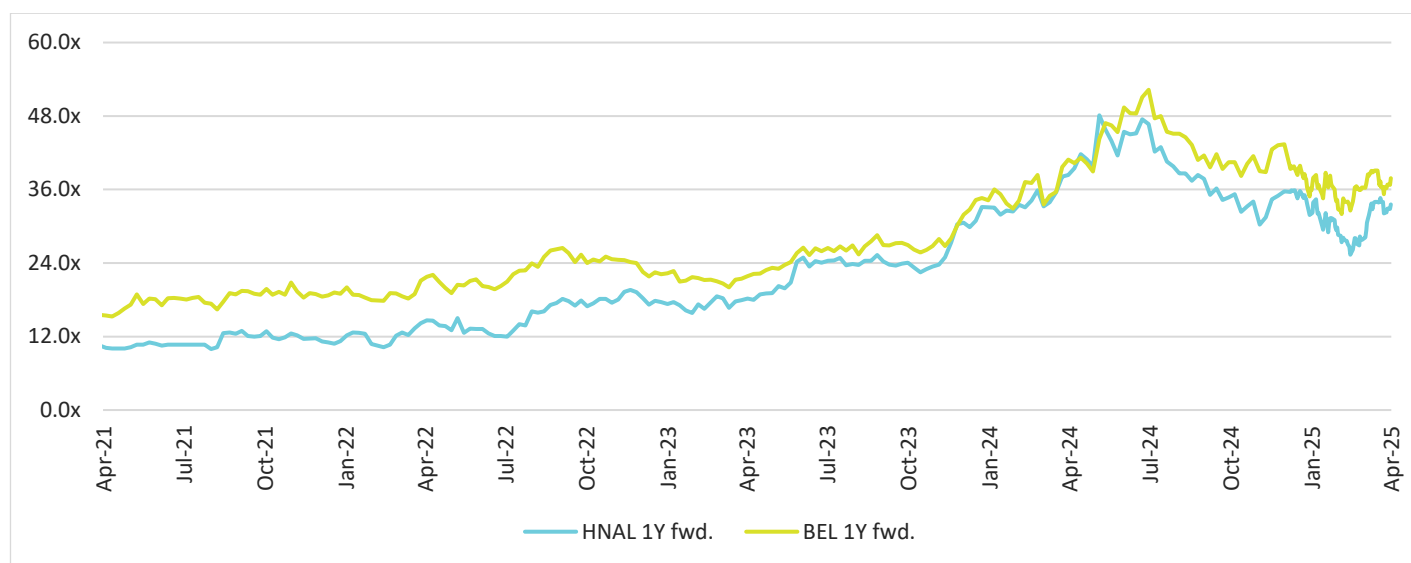
**All in all, we prefer BEL (over HNAL)** given its better execution growth, higher OPM/RoE, faster cash conversion and higher asset turns going forward, and also lower risks.

Exhibit 78: BEL versus HNAL – A financial snapshot

| Particulars (INR mn)       | Bharat Electronics |          |          |          |          | Hindustan Aeronautics |          |           |           |           |
|----------------------------|--------------------|----------|----------|----------|----------|-----------------------|----------|-----------|-----------|-----------|
|                            | FY23               | FY24     | FY25E    | FY26E    | FY27E    | FY23                  | FY24     | FY25E     | FY26E     | FY27E     |
| Order inflows              | 2,03,440           | 3,54,134 | 1,87,150 | 5,00,000 | 3,50,000 | 2,59,906              | 4,05,069 | 12,00,000 | 9,00,000  | 5,00,400  |
| Order book                 | 6,06,900           | 7,59,340 | 7,16,490 | 9,48,862 | 9,78,521 | 8,17,840              | 9,41,290 | 18,40,000 | 23,74,667 | 23,95,889 |
| Book to bill rate          | 3.4x               | 3.8x     | 3.1x     | 3.5x     | 3.0x     | 3.0x                  | 3.1x     | 6.1x      | 6.4x      | 5.0x      |
| Revenues                   | 1,76,462           | 2,01,694 | 2,33,774 | 2,71,515 | 3,24,345 | 2,69,279              | 3,03,808 | 3,04,000  | 3,68,552  | 4,83,300  |
| Gross margin (%)           | 44.4%              | 47.6%    | 49.7%    | 48.8%    | 48.8%    | 62.4%                 | 63.5%    | 58.8%     | 53.8%     | 52.7%     |
| EBITDA margin (%)          | 22.9%              | 24.8%    | 27.2%    | 26.5%    | 27.0%    | 27.0%                 | 32.1%    | 29.7%     | 26.5%     | 26.4%     |
| PAT margin (%)             | 17.0%              | 19.9%    | 21.6%    | 21.0%    | 21.6%    | 21.6%                 | 25.0%    | 26.0%     | 22.5%     | 20.4%     |
| Receivable days            | 202                | 130      | 124      | 132      | 138      | 180                   | 184      | 180       | 180       | 180       |
| Payable days               | 142                | 121      | 122      | 130      | 138      | 103                   | 108      | 100       | 100       | 100       |
| Inventory days             | 223                | 239      | 243      | 233      | 230      | 478                   | 418      | 420       | 500       | 500       |
| Cash conversion cycle      | 282                | 248      | 245      | 236      | 230      | 556                   | 494      | 500       | 580       | 580       |
| Cash from operations (CFO) | 10,866             | 46,480   | 57,494   | 40,362   | 50,207   | 88,355                | 82,257   | 67,410    | -38,505   | -25,526   |
| ROE                        | 23.5%              | 27.1%    | 29.1%    | 28.4%    | 30.2%    | 27.2%                 | 28.9%    | 25.1%     | 22.6%     | 22.9%     |
| ROCE                       | 31.3%              | 36.0%    | 38.9%    | 38.0%    | 40.4%    | 22.8%                 | 29.0%    | 25.2%     | 22.7%     | 23.0%     |
| Fixed asset turn (x)       | 6.8x               | 7.4x     | 7.9x     | 8.4x     | 9.6x     | 3.0x                  | 3.4x     | 3.2x      | 3.4x      | 3.8x      |
| Sale of services           | 9.9%               | 9.9%     | 9.4%     | 8.9%     | 8.2%     | 51.1%                 | 47.0%    | 54.5%     | 44.6%     | 39.7%     |

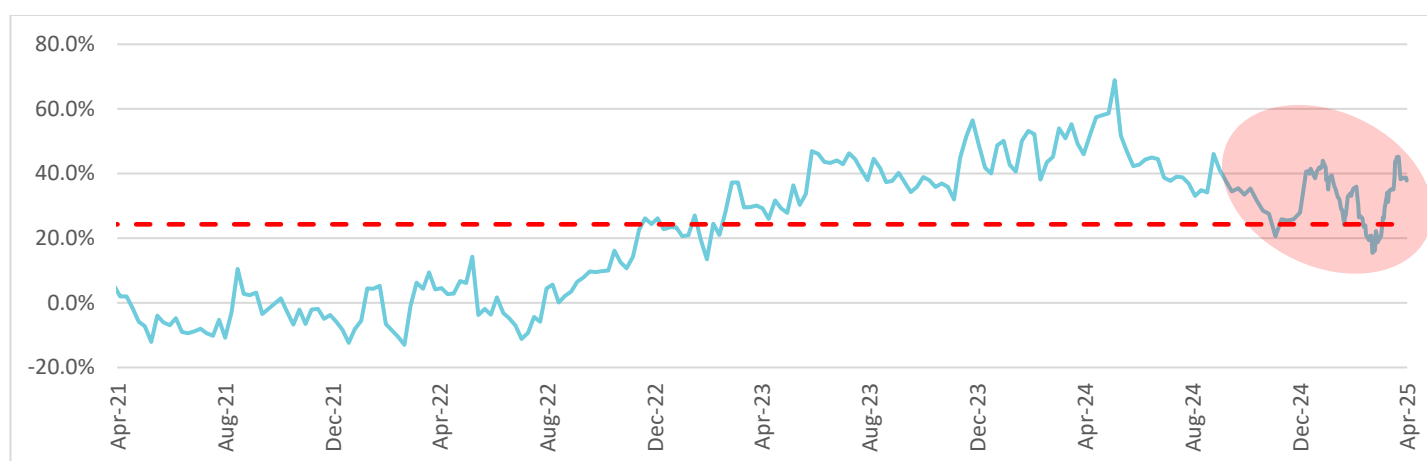
Source: Company, Nuvama Research

**Exhibit 79: HNAL versus BEL one-year forward PE**



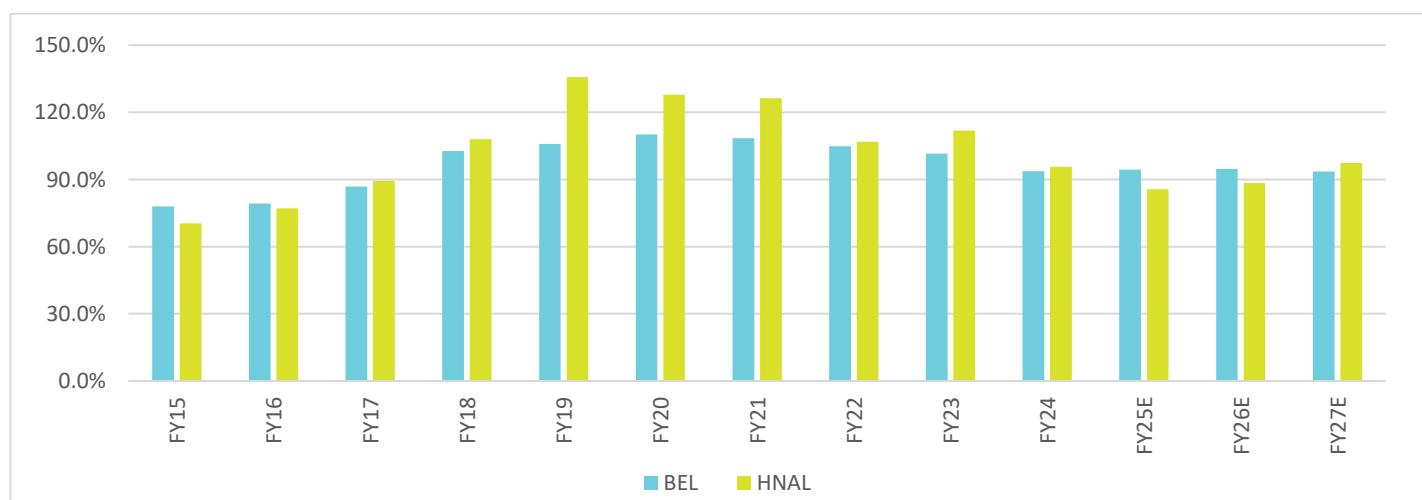
Source: Bloomberg, Nuvama Research

**Exhibit 80: HNAL's premium/discount to BEL**



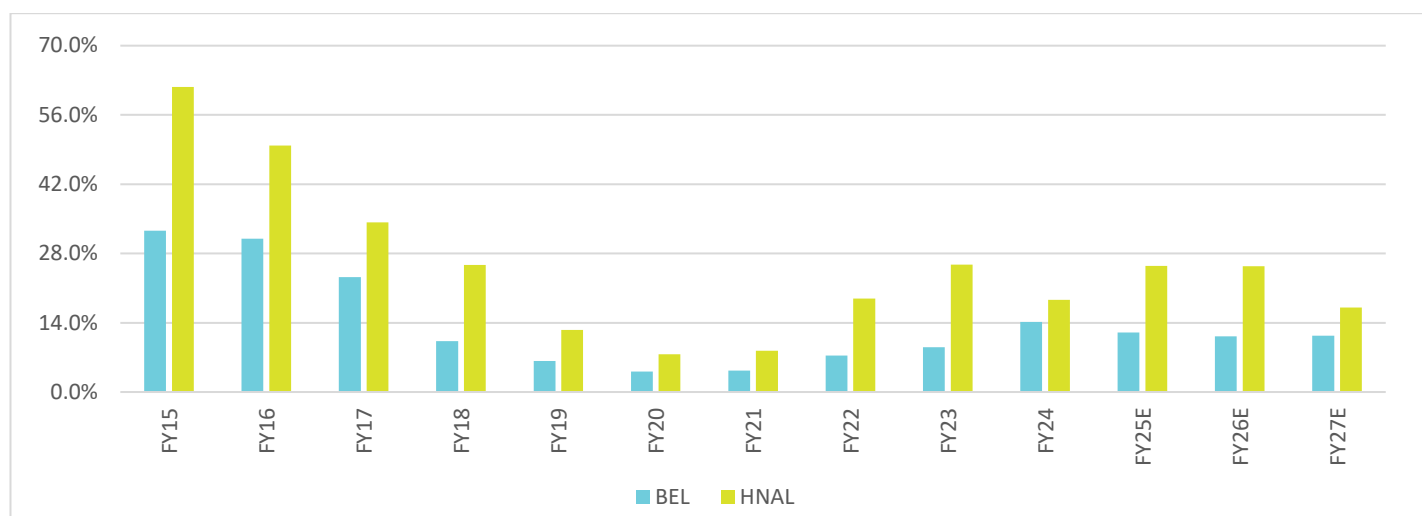
Source: Bloomberg, Nuvama Research

**Exhibit 81: BEL/HNAL – EBITDA as % of PBT**



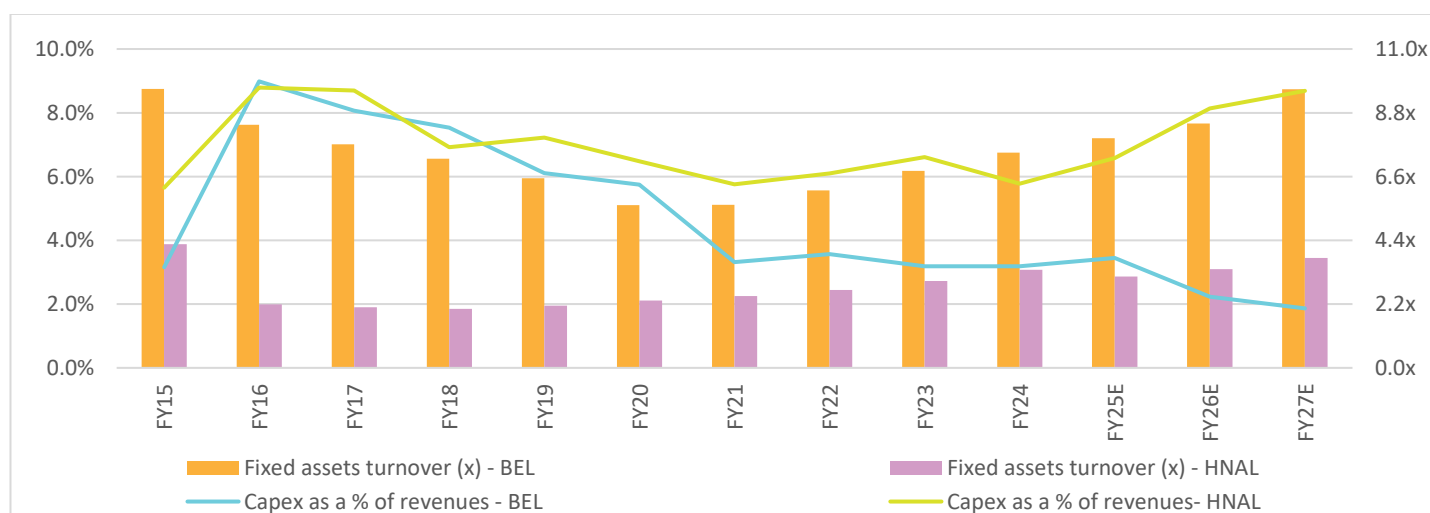
Source: Company, Nuvama Research

**Exhibit 82: BEL/HNAL – Other income as % of PBT**



Source: Company, Nuvama Research

**Exhibit 83: BEL/HNAL – Fixed asset turnover and capex as % of revenues**



Source: Company, Nuvama Research

# BHARAT DYNAMICS

## INITIATING COVERAGE



### KEY DATA

|                                         |                     |
|-----------------------------------------|---------------------|
| <b>Rating</b>                           | <b>BUY</b>          |
| <b>Sector relative</b>                  | <b>Outperformer</b> |
| <b>Price (INR)</b>                      | <b>1,405</b>        |
| <b>12 month price target (INR)</b>      | <b>1,650</b>        |
| <b>52 Week High/Low</b>                 | <b>1,795/842</b>    |
| <b>Market cap (INR bn/USD bn)</b>       | <b>515/6.0</b>      |
| <b>Free float (%)</b>                   | <b>22.3</b>         |
| <b>Avg. daily value traded (INR mn)</b> | <b>1,949.5</b>      |

### SHAREHOLDING PATTERN

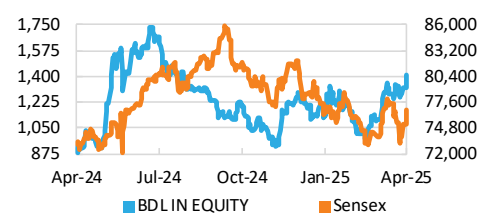
|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 74.93% | 74.93% | 74.93% |
| FII      | 3.09%  | 2.94%  | 2.95%  |
| DII      | 8.70%  | 8.46%  | 12.39% |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

### FINANCIALS

(INR mn)

| Year to March      | FY24A  | FY25E  | FY26E  | FY27E  |
|--------------------|--------|--------|--------|--------|
| Revenue            | 23,693 | 33,000 | 54,701 | 79,271 |
| EBITDA             | 5,366  | 6,930  | 12,034 | 18,232 |
| Adjusted profit    | 6,127  | 7,182  | 12,267 | 17,295 |
| Diluted EPS (INR)  | 16.7   | 19.6   | 33.5   | 47.2   |
| EPS growth (%)     | 74.0   | 17.2   | 70.8   | 41.0   |
| RoAE (%)           | 17.9   | 18.5   | 26.8   | 30.9   |
| P/E (x)            | 84.0   | 71.7   | 42.0   | 29.8   |
| EV/EBITDA (x)      | 88.0   | 65.8   | 37.3   | 24.1   |
| Dividend yield (%) | 0.1    | 0.4    | 0.7    | 1.0    |

### PRICE PERFORMANCE



## Order book flush; execution mode on

Bharat Dynamics (BDL) is a prime guided weapons production PSU with an established market position in surface-to-air missiles (SAMs), anti-tank guided missiles (ATGMs), air-to-air missiles (AAMs), underwater weapons and launchers. A gigantic [~INR228bn backlog](#) (7x FY25E sales) and a burgeoning [pipeline of ~INR288bn](#) lend comfort; that said, timely execution shall be a key catalyst.

Upside potential works out to ~18% baking in revenue/EBITDA/EPS CAGR of 55%/62%/55% over FY25E–27E. This factors in benefits of backward integration and easing of supply-crunched critical imports (chips, warheads, etc), which have plagued execution so far. At 35x FY27E PE, the TP is INR1,650; initiate at 'BUY'.

### No shortage of opportunities; execution key

BDL is one of the leading DPSUs in India and one of the biggest manufacturer and supplier of SAMs, torpedoes and ATGMs to Indian armed forces. The company is also the co-development partner with DRDO for the next generation of ATGMs and SAMs. That said, BDL has been facing supply chain issues, constraining the execution of large-ticket size orders won over the last two–three years (Konkurs, MRSAM, Akash missile system). Its book-to-bill rate has risen to 7x on FY25E backlog of INR228bn.

BDL has ramped up inventories of a few critical components to ensure timely execution. Plus, Israel/Russia supply chains seem to have normalised in our view. Meanwhile, the company has been continuously focusing on backward integration initiatives coupled with building out the local ecosystem to reduce import dependency and ensure consistent execution amid the ongoing modernisation drive.

### Eyeing new segments; a new state-of-the-art facility opens

BDL also plans to foray into new segments: guided bombs, warhead manufacturing, space applications, propellants, etc. The Jhansi facility, BDL's sixth manufacturing unit and first in Northern India, will play a pivotal role in advancing India's defence capabilities. It will focus on producing propulsion systems for all ATGMs while also serving as a key hub for the development of next-generation missile systems.

### Supply chain chinks being addressed well; initiate at 'BUY'

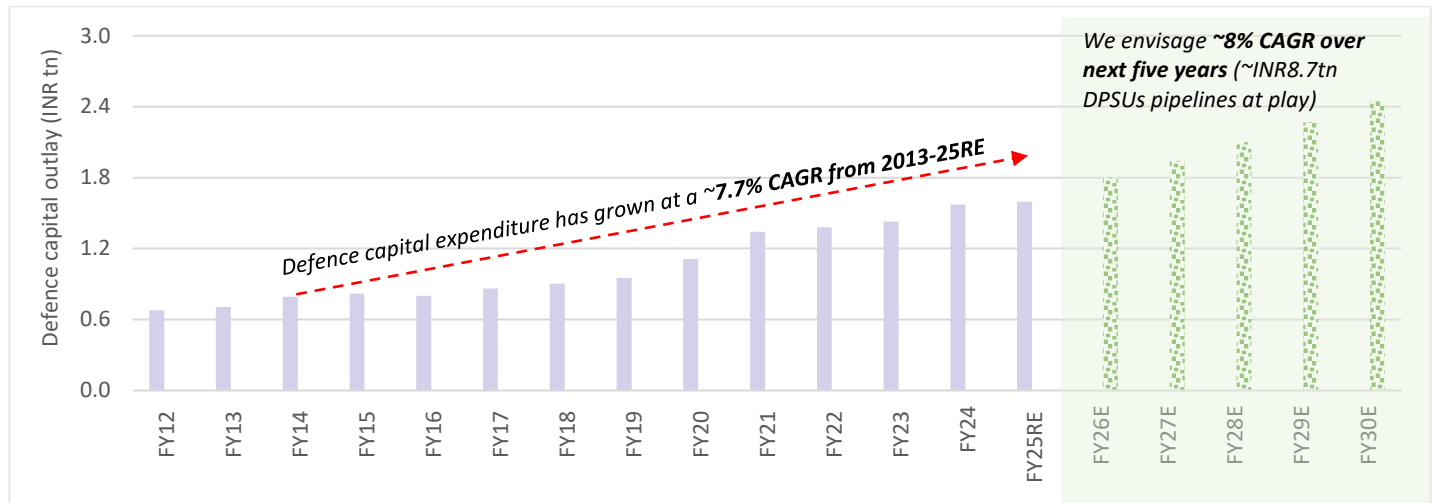
Despite a ~23% OI CAGR over the last four years feeding into an enlarging backlog of INR228bn, BDL has repeatedly disappointed on execution citing high dependency of critical component imports (chips, warheads, propulsion components, missile guidance systems) from war-hit nations—primarily Israel and Russia. However, we argue these challenges shall now ease out given ease in supply chain constraints, BDL's focus on backward integration, creating a local ecosystem in order to ensure timely execution. Initiate at 'BUY' baking in revenue/EBITDA/EPS CAGR of ~55%/62%/55% over FY25E–27E and valuing at 35x on FY27E EPS to a TP of INR1,650.

**Key risks:** Execution challenges, global supply chain issues, high dependency on single large customer and growing competition at domestic and international levels.



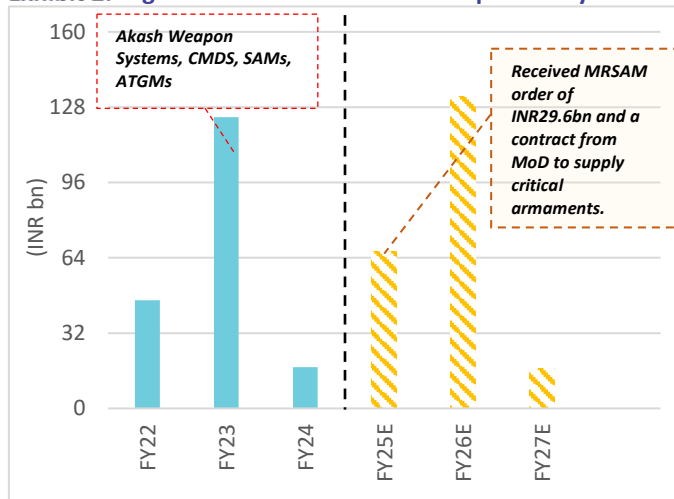
## The Story in Charts

**Exhibit 1: USD130bn opportunity size over next five years (INR8.5–9tn DPSUs' pipeline at play)**



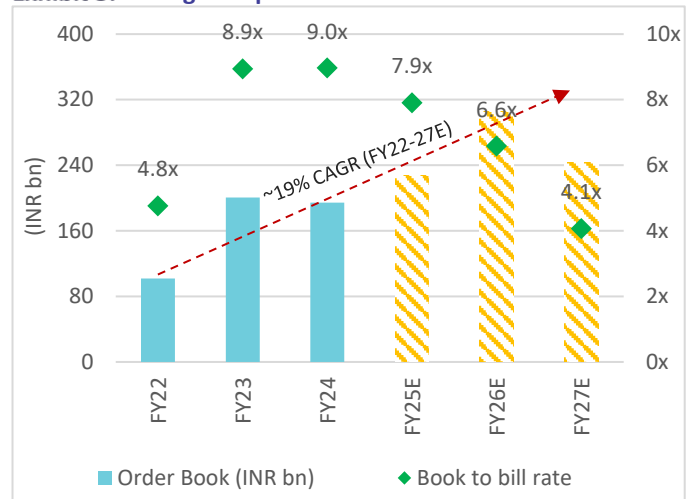
Source: Nuvama Research Note: We have only included HAL, BEL, MDL and CSL pipelines in our thesis. Considered USDINR at 84.

**Exhibit 2: High value orders received over past few years**



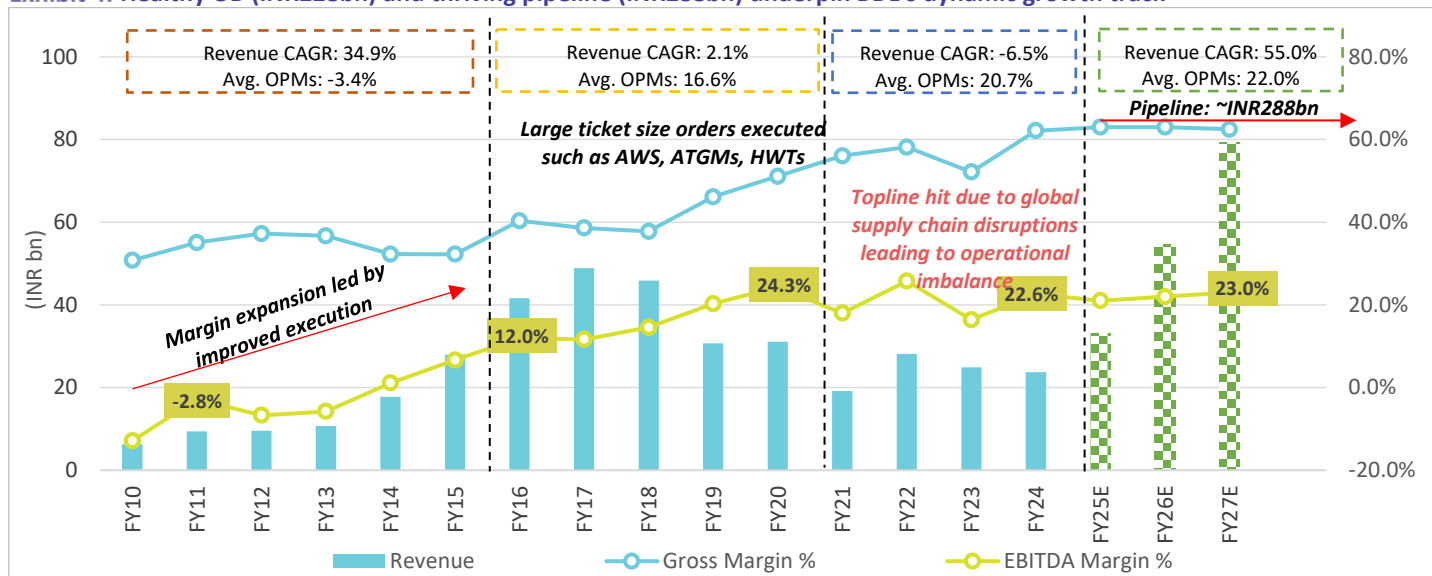
Source: Company, Nuvama Research

**Exhibit 3: Strong OB uptick with ~19% CAGR over FY22–27E**



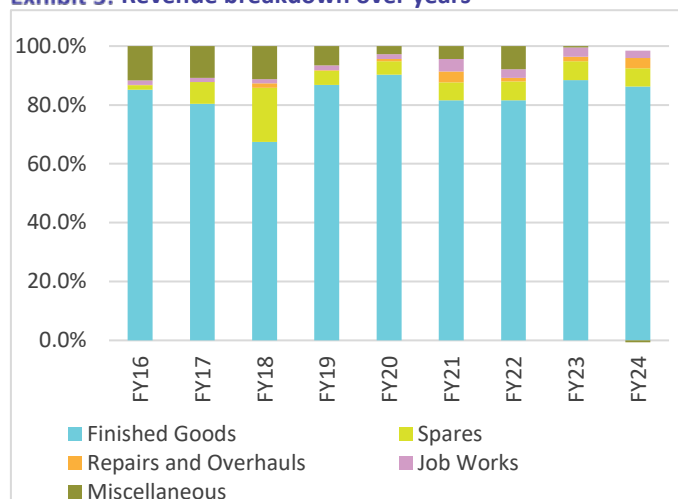
Source: Company, Nuvama Research

**Exhibit 4: Healthy OB (INR228bn) and thriving pipeline (INR288bn) underpin BDL's dynamic growth track**



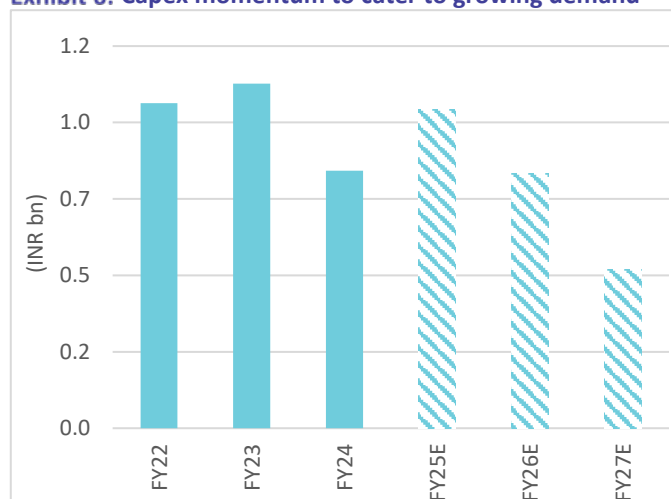
Source: Company, Nuvama Research

**Exhibit 5: Revenue breakdown over years**



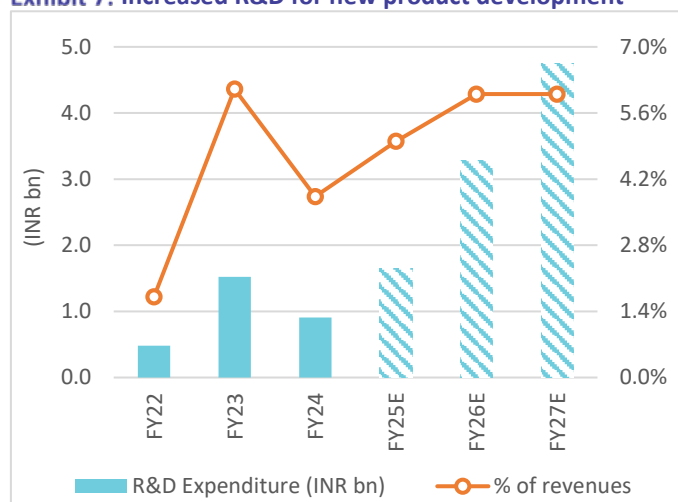
Source: Company, Nuvama Research

**Exhibit 6: Capex momentum to cater to growing demand**



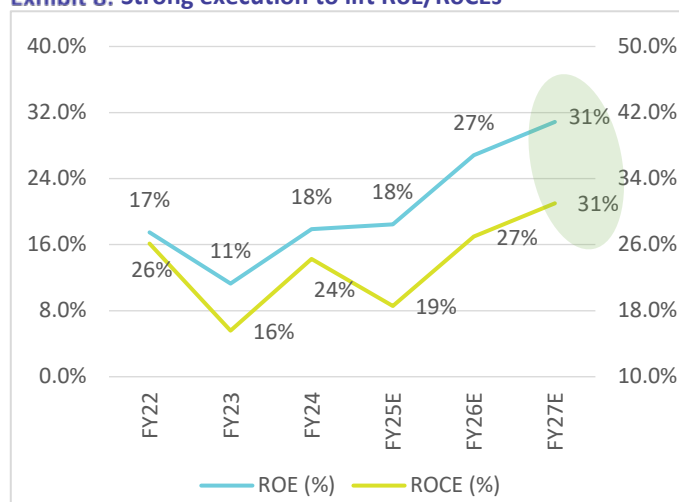
Source: Company, Nuvama Research

**Exhibit 7: Increased R&D for new product development**



Source: Company, Nuvama Research

**Exhibit 8: Strong execution to lift RoE/RoCEs**



Source: Company, Nuvama Research

**Exhibit 9: BDL's pipeline for next three-four years**

| Bharat Dynamics Limited (2025-29)                   |       |              |                   |
|-----------------------------------------------------|-------|--------------|-------------------|
| Platforms                                           | Units | Cost (INRbn) | Expected Timeline |
| Base orders (SAMs, torpedos, spares, refurbishment) | -     | 20           | INR20bn p.a.      |
| Astra Mk I                                          | 750   | 113          | FY25-29           |
| Astra Mk II                                         | 15    | 3            | FY26-27           |
| MRSAM *                                             | 70    | 30           | Order received    |
| QRSAM                                               | 144   | 88           | FY27-28           |
| LBRM                                                | 1200  | 48           | FY25-26           |
| SAAW                                                | -     | 10           | FY25-26           |
| NAG/Helina ATGM                                     | 500   | 5            | FY25-26           |
| Spike ER2                                           | -     | 3            | FY25-26           |
| <b>Total opportunity</b>                            |       | <b>288</b>   |                   |

Source: Company, Nuvama Research

**Exhibit 10: Scenario analysis: EPS CAGR of 55%+ over FY25E-27E in our base case**

| FY25E-27E                 | Bear case    | Base case    |
|---------------------------|--------------|--------------|
| Revenues CAGR             | 42.5%        | 55.0%        |
| Avg. OPMs                 | 20.7%        | 22.0%        |
| FY27E OPM                 | 20.0%        | 23.0%        |
| EPS CAGR                  | 40.0%        | 55.2%        |
| FY27 EPS                  | 38.4         | 47.2         |
| FY27 target multiple (x)  | 30           | 35           |
| <b>Price Target (INR)</b> | <b>1,152</b> | <b>1,650</b> |
| Upside/Downside           | -17.9%       | 17.5%        |

Source: Company, Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

## Financial Statements

### Income Statement (INR mn)

| Year to March          | FY24A  | FY25E  | FY26E  | FY27E  |
|------------------------|--------|--------|--------|--------|
| Total operating income | 23,693 | 33,000 | 54,701 | 79,271 |
| Gross profit           | 14,719 | 20,790 | 34,462 | 49,544 |
| Employee costs         | 6,000  | 7,260  | 11,761 | 16,251 |
| Other expenses         | 3,354  | 6,600  | 10,667 | 15,061 |
| EBITDA                 | 5,366  | 6,930  | 12,034 | 18,232 |
| Depreciation           | 670    | 692    | 718    | 725    |
| Less: Interest expense | 31     | 43     | 72     | 104    |
| Add: Other income      | 3,618  | 3,381  | 5,110  | 5,656  |
| Profit before tax      | 8,282  | 9,576  | 16,355 | 23,060 |
| Prov for tax           | 2,155  | 2,394  | 4,089  | 5,765  |
| Less: Other adj        | 0      | 0      | 0      | 0      |
| Reported profit        | 6,127  | 7,182  | 12,267 | 17,295 |
| Less: Excp.item (net)  | 0      | 0      | 0      | 0      |
| Adjusted profit        | 6,127  | 7,182  | 12,267 | 17,295 |
| Diluted shares o/s     | 367    | 367    | 367    | 367    |
| Adjusted diluted EPS   | 16.7   | 19.6   | 33.5   | 47.2   |
| DPS (INR)              | 0.9    | 5.9    | 10.0   | 14.2   |
| Tax rate (%)           | 26.0   | 25.0   | 25.0   | 25.0   |

### Important Ratios (%)

| Year to March            | FY24A | FY25E | FY26E | FY27E |
|--------------------------|-------|-------|-------|-------|
| COGS (% of rev)          | 37.9  | 37.0  | 37.0  | 37.5  |
| Employee cost (% of rev) | 25.3  | 22.0  | 21.5  | 20.5  |
| Other exp (% of rev)     | 14.2  | 20.0  | 19.5  | 19.0  |
| EBITDA margin (%)        | 22.6  | 21.0  | 22.0  | 23.0  |
| Net profit margin (%)    | 25.9  | 21.8  | 22.4  | 21.8  |
| Revenue growth (% YoY)   | (4.8) | 39.3  | 65.8  | 44.9  |
| EBITDA growth (% YoY)    | 31.4  | 29.2  | 73.7  | 51.5  |
| Adj. profit growth (%)   | 74.0  | 17.2  | 70.8  | 41.0  |

### Assumptions (%)

| Year to March         | FY24A   | FY25E     | FY26E   | FY27E  |
|-----------------------|---------|-----------|---------|--------|
| GDP (YoY %)           | 5.5     | 6.3       | 6.3     | 6.3    |
| Repo rate (%)         | 6.0     | 5.3       | 5.3     | 5.3    |
| USD/INR (average)     | 84.0    | 82.0      | 82.0    | 82.0   |
| Domestic rev gwth (%) | (4.8)   | 39.3      | 65.8    | 44.9   |
| Exports rev gwth (%)  | (85.9)  | 281.2     | 98.7    | (87.3) |
| Gross margin (%)      | 62.1    | 63.0      | 63.0    | 62.5   |
| EBITDA margin (%)     | 22.6    | 21.0      | 22.0    | 23.0   |
| Tax rate (%)          | 26.0    | 25.0      | 25.0    | 25.0   |
| Capex (INR mn)        | (808.9) | (1,000.0) | (800.0) | 250.0  |

### Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 84.0  | 71.7  | 42.0  | 29.8  |
| Price/BV (x)       | 14.2  | 12.4  | 10.3  | 8.3   |
| EV/EBITDA (x)      | 88.0  | 65.8  | 37.3  | 24.1  |
| Dividend yield (%) | 0.1   | 0.4   | 0.7   | 1.0   |

Source: Company and Nuvama estimates

### Balance Sheet (INR mn)

| Year to March        | FY24A    | FY25E    | FY26E    | FY27E    |
|----------------------|----------|----------|----------|----------|
| Share capital        | 1,833    | 1,833    | 1,833    | 1,833    |
| Reserves             | 34,535   | 39,563   | 48,149   | 60,256   |
| Shareholders funds   | 36,368   | 41,395   | 49,982   | 62,089   |
| Minority interest    | 0        | 0        | 0        | 0        |
| Borrowings           | 0        | 0        | 0        | 0        |
| Trade payables       | 7,984    | 8,363    | 13,863   | 20,361   |
| Other liabs & prov   | 59,048   | 59,048   | 59,048   | 59,048   |
| Total liabilities    | 1,03,401 | 1,08,807 | 1,22,893 | 1,41,498 |
| Net block            | 8,236    | 8,544    | 8,627    | 8,402    |
| Intangible assets    | 0        | 0        | 0        | 0        |
| Capital WIP          | 729      | 729      | 729      | 729      |
| Total fixed assets   | 8,965    | 9,273    | 9,355    | 9,131    |
| Non current inv      | 0        | 0        | 0        | 0        |
| Cash/cash equivalent | 42,285   | 58,785   | 65,208   | 75,183   |
| Sundry debtors       | 3,104    | 3,164    | 5,245    | 7,601    |
| Loans & advances     | 20       | 20       | 20       | 20       |
| Other assets         | 47,688   | 36,226   | 41,726   | 48,224   |
| Total assets         | 1,03,401 | 1,08,807 | 1,22,893 | 1,41,498 |

### Free Cash Flow (INR mn)

| Year to March         | FY24A   | FY25E   | FY26E   | FY27E   |
|-----------------------|---------|---------|---------|---------|
| Reported profit       | 6,723   | 7,182   | 12,267  | 17,295  |
| Add: Depreciation     | 670     | 692     | 718     | 725     |
| Interest (net of tax) | (3,160) | (3,338) | (5,039) | (5,553) |
| Others                | 0       | 0       | 0       | 0       |
| Less: Changes in WC   | (274)   | 11,781  | (2,081) | (2,356) |
| Operating cash flow   | 4,117   | 16,317  | 5,865   | 10,111  |
| Less: Capex           | 809     | 1,000   | 800     | 500     |
| Free cash flow        | 3,308   | 15,317  | 5,065   | 9,611   |

### Key Ratios

| Year to March         | FY24A  | FY25E  | FY26E  | FY27E  |
|-----------------------|--------|--------|--------|--------|
| RoE (%)               | 17.9   | 18.5   | 26.8   | 30.9   |
| RoCE (%)              | 24.3   | 18.6   | 27.0   | 31.0   |
| Inventory days        | 774    | 421    | 200    | 210    |
| Receivable days       | 38     | 35     | 28     | 30     |
| Payable days          | 257    | 244    | 200    | 210    |
| Working cap (% sales) | (71.4) | (87.0) | (48.7) | (30.6) |
| Gross debt/equity (x) | 0      | 0      | 0      | 0      |
| Net debt/equity (x)   | (1.2)  | (1.4)  | (1.3)  | (1.2)  |
| Interest coverage (x) | 151.2  | 144.2  | 157.8  | 168.5  |

### Valuation Drivers

| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 74.0  | 17.2  | 70.8  | 41.0  |
| RoE (%)           | 17.9  | 18.5  | 26.8  | 30.9  |
| EBITDA growth (%) | 31.4  | 29.2  | 73.7  | 51.5  |
| Payout ratio (%)  | 5.1   | 30.0  | 30.0  | 30.0  |

## Investment Rationale

- **Indian missile market an unstoppable projectile:** India's defence sector is on a strong growth trajectory with a projected increase in its capital outlay of 7–8% CAGR over the next five years translating to DPSUs' pipeline of ~INR8.7tn. This unprecedented investment is paving the way for rapid induction and modernisation of critical defence programs/systems such as LCA Mk1A, Su-30/MiG-29/Mirage-2000 upgrades, MRSAM, QRSAM, Akash Weapon System and P-75(I). This in turn is giving a push to indigenous production for advanced weaponry such as missiles, torpedoes, CMDS, etc. A paradigm shift of easing import dependency by building a local ecosystem shall be instrumental in driving sustained growth of Indian defence electronics.
- **BDL evolving from a missile manufacturer to a full-system integrator:** BDL is India's leading manufacturer of SAMs, air-to-air missiles (AAMs), torpedoes and ATGMs; it is now evolving into providing turnkey solutions to the Indian Armed Forces. A strong collaboration with the DRDO and strategic tie-ups with foreign OEMs are expected to expand BDL's serviceable market in India as well as open the gateways to exports over coming years. To its credit, BDL has over the years engineered a vast missile ecosystem through integration of sections, sub-systems, missiles, QCs and product support.
- **Quality in check, execution still a test:** BDL has stringent quality check standards; it employs more QC personnel than production staff. That said, the company has lagged on execution due to higher import dependency of critical components such as chips, warheads, missile propulsion parts, guidance systems. etc from war-hit nations (Israel, Russia). This had a fallout on its revenue, -6.8% CAGR over FY16–24 leading to operational imbalance.
- **Outlook and valuation:** Initiate at 'BUY' baking in a revenue/EBITDA/EPS CAGR of ~55%/62%/55% over FY25E–27E along with a rapidly growing backlog to ~INR228bn. The key growth catalyst shall be execution; debottlenecking of supply chain would help greatly in our view, which BDL is already addressing. Valuing the stock at 35x FY27E EPS of INR47.2 yields a TP of INR1,650.

India's missile industry is on a remarkable growth trajectory, evolving from an import-dependent sector to a formidable global exporter. Extensive modernisation efforts such as the addition of new fighter squadrons, improving weapons systems mix at the platoon level, and additions of new warships and submarines would all drive demand for missiles.

The environment is conducive too—given rising security challenges from neighbouring countries, the need for a robust missile defence system has never been greater. To strengthen defence capabilities, India is making significant investments in state-of-the-art missile defence systems, including the indigenous Akash Weapon System, MRSAM and QRSAM alongside the formidable S-400 system acquired from Russian manufacturer Almaz-Antey. These advancements are set to redefine India's military preparedness and reinforce its position as a leader in defence technology.

## Exhibit 11: Programmes fuelling Indian missile industry

### Programmes driving the Indian missile industry

#### Strategic Deterrence Programs

|                                                              |                                                                                            |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Land-based ballistic missiles: Agni series (Agni-V, Agni-VI) | For long-range strategic deterrence.                                                       |
| Air-launched systems: BrahMos-A (air-launched version)       | Nuclear-capable missiles deployed on aircraft like the Sukhoi Su-30MKI.                    |
| Submarine-launched systems: K-15 (Sagarika) and K-4          | Ballistic missiles for second-strike capability on nuclear submarines (e.g., INS Arihant). |

#### Integrated Air and Missile Defense Programs

|                            |                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Prithvi Air Defence (PAD)  | For high-altitude interception.                                                                                       |
| Advanced Air Defence (AAD) | For low-altitude interception.                                                                                        |
| MRSAM                      | Medium range surface-to-air missile launched vertically to defend against enemy aircraft, missiles, and guided bombs. |
| Barak-8                    | For naval and land-based air defense (developed with Israel) .                                                        |

#### Akash Missile System

|               |                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------|
| Akash Missile | Indigenous surface-to-air missile system deployed by the Indian Army and Air Force for medium-range air defense. |
|---------------|------------------------------------------------------------------------------------------------------------------|

#### Tactical Missile Programs

|                    |                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Prithvi series     | Tactical battlefield operations.                                                                                                              |
| Nag Missile System | Anti-tank guided missile (ATGM) for armoured warfare.                                                                                         |
| Astra Missile      | India's first indigenous beyond-visual-range (BVR) air-to-air missile, used by fighter jets like the Tejas, Sukhoi Su-30MKI, and Mirage 2000. |

#### Naval Missile Programs

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| BrahMos   | Supersonic cruise missile deployed on warships, submarines, and coastal batteries. |
| Dhanush   | Naval variant of the Prithvi missile for ship-based tactical roles.                |
| K-15, K-4 | Nuclear-capable missiles launched from nuclear submarines.                         |

#### Cruise Missile Programs

|                        |                                                                                                                                   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| BrahMos Missile        | Versatile supersonic cruise missile with land, air, and sea variants. Widely used across all branches of the Indian Armed Forces. |
| Nirbhay Cruise Missile | Long-range subsonic cruise missile under development, designed for precision strikes.                                             |

#### Hypersonic Cruise Vehicle

|                                                     |                                                                                                                                           |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Hypersonic Technology Demonstration Vehicle (HSTDV) | DRDO's program to develop hypersonic cruise missiles with enhanced speed, range, and manoeuvrability, capable of exceeding Mach 5 speeds. |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|

#### Space-Based and Anti-Satellite Defense

|                |                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mission Shakti | India's successful anti-satellite (ASAT) missile test, demonstrating the capability to neutralize satellites in orbit, enhancing space-based defense. |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Export and Collaborative Programs

|         |                                                                                                                                     |
|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| BrahMos | Built in collaboration with Russia for exporting to countries like the Philippines, with plans to expand to other friendly nations. |
| Barak-8 | Collaborative programs with Israel.                                                                                                 |

#### Specialized Missile Systems for Ground Forces

|                       |                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| Pinaka Missile System | Guided rockets and missiles integrated with the Pinaka multi-barrel rocket launcher for battlefield support. |
| Helina/Dhruvastra     | Air-launched variants of the Nag missile for helicopters.                                                    |

#### Air-Launched and Multirole Missile Systems

|                                   |                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------|
| Smart Anti-Airfield Weapon (SAAW) | Precision-guided weapon with missile-like characteristics for neutralizing enemy airbases. |
| RudraM series                     | Anti-radiation missiles for SEAD (Suppression of Enemy Air Defences) operations.           |

Source: Nuvama Research

**Exhibit 12: Key players in guided missiles and torpedoes market in India**



Source: Company, Nuvama Research

## Evolving landscape of India's missile market: A strategic shift

Deploying robust SAM systems is essential to safeguarding military assets, bases and key cities from aerial and missile threats. Furthermore, the Indian Air Force faces a shortfall, operating only ~31 active squadrons against the required strength of ~42 for a 'three-front war' scenario. Meanwhile, the impending decommissioning of aging aircraft exacerbates the challenge.

The Indian Armed Forces urgently need modernisation, but the high cost of SAM systems globally makes indigenous solutions the strategic choice. India's missile market is at a pivotal juncture with DPSUs leading the way and foreign solutions filling the gaps. In this backdrop, a surge of interest from private players is reshaping the industry as they race to acquire manufacturing licences and forge alliances with global defence giants. This newfound enthusiasm stems from the vast and growing opportunities in India's guided missile sector. Yet, a crucial factor remains that many private firms lack hands-on experience in missile production.

In contrast, DPSUs such as BDL hold a distinct edge. With a proven record of accomplishment in manufacturing guided missiles, surface-to-air missiles (SAMs) and torpedoes, the company is well positioned to capitalise on this transition while securing a significant share of this high-value market. As opportunities expand, domestic players investing in advanced missile technology and manufacturing such as BDL's exploration of technology transfers stand to benefit.



**Exhibit 13: Major missiles and torpedoes manufacturers in India**

| Company                     | Type    | Details                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bharat Dynamics             | DPSU    | Chief missile manufacturing company in India. It produces sell classes except cruise missiles including <b>Akash SAM systems, light torpedoes, launching equipment, counter measures, ATGMs, test equipment</b> and others.                                                                                                          |
| Tata Advanced Systems       | Private | TASL has <b>partnered with Raytheon, U.S.</b> to produce components for <b>Stinger missile systems</b> . These missile systems will be deployed at platoon levels and also on-board AH-64 Apaches which are being procured by India.                                                                                                 |
| Reliance Defence            | Private | Reliance Defence has signed a <b>JV agreement with Rafael Advanced Systems, Israel</b> to build <b>Air-to-Air missile systems</b> .                                                                                                                                                                                                  |
| Kalyani Strategic Systems   | Private | Kalyani Strategic Systems, Bharat Forge's defence subsidiary, signed an <b>MoU with Israel Aerospace Industries</b> to for a JV company to build air defence, <b>ground to ground and ground to sea munitions</b> in India.                                                                                                          |
| Larsen & Toubro             | Private | L&T has entered into a <b>JV with MBDA, France</b> to produce <b>5th generation ATGMs</b> in India. BDL and L&T has also entered into an agreement to export <b>light torpedo solutions</b> . BDL manufactures light torpedoes, whilst L&T has expertise in <b>tube torpedo launchers</b> .                                          |
| Adani Defence and Aerospace | Private | Adani has <b>agreements with Thales, France and EDGE Group, UAE</b> to produce missiles such as <b>Precision Guided Missile, New Generation Anti-Radiation Missile, Naval Anti-Ship Missile</b> , etc. The company's facilities in Kanpur, Uttar Pradesh are the largest ammunition and missile manufacturing complex in South Asia. |
| Solar Industries            | Private | Solar Industries India Limited has developed the <b>Bhargavastra</b> , a micro-missile system to counter drone attacks. The company is also involved in manufacturing <b>Pinaka missiles</b> and booster for Brahmos.                                                                                                                |

Source: Company, Nuvama Research

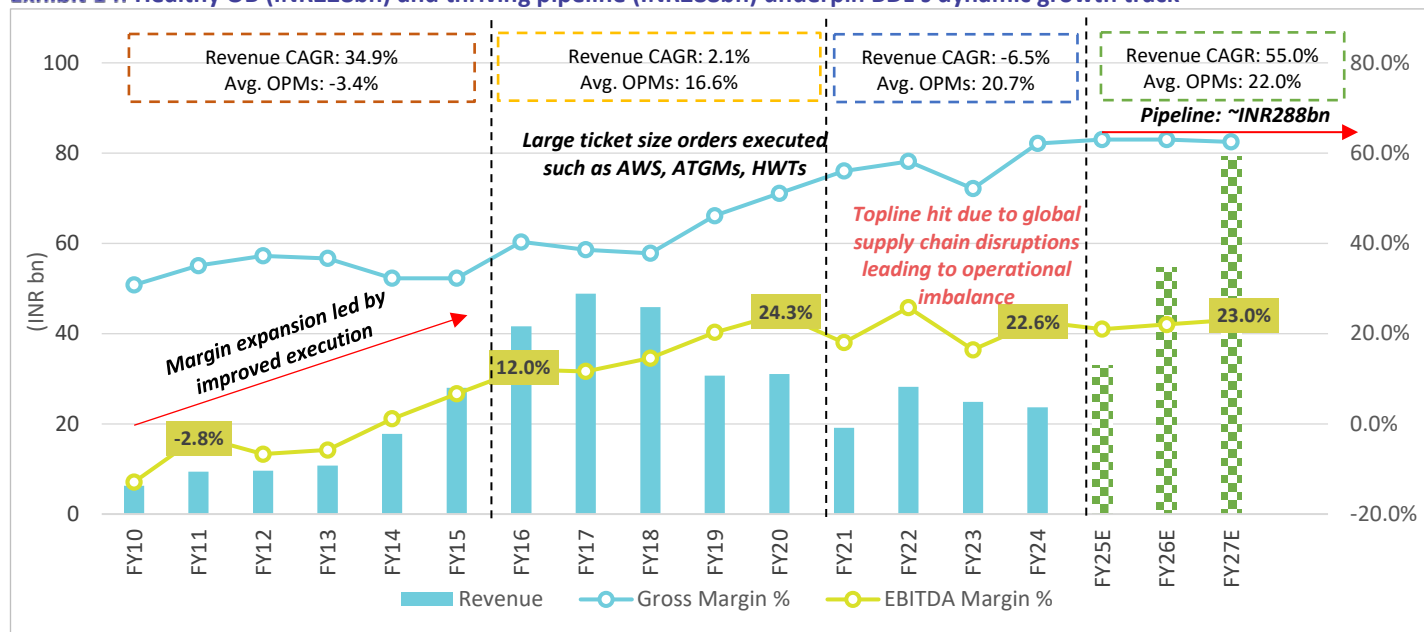
## Why BDL; what is in it?

BDL is a key beneficiary of India's rising defence capital outlay, playing a pivotal role in the development and production of missiles, torpedoes and advanced weaponry. With a dominant market share in the Indian missile industry, BDL is well positioned to capitalise on increasing defence investments. Enhanced execution efficiency and a greater focus on localisation present significant opportunities for margin expansion. Key points:

- High degree of convergence between BDL's product portfolio and opportunities arising in the Indian defence industry. The company is emerging as a prime integrator of weapon systems.
- Incremental opportunities are arising for BDL in the wake of modernisation push and procurement of new fighters, submarines, corvettes, frigates, etc.
- Foraying into new segments such as drone-delivered missiles and bombs, rockets & smart ammunition, high-energy propellants, hypersonic weapons, etc.
- BDL is actively exploring partnerships and collaborations with foreign OEMs to develop new weapons under ToT.
- It has already made an entry into exports via supplies of LWTs, CMDs, ATGMs and Akash Weapon System to friendly foreign countries.
- Despite stunted execution due to global supply chain challenges, BDL has been able to sustain and grow its margin profile over the years; it reported GM/OPM of 62.1%/22.6% in FY24.

Given BDL's growth prospects, we expect its top line to soar at a CAGR of 55%-plus over FY25E–27E fuelled by its current order book of INR228bn-plus (7x FY25E sales), ongoing strategic capacity expansion plans and increased localised content. OPMs are likely to edge up to 22–23% by FY27E as we anticipate BDL to execute full system and export orders. This shall translate to an EPS CAGR of 55%-plus over FY25E–27E.

**Exhibit 14: Healthy OB (INR228bn) and thriving pipeline (INR288bn) underpin BDL's dynamic growth track**



Source: Company, Nuvama Research

## A key beneficiary of India's growing missile industry

BDL is one of the largest beneficiaries of India's growing missile industry, playing a pivotal role in strengthening national defence capabilities. As the primary manufacturer of strategic missile systems such as the *Akash Surface-to-Air Missile (SAM)* and *Konkurs Anti-Tank Guided Missiles (ATGM)*, BDL has established itself as a key defence player.

Strong collaborations with the DRDO and foreign OEMs enable it to develop cutting-edge missile technology while its position as a major supplier to the Indian Army, Navy and Air Force ensures robust demand. With sustained investment in R&D, the company remains at the forefront of indigenous missile production.

**Exhibit 15: BDL's collaborations with foreign OEMs**

| Foreign OEM                                                     | Year | Details                                                                                                                                           |
|-----------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Javelin JV, a partnership of Raytheon Company & Lockheed Martin | 2020 | Co-production of the Javelin anti-tank missile system to fulfil potential future requirements of the Indian Ministry of Defence                   |
| MBDA, France                                                    | 2021 | Establishing a facility for the Final Assembly, Integration and Test (FAIT) of Advanced Short Range Air-to-Air Missile (ASRAAM) missiles in India |
| Thales, France                                                  | 2023 | Manufacturing in India for precision-strike 70mm laser guided rockets (FZ275 LGR)                                                                 |
| Rosoboronexport, Russia                                         | 2024 | Co-production of Pantsir air defence systems                                                                                                      |
| Ultra Maritime, US                                              | 2024 | Co-produce sonobuoys, used for detecting underwater movement                                                                                      |

Source: Nuvama Research, Company

Delayed induction of new combat aircraft into IAF's fleet could have a cascading effect on India's other major aircraft programmes in the near to medium term. This slowdown risks putting IAF at a tactical disadvantage, making modernisation of existing squadrons (currently ~31 against required strength of ~42) not just essential, but also the most practical and immediate solution to maintain operational readiness.

Simultaneously, the Indian Navy is actively enhancing its fleet's strike capabilities against enemy warships and land targets. Hence, advanced missile and torpedo systems are crucial to enhance combat readiness and deterrence.

Key upgrade programmes include arming **Su-30MKI fighters with BrahMos and Astra missiles, integrating Astra across multiple platforms, and upgrading Mirage-2000 and Jaguar fleets** with advanced strike systems.

The Indian Navy too is strengthening its fleet with **anti-ship missiles such as BrahMos and equipping submarines and warships with heavyweight torpedoes such as Varunastra**. Major naval advancements include **Project 75I for next-generation submarines, the integration of long-range land-attack missiles, and enhanced air defence systems such as Barak-8 and VL-SRSAM**, ensuring superior maritime security.

#### Exhibit 16: Major programmes to drive missiles and torpedoes market

| Programme Name                 | Estimated size (INR bn) |
|--------------------------------|-------------------------|
| LCA Tejas Mk1A, Mk2            | 1,994                   |
| LCH Prachand                   | 500                     |
| AMCA                           | 1,134                   |
| Dornier-228 Mid Life Upgrade   | 11                      |
| Su-30MKI Production & Upgrades | 135                     |
| Project-75(I) Submarine        | 480                     |
| Mig-29 upgrade                 | 74                      |
| MRSAM                          | 30                      |
| Astra Mk1, Mk2                 | 116                     |
| Next Gen Corvettes             | 360                     |
| Next Gen Destroyers            | 800                     |
| Project 17B stealth frigates   | 700                     |

Source: Company, Nuvama Research

#### Advancing self-reliance through sustained R&D and indigenisation

Aligned with the GoI's 'Aatmanirbhar Bharat' initiative, BDL is spearheading the indigenisation of critical defence technologies. The company has actively collaborated with a diverse network of vendors, including MSMEs, to accelerate the localisation of key defence components.

BDL's focus extends beyond manufacturing as it is deeply invested in the indigenous development of cutting-edge missile and underwater weapon technologies. These include *seekers, homing systems, avionics, cruise missile engines, naval anti-ship missiles, UAVs, ramjet motors, advanced guidance systems, specialised warheads, radio frequency (RF) systems, antenna design, and electronic warfare solutions*.

With an indigenisation rate of 80–90%, BDL is not only aiming to minimise import dependence, but also optimising costs, enabling it to provide high-quality, competitively priced defence solutions to the Indian Armed Forces.

**Exhibit 17: Indigenous content of BDL's product portfolio**

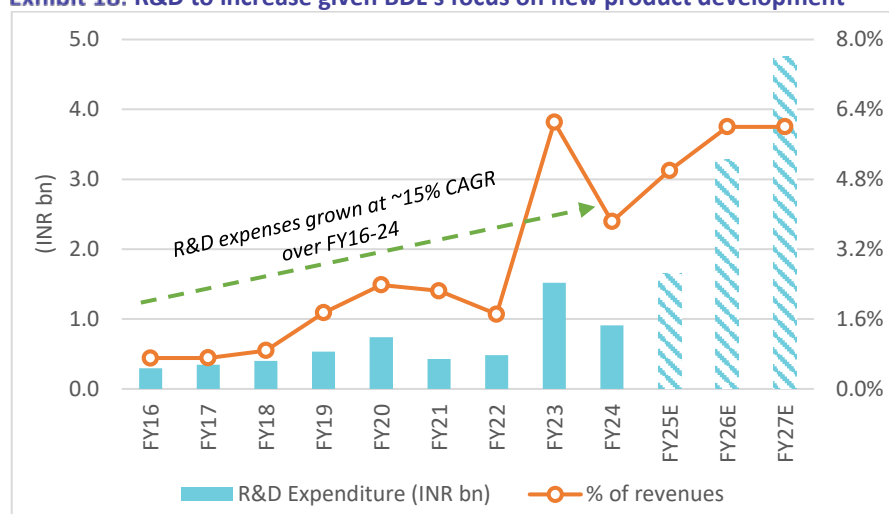
| Product                             | Indigenous content |
|-------------------------------------|--------------------|
| Konkurs-M                           | 96.3%              |
| Invar ATGM                          | 87.9%              |
| Milan-2T ATGM                       | 71.0%              |
| Akash SAM                           | 96.0%              |
| Light Weight Torpedoes              | 91.0%              |
| Heavy Weight Torpedoes – Varunastra | 86.8%              |
| QRSAM                               | 90.0%              |
| MRSAM                               | 70.0%              |

Source: Company, Nuvama Research

BDL has been navigating through supply chain disruptions due to its dependence on war-affected regions for critical missile components: warheads, chips and propulsion parts, among others. To mitigate these challenges, it is intensifying R&D efforts to drive innovation and develop indigenous alternatives.

**From FY16–24, BDL's R&D expense compounded at ~15%, reflecting the strong focus on technological advancement.** This upward R&D expense trajectory is likely to sustain as BDL progressively allocates large resources to niche and emerging technologies such as hypersonic systems, AI-driven threat detection, autonomous defence systems, drone weaponization and anti-drone solutions.

**Exhibit 18: R&D to increase given BDL's focus on new product development**

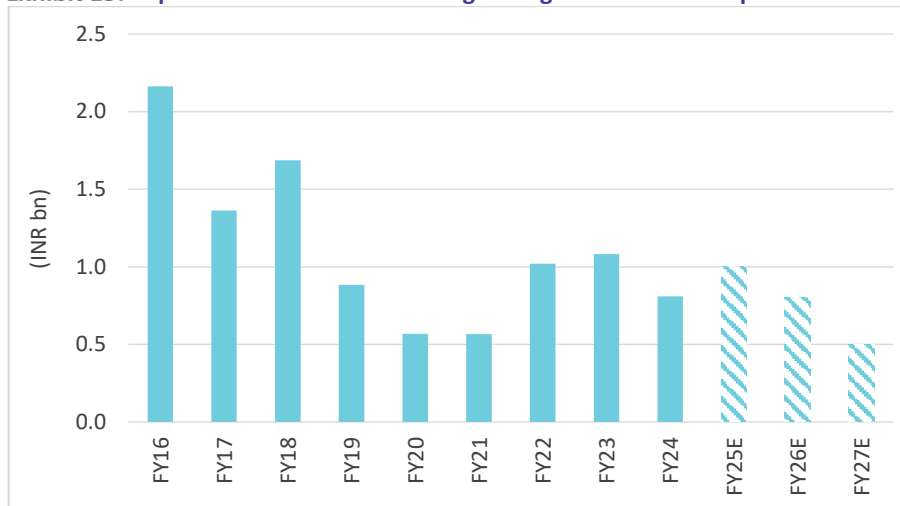


Source: Company, Nuvama Research

As part of its strategic move towards backward integration, BDL continues to invest in modernising its facilities and strengthening production capabilities. For FY25, BDL had earmarked approximately INR1bn for various expansion initiatives, including the construction of its Jhansi Unit and the Phase-II infrastructure development at Ibrahimpattam.

*The Jhansi facility, BDL's sixth manufacturing unit and first in Northern India, will play a pivotal role in advancing India's defence capabilities. It will focus on producing propulsion systems for all anti-tank guided missiles (ATGMs) while also serving as a key hub for the development of next-generation missile systems.*

**Exhibit 19: Capex momentum to cater to growing domestic and exports demand**



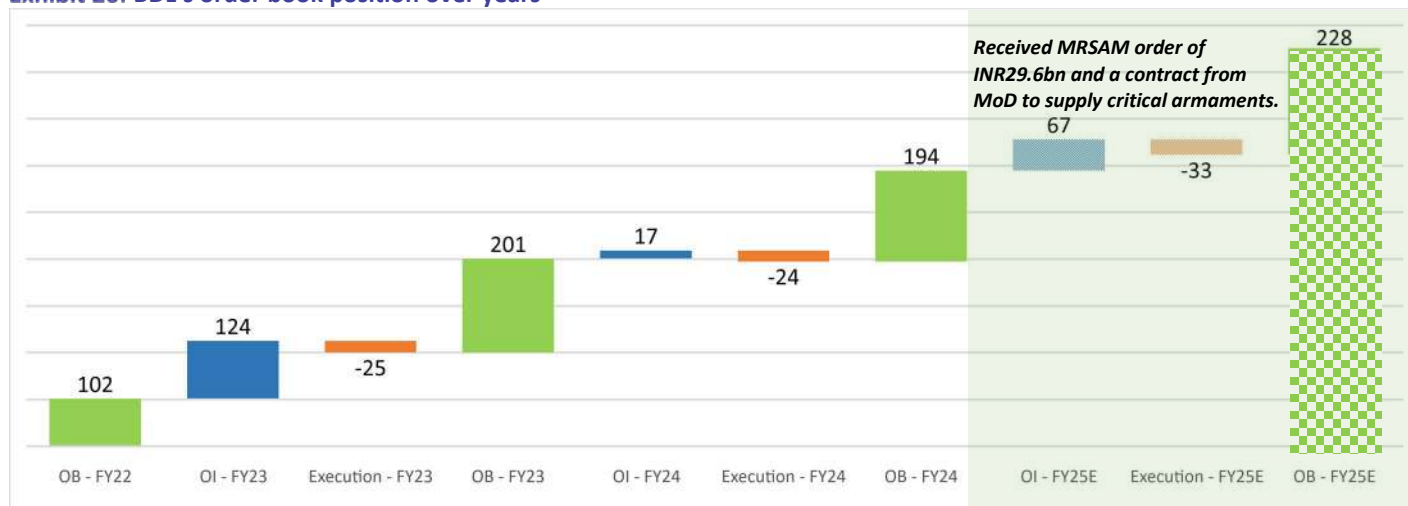
Source: Company, Nuvama Research

## Burgeoning order book to spur 55%-plus revenue CAGR over FY25E–27E

With a robust order book of ~INR228bn at end-FY25E, BDL is poised for a 55%-plus revenue CAGR over FY25E–27E, in our view. While the company faced supply chain disruptions due to its reliance on war-affected nations such as Russia and Israel, resulting in a negative 6.8% revenue CAGR over FY16–24, its strategic and pole position in India’s missile industry and strong government backing have enabled it to secure large-scale new/repeat orders over the past years. Notable contracts include the Akash Weapon System, lightweight and heavyweight torpedoes, Konkurs-M ATGMs, MRSAM and Astra Mk-1 missiles, among others.

The key challenge for BDL now lies in ramping up its execution efficiency. With a stronger product mix, improved execution capabilities and a higher degree of indigenisation, the company is well-positioned to achieve its projected growth trajectory in our view.

**Exhibit 20: BDL’s order book position over years**



Source: Company, Nuvama Research

We argue BDL shall clock consistent growth over coming years driven by the GoI’s strong procurement pipeline (~INR8.7tn over next five–seven years). With a robust order flow ensuring a healthy backlog, we anticipate an opportunity pipeline of ~INR288bn for BDL over the next three–four years.

**Exhibit 21: BDL's pipeline over next three-four years**

| Bharat Dynamics Limited (2025-29)                   |       |              |                   |
|-----------------------------------------------------|-------|--------------|-------------------|
| Platforms                                           | Units | Cost (INRbn) | Expected Timeline |
| Base orders (SAMs, torpedos, spares, refurbishment) | -     | 20           | INR20bn p.a.      |
| Astra Mk I                                          | 750   | 113          | FY25-29           |
| Astra Mk II                                         | 15    | 3            | FY26-27           |
| MRSAM *                                             | 70    | 30           | Order received    |
| QRSAM                                               | 144   | 88           | FY27-28           |
| LBRM                                                | 1200  | 48           | FY25-26           |
| SAAW                                                | -     | 10           | FY25-26           |
| NAG/Helina ATGM                                     | 500   | 5            | FY25-26           |
| Spike ER2                                           | -     | 3            | FY25-26           |
| <b>Total opportunity</b>                            |       | <b>288</b>   |                   |

Source: Company, Nuvama Research

## Global aspirations, local innovations – Eyeing the export market

While BDL primarily serves the Indian Armed Forces, it is rapidly expanding into global markets. Recognising its international potential, the company has prioritised weapon system exports, establishing a dedicated export cell within its Business Development division. This strategic initiative focuses on crafting country-specific strategies to align BDL's offerings with regional defence needs. These efforts are already paying off. The company has secured export orders for Light Weight Torpedoes, Counter Measures Dispensing Systems, ATGMs and the Akash Weapon System. **At end-FY24, BDL's export order book stood at INR24.2bn (12% of total orders).**

A key success in this push is the Akash surface-to-air missile system. In 2022, India secured an USD720mn deal with Armenia. As of February 2025, an USD200mn agreement with the Philippines is in the pipeline, which shall further solidify BDL's role in India's defence export growth.

## Outlook and Valuation

We are initiating coverage on BDL at 'BUY' baking in a revenue/EBITDA/EPS CAGR of ~55%/62%/55% over FY25E–27E. Our estimates factor in a rapid-growing order backlog to ~INR228bn assuming fructification of localisation of imported components and ease of supply chain constraints. A key catalyst remains pickup in execution and, on the whole, we see more positive triggers than negatives. We assign a 35x PE to FY27E EPS of INR47.2, which yields a TP of INR1,650.

**Key risks:** Execution challenges, global supply chain issues, high dependency on a single large customer, growing competition—both at the domestic and international levels.

**Exhibit 22: Scenario analysis: EPS CAGR of 55%-plus over FY25E–27E in our base case**

| FY25E-27E                 | Bear case    | Base case    |
|---------------------------|--------------|--------------|
| Revenues CAGR             | 42.5%        | 55.0%        |
| Avg. OPMs                 | 20.7%        | 22.0%        |
| FY27E OPM                 | 20.0%        | 23.0%        |
| EPS CAGR                  | 40.0%        | 55.2%        |
| FY27 EPS                  | 38.4         | 47.2         |
| FY27 target multiple (x)  | 30           | 35           |
| <b>Price Target (INR)</b> | <b>1,152</b> | <b>1,650</b> |
| Upside/Downside           | -17.9%       | 17.5%        |

Source: Company, Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.



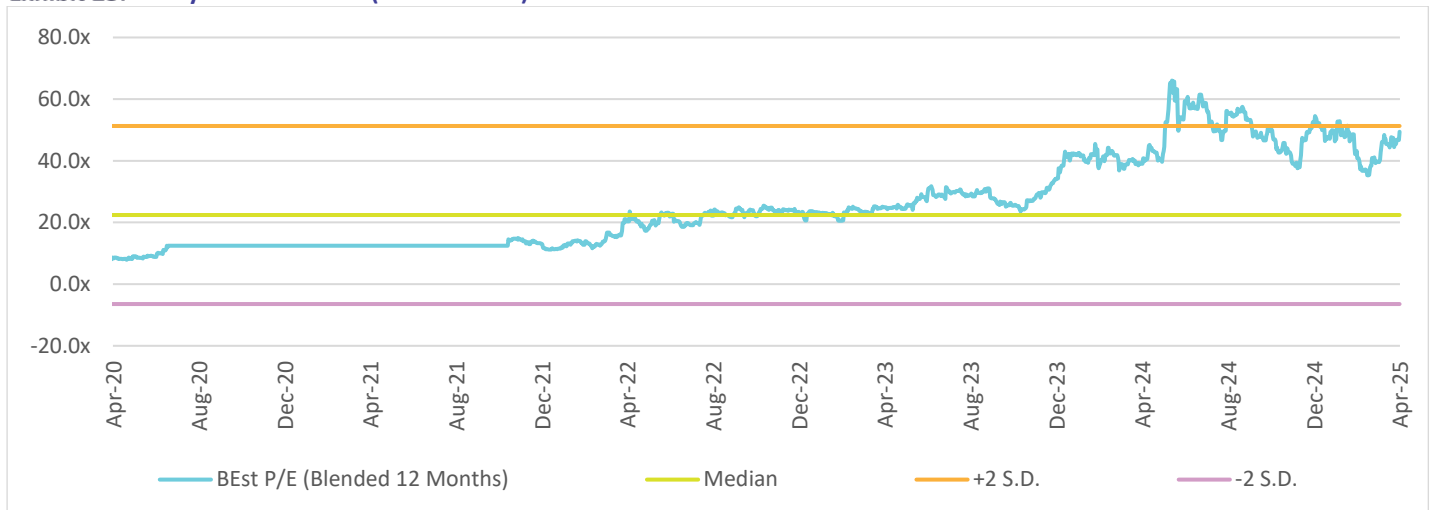
## Valuation

### Navigating its path to robust execution

- BDL is well-positioned in the defence space as a key supplier of critical weaponry—such as ATGMs, Surface-to-Air Missiles (SAMs), Air-to-Air Missiles (AAMs) and torpedoes— to the Indian Armed Forces. Order book has ballooned to ~INR228bn at end-FY25E, expanding at a CAGR of ~28% over the last four years (7x FY25E sales). This provides strong growth visibility.
- Execution consistency shall be a re-rating trigger for BDL given large ticket-size orders have been realised. We believe it shall achieve this given supply chain challenges appear to have eased out. This coupled with continuous strategic initiatives such as backward integration and creation of a local ecosystem (via significant capex/investment in R&D) shall reduce import dependency.
- Better product mix, ease of supply constraints and operational efficiencies shall lead to margin sustenance/uptick as we envisage OPMs of 22–23% over FY26E–27E. We reckon an EPS CAGR of ~55%-plus over FY25E–27E anticipating stellar execution of large/full-system orders as well as export orders (part of its backlog). In all, the execution would yield an RoE/RoCE of ~31% by FY27E.

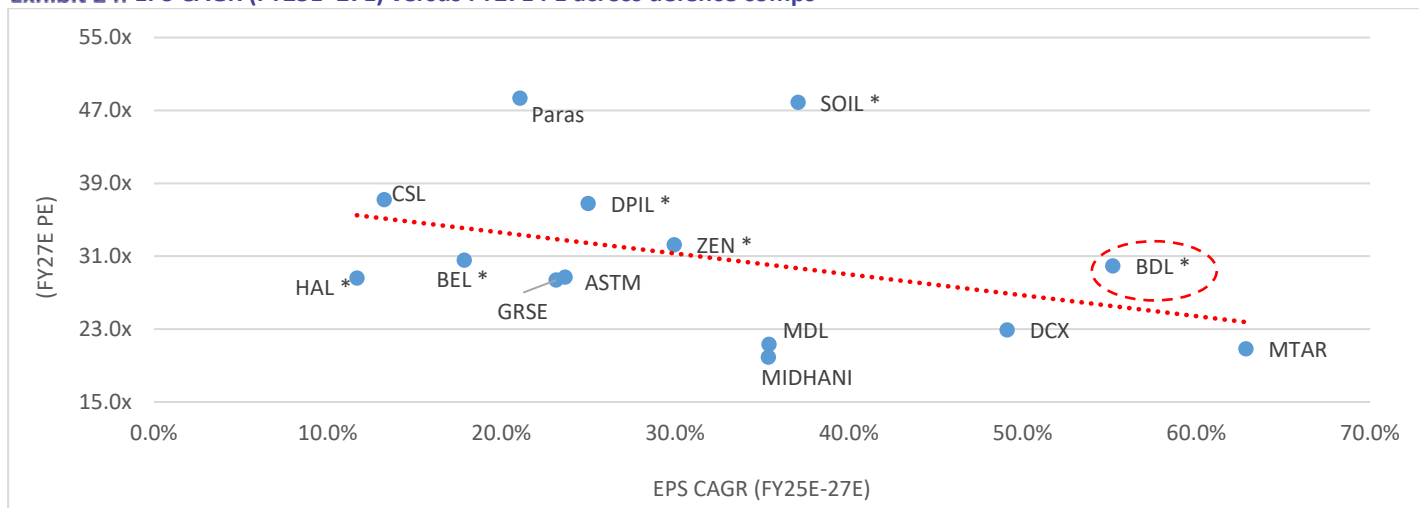
We are initiating coverage on BDL at **'BUY'** baking in a revenue/EBITDA/EPS CAGR of ~55%/62%/55% over FY25E–27E. Ease of supply chain constraints and fructification of localisation of imported components shall speed up execution of its gigantic ~INR228bn backlog. Valuing the stock at 35x its FY27E EPS of INR47.2 yields a TP of INR1,650.

**Exhibit 23: One-year forward PE (median ~22x)**



Source: Company, Nuvama Research

Exhibit 24: EPS CAGR (FY25E–27E) versus FY27E PE across defence comps



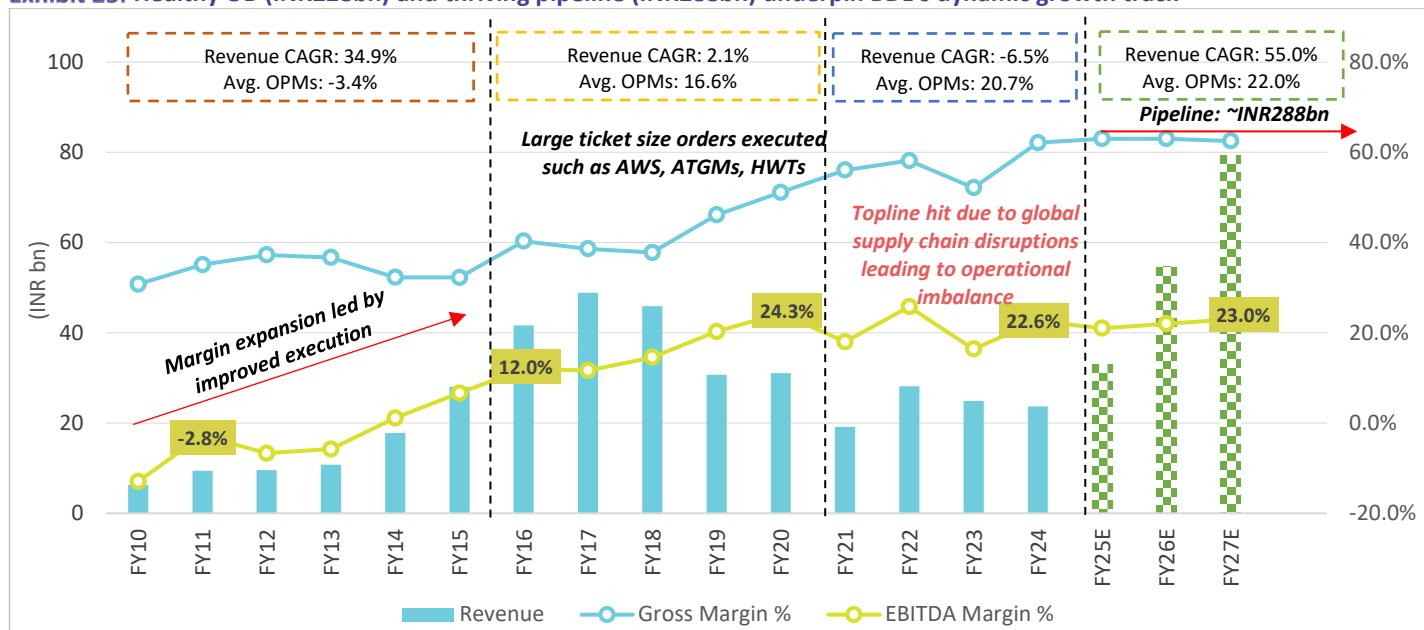
Source: Bloomberg, \*Nuvama Estimates

## Financial Outlook

- We forecast the stellar order inflow momentum shall sustain into FY26E/27E given a potential pipeline of ~INR288bn (*key orders: QRSAM, Astra Missiles, LBRMs, etc*) over the next three–four years led by the GoI's indigenous procurement and modernisation drive push.
- We also anticipate a huge export opportunity—Akash SAM, ATGMs, Astra, torpedoes—driven by increasing interest from friendly countries and lower cost of production owing to increasing indigenisation levels.
- We remain prudent on OPMs, expecting them to hover within 21–23% by FY27E (versus 22.6% in FY24) as execution ramps up. However, BDL's strategic capacity expansion and emphasis on indigenous production of critical components position it well to cater to rising demand from both domestic and export markets in our view.

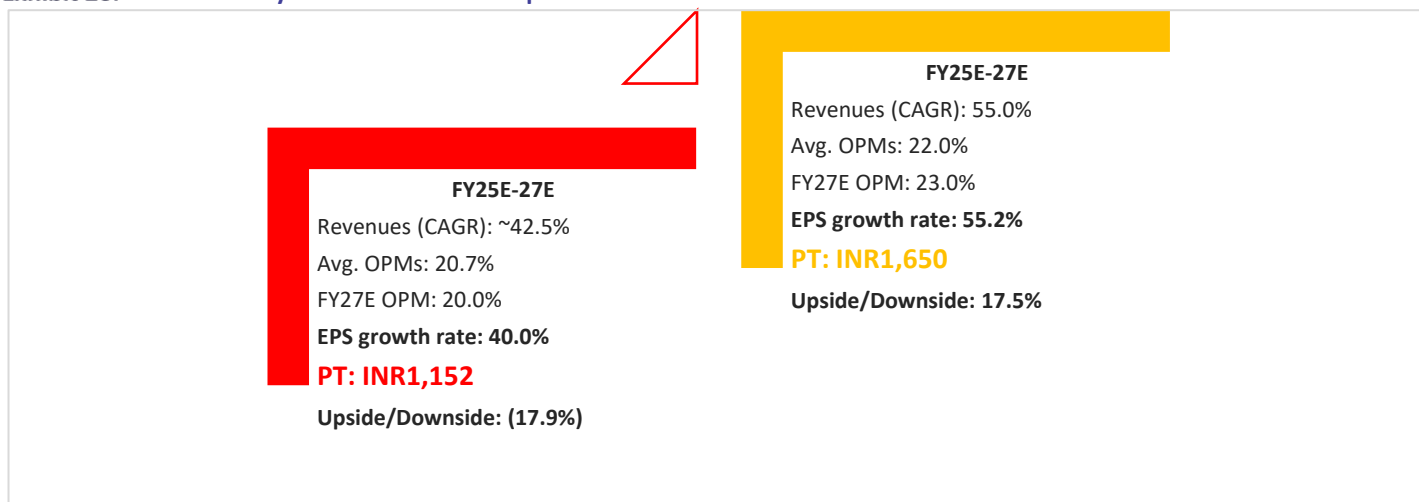
We factor in a revenue/EBITDA/EPS CAGR of ~55%/62%/55% over FY25E–27E as we envisage a sharp uptick in execution of high-value products such as Konkur-M ATGMs, Akash Weapon System and MRSAM along with export orders. Valuing the stock at 35x FY27E EPS of INR47.2 yields a TP of INR1,650.

**Exhibit 25: Healthy OB (INR228bn) and thriving pipeline (INR288bn) underpin BDL's dynamic growth track**



Source: Company, Nuvama Research

**Exhibit 26: Scenario analysis: EPS CAGR of 55%-plus over FY25E–27E in our base case**



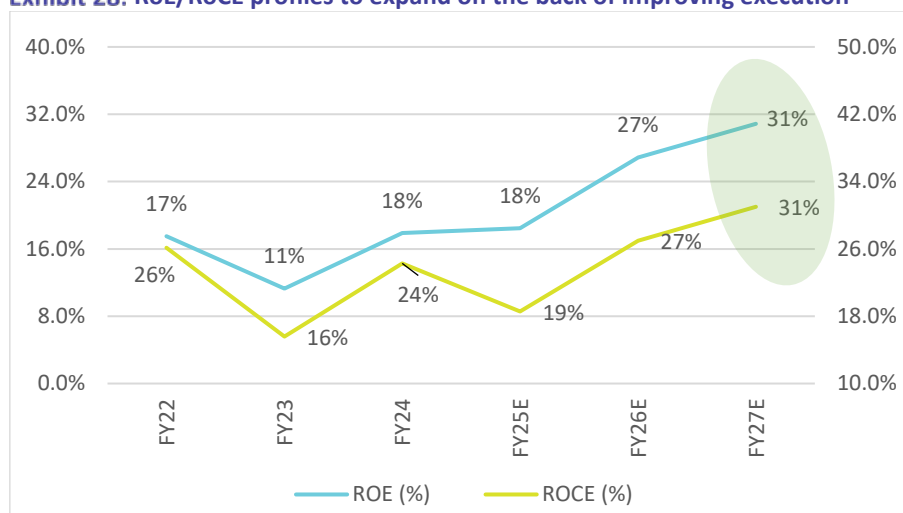
Source: Company, Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 27: FY27E EPS sensitivity**

|                |       | Revenue CAGR (FY25E-27E) |       |       |       |       |
|----------------|-------|--------------------------|-------|-------|-------|-------|
|                |       | 30.0%                    | 40.0% | 50.0% | 55.0% | 60.0% |
| FY27E OPMs (%) | 18.0% | 30.5                     | 33.7  | 37.2  | 39.1  | 41.0  |
|                | 20.0% | 32.8                     | 36.4  | 40.3  | 42.3  | 44.4  |
|                | 22.0% | 35.0                     | 39.0  | 43.3  | 45.6  | 47.9  |
|                | 25.0% | 38.5                     | 43.0  | 47.9  | 50.4  | 53.1  |
|                | 27.0% | 40.8                     | 45.6  | 50.9  | 53.7  | 56.5  |

Source: Nuvama Research

**Exhibit 28: RoE/RoCE profiles to expand on the back of improving execution**



Source: Company, Nuvama Research

## Key Risks

### Supply chain issues

BDL has been facing supply chain issues for the past several quarters. It is dependent on multiple OEMs for subassemblies/components, single source suppliers and sub-contractors.

The ongoing Russia-Ukraine war along with the Middle-East conflict has hurt BDL's supply chain, leading to a delay in receipt of key components such as propulsion parts, guidance systems, warheads, chips, etc from foreign OEMs, which has affected the company's performance.

To reduce its dependency on foreign OEMs, BDL has been focusing on indigenising its products and critical items. The company has been able to achieve indigenisation of 80–90% in its key platforms: ATGMs, SAMs, Air-to-Air Missiles and torpedoes.

### Primarily dependent on a single customer

BDL is dependent on a single customer, i.e. the Indian armed forces through the Ministry of Defence, GoI.

Any decline in or reprioritisation of the Indian defence budget, decreased orders, contract terminations, or failure to win tender projects along with deviations in the short-term and long-term policies of the MoD or the Indian Armed Forces could harm BDL's business, financial status, operational results, growth opportunities and cash flows.

In order to expand its customer base, the company is focusing on increasing its export sales.

### Competition from both domestic and international players

Intense competition by domestic (Adani Defence, Reliance Defence, Tata Advanced Systems, L&T, Solar Industries, etc) and international players with similar product offerings can affect the company's business.

In addition, BDL works in nascent fields/areas wherein the private sector is being increasingly granted a fair playing field. This may pose challenges to assessing the company's current and future opportunities given its 'preferred' status so far.

Accordingly, diversification to other segments such as space technology and its related products and services is crucial for BDL.

## Company Description

Bharat Dynamics Limited (BDL), established in 1970, is a leading public sector undertaking under the Ministry of Defence. The company manufactures Surface-to-Air Missiles (SAM), Air-to-Air Missiles (AAM), Anti-Tank Guided Missiles (ATGMs), underwater weapons - Torpedoes, and allied defence equipment such as launchers, counter measures dispensing system (CMDs) and test equipment.

Headquartered in Hyderabad, BDL has three manufacturing units located at Kanchanbagh, Hyderabad (Telangana), Bhanur, Sangareddy District (Telangana) and Visakhapatnam (Andhra Pradesh).

The manufacturing unit is engaged in the manufacture of SAMs, Milan 2T ATGMs, countermeasures, launchers and test equipment. The Bhanur unit manufactures the Konkurs – M ATGMs, the INVAR (3UBK 20) ATGMs, launchers and spares. The Vishakhapatnam unit is engaged in the manufacturing of lightweight torpedoes, the C-303 anti-torpedo system, countermeasures and spares.

BDL collaborates closely with DRDO labs, research and top academic institutions, and niche technology players to develop products and solutions for emerging technologies.

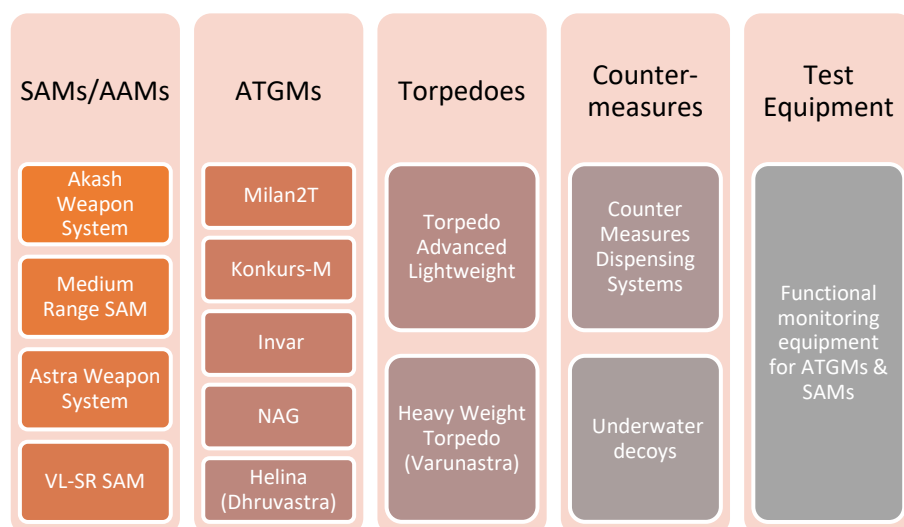
**Exhibit 29: BDL — A chronology**



Source: Company, Nuvama Research

## BDL's products

**Exhibit 30: Product portfolio**



Source: Company, Nuvama Research



The Integrated Guided Missile Development Programme launched by the Government of India in the 1980s generated huge opportunities for BDL. As the prime production agency, BDL collaborated closely with DRDO to integrate program management and sophisticated manufacturing technology. This transition helped BDL progress from a missile manufacturer to a comprehensive weapon system integrator, providing complete solutions to the Indian Armed Forces.

Now, BDL is a multi-product and multi-location company that caters to the Indian Army, Navy and Air Force.

## Exhibit 31: Manufacturing facilities – current and upcoming

| Manufacturing facilities       | Products                                                                                     |
|--------------------------------|----------------------------------------------------------------------------------------------|
| Hyderabad, Telangana           | SAMs, Milan 2T ATGMs, CMDS, launchers and test equipment                                     |
| Bhanur, Telangana              | Konkurs-M, Invar ATGMs, launchers and spares.                                                |
| Vishakhapatnam, Andhra Pradesh | Lightweight torpedoes, C-303 anti-torpedo system, CMDS and spares                            |
| Upcoming facilities            |                                                                                              |
| Ibrahimpattam, Telangana       |                                                                                              |
| Amravati, Maharashtra          | SAMs (including new generation missiles), VSHORADs rockets and propellants for various ATGMs |
| Jhansi, Uttar Pradesh          |                                                                                              |

Source: Company, Nuvama Research

## Key products

### Akash Weapon System

Akash SAM, a short-range missile used in the Akash Weapon System, is an all-weather defence system built to protect vulnerable areas from air attacks. The missile is capable of engaging multiple targets (helicopters, fighter aircraft and UAVs) simultaneously.

BDL, along with missiles, also supplies ground support system and constructs infrastructure facilities for Akash SAM for its customers. The system has been inducted by the Indian Air Force and Indian Army.

*In 2023, BDL received an AWS contract from the MoD for the 3<sup>rd</sup> and 4<sup>th</sup> regiments of Army Air Defence, for live missiles and launchers with upgrades, ground support equipment, vehicles and infrastructure. The project has overall indigenous content of 82%, which would be increased to 93% by 2026–27.*

## Exhibit 32: Akash Weapon System



Source: Company, Nuvama Research

## Medium Range Surface-to-Air Missile (MRSAM)

MRSAM is a medium to long-range air defence and anti-missile defence surface to air missile. The missile is manufactured as a collaboration between DRDO and Israel Aerospace Industry (IAI). It is a high response, quick reaction, vertically launched supersonic missile and is capable of neutralising aerial threats such as missiles, aircraft, guided bombs, helicopters. The system is used by the Indian Army, Navy and Air Force.

*Recently, the MoD signed a contract with BDL for supply of MRSAM to the Indian Navy at a cost of approximately INR29.6bn. These missiles would be fitted on majority of the future platforms planned for induction.*

### Exhibit 33: Medium Range Surface-to-Air Missile (MRSAM)



Source: Company, Nuvama Research

## Astra Weapon System

Astra is an all-weather, beyond visual range air-to-air missile designed to be mounted on fighter aircraft. With an all-weather day and night capability, the missile can be used to neutralise and destroy highly manoeuvring supersonic aircraft. It is competent of being launched from fighter class of aircraft such as SU-30, Mirage-2000, MIG-29 and LCA-Tejas.

### Exhibit 34: Astra: Air-to-Air Missile



Source: Company, Nuvama Research

## Vertically Launched-Short Range Surface-to-Air Missile (VL-SRSAM)

VL-SRSAM is a quick reaction surface-to-air missile designed to be fitted in destroyers, frigates, corvettes and aircraft carriers. It is designed for neutralising various airborne threats at close ranges such as aircraft, helicopters, drones and incoming missiles. The VL-SRSAM is expected to replace the Barak 1 surface-to-air missile system on the Indian Navy warships.

**Exhibit 35: Vertically-Launched SAM**



Source: Company, Nuvama Research

## Countermeasure Dispensing System (CMDS)

Manufactured at the Vishakhapatnam facility, the CMDS is a chaff and flare-based airborne defence system providing self-protection to aircraft against radar guided and IR seeking missiles. The system is capable of firing any combination of payloads at any interval in any direction.

**Exhibit 36: Countermeasure Dispensing System**



Source: Company, Nuvama Research

## Konkurs-M Anti-tank Guided Missile

Konkurs-M is a second generation, mechanized infantry ATGM, to destroy armoured vehicle equipped with explosive reactive armour, moving and stationary targets.

**Exhibit 37: Konkurs-M ATGM**



Source: Company, Nuvama Research

**Exhibit 38: BDL's missiles portfolio (1/2)**

| Missiles           |                                             |                                                |                                                      |                                                                            |                                                       |
|--------------------|---------------------------------------------|------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
|                    | Akash                                       | VL-SR SAM                                      | MR SAM                                               | Astra                                                                      | Man Portable                                          |
| Type               | Short- Range Surface-to-Air                 | Vertically Launched Short-Range Surface-to-Air | Medium Range Surface-to-Air                          | Beyond Visual Range Air-to-Air                                             | Anti-tank guided                                      |
| Dimensions         | L - 3931mm, D - 178mm                       | L - 5870mm, D - 350mm                          | L - 4500mm, D - 225mm                                | L - 3840mm, D - 178mm                                                      | L - 1340mm, D - 120mm                                 |
| Weight             | 710 kg                                      | 170 kg                                         | 275 kg                                               | 154 kg                                                                     | 14.5 kg                                               |
| Range of Operation | 4.5 km to 25 km                             | 40 km                                          | 70 km                                                | 80 -110 km                                                                 | 2.5 km                                                |
| Indigenization %   | 82%                                         | -                                              | 70%                                                  | -                                                                          | -                                                     |
| Guidance system    | Command Guidance                            | -                                              | Command & Active Radar Seeker (RF)                   | Inertial, mid-course update and terminal active radar homing (13 km)       | Imaging Infra-Red (IIR) Seeker                        |
| Used by            | Indian Army, Indian Air Force               | Indian Navy                                    | Indian Air Force, Army, Navy                         | Indian Air Force, Indian Navy                                              | Indian Army                                           |
| SSKP               | > 88%                                       | High kill probability                          | High kill probability                                | Very high kill probability                                                 | -                                                     |
| Target types       | Helicopters, Fighter AC, UAV etc.           | High-speed aerial threats                      | Missiles, aircraft, guided bombs, helicopters        | High-speed aerial threats                                                  | Aircraft, armoured vehicles, and fortifications       |
| Partnership        | DRDO                                        | DRDO                                           | DRDO and Israeli Aerospace Industries (IAI)          | DRDO                                                                       | DRDO                                                  |
| Other properties   | Simultaneously engages with multiple target | Smokeless propulsion, all weather capability   | High response, quick reaction, supersonic capability | Smokeless propulsion, all weather capability, Launch platform is Su-30 MKI | Developed for Infantry and Parachute (Special Forces) |

Source: Company, Nuvama Research

**Exhibit 39: BDL's missiles portfolio (2/2)**

| Missiles           |                                                                  |                                                                                |                                                                 |                                               |                                                                  |
|--------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------|
|                    | NAG                                                              | Helina (Dhruvastra)                                                            | Konkurs - M                                                     | Milan -2T                                     | Invar (3 UBK 20)                                                 |
| Type               | 3rd generation Anti-tank guided                                  | Anti-tank guided                                                               | 2nd generation Anti-tank guided                                 | 2nd generation Anti-tank guided               | Anti-tank guided                                                 |
| Dimensions         | L - 1832mm, D - 150mm                                            | L - 1946mm, D - 150mm                                                          | L - 1260mm, D - 135mm                                           | L - 1123mm, D - 115mm                         | L - 695mm, D - 125mm                                             |
| Weight             | 42 kg                                                            | 45 kg                                                                          | 16.5 kg                                                         | 7.1 kg                                        | 17.2kg                                                           |
| Range of Operation | 0.5 - 4km                                                        | 0.5 - 7km                                                                      | 4 km                                                            | 1.85 km                                       | 5 km                                                             |
| Indigenization %   | 100%                                                             | 100%                                                                           | 96.3%                                                           | 71%                                           | 87.9%                                                            |
| Guidance system    | Passive Homing through IIR Seeker                                | IIR LOBL                                                                       | SALCOS System                                                   | SALCOS System                                 | Semi-automatic control system                                    |
| Used by            | Indian Army                                                      | Indian Air Force                                                               | Indian Army                                                     | Indian Army                                   | Indian Army                                                      |
| SSKP               | 90%                                                              | 90%                                                                            | 90%                                                             | 95%                                           | High kill probability                                            |
| Target types       | Neutralize heavily-fortified enemy tanks                         | Battle tanks with both conventional armour and explosive reactive armour (ERA) | Armoured targets fitted with ERA                                | Tanks and other stationary and moving targets | Armoured targets fitted with ERA                                 |
| Partnership        | DRDO                                                             | DRDO                                                                           | Under license from Russian OEM                                  | Under license from French OEM                 | Rosoboronexport                                                  |
| Other properties   | Operates in all weather conditions and during both day and night | Launched from Advanced Light Helicopter (ALH)                                  | Can be installed on a variety of wheeled and tracked platforms. | Requires no maintenance / no pre-fire checks  | Mechanized infantry weapon fired from the gun barrel of T90 tank |

Source: Company, Nuvama Research

**Exhibit 40: BDL's torpedoes portfolio**

| Torpedoes          |                                                                          |                                                                          |
|--------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
|                    | Torpedo Advanced Lightweight                                             | Heavy Weight Torpedo (Varunastra)                                        |
| Type               | Anti-submarine Underwater Weapon                                         | Anti-submarine Underwater Weapon                                         |
| Dimensions         | L - 2752mm, D - 324mm                                                    | L - 7780mm, D - 533.4mm                                                  |
| Weight             | 197.5 kg                                                                 | 1850 ± 10 kgs                                                            |
| Range of Operation | 12km (high speed) - 25 km (low speed)                                    | 40 km                                                                    |
| Indigenization %   | 91%                                                                      | 86.8%                                                                    |
| Guidance system    | Sophisticated guidance systems for both horizontal and vertical control. | GPS/NavIC satellite guidance and active-passive acoustic homing.         |
| Used by            | Indian Navy                                                              | Indian Navy                                                              |
| SSKP               | -                                                                        | -                                                                        |
| Target types       | Detect and attack submarines                                             | Submarines operating in shallow / deep waters                            |
| Partnership        | DRDO                                                                     | DRDO                                                                     |
| Other properties   | Can be launched from Ship / helicopter / fixed wing aircraft             | Acoustic homing with wide look angle capable of tracking silent targets. |

Source: Company, Nuvama Research

## Management Overview

### **Commodore A Madhavarao (retired)–Chairman & Managing Director**

Commodore Madhavarao (retired) has been steering BDL since July 2023. He had joined as an Executive Director in 2020 as Director (Technical) with additional charge of Director (Production).

As a part of his responsibilities at BDL, Commodore Madhavarao established a Product Support Group to provide support to the Indian armed forces focused on enhancing R&D along with establishing an effective supply chain to meet the production schedules.

Prior to joining BDL, he worked with the Indian Navy and took part in the Kargil and Parakram operations.

### **Mr U Raja Babu – Director General, Missiles & Strategic Systems (MSS)**

Mr Babu has contributed to BDL's design, development and successful demonstration of ballistic missile defence capabilities. In his 35 years of professional aerospace career, he has worked on aircraft, helicopters and development of many missile systems.

He has also worked on the development of many critical technologies and mission mode projects, development of advanced missile avionics for all tactical, ATGMs, strategic, cruise missiles and weapon systems for the Indian armed forces.

Mr Babu served the Indian Air Force in 1988 and later joined the DRDO in 1995.

### **Mr Amit Satija – Joint Secretary (DIP)**

Mr Satija is Joint Secretary – Department of Defence Production in the Ministry of Defence. Prior to joining the Government of India, he has served at various levels in different states and union territories, including Delhi, Goa, the Andaman & Nicobar Islands and the Lakshadweep Islands.

### **Mr P V Raja Ram – Director (Production)**

Mr Ram has been serving as the Director (Production) since August 2023. He has 34 years of experience in various areas of missile production.

Prior to this, Mr Ram served as Executive Director, Head of Kanchanbagh unit. Earlier as a General Manager, Head of Surface to Air Missiles, he established facilities and streamlined the production of MRSAM. He was instrumental in establishing flexible manufacturing lines for Akash Missile and its variants as head of the Akash Weapon System.

Besides, Mr Ram was actively involved in the preparation of quality and process documents for implementation of ISO 9001 for Prithvi and Akash missiles. He also played a key role in establishing facilities for the production of Prithvi missile.



Additional Data

Management

|                     |                   |
|---------------------|-------------------|
| Chairman/MD         | A Madhava Rao     |
| CFO                 | G Gayatri Prasad  |
| CFO                 | Chanchal Rajora   |
| Director:Production | P V Raja Ram      |
| Auditor             | M/s Tej Raj & Pal |

Holdings – Top 10\*

| % Holding         |      | % Holding        |      |
|-------------------|------|------------------|------|
| Life Insurance    | 2.79 | BlackRock Inc    | 0.46 |
| Motilal Oswal AMC | 1.47 | Edelweiss AMC    | 0.42 |
| HDFC Asset Mana   | 1.14 | Invesco AMC      | 0.32 |
| Vanguard Group    | 0.98 | Axis AMC         | 0.28 |
| Nippon Life Ind   | 0.77 | Dimensional Fund | 0.24 |

\*Latest public data

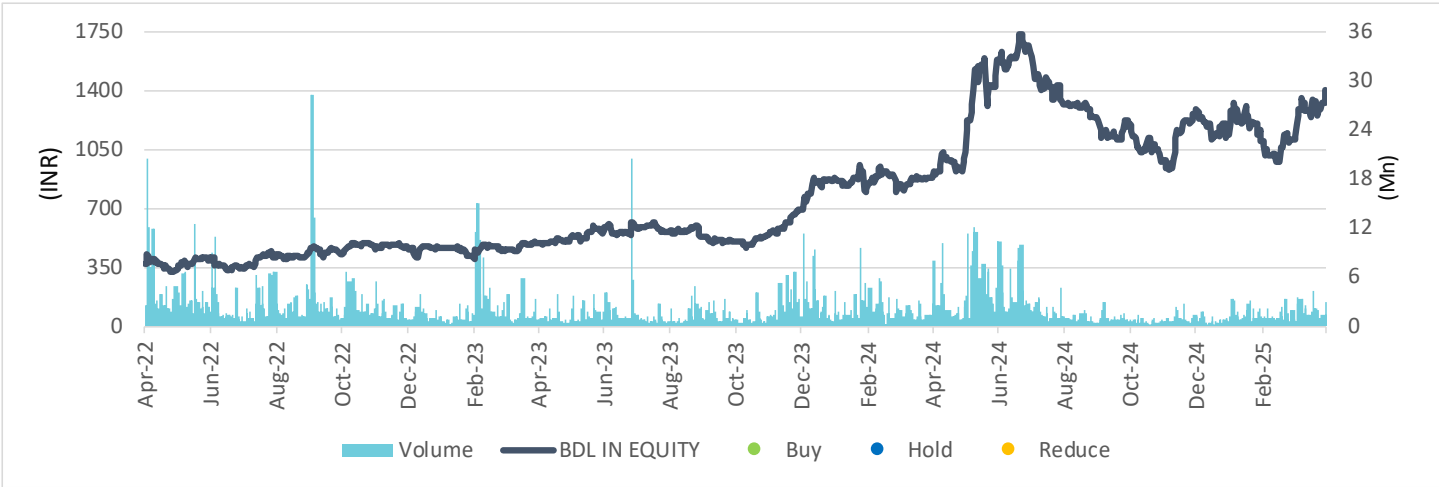
Recent Company Research

| Date | Title | Price | Reco |
|------|-------|-------|------|
|      |       |       |      |
|      |       |       |      |
|      |       |       |      |

Recent Sector Research

| Date      | Name of Co./Sector | Title                                                          |
|-----------|--------------------|----------------------------------------------------------------|
| 18-Feb-25 | Zen Technologies   | Muted results; OI ramp-up remains key as; <i>Result Update</i> |
| 07-Feb-25 | Solar Industries   | Positioning for future growth; <i>Result Update</i>            |
| 30-Jan-25 | Bharat Electronics | Befitting optimism on a growing giant; <i>Result Update</i>    |

Rating and Daily Volume Interpretation



Source: Bloomberg, Nuvama research

Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

# DATA PATTERNS

## INITIATING COVERAGE

### KEY DATA

|                                         |                     |
|-----------------------------------------|---------------------|
| <b>Rating</b>                           | <b>BUY</b>          |
| <b>Sector relative</b>                  | <b>Outperformer</b> |
| <b>Price (INR)</b>                      | <b>1,879</b>        |
| <b>12 month price target (INR)</b>      | <b>2,300</b>        |
| <b>52 Week High/Low</b>                 | <b>3,655/1,351</b>  |
| <b>Market cap (INR bn/USD bn)</b>       | <b>105/1.2</b>      |
| <b>Free float (%)</b>                   | <b>42.4</b>         |
| <b>Avg. daily value traded (INR mn)</b> | <b>2,084.5</b>      |

### SHAREHOLDING PATTERN

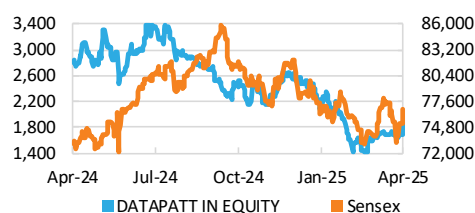
|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 42.41% | 42.41% | 42.41% |
| FII      | 14.05% | 14.39% | 14.56% |
| DII      | 8.84%  | 8.72%  | 11.58% |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

### FINANCIALS

(INR mn)

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Revenue            | 5,198 | 5,188 | 6,497 | 8,749 |
| EBITDA             | 2,216 | 2,231 | 2,729 | 3,675 |
| Adjusted profit    | 1,817 | 1,826 | 2,197 | 2,853 |
| Diluted EPS (INR)  | 32.4  | 32.6  | 39.2  | 50.9  |
| EPS growth (%)     | 46.0  | 0.5   | 20.3  | 29.8  |
| RoAE (%)           | 14.6  | 13.1  | 14.1  | 16.2  |
| P/E (x)            | 57.8  | 57.5  | 47.8  | 36.8  |
| EV/EBITDA (x)      | 45.6  | 44.3  | 36.1  | 26.9  |
| Dividend yield (%) | 0.3   | 0.3   | 0.4   | 0.5   |

### PRICE PERFORMANCE



## Growth pattern: Hi-tech yet efficient

Data Patterns (DPIL) has a track record of more than 30 years in design, development and manufacturing of electronic equipment for defence and aerospace industries. Its in-house technology and a proactive approach of redesigning high-tech products and/or customisation via building blocks are a testament to its technological prowess, capital and operational efficiency. A staggering DPSU pipeline of ~INR8.7tn over next five–seven years (*second-derivative beneficiary*), the ongoing modernisation drive and exports shall drive growth hereon.

Initiating DPIL at 'BUY' with a TP of INR2,300 (45x PE FY27E). As a top-three proxy on the Indian defence electronics theme, DPIL is poised to clock revenue/EBITDA/EPS CAGR of ~30%/28%/25% over FY25E–27E.

### Strategic edge in sensitive sectors: Track record, growing suite

DPIL's product basket includes radars, electronic warfare and avionics ([see product portfolio](#)), which are part of the defence electronics sub-segment. DRDO, DPSUs, foreign OEMs, etc are its key customers. Besides, DPIL is strategically expanding its product portfolio as well as geographical presence to capture a bigger total serviceable market. DPIL credentials are compelling too: 35 years of industry track record with 100% in-house design; and development and manufacturing capabilities across the aerospace and defence platforms for the three Indian Armed Forces.

### Proactively positioning for future growth

DPIL is one of the few players involved in [proactively developing indigenous prototypes](#) (RF seeker for Brahmos, precision approach radar, cockpit displays for LCA Tejas, Nano satellites, etc) to replace imports (> 51% of OB was developmental orders in FY24). It has 1,000-plus enterprising building blocks with in-house IP providing: i) competitive cost advantage; ii) better margins; and iii) faster lead times.

DPIL has traditionally secured development contracts with the DRDO, which later translated to production orders. However, the company is now making a strategic shift by moving beyond its reliance on the DRDO technology to focus on developing its own IP and proprietary products. As DPSUs scale up procurement and indigenisation efforts, proactive private sector players such as DPIL stand to gain from structurally rising demand for defence electronics and mission-critical systems.

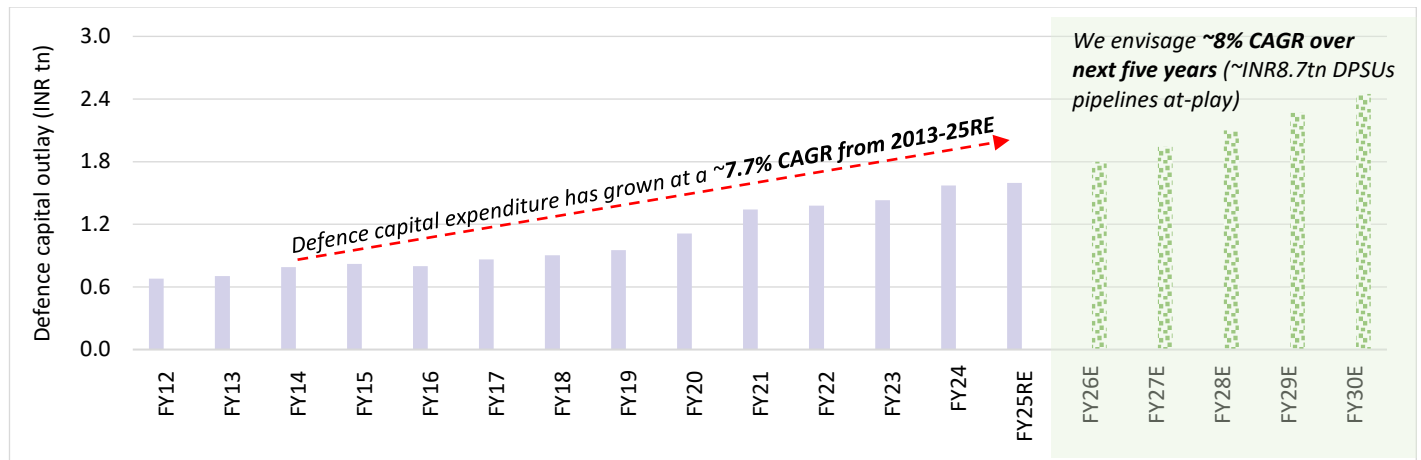
### A whopping growth opportunity; initiate at 'BUY'

We envisage defence capital outlay shall expand at a CAGR of 7–8% over 2026–30E, enabling a ~USD130bn opportunity over the next five years, whereas upcoming large platforms/programs (primarily for Air Force, Navy) coupled with the ongoing modernisation drive would power the defence electronics sub-segment growth at 1.5–2x capital outlay (i.e. 14–15% CAGR). We are initiating DPIL at 'BUY', valuing the stock at 45x FY27E EPS of INR50.9, yielding a TP of INR2,300 in our base case.

**Key risks:** High dependency on orders from the GoI, increased competitive intensity, challenge in winning large-ticket projects, and working capital management.

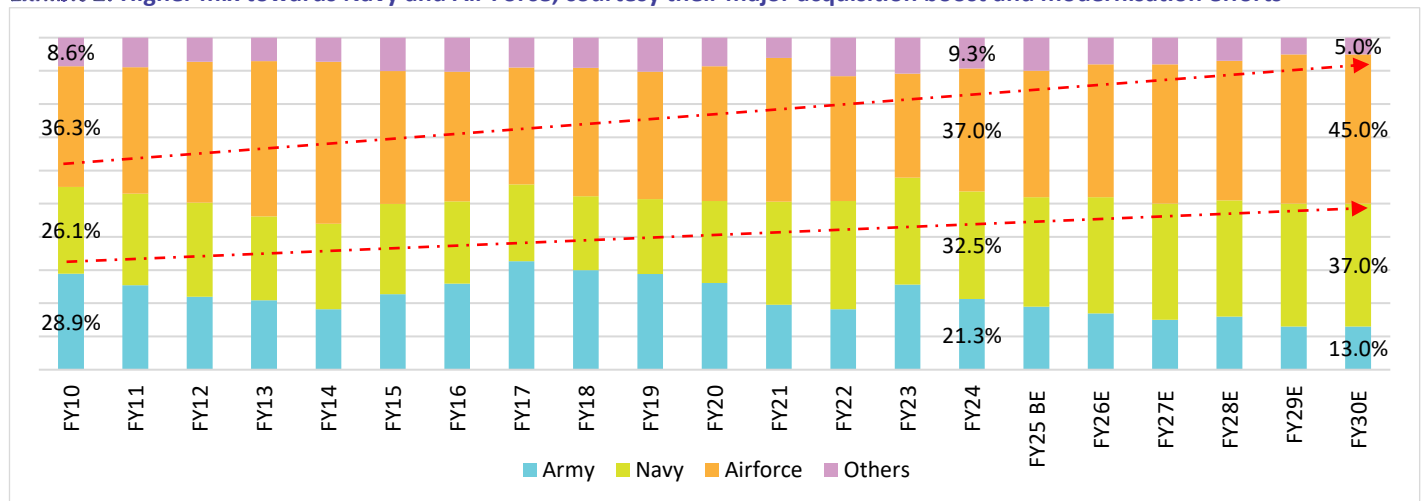
## The Story in Charts

**Exhibit 1: USD130bn opportunity over next five years (INR8.5–9tn + DPSUs' pipeline at play)**



Source: Budget Docs, Nuvama Research Note: We have included HAL, BEL, MDL and CSL pipelines in our thesis. Considered USDINR @ 84.

**Exhibit 2: Higher mix towards Navy and Air Force, courtesy their major acquisition boost and modernisation efforts**



Source: Budget docs, Nuvama Research

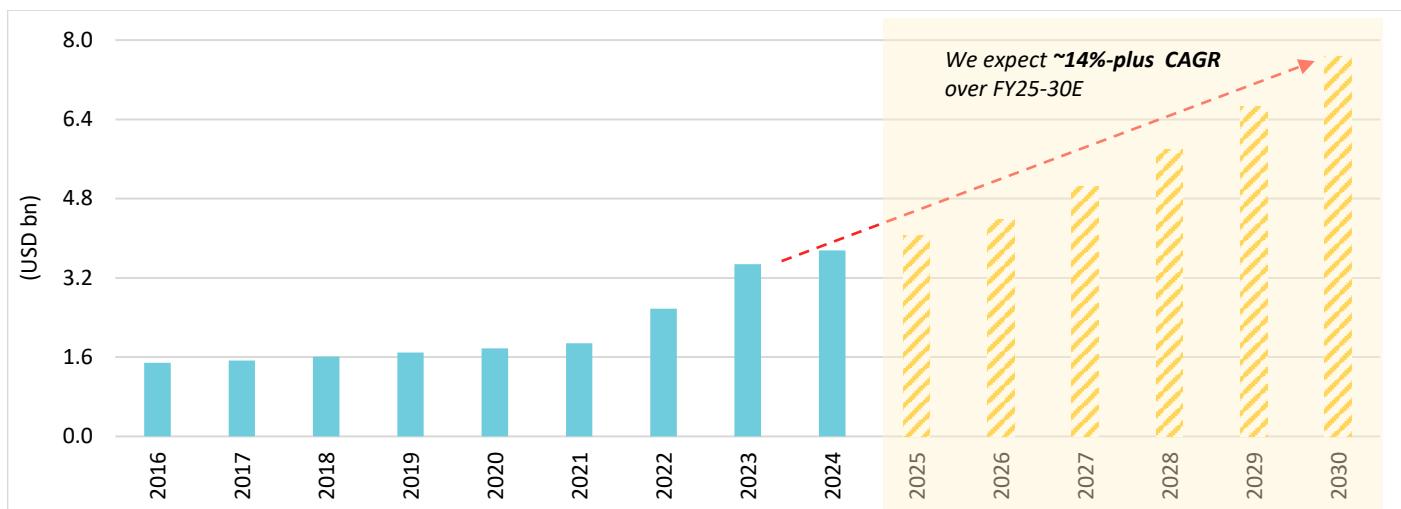
**Exhibit 3: Key products/players in defence electronics in India**

| Company                | Radars - Tracking & Surveillance | Radars (Multi-mission) | Radars - Specialized (Stealth detection etc.) | Seekers & Electronics for Missiles/Torpedoes/Sonbuys | EW | Communications & SDR | Satcom | Ground stations | Fire control systems | Avionics | Nano & micro satellites | Testing |
|------------------------|----------------------------------|------------------------|-----------------------------------------------|------------------------------------------------------|----|----------------------|--------|-----------------|----------------------|----------|-------------------------|---------|
| Data Patterns          |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| L&T                    |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| BEL                    |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Paras Def.             |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Mahindra Def. Sys.     |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Tata                   |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Astra Microwave        |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Godrej & Boyce         |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Centum Elect.          |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Alpha Design           |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Adani Aerospace & Def. |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| CoreEL Tech.           |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |
| Mistral Solutions      |                                  |                        |                                               |                                                      |    |                      |        |                 |                      |          |                         |         |

Source: Company DRHP, Nuvama Research Note: L&T – Defence Engineering

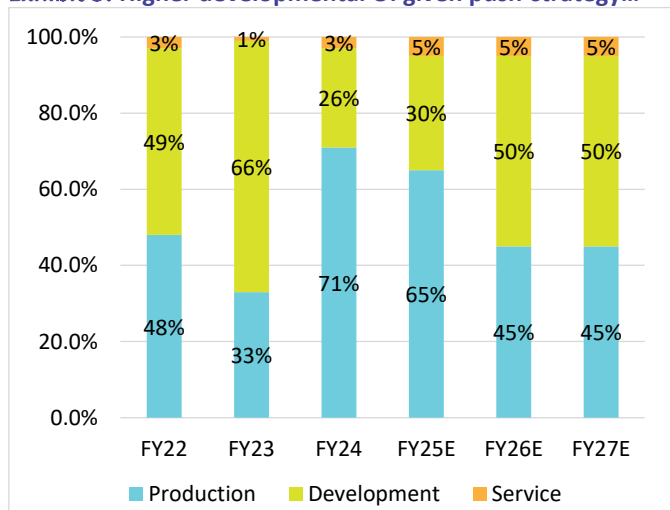
# DATA PATTERNS

**Exhibit 4: ~USD34bn Indian defence electronics market to expand 1.5–2x defence budget outlay over FY25–30E**



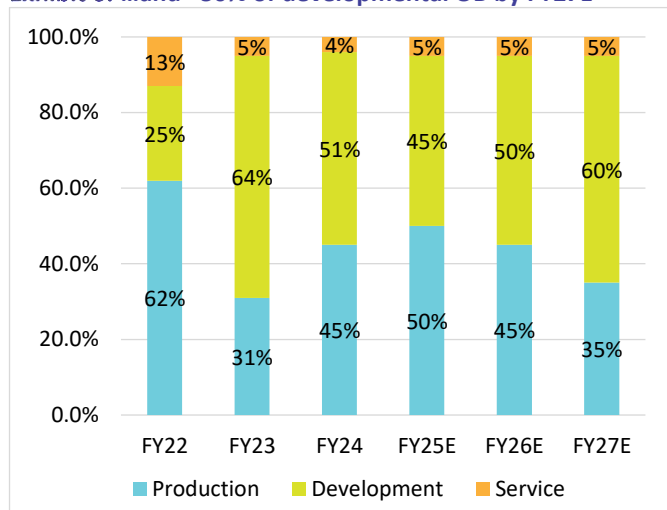
Source: Company DRHP, Nuvama Research. Note: Actuals up to 2022.

**Exhibit 5: Higher developmental OI given push-strategy...**



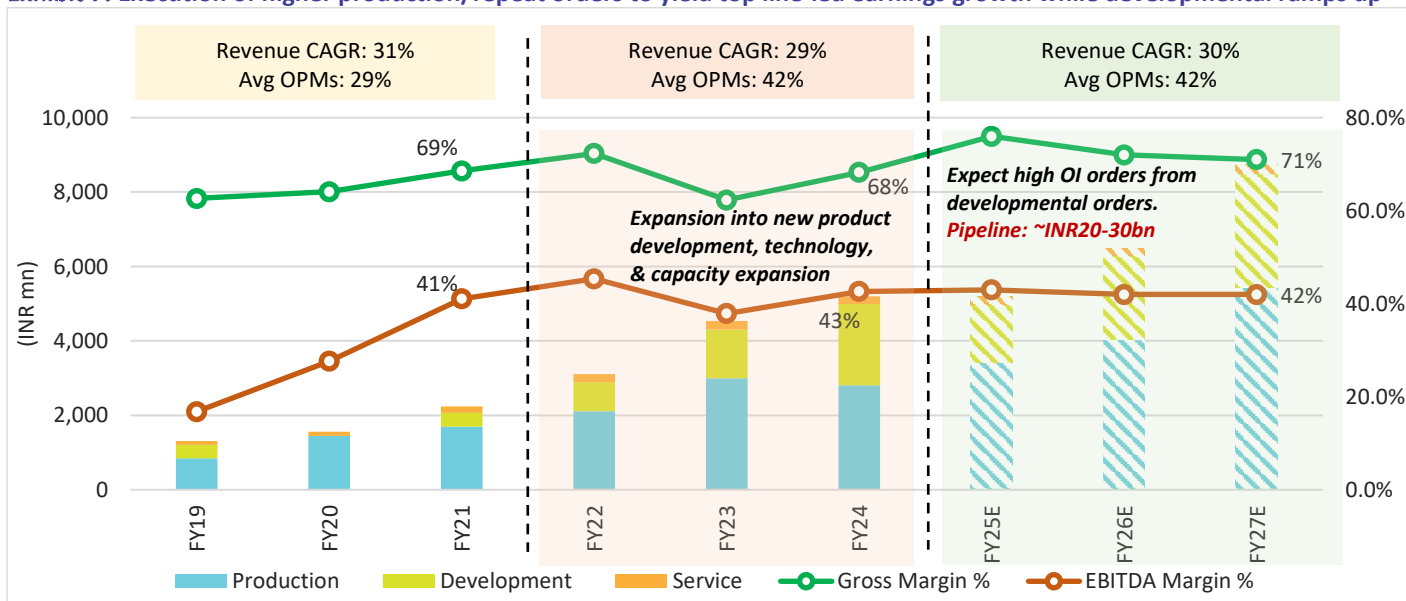
Source: Nuvama Research, Company

**Exhibit 6: ...and >50% of developmental OB by FY27E**



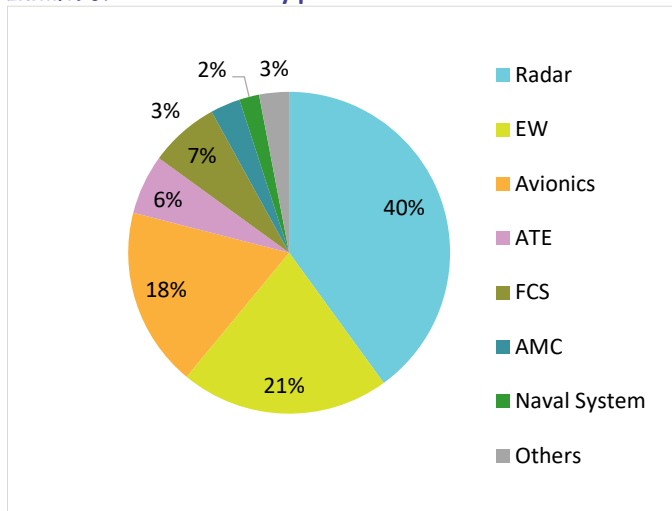
Source: Nuvama Research, Company

**Exhibit 7: Execution of higher production/repeat orders to yield top line-led earnings growth while developmental ramps up**



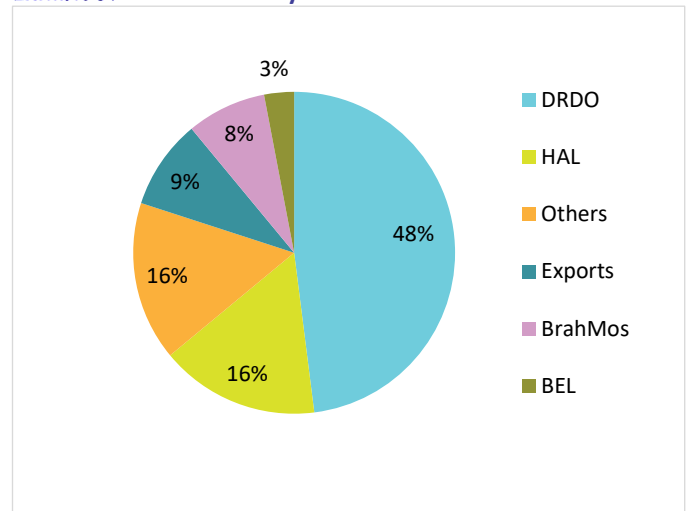
Source: Company, Nuvama Research

**Exhibit 8: Revenue mix by product – FY24**



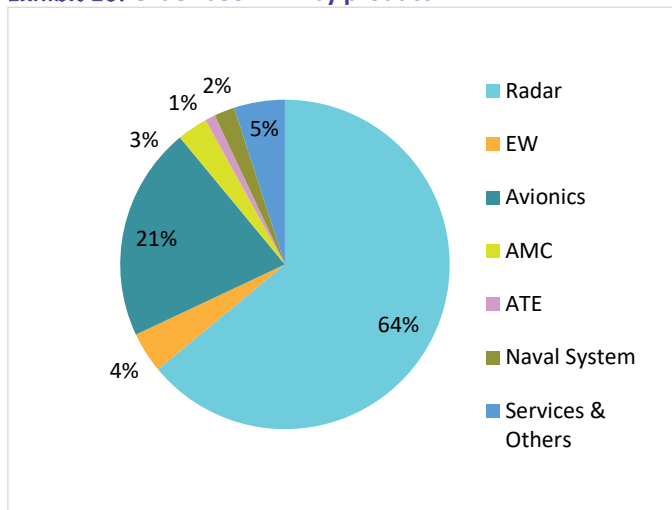
Source: Company, Nuvama Research

**Exhibit 9: Revenue mix by customer – FY24**



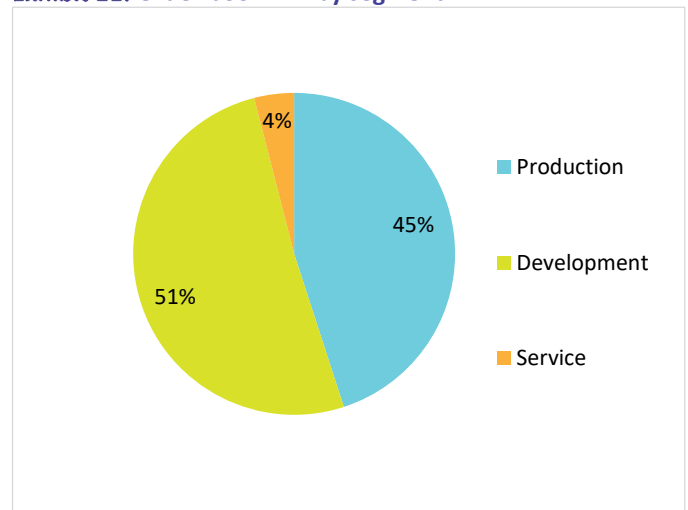
Source: Company, Nuvama Research

**Exhibit 10: Order book mix by product – FY24**



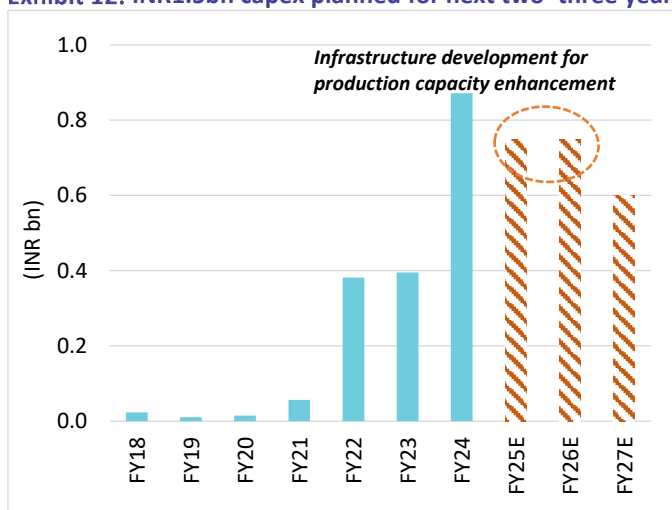
Source: Company, Nuvama Research

**Exhibit 11: Order book mix by segment – FY24**



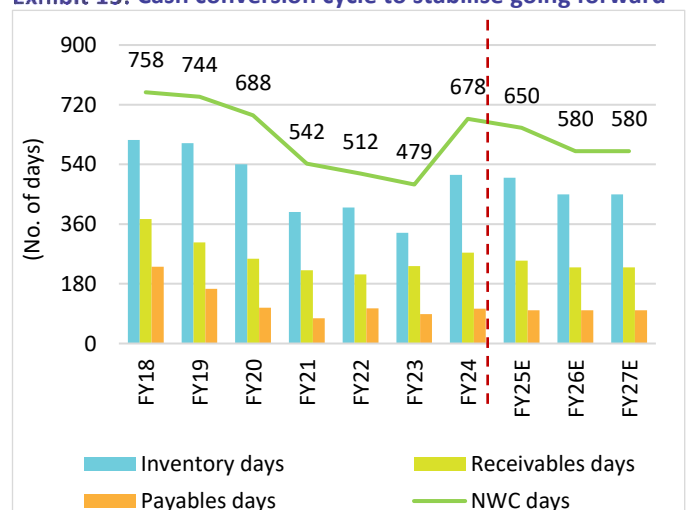
Source: Company, Nuvama Research

**Exhibit 12: INR1.5bn capex planned for next two–three years**



Source: Company, Nuvama Research

**Exhibit 13: Cash conversion cycle to stabilise going forward**



Source: Company, Nuvama Research

**Exhibit 14: Nuvama scenario analysis – ~25% EPS CAGR over FY25E–27E**

| FY25E-27E                 | Bear case    | Base case    | Bull case    |
|---------------------------|--------------|--------------|--------------|
| Revenues CAGR             | 21.9%        | 29.9%        | 37.7%        |
| Avg. OPMs                 | 41.0%        | 42.3%        | 42.3%        |
| FY27E OPM                 | 40.0%        | 42.0%        | 42.0%        |
| EPS CAGR                  | 15.1%        | 25.0%        | 31.7%        |
| FY27E EPS                 | 43.2         | 50.9         | 56.6         |
| FY27 target multiple (x)  | 40           | 45           | 50           |
| <b>Price Target (INR)</b> | <b>1,729</b> | <b>2,300</b> | <b>2,830</b> |
| Upside/Downside           | -7.7%        | 22.7%        | 51.0%        |

Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 15: Key players in defence electronics space**

| Particulars (INRbn)   | Bharat Electronics                                                                                                                                                                      |       |       |       | Data Patterns                                                                  |       |       |       | Astra Microwave Products                                                                                                            |       |       |       | Bharat Dynamics                                                                                                                                                                             |       |       |       | Paras Defence                                                                                                                   |       |       |       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|--------------------------------------------------------------------------------|-------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|---------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|
|                       | FY24                                                                                                                                                                                    | FY25E | FY26E | FY27E | FY24                                                                           | FY25E | FY26E | FY27E | FY24                                                                                                                                | FY25E | FY26E | FY27E | FY24                                                                                                                                                                                        | FY25E | FY26E | FY27E | FY24                                                                                                                            | FY25E | FY26E | FY27E |
| Market Capitalisation | 2,141                                                                                                                                                                                   |       |       |       | 106                                                                            |       |       |       | 72                                                                                                                                  |       |       |       | 518                                                                                                                                                                                         |       |       |       | 42                                                                                                                              |       |       |       |
| PE (x)                | 53.5                                                                                                                                                                                    | 42.5  | 37.7  | 30.6  | 58.0                                                                           | 57.5  | 47.8  | 36.8  | 46.4                                                                                                                                | 44.4  | 36.5  | 29.0  | 71.6                                                                                                                                                                                        | 61.0  | 35.7  | 25.3  | 74.4                                                                                                                            | 71.5  | 59.7  | 48.8  |
| Revenues              | 202                                                                                                                                                                                     | 234   | 272   | 324   | 5                                                                              | 5     | 6     | 9     | 9                                                                                                                                   | 11    | 13    | 16    | 24                                                                                                                                                                                          | 33    | 55    | 79    | 3                                                                                                                               | 3     | 4     | 5     |
| EBITDA                | 50                                                                                                                                                                                      | 64    | 72    | 88    | 2                                                                              | 2     | 3     | 4     | 2                                                                                                                                   | 3     | 3     | 4     | 5                                                                                                                                                                                           | 7     | 12    | 18    | 1                                                                                                                               | 1     | 1     | 1     |
| EBITDA Margin (%)     | 24.8                                                                                                                                                                                    | 27.2  | 26.5  | 27.0  | 42.6                                                                           | 43.0  | 42.0  | 42.0  | 21.1                                                                                                                                | 24.3  | 25.8  | 24.8  | 22.6                                                                                                                                                                                        | 21.0  | 22.0  | 23.0  | 20.1                                                                                                                            | 25.7  | 25.7  | 25.6  |
| PAT                   | 40                                                                                                                                                                                      | 51    | 57    | 70    | 2                                                                              | 2     | 2     | 3     | 1                                                                                                                                   | 2     | 2     | 2     | 6                                                                                                                                                                                           | 7     | 12    | 17    | 0                                                                                                                               | 1     | 1     | 1     |
| PAT Margin (%)        | 19.9                                                                                                                                                                                    | 21.6  | 21.0  | 21.6  | 35.0                                                                           | 35.2  | 33.8  | 32.6  | 13.3                                                                                                                                | 15.3  | 15.6  | 15.7  | 25.9                                                                                                                                                                                        | 21.8  | 22.4  | 21.8  | 12.6                                                                                                                            | 16.8  | 16.6  | 16.2  |
| EPS                   | 5.5                                                                                                                                                                                     | 6.9   | 7.8   | 9.6   | 32.4                                                                           | 32.6  | 39.2  | 50.9  | 12.9                                                                                                                                | 17.1  | 20.8  | 26.1  | 16.7                                                                                                                                                                                        | 19.6  | 33.5  | 47.2  | 8.2                                                                                                                             | 14.6  | 17.5  | 21.4  |
| ROE (%)               | 27.1                                                                                                                                                                                    | 29.1  | 28.4  | 30.2  | 14.6                                                                           | 13.1  | 14.1  | 16.2  | 15.1                                                                                                                                | 14.7  | 15.5  | 16.5  | 17.9                                                                                                                                                                                        | 18.5  | 26.8  | 30.9  | 7.5                                                                                                                             | 12.1  | 13.2  | 14.1  |
| Key products          | Radars, missile systems, network centric systems, naval systems, defence communication, electro optics, tank electronics & gun upgrades, EW suites, avionics, non defence products etc. |       |       |       | Radars, electronic warfares, communication systems, satellites components etc. |       |       |       | Radars, electronic warfares, missile electronics, telemetry, counter-drones, satellite components, antennas, homeland security etc. |       |       |       | Missiles, launchers, ground equipment, underwater weapons & decoys, air borne counter measures, weapon system integrator, refurbishment, integration of airborne system with platforms etc. |       |       |       | Optronic systems, optical assemblies, optical components, defence electronics, EMP protection solutions, heavy engineering etc. |       |       |       |

Source: Company, Nuvama Research. Note: Astra Microwave and Paras Defence historical/estimates are BBG estimates.



## Financial Statements

### Income Statement (INR mn)

| Year to March          | FY24A | FY25E | FY26E | FY27E |
|------------------------|-------|-------|-------|-------|
| Total operating income | 5,198 | 5,188 | 6,497 | 8,749 |
| Gross profit           | 3,547 | 3,943 | 4,678 | 6,212 |
| Employee costs         | 990   | 1,245 | 1,429 | 1,881 |
| Other expenses         | 341   | 467   | 520   | 656   |
| EBITDA                 | 2,216 | 2,231 | 2,729 | 3,675 |
| Depreciation           | 161   | 173   | 239   | 298   |
| Less: Interest expense | 93    | 114   | 123   | 157   |
| Add: Other income      | 460   | 491   | 564   | 585   |
| Profit before tax      | 2,422 | 2,435 | 2,930 | 3,804 |
| Prov for tax           | 605   | 609   | 732   | 951   |
| Less: Other adj        | 0     | 0     | 0     | 0     |
| Reported profit        | 1,817 | 1,826 | 2,197 | 2,853 |
| Less: Excp.item (net)  | 0     | 0     | 0     | 0     |
| Adjusted profit        | 1,817 | 1,826 | 2,197 | 2,853 |
| Diluted shares o/s     | 56    | 56    | 56    | 56    |
| Adjusted diluted EPS   | 32.4  | 32.6  | 39.2  | 50.9  |
| DPS (INR)              | 6.5   | 6.5   | 7.8   | 10.2  |
| Tax rate (%)           | 25.0  | 25.0  | 25.0  | 25.0  |

### Important Ratios (%)

| Year to March            | FY24A | FY25E | FY26E | FY27E |
|--------------------------|-------|-------|-------|-------|
| COGS (% of rev)          | 31.8  | 24.0  | 28.0  | 29.0  |
| Employee cost (% of rev) | 19.0  | 24.0  | 22.0  | 21.5  |
| Other exp (% of rev)     | 6.6   | 9.0   | 8.0   | 7.5   |
| EBITDA margin (%)        | 42.6  | 43.0  | 42.0  | 42.0  |
| Net profit margin (%)    | 35.0  | 35.2  | 33.8  | 32.6  |
| Revenue growth (% YoY)   | 14.6  | (0.2) | 25.2  | 34.7  |
| EBITDA growth (% YoY)    | 29.0  | 0.7   | 22.3  | 34.7  |
| Adj. profit growth (%)   | 46.0  | 0.5   | 20.3  | 29.8  |

### Assumptions (%)

| Year to March         | FY24A   | FY25E   | FY26E   | FY27E   |
|-----------------------|---------|---------|---------|---------|
| GDP (YoY %)           | 5.5     | 6.3     | 6.3     | 6.3     |
| Repo rate (%)         | 6.0     | 5.3     | 5.3     | 5.3     |
| USD/INR (average)     | 84.0    | 82.0    | 82.0    | 82.0    |
| Domestic rev gwth (%) | 14.6    | (0.2)   | 25.2    | 34.7    |
| Exports rev gwth (%)  | (24.7)  | (15.0)  | 40.0    | 50.0    |
| Gross margin (%)      | 68.2    | 76.0    | 72.0    | 71.0    |
| EBITDA margin (%)     | 42.6    | 43.0    | 42.0    | 42.0    |
| Tax rate (%)          | 25.0    | 25.0    | 25.0    | 25.0    |
| Capex (INR mn)        | (872.0) | (750.0) | (750.0) | (600.0) |

### Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 57.8  | 57.5  | 47.8  | 36.8  |
| Price/BV (x)       | 7.9   | 7.1   | 6.4   | 5.6   |
| EV/EBITDA (x)      | 45.6  | 44.3  | 36.1  | 26.9  |
| Dividend yield (%) | 0.3   | 0.3   | 0.4   | 0.5   |

Source: Company and Nuvama estimates

### Balance Sheet (INR mn)

| Year to March        | FY24A  | FY25E  | FY26E  | FY27E  |
|----------------------|--------|--------|--------|--------|
| Share capital        | 112    | 112    | 112    | 112    |
| Reserves             | 13,130 | 14,591 | 16,349 | 18,631 |
| Shareholders funds   | 13,242 | 14,703 | 16,461 | 18,743 |
| Minority interest    | 0      | 0      | 0      | 0      |
| Borrowings           | 0      | 0      | 0      | 0      |
| Trade payables       | 501    | 341    | 498    | 695    |
| Other liabs & prov   | 3,175  | 3,175  | 3,175  | 3,175  |
| Total liabilities    | 16,918 | 18,219 | 20,134 | 22,613 |
| Net block            | 1,502  | 2,079  | 2,590  | 2,892  |
| Intangible assets    | 409    | 409    | 409    | 409    |
| Capital WIP          | 72     | 72     | 72     | 72     |
| Total fixed assets   | 1,983  | 2,560  | 3,071  | 3,373  |
| Non current inv      | 0      | 0      | 0      | 0      |
| Cash/cash equivalent | 3,927  | 6,048  | 6,374  | 6,246  |
| Sundry debtors       | 3,988  | 3,553  | 4,094  | 5,513  |
| Loans & advances     | 0      | 0      | 0      | 0      |
| Other assets         | 7,020  | 6,058  | 6,595  | 7,480  |
| Total assets         | 16,918 | 18,219 | 20,134 | 22,613 |

### Free Cash Flow (INR mn)

| Year to March         | FY24A | FY25E | FY26E | FY27E   |
|-----------------------|-------|-------|-------|---------|
| Reported profit       | 1,791 | 1,826 | 2,197 | 2,853   |
| Add: Depreciation     | 161   | 173   | 239   | 298     |
| Interest (net of tax) | 93    | 114   | 123   | 157     |
| Others                | (439) | (491) | (564) | (585)   |
| Less: Changes in WC   | (213) | 1,237 | (921) | (2,108) |
| Operating cash flow   | 1,394 | 2,859 | 1,076 | 616     |
| Less: Capex           | 872   | 750   | 750   | 600     |
| Free cash flow        | 522   | 2,109 | 326   | 16      |

### Key Ratios

| Year to March         | FY24A | FY25E | FY26E | FY27E |
|-----------------------|-------|-------|-------|-------|
| RoE (%)               | 14.6  | 13.1  | 14.1  | 16.2  |
| RoCE (%)              | 20.2  | 18.2  | 19.6  | 22.5  |
| Inventory days        | 508   | 641   | 396   | 386   |
| Receivable days       | 274   | 265   | 215   | 200   |
| Payable days          | 105   | 123   | 84    | 86    |
| Working cap (% sales) | 141.5 | 117.9 | 108.3 | 104.5 |
| Gross debt/equity (x) | 0     | 0     | 0     | 0     |
| Net debt/equity (x)   | (0.3) | (0.4) | (0.4) | (0.3) |
| Interest coverage (x) | 22.0  | 18.0  | 20.2  | 21.4  |

### Valuation Drivers

| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 46.0  | 0.5   | 20.3  | 29.8  |
| RoE (%)           | 14.6  | 13.1  | 14.1  | 16.2  |
| EBITDA growth (%) | 29.0  | 0.7   | 22.3  | 34.7  |
| Payout ratio (%)  | 20.0  | 20.0  | 20.0  | 20.0  |

## Investment Rationale

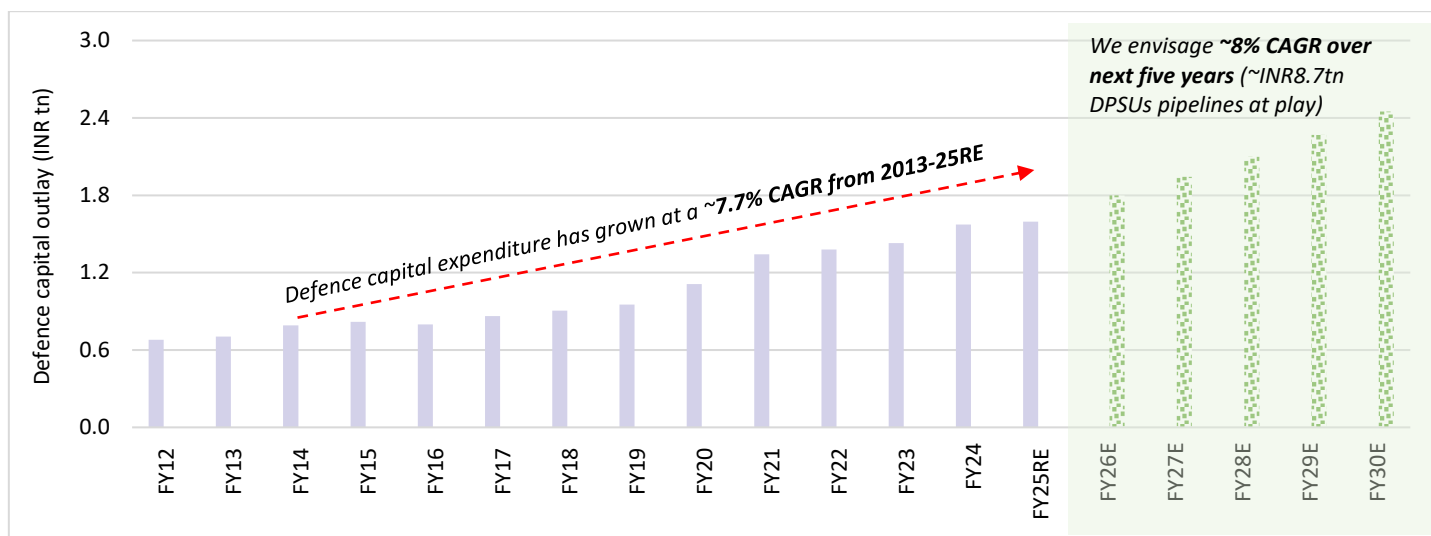
- **Defence electronics to grow 1.5–2x defence capex outlay:** We envisage long-term structural growth for Indian defence electronics market driven by the dual-engines of indigenisation and modernisation initiatives. As much as ~75% of FY26BE defence budget totalling ~INR1.8tn is earmarked for indigenous procurement. Promising surge in localisation is set to propel defence electronics sub-segment's CAGR to 14%-plus (1.5–2x capital outlay) outgrowing the overall defence market CAGR. The sub-segment shall be ~USD34bn market by FY26–30E.
- **Vertically integrated defence/aerospace electronics solutions provider:** With an industry track record of more than 35 years, DPIL has 100% in-house design, development and manufacturing capabilities with stellar competencies in delivering electronic solutions and complete systems for the entire spectrum of aerospace and defence platforms (across three Indian Armed Forces).
- **Building competencies with 'building blocks':** We reckon DPIL is one of the few industry players involved in proactively developing prototypes indigenously with an eye on replacing imports (*>51% of FY24 OB was developmental orders*). They have 1,000-plus enterprising building blocks with in-house IP providing: i) competitive cost advantage; ii) better margins; and iii) faster turnaround for product delivery.
- **Outlook and valuation: Growth trajectory intact; initiate at 'BUY':** We factor in a revenue/EBITDA/EPS CAGR of 30%/28%/25% over FY25E–27E bolstered by higher production-led revenue mix while DPIL continues to strengthen the positioning of development segment. We envisage an OI CAGR of ~45% over FY25E–27E with OPMs of ~42% through FY27E (~42.6% in FY24), yielding an EPS CAGR of ~25%-plus over FY25E–27E. Valuing the stock at 45x FY27E EPS of INR50.9 which yields a TP of INR2,300.

### Fostering growth through self-sustenance

The Govt's keen focus on self-sustenance in the overall defence sector coupled with indigenous platform recapitalisation, burgeoning defence production and exports, and prioritisation for Indian companies-led procurement mechanisms, etc is broadening the opportunities for Indian defence companies. While we believe defence players across the value chain shall be prominent beneficiaries, private sector participation will be stronger given DPSUs are focusing on integration with outsourcing of subcomponent manufacturing to private players.

We reckon the Indian defence outlay would expand at a CAGR of 7–8% to a TAM of USD125–130bn over FY26–30E. Key catalysts: i) import substitution under the 'Aatmanirbhar Bharat' initiative; ii) expansion of domestic military capabilities; and iii) export promotion to participate in the global defence value chain.

**Exhibit 16: ~USD130bn opportunity size over next five years (INR8.5–9tn-plus DPSUs' pipeline)**



Source: Nuvama Research

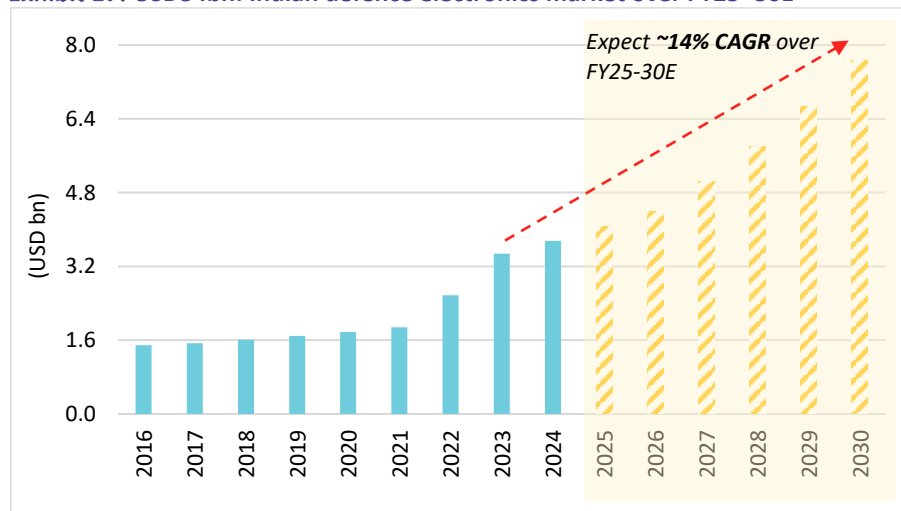
Note: We have only included HAL, BEL, MDL and CSL pipelines in our thesis. Considered INR84 as USD/INR rate.

## Defence electronics: Driving integrated battlefield network

While the overall defence industry is slated to expand at a CAGR of 7–8% over FY26–30E, we expect the defence electronics sub-segment to burgeon at a CAGR of 14–15% over the same period. Growth in unmanned systems, significant emphasis on C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance), electronic warfare, military commercial off-the-shelf equipment, radars, and militarisation of space is shaping the segment.

In India, platform/equipment obsolescence in the forces is one of the major concerns spurring rapid adoption of platform recapitalisation, C4ISR and network equipment. These areas are aimed at bridging gaps in the required strength of 42 squadrons in the IAF (versus 31 squadrons currently), improving situational awareness in critical locations, facilitating improved decision making, and optimising resources for intelligence gathering across land, air, sea and space.

**Exhibit 17: USD34bn: Indian defence electronics market over FY25–30E**



Source: Company, Nuvama Research

**Exhibit 18: Major programmes to drive defence electronics**

| Programme Name                 | Estimated size (INR bn) |
|--------------------------------|-------------------------|
| LCA Tejas Mk1A, Mk2            | 1,994                   |
| LCH Prachand                   | 500                     |
| HTT-40 Trainer                 | 68                      |
| AMCA                           | 1,134                   |
| Dornier-228 Mid Life Upgrade   | 11                      |
| Su-30MKI Production & Upgrades | 135                     |
| Project-75(I) Submarine        | 480                     |
| Mig-29 upgrade                 | 74                      |
| MRSAM                          | 30                      |
| Astra Mk1, Mk2                 | 116                     |
| Next Gen Corvettes             | 360                     |
| Next Gen Destroyers            | 800                     |
| Project 17B stealth frigates   | 700                     |

Source: Nuvama Research

## Why Data Patterns; what is in it?

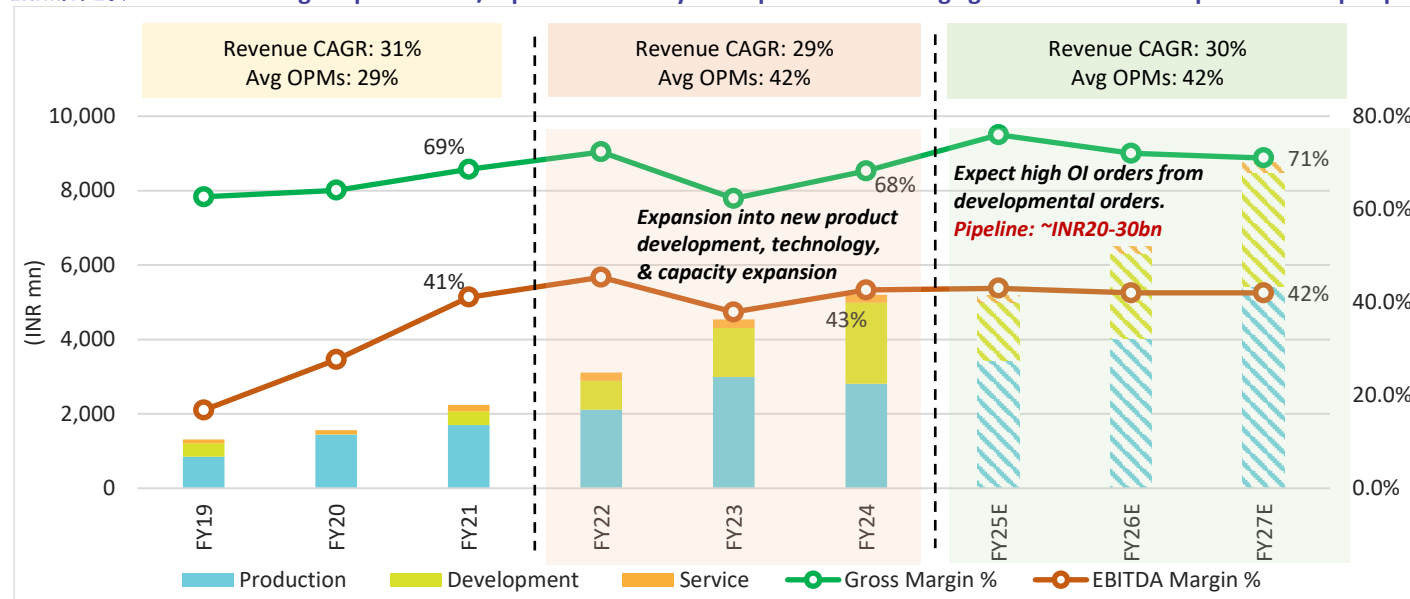
Increased push for indigenous procurement coupled with ongoing modernisation programmes implies that private players such as Data Patterns are set to play a pivotal role. Leveraging its niche expertise in end-to-end in-house design, development, and manufacturing, along with unique vertically integrated capabilities, the company is positioned to deliver electronic solutions and complete systems across the entire spectrum of aerospace and defence platforms.

- DPIL is one of the few Indian defence companies focused on designing and building 100% in-house capabilities in defence electronics, thereby reducing dependency on imports.
- Strong corporate governance with senior personnel associated with the company for more than two decades.
- Data Patterns is particularly invested in transitioning from a DRDO-model to proprietary product development, which we believe shall create a niche for it and reinforce its market positioning. These efforts are expected to drive accelerated conversion of production orders, further solidifying its franchise.
- With a robust margin profile, among the highest in the sector (reported GM/OPM of 76.4%/40.2% for 9MFY25), the company continues to demonstrate strong profitability due to various initiatives being undertaken. Increased R&D investments driving in-house innovation coupled with efficient execution shall ensure OPM sustenance, in our view.
- DPIL has clocked a strong revenue CAGR of ~35% over recent years. We argue revenue shall continue to compound at ~30% over FY25E–27E backed by higher order inflows and timely execution.
- Management remains highly confident of its outlook, reaffirming its revenue growth guidance of 20–25% for the next two–three years. Moreover, management anticipates a robust pipeline, with a strong order book projected to be INR20–30bn over the next 18–24 months.

We are initiating coverage on Data Patterns at '**BUY**', valuing the stock at 45x FY27E EPS of INR50.9, which yields a TP of INR2,300 in our base case.

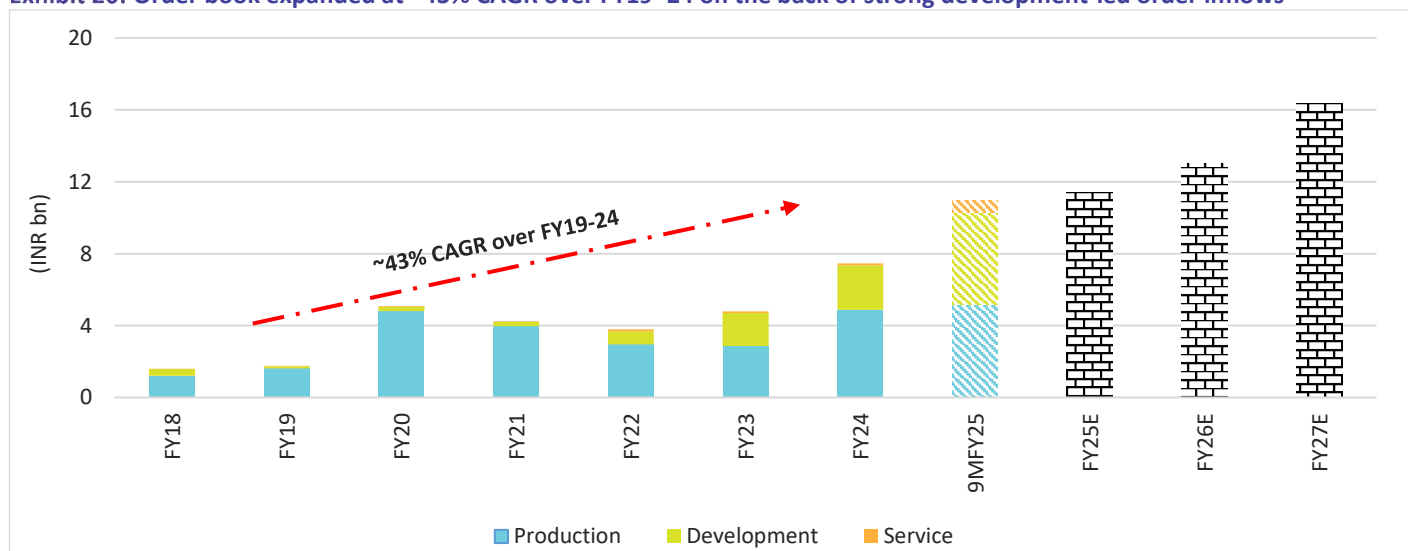
**Key risks:** High dependency on orders from the GoI, competitive intensity, challenge in winning large-ticket size projects, and working capital management.

**Exhibit 19: Execution of higher production/repeat orders to yield top line-led earnings growth while developmental ramps up**



Source: Company, Nuvama Research

**Exhibit 20: Order book expanded at ~43% CAGR over FY19-24 on the back of strong development-led order inflows**



Source: Company, Nuvama Research

## Strong competitive positioning in defence electronics segment

Development in the defence electronics market is an impetus for multifold growth of companies such as Data Patterns, which possess a unique portfolio catering to this segment. With a unique building block – Commercial Off-the-Shelf (COTS) based business model (*more than 51% of the OB comprised developmental orders in FY24*), the company has developed several projects such as *processor modules, cockpit displays, actuator controllers for missiles and torpedoes, flight control computers, digital receivers and up/down converters for radars*. To boot, DPIL aims to utilise these components in subsequent projects.

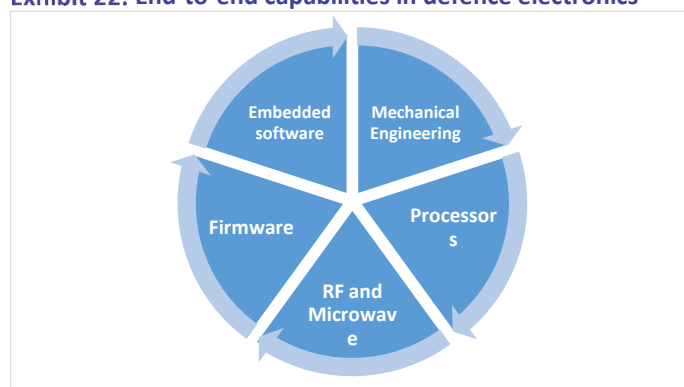
Having developed the building blocks across all electronics (including RF & microwave and signal processing), DPIL has inculcated capabilities to develop complete systems. With Indian defence requirements being opened to local manufacturers, we believe such opportunities are now available for private defence companies, wherein DPIL has high odds of success given its in-house prowess to develop such critical systems.

**Exhibit 21: Functionality of building blocks**



Source: Company, Nuvama Research

**Exhibit 22: End-to-end capabilities in defence electronics**



Source: Company, Nuvama Research

Since these building blocks are developed entirely in-house and can be reused across different platforms, they offer many long-standing advantages. Development costs are lower than competitors that rely on imports; and hence can be adapted for new segments in aerospace and defence electronics; as there is no dependency on third-party suppliers, thereby reducing risks greatly.

With DRDO simplifying its procurement process, DPIL is positioned to step in by offering advanced COTS solutions. These solutions are compatible with both local and imported modules, making integration seamless. DRDO has already deployed DPIL's military-grade COTS processors in key defence applications, including naval systems, radar systems, electronic warfare and BrahMos missile seekers. The company is also actively contributing to critical defence projects such as airborne phased-array radars and integrated electronic warfare systems, further strengthening its role in the defence sector.

**Exhibit 23: Peer comparison**

| Company                | Radars - Tracking & Surveillance | Radars (Multi-mission) | Radars - Specialized (Stealth detection etc.) | Seekers & Electronics for Missiles/Torpedoes/Sonbuoys | EW | Communications & SDR | Satcom | Ground stations | Fire control systems | Avionics | Nano & micro satellites | Testing |
|------------------------|----------------------------------|------------------------|-----------------------------------------------|-------------------------------------------------------|----|----------------------|--------|-----------------|----------------------|----------|-------------------------|---------|
| Data Patterns          |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| L&T                    |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| BEL                    |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Paras Def.             |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Mahindra Def. Sys.     |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Tata                   |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Astra Microwave        |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Godrej & Boyce         |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Centum Elect.          |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Alpha Design           |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Adani Aerospace & Def. |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| CoreEL Tech.           |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |
| Mistral Solutions      |                                  |                        |                                               |                                                       |    |                      |        |                 |                      |          |                         |         |

Source: Company, Nuvama Research, Note: L&T – Defence Engineering

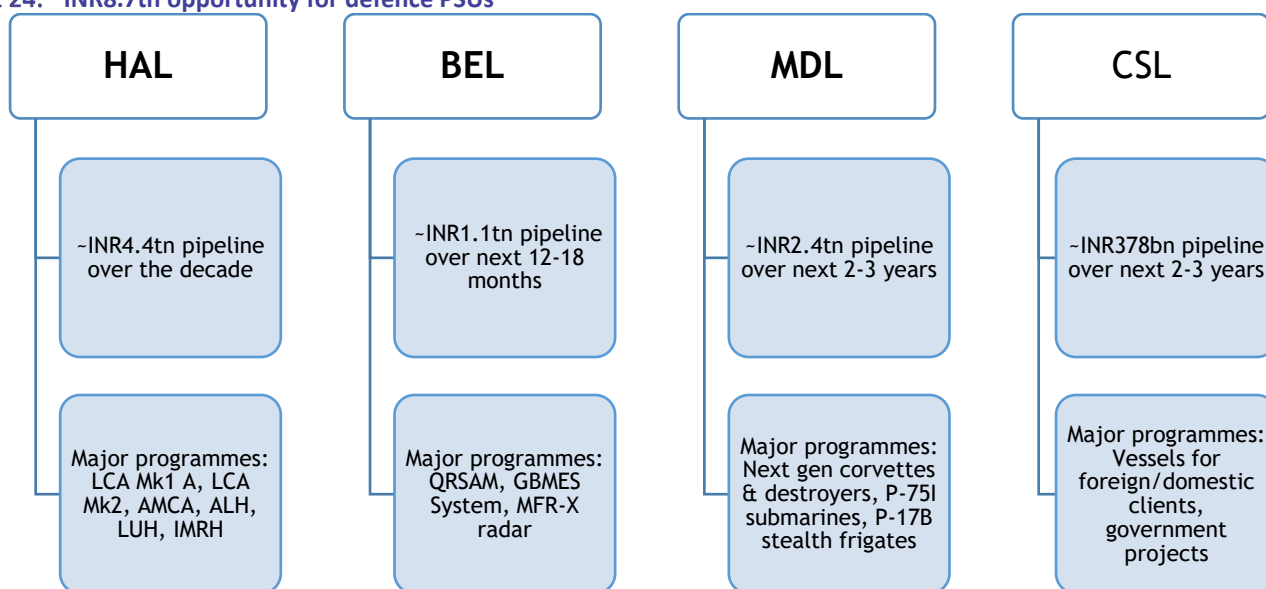


## Execution and growth mindset; material TAM expansion underway

DPIL has traditionally secured development contracts from the DRDO, which later translate to production orders. However, the company is now making a strategic shift by moving beyond its reliance on DRDO tech to focus on developing its own IP and proprietary products. This transition is underscored by the company's ability to sustain industry-leading margins with GMs at 76.4% and OPMs at 40.2% in 9MFY25, reinforcing its strong execution and profitability.

At a macro level, we believe Data Patterns is poised to capitalise on the robust ordering momentum from DPSUs (~*INR8.7tn pipeline potentially over next five–six years*). This surge in defence spending is set to further unlock subcontracting opportunities for private players, particularly in high-value areas such as components, subsystems and maintenance services. As DPSUs scale up procurement and indigenisation efforts, private players such as DPIL stand to gain from the rising demand for defence electronics and mission-critical systems.

**Exhibit 24: ~INR8.7tn opportunity for defence PSUs**

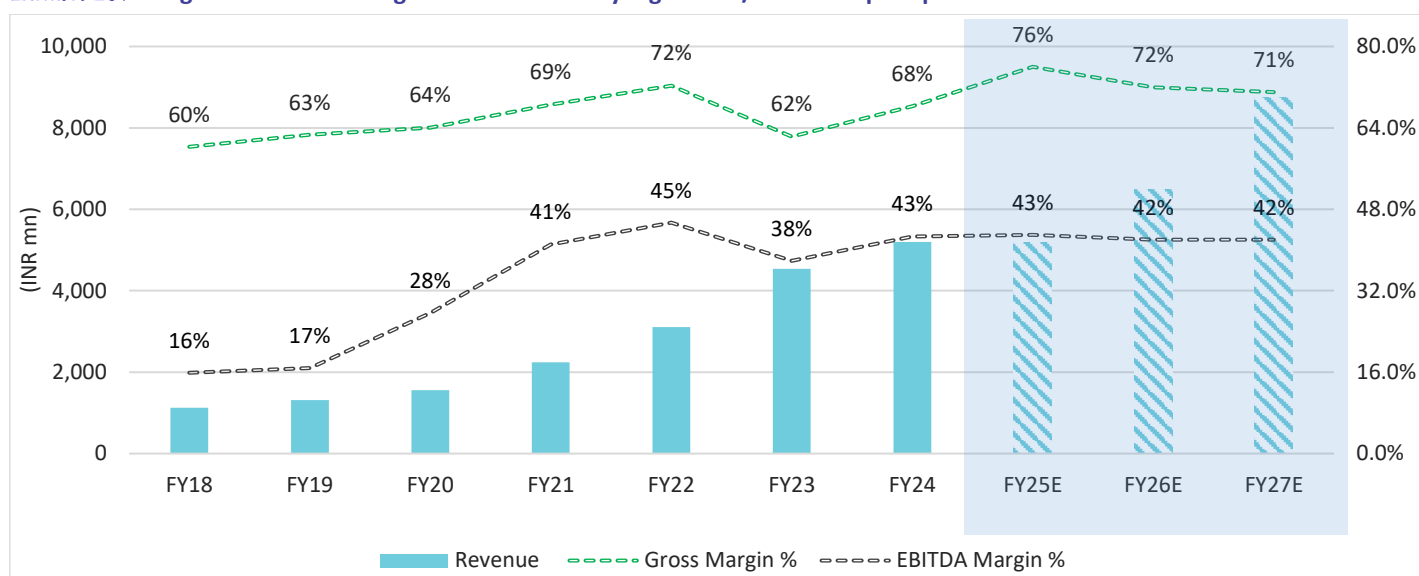


Source: Nuvama Research

The company has consistently maintained impressive gross margins of 65–75% given its expertise in developing in-house commercial off-the-shelf (COTS) products. Notably, these margins have improved as the company secured a higher proportion of orders from single vendors, streamlining execution and cost efficiencies.

Looking ahead, DPIL is placed optimally to capitalise on high volume and high value repeat production orders, driving/maintaining higher EBITDA margins than other industry players. With much of the learning curve already completed during the development phase, overhead costs are expected to remain stable, reinforcing profitability. However, a higher share of development contracts may exert pressure on margins. That said, we believe robust revenue growth fuelled by a strong pipeline, would unlock operating leverage and help sustain EBITDA margins of ~41-42% by FY27E.

**Exhibit 25: Margins to sustain at higher levels driven by high value/volume repeat production orders**



Source: Company, Nuvama Research

Moreover, DPIL rigorously works on expanding its capabilities and product portfolio, particularly in complex technology-based products. The company incurred ~INR850mn on R&D until Sep-24, including materials worth INR450mn.

In FY23, it raised INR5bn through a QIP. The proceeds were utilised as follows:

**Exhibit 26: QIP proceeds' end-use (INR bn)**

| Issue objective                                      | Amount to be utilised as per the prospectus | Utilisation till 30th December 2024 | Unutilised amount as on 30th December 2024 |
|------------------------------------------------------|---------------------------------------------|-------------------------------------|--------------------------------------------|
| Working capital requirements                         | 1.68                                        | 1.68                                | -                                          |
| Investment in product development                    | 1.67                                        | 0.68                                | 1.00                                       |
| Prepayment or repayment of borrowings                | 0.25                                        | 0.25                                | -                                          |
| Capex towards setting up an EMI-EMC Testing Facility | 0.15                                        | 0.14                                | 0.02                                       |
| Acquisition of land (including building)             | 0.08                                        | 0.08                                | -                                          |
| General corporate purposes                           | 1.05                                        | 1.05                                | -                                          |
| <b>Total</b>                                         | <b>4.88</b>                                 | <b>3.87</b>                         | <b>1.01</b>                                |

Source: Company, Nuvama Research

**Exhibit 27: Major orders received in 9MFY25**

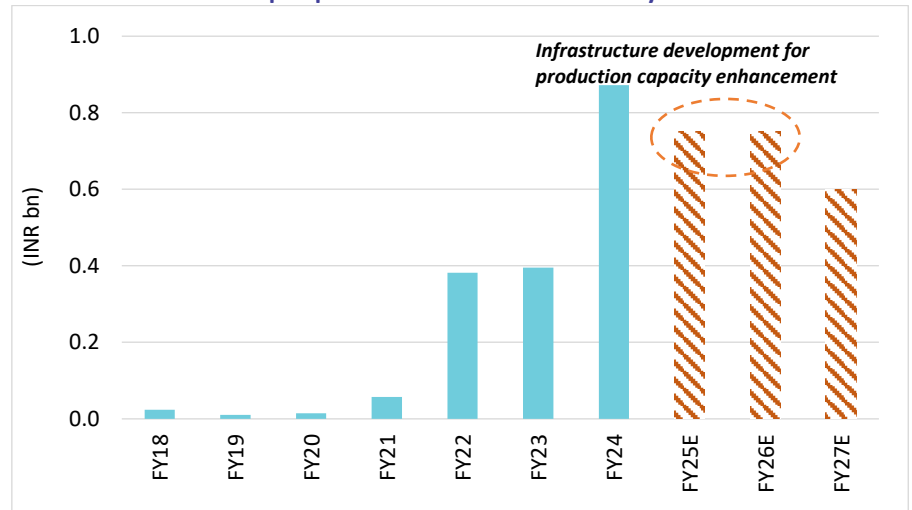
| Product  | Customer | Order Type  | Value (INR mn) |
|----------|----------|-------------|----------------|
| EW       | DSPU     | Production  | 798            |
| Radar    | MoD      | Production  | 531            |
| Avionics | Export   | Production  | 530            |
| Avionics | Export   | Production  | 157            |
| FCS      | BrahMos  | Development | 144            |
| ATE      | DRDO     | Production  | 113            |
| Avionics | ADA      | Development | 103            |

Source: Company, Nuvama Research

To keep up with the growing order book (currently ~INR11bn), DPIL expanded its manufacturing facility to a 200,000 square feet factory in Chennai and boosted the workforce to 1,500-plus with more than 1,020 qualified engineers. DPIL has further

capex plans of ~INR1.5bn over FY26E–27E to enhance its existing production capacity.

**Exhibit 28: INR1.5bn capex planned over next two–three years**



Source: Company, Nuvama Research

## Services and exports expected to augur additional revenue potential

In this volatile geopolitical and security landscape, countries are prioritising military strength. The global military expenditure marked the steepest YoY increase since 2009, touching USD2,443bn in 2023 (6.8% increase YoY). This, in our view, provides an opportunity for DPIL as it has demonstrated necessary design and manufacturing capabilities to expand into high-end geographies and markets.

We identify engineering services as a key area for growth given its established competencies in electronic hardware development, embedded software & application development, algorithm and firmware development, and life extension of defence OEM products and other non-defence products. Additionally, growth in the services segment for DPIL shall also be fuelled by maintenance, repair, upgradation, and upkeep services of platforms and products in the defence and aerospace sector. In Q3FY25, a substantial portion of its revenue (~76.8%) and order inflows (~25%) were driven by exports market.

Above are all key catalysts for generating incremental revenue growth over coming years for DPIL, in our view.

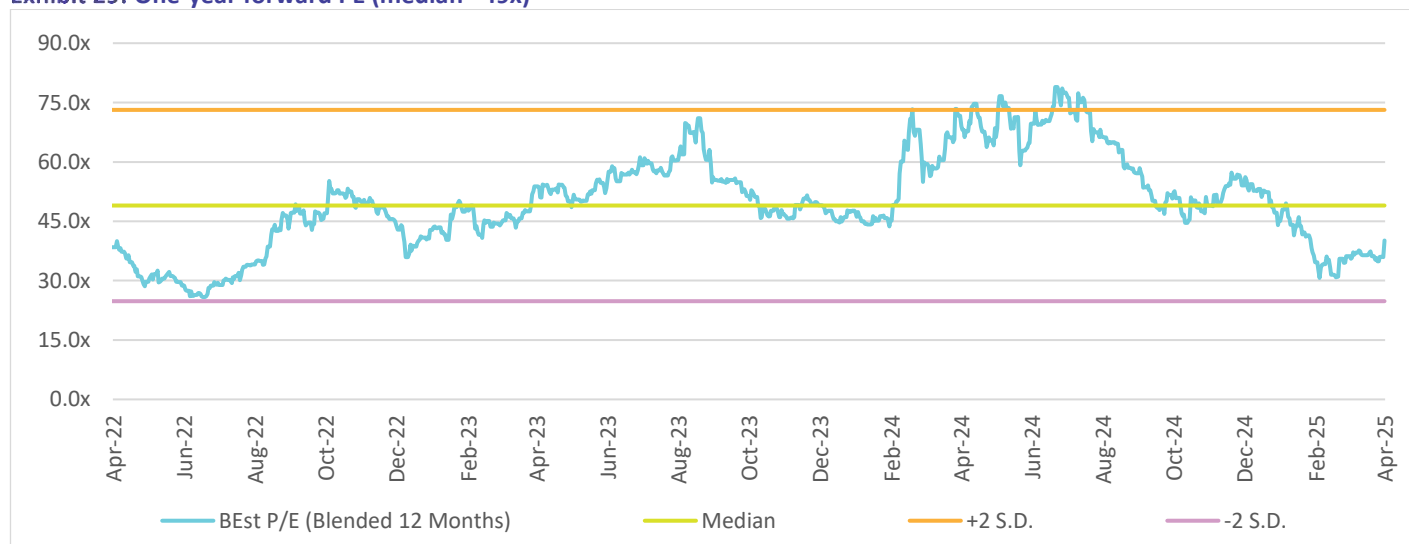
## Valuation

### Building on solid foundation with multiple niche opportunities

- DPSUs are expected to clock an EPS CAGR of 12–18%, whereas private defence comps shall grow much faster (25–40%) than DPSUs or the overall industry given their smaller base and gateways that lead into an evolving local ecosystem. Therefore, we argue valuation premiums shall remain.
- DPIL is a pivotal player in the defence electronics segment with fully in-house design, development and manufacturing capabilities. It possesses potential for higher growth given strong focus on new product development via continuous spends on R&D. The company's unique approach of identifying requirements and developing products ahead of demand shows its innovation-centricity.
- Strong balance sheet and high earnings CAGR shall drive better RoE/RoCEs. Data Patterns, in our view, has a sizeable market to tap into these developmental products that hold a real promise of conversion into production orders, thereby driving top line-led earnings CAGR of ~25% over FY25E–27E and FY27E RoE/RoCE of ~16%/23%; initiate at 'BUY' with a TP of INR2,300.

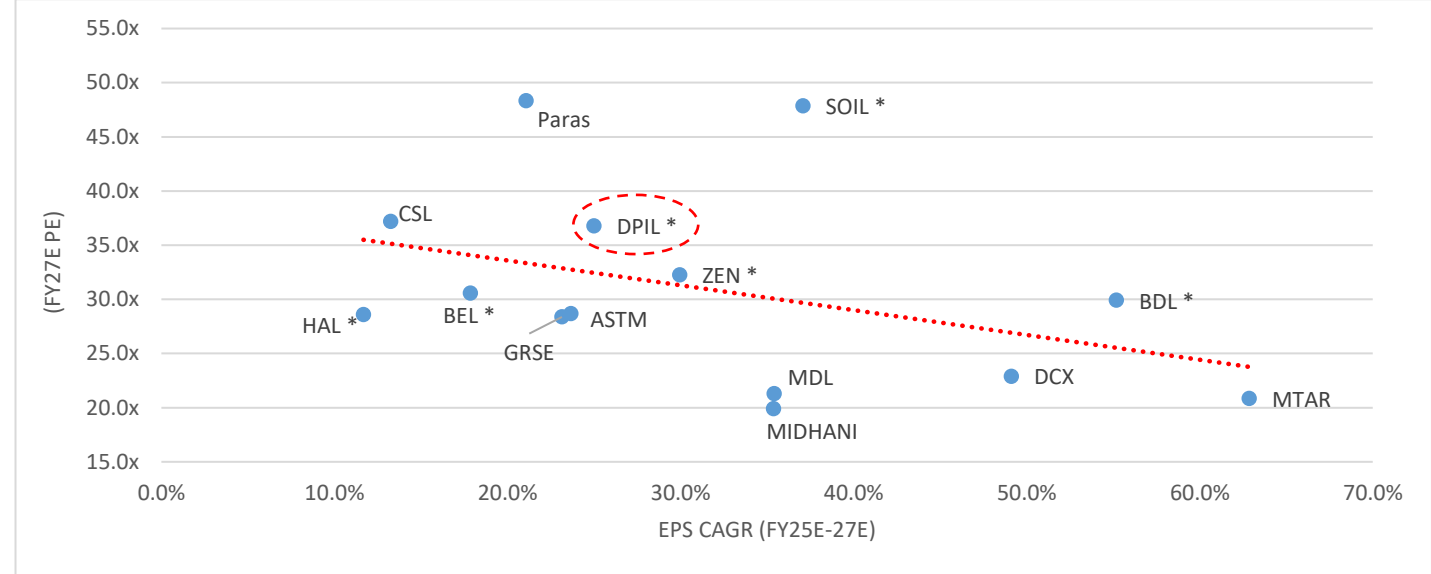
We are initiating coverage on DPIL with a 'BUY', valuing the stock at **45x FY27E EPS of INR50.9, yielding a TP of INR2,300** in our base case. Our **bull case** factors in OI/revenue CAGR of ~60%/38% over FY25E–27E along with aggregate OPMs of ~42% and a **50x target PE, yielding a TP of INR2,830**.

**Exhibit 29: One-year forward PE (median ~49x)**



Source: Bloomberg, Nuvama Research

**Exhibit 30: EPS CAGR (FY25E–27E) versus FY27E PE across defence comps**



Source: Bloomberg, \*Nuvama Estimates

**Exhibit 31: Nuvama scenario analysis – ~25% EPS CAGR over FY25E–27E**

| FY25E-27E                 | Bear case    | Base case    | Bull case    |
|---------------------------|--------------|--------------|--------------|
| Revenues CAGR             | 21.9%        | 29.9%        | 37.7%        |
| Avg. OPMs                 | 41.0%        | 42.3%        | 42.3%        |
| FY27E OPM                 | 40.0%        | 42.0%        | 42.0%        |
| EPS CAGR                  | 15.1%        | 25.0%        | 31.7%        |
| FY27E EPS                 | 43.2         | 50.9         | 56.6         |
| FY27 target multiple (x)  | 40           | 45           | 50           |
| <b>Price Target (INR)</b> | <b>1,729</b> | <b>2,300</b> | <b>2,830</b> |
| Upside/Downside           | -7.7%        | 22.7%        | 51.0%        |

Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

## Financial Outlook

- We envisage defence capital outlay would compound at 7–8% over 2026E–30E to ~USD130bn—a staggering market opportunity.
- Upcoming large platforms/programmes (primarily pertaining to Air Force, Navy) along with ongoing modernisation drive would drive outsized CAGR of 14–15% for power defence electronics, i.e. 1.5–2x capital outlay over the same period.
- DPIL likely to capture much superior order intake growth (~45% CAGR over FY25E–27E) fuelled by commercialisation and scale-up of existing portfolio along with high value orders for defence electronics.
- We factor in a revenue CAGR of ~30% over FY25E–27E coupled with sustained margins (both GM and OPM) supported by high-value, high-volume repeat orders along with a decent conversion rate from development to production orders. With the learning curve mastered during development, overhead costs are set to stabilise, implying a head start on profitability and efficiency.
- DPIL is also focusing on expanding capabilities to a fully integrated system manufacturer. Robust execution thereof over coming years coupled with stable OPMs and favourable working capital, we reckon the RoCE to improve to 22%-plus by FY27E.

**Exhibit 32: Financial snapshot (INR mn)**

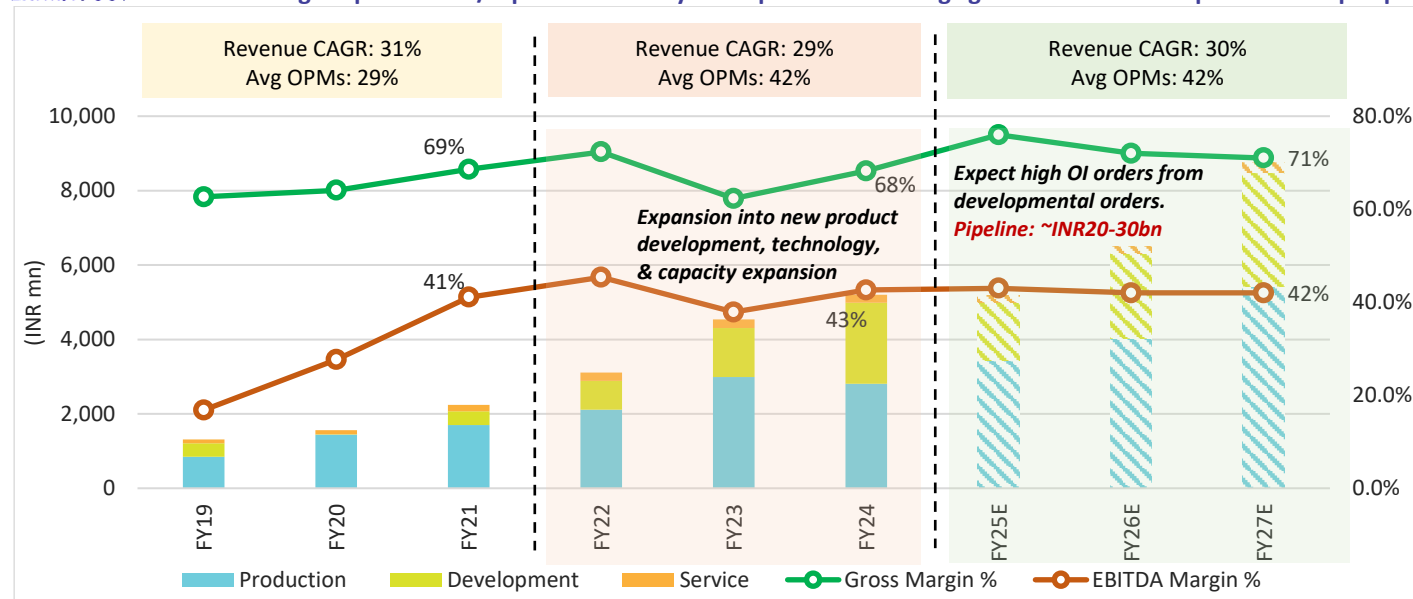
| Particulars       | FY19  | FY20   | FY21   | FY22   | FY23   | FY24   | FY25E  | FY26E  | FY27E  |
|-------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Order inflows     | 1,339 | 5,601  | 1,370  | 2,890  | 9,014  | 6,788  | 5,770  | 8,078  | 12,117 |
| YoY growth        |       | 318.4% | -75.5% | 110.9% | 211.9% | -24.7% | -15.0% | 40.0%  | 50.0%  |
| Order book        | 1,815 | 5,855  | 4,980  | 4,760  | 9,241  | 10,831 | 11,413 | 12,994 | 16,361 |
| YoY growth        |       | 222.6% | -15.0% | -4.4%  | 94.1%  | 17.2%  | 5.4%   | 13.9%  | 25.9%  |
| Book to bill rate | 2.4x  | 4.8x   | 3.2x   | 2.5x   | 3.0x   | 3.1x   | 3.2x   | 3.0x   | 2.9x   |
| Revenues          | 1,311 | 1,561  | 2,240  | 3,109  | 4,535  | 5,198  | 5,188  | 6,497  | 8,749  |
| YoY growth        |       | 19.1%  | 43.5%  | 38.8%  | 45.9%  | 14.6%  | -0.2%  | 25.2%  | 34.7%  |
| EBITDA            | 220   | 432    | 920    | 1,410  | 1,718  | 2,216  | 2,231  | 2,729  | 3,675  |
| EBITDA margin     | 16.8% | 27.6%  | 41.1%  | 45.4%  | 37.9%  | 42.6%  | 43.0%  | 42.0%  | 42.0%  |
| PAT               | 74    | 211    | 556    | 940    | 1,240  | 1,817  | 1,826  | 2,197  | 2,853  |
| PAT margin        | 5.7%  | 13.5%  | 24.8%  | 30.2%  | 27.3%  | 35.0%  | 35.2%  | 33.8%  | 32.6%  |
| EPS               | 8.7   | 24.8   | 65.4   | 18.1   | 22.1   | 32.4   | 32.6   | 39.2   | 50.9   |
| YoY growth        |       | 183.3% | 163.8% | -72.3% | 22.3%  | 46.5%  | 0.5%   | 20.3%  | 29.8%  |

Source: Company, Nuvama Research



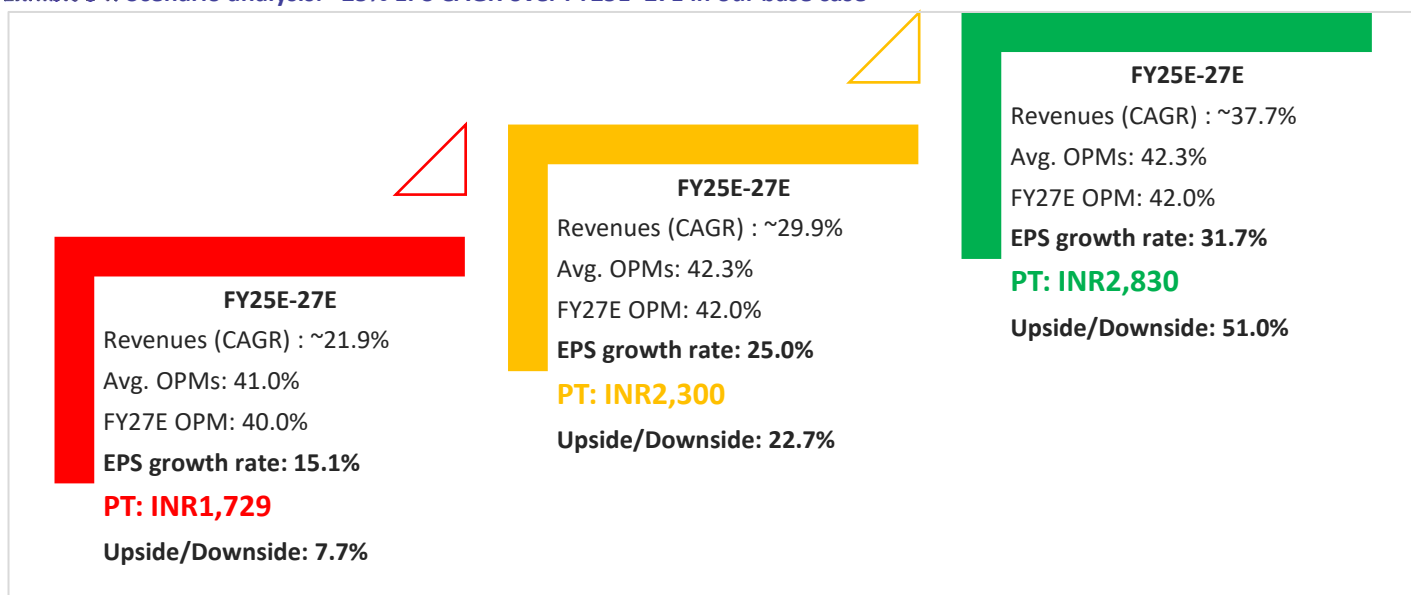
# DATA PATTERNS

**Exhibit 33: Execution of higher production/repeat orders to yield top line-led earnings growth while developmental ramps up**



Source: Company, Nuvama Research

**Exhibit 34: Scenario analysis: ~25% EPS CAGR over FY25E-27E in our base case**



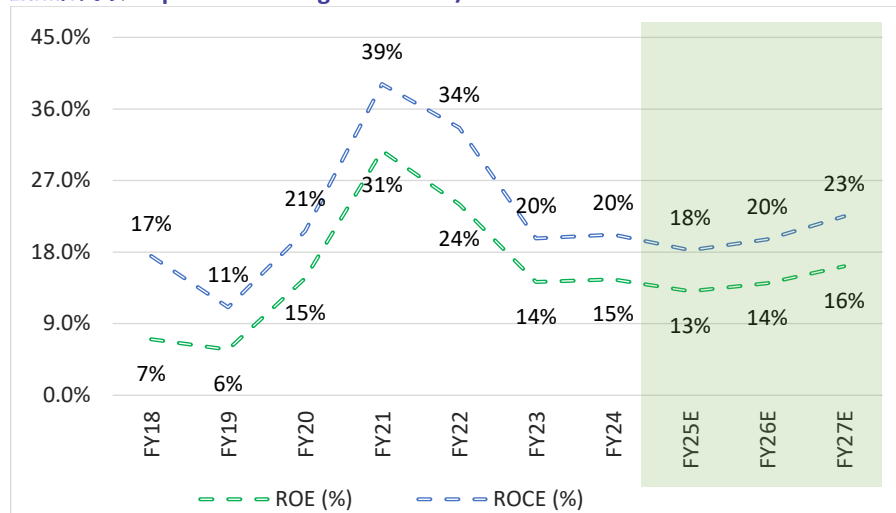
Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 35: FY27E EPS sensitivity**

|                |       | Revenue CAGR (FY25E-27E) |       |       |       |       |
|----------------|-------|--------------------------|-------|-------|-------|-------|
|                |       | 20.0%                    | 25.0% | 30.0% | 40.0% | 50.0% |
| FY27E OPMs (%) | 38.0% | 40.0                     | 43.0  | 46.2  | 53.0  | 60.3  |
|                | 40.0% | 42.0                     | 45.2  | 48.6  | 55.8  | 63.5  |
|                | 42.0% | 44.0                     | 47.4  | 50.9  | 58.5  | 66.6  |
|                | 43.5% | 45.5                     | 49.0  | 52.7  | 60.5  | 68.9  |
|                | 45.0% | 47.0                     | 50.6  | 54.5  | 62.6  | 71.3  |

Source: Nuvama Research

**Exhibit 36: Improved earnings to lift RoE/RoCE**



Source: Company, Nuvama Research

## Key Risks

### High dependency on orders from Government of India

The bulk of DPIL's order book is made up of orders from the GoI and DPSUs, as well as from government organisations involved in space research. High regulatory requirements of government entities can increase the company's compliance costs. Winning tenders from GoI entities poses a huge challenge as the contracts are awarded to the lowest bidder that satisfies all the technical requirements. Moreover, lower-priced contracts can exert pressure on the company's margins.

### Capital-intensive and time-consuming development contracts

Development contracts demand high investment and extended execution timelines. DPIL self-funds the design and testing of critical building blocks and subsystems, often bearing significant upfront costs. With such projects spanning 12–18 months, substantial working capital is required, not to mention navigating single-delivery schedules and final field trials that can delay completion.

### Working capital management

Given DPIL's business entails long product development periods and production cycles, maintaining a high level of working capital is inescapable. Payment delays for ongoing contracts, decreased advance payments due to lower order inflows, and higher inventories/work in progress or accelerated payments to suppliers may negatively hurt the company's cash flow and working capital. DPIL might face working capital challenges given its high WC days of 678 in FY24.

### Challenges in winning large-ticket size projects

DPIL is focused on building full systems over coming years and would hence bid for large-ticket projects. The bidding and selection process have multiple aspects such as pricing, technological and technical expertise, quality control, etc. Accordingly, the company may face high competitive intensity in certain categories from companies such as L&T, BEL, Mahindra Defence Systems, Astra Microwave Products, Alpha Design Technologies, Mistral Solutions and CoreEI Technologies.

## Company Description

DPIL is a vertically integrated defence and aerospace electronics solutions provider. It caters to the entire spectrum of indigenously developed defence products industry and aerospace platforms. The company was incorporated as 'Indus Teqsite Private Limited' in 1998 in Bangalore (Karnataka); the name was changed to Data Patterns (India) Limited in 2021.

DPIL has design capabilities across the entire spectrum of strategic defence and aerospace electronic solutions—including processors, power, radio frequencies (RF) and microwave, embedded software & firmware and mechanical engineering. Its core competencies include electronic hardware design & development, software design & development, firmware design & development, mechanical design & development, product prototype design & development, functional testing and validation, environment testing and verification, and engineering services.

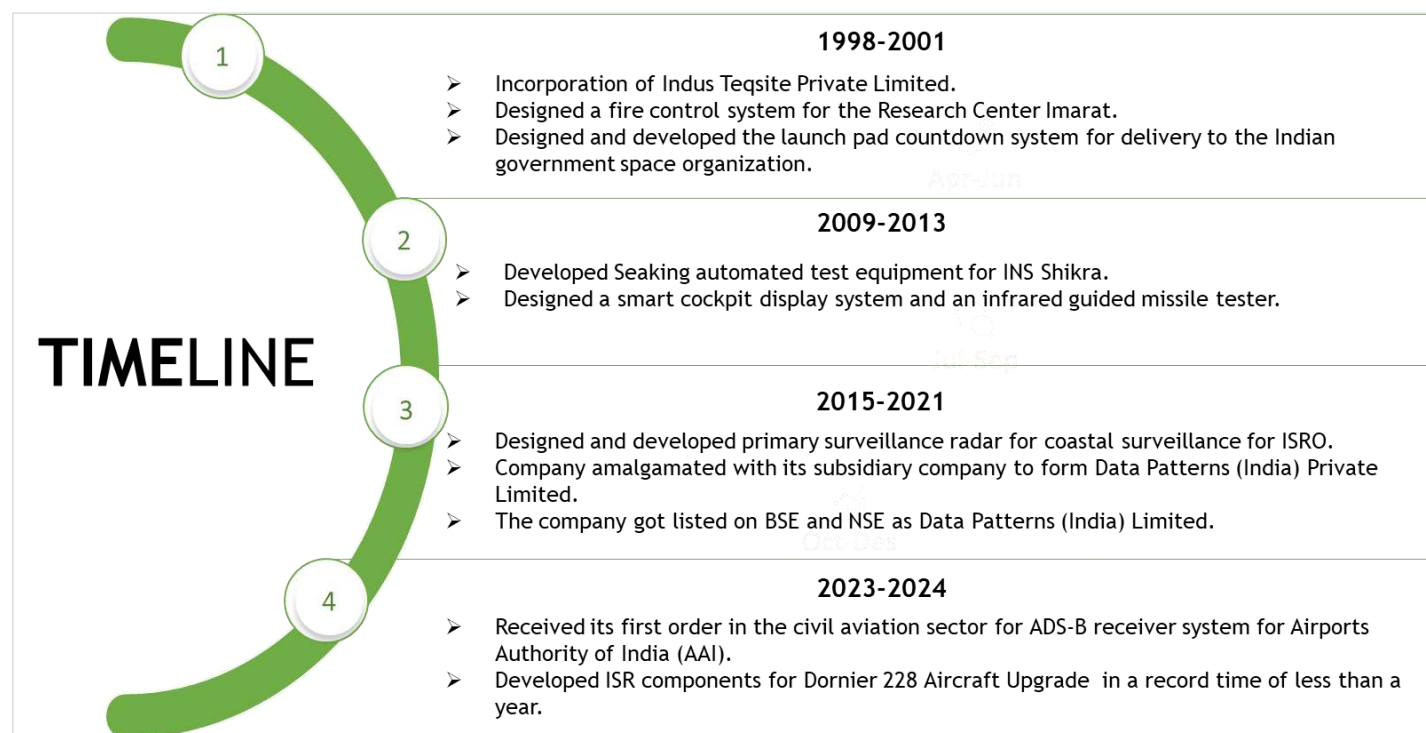
The company has end-to-end capabilities in building and delivering complete systems, with its design and manufacturing capabilities being completely in-house. Electronic solutions are developed by specialist teams working on areas including complex 20+ layer printed circuit board (PCB) designs, field-programmable gate arrays (FPGA) based firmware algorithms, all layers of software including operating system porting, device drivers, networking layers, application software, graphical user interface, cartography, signal processing, streaming protocols and waveform engineering. Its capabilities across the spectrum of aerospace and defence electronics solutions from design to delivery lends it significant competitive benefits in terms of overall development time and cost, and also allow it to offer competitive pricing when bidding for aerospace and defence projects.

The company believes that platform-specific products and products certified for ongoing programmes make it the preferred OEM supplier for such qualified product requirements, driving growth and revenue visibility over many years.

DPIL has diversified its products and solutions, mainly due to its design and development capabilities, and qualified and experienced workforce. As on September 30, 2024, DPIL had 1,500-plus employees, including 1,020 qualified engineers.

The company's design & development capabilities have allowed it to develop complete systems as well as sub-systems for various strategic defence and aerospace electronics solutions. These systems have found applications on various platforms and in programmes such as the Tejas Light Combat Aircraft (LCA), the Light Utility Helicopter (LUH), the BrahMos missile programme, precision approach radars and various communications intelligence (COMINT) and electronic intelligence (ELINT) systems.

Exhibit 37: DPIL's corporate journey – A chronology



Source: Company, Nuvama Research

Exhibit 38: Various test equipment indigenously designed and developed by DPIL over past few years



Source: Company, Nuvama Research

## Completely functional integrated production and testing facilities

The company's manufacturing facility consists of a 200,000 square feet factory built on 10.28 acres (post-expansion in Chennai) with capabilities for design, manufacturing, qualification and life cycle support of high reliability electronic systems used in defence and aerospace applications.

The facility has 100,000 class clean rooms, an electronic facility line, BGA repair work station with display, and Electronics Manufacturing Services (EMS) assembly capacity of 600 boards per day with dedicated 70 work stations for testing modules and small systems as well as 20 dedicated mechanical assembly stations to assemble small and large systems.

DPIL's systems and processes are subject to periodic audit by its customers such as the Indian Space Research Organisation, Hindustan Aeronautics Limited (HAL) and other government departments.

### Exhibit 39: Manufacturing facility in Chennai



Source: Company, Nuvama Research



Exhibit 40: Facility drilldown: What goes on inside the facility

**State-of-the-art & well-resourced facilities**

|                                                                                                                                                                                                                               |                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <ul style="list-style-type: none"> <li>• Large Systems Integration Hangar</li> <li>• Augmented Environmental Test Infrastructure</li> </ul> |  <ul style="list-style-type: none"> <li>• Additional EMS Line</li> </ul>                                    |
|  <ul style="list-style-type: none"> <li>• Complete Radar Integration</li> </ul>                                                              |  <ul style="list-style-type: none"> <li>• Clean Room for Satellite Integration</li> </ul>                   |
|  <ul style="list-style-type: none"> <li>• Electronic Warfare Vehicle Integration</li> </ul>                                                 |  <ul style="list-style-type: none"> <li>• Additional Space For Design and Development Resources</li> </ul> |

Source: Company, Nuvama Research

## Products offerings

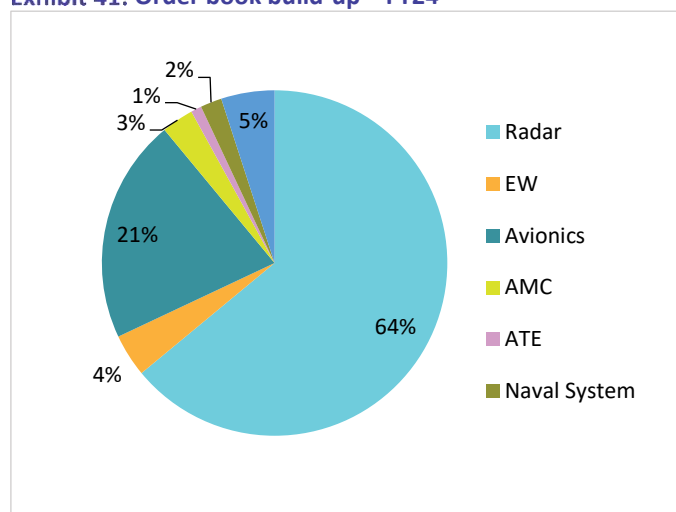
Data Patterns offers a comprehensive range of standard products, providing solutions from COTS modules to multi-rack system integration. It offers products under the business domains of Automatic Test Equipment (ATE) and Rugged Military Electronics (RME).

The company also develops advanced functionalities, thermal and environmental protection, and built-in test and life cycle maintenance strategies required for ensuring reliable and predictable system performance in harsh environments.

Furthermore, the company integrates complex solutions for avionics and other rugged military hardware. These products are accompanied by test systems that validate the Line Replaceable Units in order to ensure long-term maintainability of products.

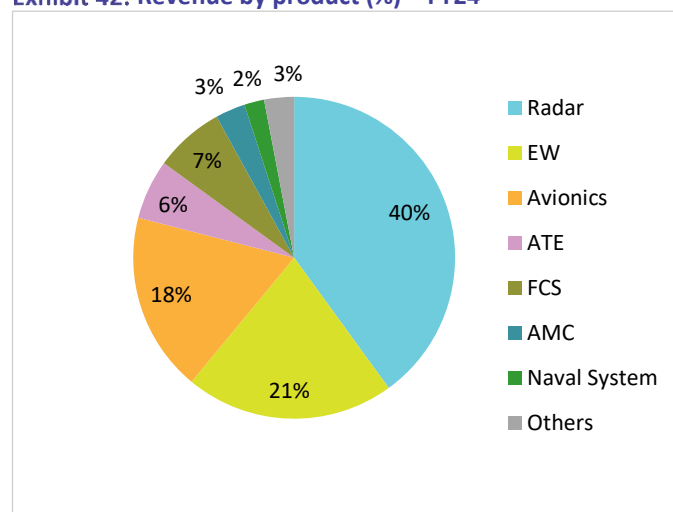
# DATA PATTERNS

Exhibit 41: Order book build-up – FY24



Source: Company, Nuvama Research

Exhibit 42: Revenue by product (%) – FY24



Source: Company, Nuvama Research

Exhibit 43: Strong portfolio positioning

| Category                                       | Select Product offerings                                                                                                                                                                          | Category                      | Select Product offerings                                                                                                                                                    |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Commercial off the shelf (COTS)</b><br>     | <p>COTS modules designed in context of reusable building blocks for building Military Electronics systems with a quick turnaround time</p>                                                        | <b>BrahMos Programme</b><br>  | <ul style="list-style-type: none"> <li>Fire control systems</li> <li>Mobile autonomous launcher</li> <li>Airborne launcher and</li> <li>Other electronic systems</li> </ul> |
| <b>Avionics</b><br>                            | <p>Avionics displays used on :</p> <ul style="list-style-type: none"> <li>Light Combat Aircraft ("LCA"),</li> <li>Intermediate Jet Trainers</li> <li>Light Utility Helicopters ("LUH")</li> </ul> | <b>Electronic Warfare</b><br> | <ul style="list-style-type: none"> <li>Surveillance and intelligence gathering ("SIGINT")</li> <li>Further divided into COMINT and ELJINT</li> </ul>                        |
| <b>Communications, ATEs and Satellites</b><br> | <ul style="list-style-type: none"> <li>Underwater electronics / Communications / Other Systems</li> <li>Automated Test Equipment (ATE)</li> <li>Small and Nano Satellites</li> </ul>              | <b>Radars</b><br>             | <p>Surveillance radars    Weather radars    Coastal Surveillance Radar</p>                                                                                                  |

Source: Company, Nuvama Research

**Exhibit 44: In-house products/programmes – An overview**

| Products/Programmes                                           | Details                                                           |
|---------------------------------------------------------------|-------------------------------------------------------------------|
| Monopulse RF Seeker                                           | Delivered prototypes to DRDO                                      |
| X-Band Doppler Weather Radar                                  | Prototype installed in Chennai for meteorology department         |
| 205MHz Wind Profile Radar for CUSAT                           | Installed at Cochin for a government owned university             |
| Radar for Naval Utility Helicopter                            | Prototype delivered to LRDE (DRDO)                                |
| A Next-Generation Software Defined Radio for fighter aircraft | Prototype developed for DEAL (DRDO)                               |
| A Next-Generation Radar Warning Receiver for fighter aircraft | Prototype developed for DLRL (DRDO)                               |
| A Next-Generation COMINT                                      | Prototype developed for DLRL (DRDO)                               |
| Precision Approach Radar                                      | Delivered to Air Force and Navy                                   |
| Nano Satellite                                                | Being delivered to industry                                       |
| Launches and Fire control systems                             | Brahmos                                                           |
| Avionics                                                      | Cockpit display for LCA Tejas                                     |
| Electronic Warfare                                            | For various upgrade programs                                      |
| Doppler weather radars                                        | Built both X-Band and C-Band                                      |
| Dharashakti programme                                         | COMINT search receivers, Direction Finder & Monitoring receivers. |
| Airborne surveillance radar                                   | Inducted in Navy's Dornier upgrade and new helicopter programmes  |
| Himshakti program                                             | COMINT search receivers, Direction Finder & Monitoring receivers. |
| Arudra radar                                                  | Supply of advanced radar subsystems and components                |
| Ashwini LLTR                                                  | TR modules, AGRU, signal processor, etc.                          |

Source: Company, Nuvama Research

## Key offerings

### Radar and Radar Subsystems

Data Patterns has developed variety of complete radars and radar sub-systems. These include Airborne Central Unit for an Early Warning Radar, which has fully qualified to LRU standards, Tracking Radars, Phased Array Antenna Components, Wind profile radar, Coastal Surveillance, etc. The radars are equipped with technologies such as radar signal processing, transmitters, transmit waveform generation and phase-sensitive detection—angle tracking, range tracking, etc.

**Exhibit 45: X-Band Doppler Weather Radar**



Source: Company, Nuvama Research

**Exhibit 46: Precision Approach Radar**



Source: Company, Nuvama Research

## ATE & Test Systems; Communication products

DPIL's core business for 20-plus years has been development of Automated Test Equipment (ATE) for critical aerospace requirements. DPIL developed test automation, which found use in development of test benches required by ISRO for the Polar Satellite Launch Vehicle (PSLV) and Geo Stationary Launch Vehicle (GSLV).

DPIL has standard communication products for most military protocols for both terrestrial and satellite communication requirements. These products are designed primarily for on-board interfaces in avionic systems and for ATE requirements.

**Exhibit 47: ATE for Avionics Suite**



Source: Company, Nuvama Research

**Exhibit 48: Next-Gen Software Defined Radio (SDR) for aircraft**



Source: Company, Nuvama Research

## Avionic Systems

DPIL designs prototypes of a wide variety of products intended for airborne applications in manned and unmanned aircraft. Ranging from smaller unmanned vehicles and missiles to manned fighter aircraft, DPIL has the largest number of qualified LRUs designed in India from a single source.

**Exhibit 49: Actuator controller for UAV**



Source: Company, Nuvama Research

**Exhibit 50: Next-Gen Software Defined Radio (SDR) for aircraft**



Source: Company, Nuvama Research

## Cockpit and Rugged Displays

The company also offers a wide range of multi-function rugged LCD displays for rotary and fixed-wing aircraft. The current range extends from 3" to 20" units. All avionics displays offer on-board smart processing, and internal and external sensors support video formats. The integration of latest technologies and the optical stack-up allows for very high brightness, high contrast sunlight readable screens with minimised reflections at low power consumption.



**Exhibit 51: Light utility helicopter cockpit display**



Source: Company, Nuvama Research

**Exhibit 52: Fixed wing cockpit displays**



Source: Company, Nuvama Research

## Electronic warfare

Electronic Warfare is used for passive surveillance and intelligence gathering ('SIGINT') and is broadly divided into COMINT and ELINT. DPIL has developed a line-up of state-of-the-art integrated solutions for spectrum monitoring, wideband searching, ECM & ESM, VHF/UHF search receiver, HF search receiver, monitoring receivers & jammers.

**Exhibit 53: Jammer Power Amplifier**



Source: Company, Nuvama Research

**Exhibit 54: Real Time Monitoring Unit**



Source: Company, Nuvama Research

## BrahMos programme

DPIL develops fire control systems and other electronic systems such as flight-qualified launchers, missile checkout system, etc for the BrahMos missile programme.

**Exhibit 55: FCS for BrahMos – Indian Army**



Source: Company, Nuvama Research

**Exhibit 56: BrahMos missile checkout**



Source: Company, Nuvama Research

## Space systems

A number of products for space applications are manufactured to customer designs at DPIL's ISRO-approved manufacturing facility. DPIL caters to this demand owing to its capability of building Nano satellites, including required components.

The company developed and deployed its first Nano Satellite ('NIUSAT') in 2017. ISRO uses on-board and ground systems developed by DPIL for its Nano Satellite programme.

**Exhibit 57: Nano satellite**



Source: Company, Nuvama Research

**Exhibit 58: Ground station**



Source: Company, Nuvama Research

## Extracting value through COTS

DPIL has developed a reusable building blocks model, under which it designs COTS (commercial off-the-shelf) products used to build large systems and platforms. The company has more than 1,000 building blocks pre-approved by its customers and government ministries, thereby allowing it to reduce lead times for development of new products. These building blocks also provide a cost advantage as development cost spreads over multiple programs, leading to improved margins for the company.

DPIL designs and markets a variety of COTS boards such as VPX products required for high-end radar/electronic warfare/image processing and sonar applications, unique products for VME-based systems targeting radar/image and sonar signal processing applications, components for CRT & LCD displays/keyboards, pointing devices, finger print security devices, etc. Multiple programs such as the LCA, the LUH, BrahMos, ATE, land and air-based missile launch systems, tracking radars, weather radars, Nano satellites for ISRO, radars and EW systems for the DRDO, and on-board equipment for aircraft, missiles and torpedoes have been built and supported with DPIL's building blocks.

The company has an integrated approach across the complete product life cycle and expertise in contemporary technologies, which enhances its competitiveness with respect to traditional imports and ToT-dependent DPSUs and private sector entities. Furthermore, a large number of its orders are on a single-vendor basis, i.e. they are typically not awarded on an open tender basis. This is a testament to DPIL's technical prowess as well as its deep trustworthy relationships.



**Exhibit 59: Some products in DPIL's COTS portfolio**



Source: Company, Nuvama Research

## Developmental orders leading to production/repeat requirements

DPIL invests significantly in development of new products, which are tailored to the specific needs of defence forces. These contracts contributed about 42% to the company's revenue in FY24.

As much as 70% of the company's total engineer base is focused on product development. DPIL intends to spend 20–25% of its revenue on R&D in the current and next financial year for product development. To meet international standards, products are being developed in four key areas:

- **Radars** – Airborne radars and full radar systems.
- **Electronic Warfare** – Electronic warfare suite along with ground systems.
- **Communications** – Building network radios required by the Indian Army, Navy and Air Force in line with the in-house COMINT competencies.
- **Waveforms** – Waveform systems for real-time signal processing, electronic waveform generation.

These developmental products are expected to bring in revenue growth in upcoming years post-trials. DPIL promises a significant opportunity to produce and deliver high volume/value repeat orders. Such production contracts and repeat procurements provide order visibility and allow the company to generate stable cash flows. Along with electronics, DPIL is building upgrade programs to acquire competencies in the IP and software domain.

DPIL has maintained strong order book growth over the years. Its order book was ~INR11bn at end-9MFY25 while order inflows were INR3.2bn, driven primarily by production contracts (76%), followed by development (13%) and services contracts (11%). Strong backlog coupled with an emerging pipeline ensures healthy revenue visibility with most of the backlog expected to be executed over the next two years. Select development projects may extend to three–four years.

The increasing share of production orders over the past few years has significantly enhanced profitability, reinforcing a positive outlook. DPIL's robust order book is backed by its contributions to key indigenous defence projects, including multiple radars for the Ministry of Defence, Fire Control Systems (FCS) for BrahMos, ATE, naval systems for DRDO, and avionics for ADA and export contracts.

In FY23, DPIL raised ~INR5bn through a QIP. Of this, ~40% is being utilised for new product development in existing categories (radar, electronic warfare, communication systems, and avionics and satellite systems) and capex for expansion as the company sees itself as a major contender for contracts worth INR20–30bn over the next three–four years.

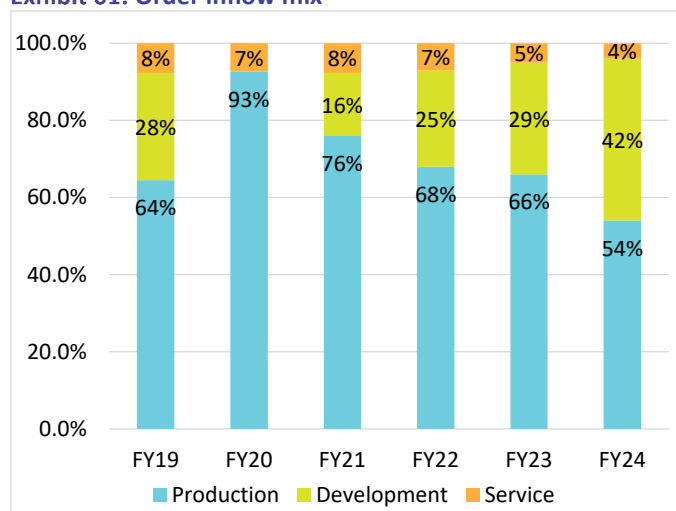
To keep up with its growing order book, DPIL has expanded its manufacturing facility and boosted its work force to 1,500-plus employees with more than 1,020 qualified engineers. DPIL has further capex plans of ~INR1.5bn for FY25–26E.

**Exhibit 60: Details of utilisation of QIP proceeds (INR bn)**

| Issue objective                                      | Amount to be utilized as per the prospectus | Utilization till 30th Dec, 2024 | Unutilized amount as on 30th Dec, 2024 |
|------------------------------------------------------|---------------------------------------------|---------------------------------|----------------------------------------|
| Working capital requirements                         | 1.68                                        | 1.68                            | -                                      |
| Investment in product development                    | 1.67                                        | 0.68                            | 1.00                                   |
| Prepayment or repayment of borrowings                | 0.25                                        | 0.25                            | -                                      |
| Capex towards setting up an EMI-EMC Testing Facility | 0.15                                        | 0.14                            | 0.02                                   |
| Acquisition of land (including building)             | 0.08                                        | 0.08                            | -                                      |
| General corporate purposes                           | 1.05                                        | 1.05                            | -                                      |
| <b>Total</b>                                         | <b>4.88</b>                                 | <b>3.87</b>                     | <b>1.01</b>                            |

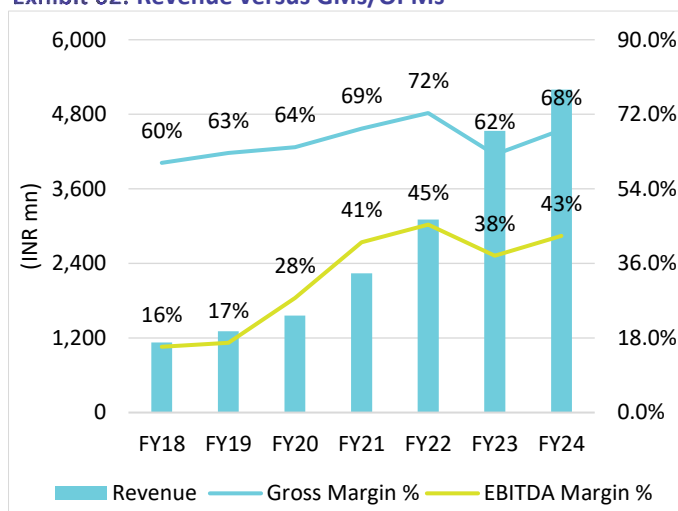
Source: Company

**Exhibit 61: Order inflow mix**



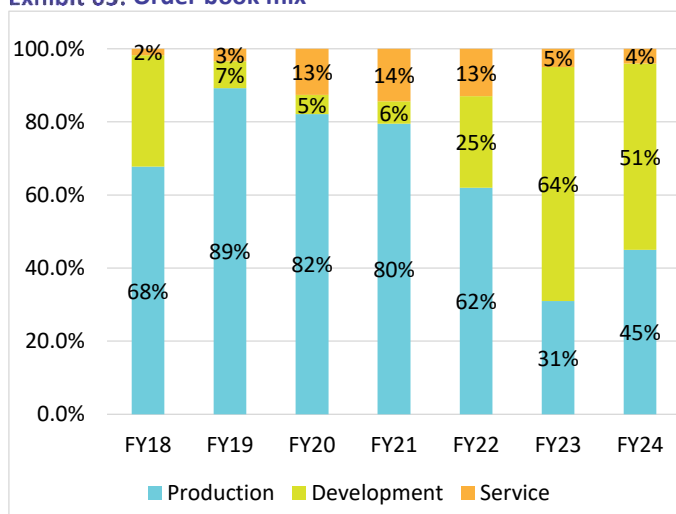
Source: Company, Nuvama Research

**Exhibit 62: Revenue versus GMs/OPMs**



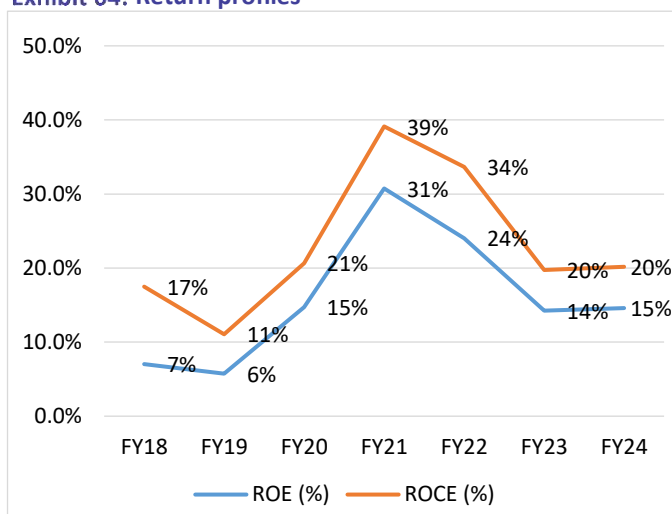
Source: Company, Nuvama Research

Exhibit 63: Order book mix



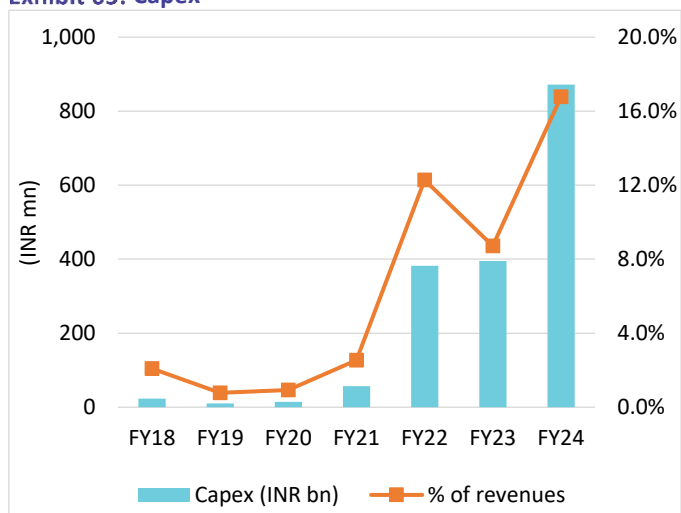
Source: Company, Nuvama Research

Exhibit 64: Return profiles



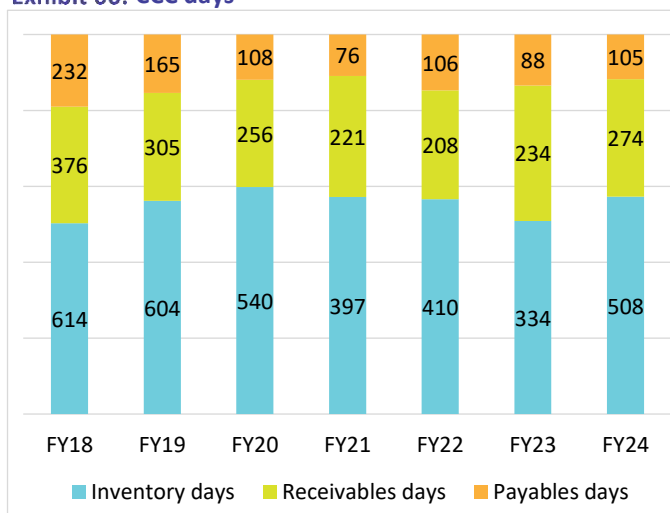
Source: Company, Nuvama Research

Exhibit 65: Capex



Source: Company, Nuvama Research

Exhibit 66: CCC days



Source: Company, Nuvama Research

## Management Overview

### **Mr Srinivasagopalan Rangarajan – Chairman & Managing Director**

Mr Rangarajan has been associated with Data Patterns since its inception in 1985. He is a Bachelor of Technology (Chemical Engineering) from the A.C. College of Technology, University of Madras, and a Master of Science from the Indian Institute of Technology, Madras. Mr Rangarajan has over three decades of experience in business development, corporate affairs, finance and marketing.

### **Mr Venkata Subramanian Venkatachalam – Chief Financial Officer**

Mr Venkatachalam is a Bachelor of Commerce from Madurai Kamaraj University. He is a fellow member of the Institute of the Chartered Accountants of India. Mr Venkatachalam has over two decades of experience in the finance sector, and he joined Data Patterns as Manager – Finance in November 2000.

### **Mr Vijay Ananth K – Whole Time Director, COO and CISO**

Mr Ananth K has 20-plus years of expertise in software engineering and product management. He is a BCS from Manomanian Sundaranar University and a Master of Computer Applications from the University of Madras. With more than two decades of association with Data Patterns, Mr Ananth K's extensive experience underscores his significant role in the organization.

Additional Data

Management

|             |                                   |
|-------------|-----------------------------------|
| Chairman/MD | Srinivasagopalan Rangarajan       |
| CFO         | Venkata Subramanian Venkatachalam |
| COO         | Vijay Ananth                      |
| CTO         | Desinguraja Parthasarthy          |
| Auditor     | Deloitte Haskins & Sells LLP      |

Holdings – Top 10\*

| % Holding         |      | % Holding       |      |
|-------------------|------|-----------------|------|
| Vanguard Group    | 1.91 | BlackRock Inc   | 0.83 |
| Tata AIA Life I   | 1.86 | Franklin Resour | 0.76 |
| Axis Asset Mana   | 1.26 | Kotak Mahindra  | 0.58 |
| Nippon Life Ind   | 0.97 | L&T Mutual Fund | 0.39 |
| Motilal Oswal AMC | 0.85 | HSBC Asset Mana | 0.33 |

\*Latest public data

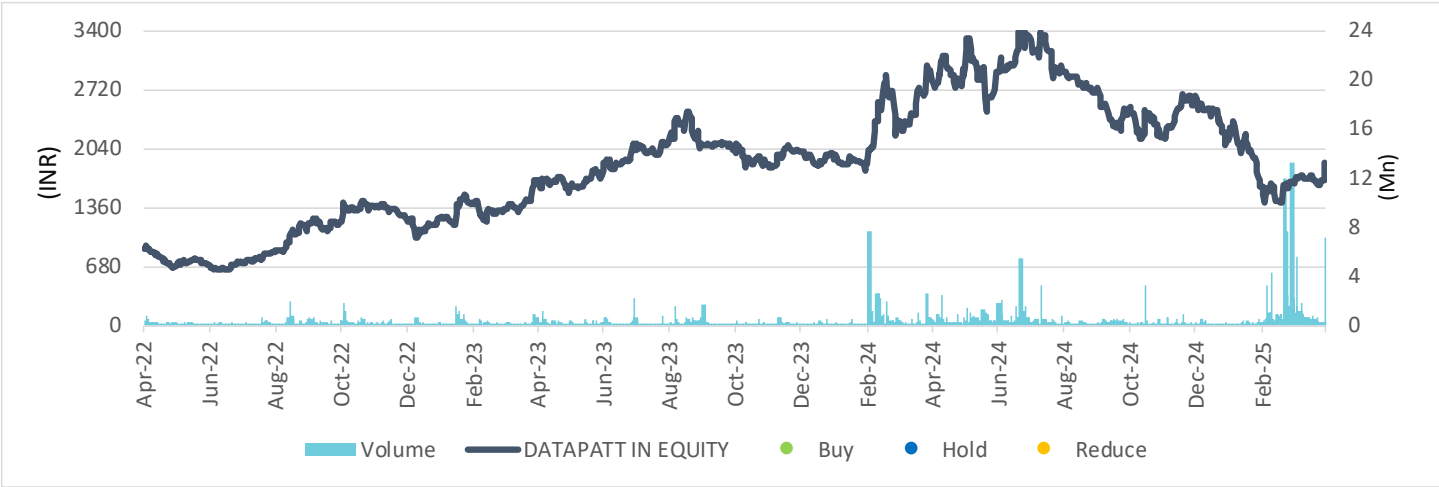
Recent Company Research

| Date | Title | Price | Reco |
|------|-------|-------|------|
|      |       |       |      |
|      |       |       |      |
|      |       |       |      |

Recent Sector Research

| Date      | Name of Co./Sector | Title                                                          |
|-----------|--------------------|----------------------------------------------------------------|
| 18-Feb-25 | Zen Technologies   | Muted results; OI ramp-up remains key as; <i>Result Update</i> |
| 07-Feb-25 | Solar Industries   | Positioning for future growth; <i>Result Update</i>            |
| 30-Jan-25 | Bharat Electronics | Befitting optimism on a growing giant; <i>Result Update</i>    |

Rating and Daily Volume Interpretation



Source: Bloomberg, Nuvama research

Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

# HINDUSTAN AERONAUTICS

## INITIATING COVERAGE

### KEY DATA

|                                  |              |
|----------------------------------|--------------|
| <b>Rating</b>                    | <b>BUY</b>   |
| Sector relative                  | Outperformer |
| Price (INR)                      | 4,210        |
| 12 month price target (INR)      | 5,150        |
| 52 Week High/Low                 | 5,675/3,046  |
| Market cap (INR bn/USD bn)       | 2,813/32.8   |
| Free float (%)                   | 25.8         |
| Avg. daily value traded (INR mn) | 9,042.6      |

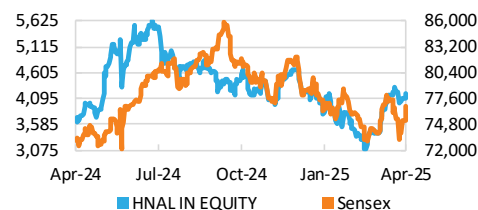
### SHAREHOLDING PATTERN

|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 71.64% | 71.64% | 71.64% |
| FII      | 12.26% | 11.85% | 12.42% |
| DII      | 8.13%  | 8.37%  | 9.58%  |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

### FINANCIALS

|                    | (INR mn) |          |          |          |
|--------------------|----------|----------|----------|----------|
| Year to March      | FY24A    | FY25E    | FY26E    | FY27E    |
| Revenue            | 3,03,808 | 3,04,000 | 3,68,552 | 4,83,300 |
| EBITDA             | 97,539   | 90,159   | 97,813   | 1,27,783 |
| Adjusted profit    | 75,950   | 78,892   | 82,916   | 98,395   |
| Diluted EPS (INR)  | 113.6    | 118.0    | 124.0    | 147.1    |
| EPS growth (%)     | 57.0     | 3.9      | 5.1      | 18.7     |
| RoAE (%)           | 28.9     | 25.1     | 22.6     | 22.9     |
| P/E (x)            | 37.1     | 35.7     | 34.0     | 28.6     |
| EV/EBITDA (x)      | 26.2     | 27.8     | 26.3     | 20.7     |
| Dividend yield (%) | 0.8      | 1.1      | 0.9      | 1.0      |

### PRICE PERFORMANCE



## A giant air-borne

Hindustan Aeronautics (HNAL) specialises in manufacturing fighter jets/combat helicopters and [ROH services](#), and boasts a near monopoly in the Indian aerospace and defence industry. A staggering order backlog of [INR1.84tn](#) and pipeline of [~INR4.4tn](#) (LCA Mk-IA and Mk-II, IMRH, AMCA) imply growth can stay durably air-borne.

Initiating coverage at 'BUY' building in a revenue/EBITDA/EPS CAGR of 26%/19%/12% over FY25E–27E. We reckon a higher product sales mix (~60% in FY27E versus ~46% in FY24), upcoming capex (INR150bn over three–five years) and inventories/receivables' build-up to yield a lower RoE of ~23%. We value HNAL at 35x (monopoly-led scarcity premium; 12.5% discount to BEL) FY27E EPS, yielding a TP of INR5,150.

### IAF's shortfall, HNAL's rising backlog/pipeline lend growth visibility

Time overruns in delivering Tejas Mark1A to the IAF owing to supply-chain-driven delays in GE-404 engines is worrisome, but the issue now seems to be behind given [GE has started deliveries](#). The [IAF faces a critical shortfall](#) in its fleet due to delays in LCA Mark1A, LCA Mark2, MRFA, AMCA and other programmes, particularly in the face of increasing defence technology one-upmanship from the China-Pak duo. Meanwhile, China and US are said to be working on their 6<sup>th</sup> gen stealth fighters while the IAF's fleet is still made up of 4/4.5<sup>th</sup> gen fighters. Fast-tracking India's ambitious large fighter jets/combat helicopters programmes is, hence, imperative.

We argue HNAL needs to ramp up localisation efforts (via domestic tie-ups, in-house production expansion, strategic transfer of technology (ToT) partnerships) and hire talented/experienced engineers to meet the IAF's requirements without losing more time. The company has 20-plus production/overhaul divisions and ten-plus R&D centres co-located with production divisions across the country. Over the last few decades, HNAL has developed robust fully integrated production capabilities in order to operate across the value chain of aviation production and continuously improve its product portfolio. However, the production is currently contingent on fighter jet engines and other critical components from foreign OEMs. [Exhibits 41–43](#) give a snapshot of HNAL's diverse product portfolio and supplier profiles.

In this context, it is critical for HNAL to adapt to technological advancements and absorb imported technologies via accelerated and enlarged R&D ([exhibit 27](#)).

### Increasing product mix powering growth; initiate at 'BUY'

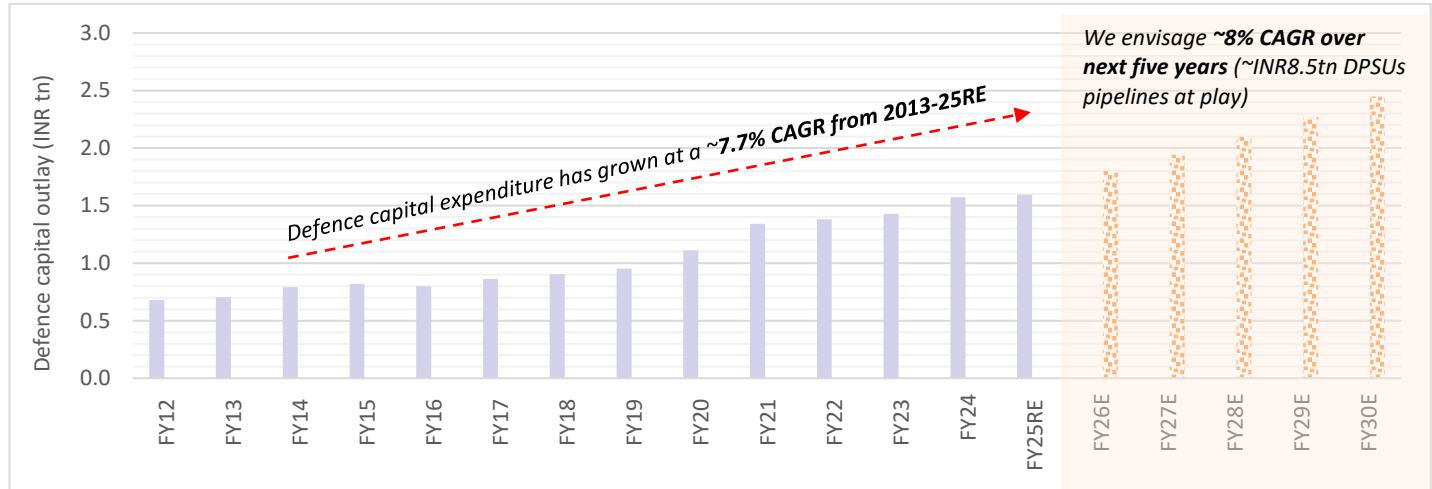
We estimate HNAL's revenue/EBITDA/EPS CAGR would be 26%/19%/12% over FY25E–27E driven by strong execution of its INR1.84tn backlog. We reckon HNAL would speed up product deliveries (LCA Mk1A, LCH, ALH, RD-33 and AL-31 engines), particularly in the wake of a subdued execution phase of about two years due to supply chain bottlenecks. All in all, we value HNAL at a PE of 35x (~12.5% discount to BEL at 40x) FY27E EPS of INR147.1, yielding a TP of INR5,150 (22.3% upside).

**Key risks:** Reduced defence spending by GoI, order/execution delays, OPM pressure due to a rising product mix and increased competition from the private sector.



## The Story in Charts

Exhibit 1: USD130bn opportunity over next five years (INR8.5–9tn + DPSUs' pipeline at play)



Source: Nuvama Research. Note: We have included HNAL, BEL, MDL and CSL pipelines in our thesis. Modelled in USDINR at 84.

Exhibit 2: IAF's current and planned fighter jet fleet

| Aircraft                    | Procured from         | Generation | Type            | Engine         | Fleet size | Phase out plan    |
|-----------------------------|-----------------------|------------|-----------------|----------------|------------|-------------------|
| IAF Fighter fleet (Current) |                       |            |                 |                |            |                   |
| MiG-21                      | Soviet Union          | 3rd Gen    | Fighter         | Tumanskii R-25 | 36         | 2025              |
| Mirage 2000                 | France                | 4th Gen    | Multirole       | SNECMA M53     | 36         | 2040              |
| MiG-29                      | Russia                | 4th Gen    | Multirole       | Klimov RD-33   | 54         | 2035              |
| Jaguar DARIN III            | United Kingdom        | 4th Gen    | Ground Attack   | Adour 804E/811 | 108        | 2030              |
| Dassault Rafale             | France                | 4.5 Gen    | Multirole       | Safran M88     | 36         | -                 |
| HAL Tejas Mk1               | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 36         | -                 |
| Sukhoi Su-30MKI             | Russia                | 4.5 Gen    | Multirole       | AL-31 FP       | 260        | -                 |
| Total                       |                       |            |                 |                | 566        |                   |
| Aircraft                    | Procured from         | Generation | Type            | Engine         | Fleet size | Induction         |
| IAF Fighter fleet (Planned) |                       |            |                 |                |            |                   |
| HAL Tejas Mk1A              | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 83         | 2025 onwards      |
| HAL Tejas Mk1A              | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 97         | 2032 onwards      |
| HAL Tejas Mk2               | Indigenous production | 4.5 Gen    | Multirole       | GE-414         | 120        | 2035 onwards      |
| AMCA                        | Indigenous production | 5th Gen    | Stealth fighter | -              | 126        | 2035 onwards      |
| MRFA (SU-57/F-35)           | US/Russia             | 5th Gen    | Stealth fighter | -              | 110        | Ordering 2025/26E |
| Total                       |                       |            |                 |                | 536        |                   |

Source: Nuvama Research

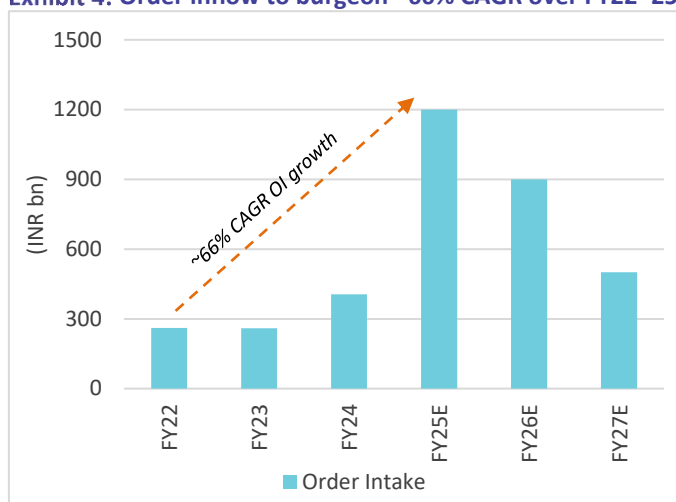
Exhibit 3: HNAL's ~INR4.4tn pipeline

| Hindustan Aeronautics Limited (2025–35)    |       |               |                      |
|--------------------------------------------|-------|---------------|----------------------|
| Platforms                                  | Units | Cost (INR bn) | Expected Timeline    |
| <b>Helicopters</b>                         |       |               |                      |
| Light Utility Helicopters (LUH)            | 213   | 266           | Spread over a decade |
| Light Combat Helicopters (LCH) *           | 156   | 627           | Order received       |
| Advanced Light Helicopter (ALH)            | 37    | 88            | FY26-27              |
| Naval Utility Helicopter (NUH)             | 111   | 217           | FY25-26              |
| Indian Multi-Role Helicopter (IMRH)/ DBMRH | 314   | 942           | FY28-29              |
| <b>Aircraft</b>                            |       |               |                      |
| Light Combat Aircraft (LCA) Mark 1A        | 97    | 650           | FY25-26              |
| Light Combat Aircraft (LCA) Mark 2         | 120   | 960           | FY29-30              |
| Sukhoi-30 MKI *                            | 12    | 135           | Order received       |
| Dornier-228 Mid Life Upgrade *             | 25    | 29            | Order received       |
| Advanced Medium Combat Aircraft (AMCA)     | 126   | 1,134         | FY34-35              |
| Twin Engine Deck Based Fighter (TEDBF)     | 45    | 140           | FY32-33              |
| <b>Engine</b>                              |       |               |                      |
| AL-31 FP *                                 | 240   | 260           | Order received       |
| <b>Total opportunity</b>                   |       | <b>4,397</b>  |                      |

Source: Company, Nuvama Research, \*Orders received

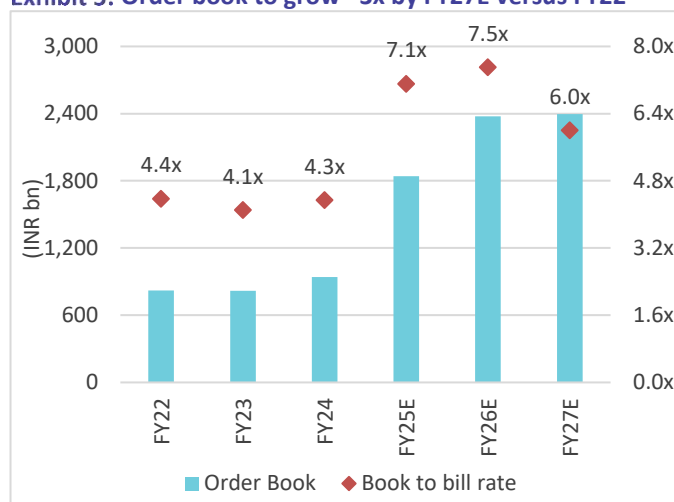
# HINDUSTAN AERONAUTICS

**Exhibit 4: Order inflow to burgeon ~66% CAGR over FY22–25E**



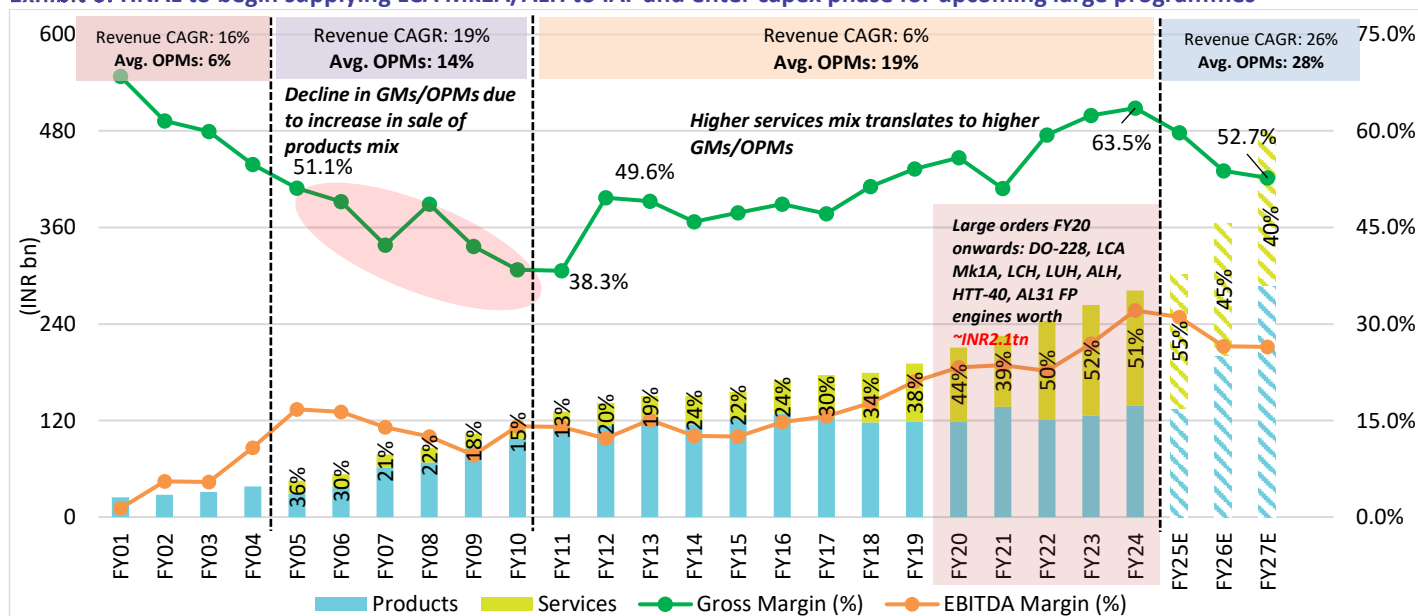
Source: Company, Nuvama Research

**Exhibit 5: Order book to grow ~3x by FY27E versus FY22**



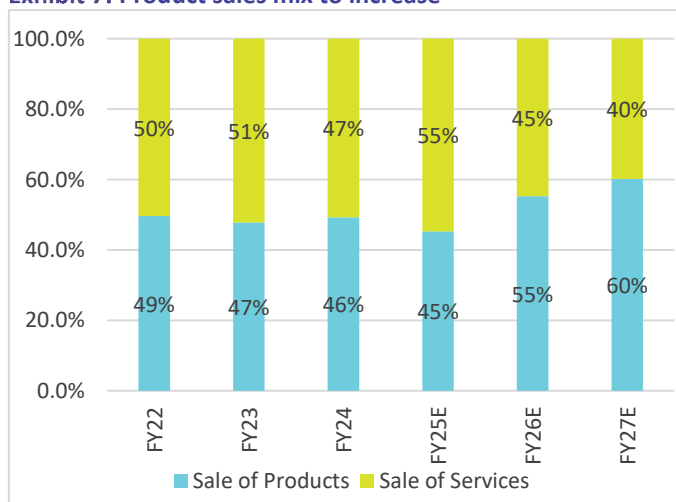
Source: Company, Nuvama Research

**Exhibit 6: HNAL to begin supplying LCA Mk1A/ALH to IAF and enter capex phase for upcoming large programmes**



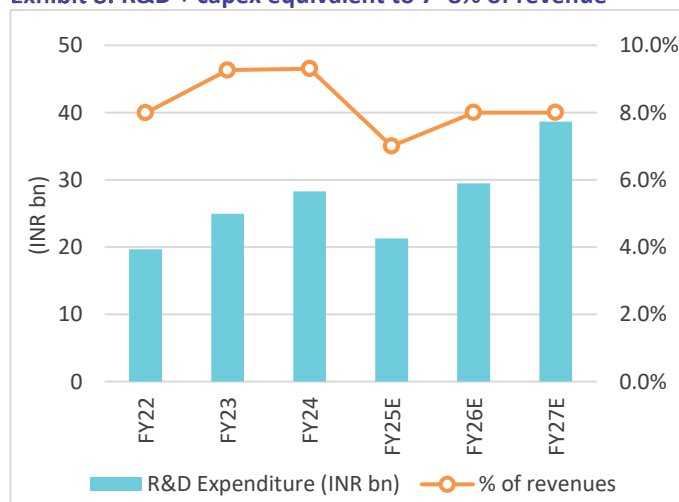
Source: Company, Nuvama Research

**Exhibit 7: Product sales mix to increase**



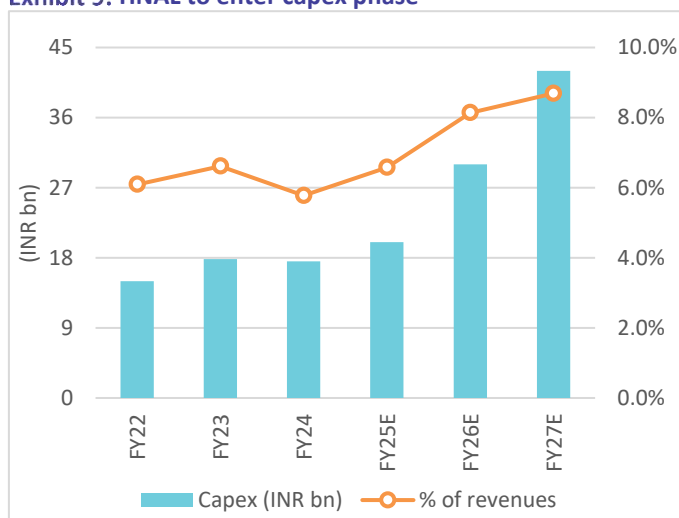
Source: Company, Nuvama Research

**Exhibit 8: R&D + capex equivalent to 7–8% of revenue**



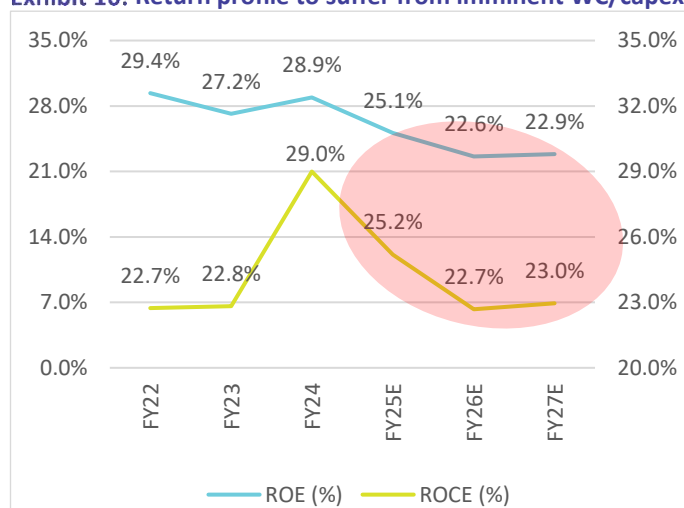
Source: Company, Nuvama Research

**Exhibit 9: HNAL to enter capex phase**



Source: Company, Nuvama Research

**Exhibit 10: Return profile to suffer from imminent WC/capex**



Source: Company, Nuvama Research

**Exhibit 11: Nuvama Base case: We envisage ~12% EPS CAGR over FY25E–27E**

| FY25E-27E                 | Bear case    | Base case    | Bull case    |
|---------------------------|--------------|--------------|--------------|
| Revenues CAGR             | 16.0%        | 26.1%        | 31.9%        |
| Avg. OPMs                 | 27.1%        | 27.5%        | 27.7%        |
| FY27E OPM                 | 25.5%        | 26.4%        | 27.0%        |
| EPS CAGR                  | -0.8%        | 11.7%        | 15.9%        |
| FY27E EPS                 | 116.2        | 147.1        | 158.4        |
| FY27 target multiple (x)  | 35.0         | 35.0         | 35.0         |
| <b>Price Target (INR)</b> | <b>4,066</b> | <b>5,150</b> | <b>5,545</b> |
| Upside/Downside           | -3.4%        | 22.3%        | 31.7%        |

Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 12: FY27E EPS sensitivity**

|                |       | Revenue CAGR (FY25E–27E) |       |       |       |       |
|----------------|-------|--------------------------|-------|-------|-------|-------|
|                |       | 15.0%                    | 18.0% | 21.0% | 25.0% | 30.0% |
| FY27E OPMs (%) | 25.0% | 123.9                    | 130.5 | 137.3 | 146.6 | 158.6 |
|                | 26.0% | 128.9                    | 135.8 | 142.8 | 152.5 | 165.0 |
|                | 27.0% | 133.9                    | 141.1 | 148.4 | 158.4 | 171.4 |
|                | 28.5% | 141.5                    | 149.0 | 156.7 | 167.3 | 181.1 |
|                | 30.0% | 149.0                    | 156.9 | 165.0 | 176.2 | 190.7 |

Source: Company, Nuvama Research

## Financial Statements

### Income Statement (INR mn)

| Year to March          | FY24A    | FY25E    | FY26E    | FY27E    |
|------------------------|----------|----------|----------|----------|
| Total operating income | 3,03,808 | 3,04,000 | 3,68,552 | 4,83,300 |
| Gross profit           | 1,93,049 | 1,78,813 | 1,98,281 | 2,54,699 |
| Employee costs         | 52,762   | 51,680   | 58,968   | 74,911   |
| Other expenses         | 15,277   | 15,200   | 18,428   | 24,165   |
| EBITDA                 | 97,539   | 90,159   | 97,813   | 1,27,783 |
| Depreciation           | 14,214   | 11,452   | 15,002   | 18,470   |
| Less: Interest expense | 321      | 321      | 389      | 510      |
| Add: Other income      | 18,985   | 26,802   | 28,133   | 22,390   |
| Profit before tax      | 1,01,990 | 1,05,189 | 1,10,555 | 1,31,194 |
| Prov for tax           | 26,039   | 26,297   | 27,639   | 32,798   |
| Less: Other adj        | 0        | 0        | 0        | 0        |
| Reported profit        | 75,950   | 78,892   | 82,916   | 98,395   |
| Less: Excp.item (net)  | 0        | 0        | 0        | 0        |
| Adjusted profit        | 75,950   | 78,892   | 82,916   | 98,395   |
| Diluted shares o/s     | 669      | 669      | 669      | 669      |
| Adjusted diluted EPS   | 113.6    | 118.0    | 124.0    | 147.1    |
| DPS (INR)              | 35.0     | 47.2     | 37.2     | 44.1     |
| Tax rate (%)           | 25.5     | 25.0     | 25.0     | 25.0     |

### Important Ratios (%)

| Year to March            | FY24A | FY25E | FY26E | FY27E |
|--------------------------|-------|-------|-------|-------|
| COGS (% of rev)          | 36.5  | 41.2  | 46.2  | 47.3  |
| Employee cost (% of rev) | 17.4  | 17.0  | 16.0  | 15.5  |
| Other exp (% of rev)     | 5.0   | 5.0   | 5.0   | 5.0   |
| EBITDA margin (%)        | 32.1  | 29.7  | 26.5  | 26.4  |
| Net profit margin (%)    | 25.0  | 26.0  | 22.5  | 20.4  |
| Revenue growth (% YoY)   | 12.8  | 0.1   | 21.2  | 31.1  |
| EBITDA growth (% YoY)    | 34.3  | (7.6) | 8.5   | 30.6  |
| Adj. profit growth (%)   | 57.0  | 3.9   | 5.1   | 18.7  |

### Assumptions (%)

| Year to March         | FY24A      | FY25E      | FY26E      | FY27E      |
|-----------------------|------------|------------|------------|------------|
| GDP (YoY %)           | 5.5        | 6.3        | 6.3        | 6.3        |
| Repo rate (%)         | 6.0        | 5.3        | 5.3        | 5.3        |
| USD/INR (average)     | 84.0       | 82.0       | 82.0       | 82.0       |
| Domestic rev gwth (%) | 12.8       | 0.1        | 21.2       | 31.1       |
| Exports rev gwth (%)  | 55.9       | 196.2      | (25.0)     | (44.4)     |
| Gross margin (%)      | 63.5       | 58.8       | 53.8       | 52.7       |
| EBITDA margin (%)     | 32.1       | 29.7       | 26.5       | 26.4       |
| Tax rate (%)          | 25.5       | 25.0       | 25.0       | 25.0       |
| Capex (INR mn)        | (17,549.0) | (20,000.0) | (30,000.0) | (42,000.0) |

### Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 37.1  | 35.7  | 34.0  | 28.6  |
| Price/BV (x)       | 9.7   | 8.3   | 7.1   | 6.1   |
| EV/EBITDA (x)      | 26.2  | 27.8  | 26.3  | 20.7  |
| Dividend yield (%) | 0.8   | 1.1   | 0.9   | 1.0   |

Source: Company and Nuvama estimates

### Balance Sheet (INR mn)

| Year to March        | FY24A    | FY25E    | FY26E    | FY27E    |
|----------------------|----------|----------|----------|----------|
| Share capital        | 3,344    | 3,344    | 3,344    | 3,344    |
| Reserves             | 2,87,120 | 3,34,455 | 3,92,497 | 4,61,373 |
| Shareholders funds   | 2,90,464 | 3,37,799 | 3,95,840 | 4,64,717 |
| Minority interest    | 0        | 0        | 0        | 0        |
| Borrowings           | 0        | 0        | 0        | 0        |
| Trade payables       | 34,147   | 34,298   | 46,650   | 62,630   |
| Other liabs & prov   | 4,55,226 | 4,55,226 | 4,55,226 | 4,55,226 |
| Total liabilities    | 7,79,837 | 8,27,323 | 8,97,716 | 9,82,574 |
| Net block            | 67,300   | 75,848   | 90,846   | 1,14,376 |
| Intangible assets    | 0        | 0        | 0        | 0        |
| Capital WIP          | 24,923   | 24,923   | 24,923   | 24,923   |
| Total fixed assets   | 92,224   | 1,00,772 | 1,15,769 | 1,39,299 |
| Non current inv      | 14,971   | 14,971   | 14,971   | 14,971   |
| Cash/cash equivalent | 2,64,218 | 3,06,553 | 2,40,918 | 1,65,754 |
| Sundry debtors       | 1,65,106 | 1,49,918 | 1,81,752 | 2,38,340 |
| Loans & advances     | 96,516   | 96,516   | 96,516   | 96,516   |
| Other assets         | 1,54,374 | 1,66,166 | 2,55,363 | 3,35,267 |
| Total assets         | 7,79,837 | 8,27,323 | 8,97,716 | 9,82,574 |

### Free Cash Flow (INR mn)

| Year to March         | FY24A    | FY25E    | FY26E      | FY27E      |
|-----------------------|----------|----------|------------|------------|
| Reported profit       | 82,296   | 78,892   | 82,916     | 98,395     |
| Add: Depreciation     | 14,214   | 11,452   | 15,002     | 18,470     |
| Interest (net of tax) | (16,020) | (26,481) | (27,745)   | (21,880)   |
| Others                | 58,040   | 0        | 0          | 0          |
| Less: Changes in WC   | (56,273) | 3,548    | (1,08,679) | (1,20,511) |
| Operating cash flow   | 82,257   | 67,410   | (38,505)   | (25,526)   |
| Less: Capex           | 17,549   | 20,000   | 30,000     | 42,000     |
| Free cash flow        | 64,708   | 47,410   | (68,505)   | (67,526)   |

### Key Ratios

| Year to March         | FY24A  | FY25E  | FY26E | FY27E |
|-----------------------|--------|--------|-------|-------|
| RoE (%)               | 28.9   | 25.1   | 22.6  | 22.9  |
| RoCE (%)              | 38.9   | 33.6   | 30.2  | 30.6  |
| Inventory days        | 418    | 403    | 404   | 436   |
| Receivable days       | 184    | 189    | 164   | 159   |
| Payable days          | 108    | 100    | 87    | 87    |
| Working cap (% sales) | (31.4) | (32.6) | 2.6   | 26.9  |
| Gross debt/equity (x) | 0      | 0      | 0     | 0     |
| Net debt/equity (x)   | (0.9)  | (0.9)  | (0.6) | (0.4) |
| Interest coverage (x) | 260.0  | 245.4  | 213.0 | 214.4 |

### Valuation Drivers

| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 57.0  | 3.9   | 5.1   | 18.7  |
| RoE (%)           | 28.9  | 25.1  | 22.6  | 22.9  |
| EBITDA growth (%) | 34.3  | (7.6) | 8.5   | 30.6  |
| Payout ratio (%)  | 30.8  | 40.0  | 30.0  | 30.0  |

## Investment Rationale

- **Global military superpowers on the offensive:** China has deployed 5th-gen J-20 fighters near Indian borders and Pakistan is seeking 5th-gen J-35A jets. Global superpowers too are advancing next-gen aircraft: *US: 6th-gen NGAD; Europe: building 6th-gen FCAS and Tempest; and Russia: upgrading 5th-gen Su-57.*
- **IAF's squadron shortage:** India's 5th-gen AMCA remains in early development, and is unlikely to be operational before 2035. Relying on its [current fleet](#) of 4th-gen and 4.5-gen aircraft (Su-30MKI, Rafale, Tejas) leaves India in dire need for stealth, advanced sensor fusion and next-gen fighter jets. With adversaries rapidly modernising, accelerating the development of indigenous fighter jets along with expansion of current fleet size remains the need of the hour.
- **Rising exigency for new fighter jets:** Given the IAF is operating with only 31 squadrons versus 42 authorised, not to mention impending retirement of aging jets (MiG-21, MiG-29, Mirage-2000, Jaguar) over the next decade, accelerated induction of fighter jets is urgent, to say the least. Timely delivery of LCA Mk1A, speedy progress on futuristic programmes such as LCA Tejas Mk2, AMCA, IMRH and modernisation of existing fleet (to expand lifespans, making them combat-ready) are critical to strengthening India's airpower ([Nuvama scenario analysis](#)).
- **Growing backlog (~INR1.8tn) and staggering pipeline (~INR4.4tn):** HNAL, the biggest Indian aerospace & defence manufacturer, is poised to capitalise on the decade-long opportunity (~USD130bn) with a staggering pipeline of [~INR4.4tn](#) plus, over and above its ~INR1.84tn backlog (6x FY25E sales). With minimal/no competition in the combat aircraft space in India, HNAL remains the chief integrator/supplier of fighter jets, combat helicopters to Indian armed forces.
- **Outlook and valuation: Delays, not derailment; initiate at 'BUY':** We expect product deliveries (LCA Mk1A, LCH, RD-33 engines, etc.) to 'take off' after a subdued execution phase of ~two years of supply chain bottlenecks. We reckon in a revenue/EBITDA/EPS CAGR of ~26%/19%/12% over FY25E–27E. Valuing the stock at 35x (~12.5% discount to BEL at 40x) FY27E EPS of INR147.1 yields a TP of INR5,150 (22.3% upside); initiate at 'BUY'.

### Defence indigenisation: Cornerstone of India's self-reliance mission

India's dedication to self-reliance, or 'Aatmanirbharta', in the defence sector is underscored by its evolution from being the world's second-largest arms importer to a burgeoning hub for local production. Fuelled by the GoI/MoD's strategic initiatives to reshape India's positioning from being a sub-systems/components supplier to a one-stop-shop offering turnkey solutions, the sector is poised for fast growth and lucrative order flow opportunities across the value chain considering the MoD's **target of INR500bn in defence exports and INR3tn in defence production by 2030.**

India continues to depend on foreign OEMs for critical defence components as Russia still accounts for 50%-plus of India's total defence imports to meet its growing demand, followed by other countries such as France, Israel, US and South Korea. That said, we find heightened geopolitical uncertainty (Europe, Middle East, East Asia) disrupting global supply chains shall drive India to ascribe even greater importance to localisation in the years to come. This implies a golden pipeline of **~USD130bn for India's defence industry.**

India's defence capex for FY26BE is INR1.8tn versus INR1.4tn in FY22 as defence capex (actuals) has expanded at a CAGR of 7–8% over the last five–six years. Breaking down the capital outlay of past five years, the Indian Air Force accounted for 42–45%, followed by the Indian Navy at 30–35%.

**Exhibit 13: Defence capital outlay sensitivity**

| USDbn                                      |       | Defence capex as a % of GDP |       |       |       |       |
|--------------------------------------------|-------|-----------------------------|-------|-------|-------|-------|
| Defence capex as % of central capex outlay |       | 1.5%                        | 2.0%  | 2.5%  | 3.0%  | 4.0%  |
|                                            | 15.0% | ☆ 101                       | ☆ 115 | ☆ 130 | ★ 144 | ★ 172 |
|                                            | 17.5% | ☆ 111                       | ★ 125 | ★ 139 | ★ 154 | ★ 182 |
|                                            | 20.0% | ☆ 120                       | ★ 135 | ★ 149 | ★ 163 | ★ 192 |
|                                            | 22.5% | ☆ 130                       | ★ 144 | ★ 159 | ★ 173 | ★ 201 |
|                                            | 25.0% | ★ 140                       | ★ 154 | ★ 168 | ★ 183 | ★ 211 |

Source: Budget Docs, Nuvama Research

## India's fighter strength depletion: A grave impediment for IAF

As much as indigenisation is crucial for the Indian defence sector, we believe the depleting fighter aircraft fleet is a huge 'blockade' for the Indian Air Force and thus precarious for the country's security given rising geopolitical uncertainties and tough neighbours. What historically has been a 'two and a half front war' with China on the northern front and Pakistan on the west could potentially become a possible 'three and a half front' situation—with Bangladesh on the eastern side.

**Exhibit 14: Military strength ranking across top defence nations**

| (Nos)                      | China     | Pakistan | India     | Russia    | USA       | Israel   |
|----------------------------|-----------|----------|-----------|-----------|-----------|----------|
| Active Frontline Personnel | 20,35,000 | 6,54,000 | 14,55,550 | 13,20,000 | 13,28,000 | 1,70,000 |
| <b>Land System</b>         |           |          |           |           |           |          |
| Tanks                      | 6,800     | 2,627    | 4,201     | 5,750     | 4,640     | 1,300    |
| Armoured Vehicles          | 1,44,017  | 17,516   | 1,48,594  | 1,31,527  | 3,91,963  | 35,985   |
| Self-Propelled Artillery   | 3,490     | 662      | 100       | 5,168     | 671       | 352      |
| Towed Artillery            | 1,000     | 2,629    | 3,975     | 8,505     | 1,212     | 171      |
| Mobile Rocket Projectors   | 2,750     | 600      | 264       | 3,005     | 641       | 183      |
| <b>Air Power</b>           |           |          |           |           |           |          |
| Total Aircraft             | 3,309     | 1,399    | 2,229     | 4,292     | 13,043    | 611      |
| Fighter Aircraft           | 1,212     | 328      | 513       | 833       | 1,790     | 240      |
| Dedicated Attack           | 371       | 90       | 130       | 689       | 889       | 38       |
| Transport                  | 289       | 64       | 270       | 456       | 918       | 13       |
| Trainer Aircraft           | 402       | 565      | 351       | 611       | 2,647     | 159      |
| Special Mission Aircraft   | 112       | 27       | 74        | 141       | 647       | 19       |
| Helicopters                | 913       | 373      | 899       | 1,651     | 5,843     | 147      |
| Attack Helicopters         | 281       | 57       | 80        | 557       | 1,002     | 48       |
| <b>Naval Power</b>         |           |          |           |           |           |          |
| Total Naval Fleet Strength | 754       | 121      | 293       | 419       | 440       | 62       |
| Aircraft carriers          | 3         | -        | 2         | 1         | 11        | -        |
| Helicopter Carriers        | 4         | -        | -         | -         | 9         | -        |
| Submarine                  | 61        | 8        | 18        | 63        | 70        | 5        |
| Destroyers                 | 50        | -        | 13        | 10        | 81        | -        |
| Frigates                   | 47        | 9        | 14        | 12        | -         | -        |
| Corvettes                  | 72        | 9        | 18        | 83        | 23        | 7        |
| Patrol Vessel              | 150       | 69       | 135       | 123       | 0         | 46       |
| Mine Warfare               | 36        | 3        | -         | 47        | 8         | -        |

Source: Global Firepower, Nuvama Research



The Indian Air Force (IAF) is grappling with a critical shortfall in fighter fleet due to delays in key programmes such as the LCA Mark 1A, LCA Mark 2, MRFA, AMCA and others. Meanwhile, the threat from the China-Pakistan alliance is growing rapidly. Some media reports indicate that China is actively developing a 6th-gen stealth fighter while Pakistan is set to receive 40 advanced J-35A stealth jets from China over the next one–two years. Additionally, the US has approved ~USD400mn for maintenance and upgrade of Pakistan’s existing F-16 fleet.

Global superpowers have the latest fighter jets: US operates the 5<sup>th</sup>-gen F-22 Raptor and F-35 Lightning II while China operates the J-20 and Russia has the Su-57. Furthermore, Turkey is developing the TF-X (KAAN) and South Korea, in collaboration with Indonesia, is advancing the KF-21 Boramae. Japan is developing the F-X while European nations are pursuing two separate programmes: the Tempest (led by the UK, Italy and Japan) and the FCAS (a joint effort by France, Germany and Spain). Most of these projects aim for deployment in the 2030s, with European programs targeting the 2040s.

The sluggish induction of the LCA Mark 1A Tejas and delayed development of the 5<sup>th</sup>-gen AMCA could have a cascading impact on India’s other major aircraft programs in the near to medium term, in our view. With the IAF currently operating only ~[31 squadrons](#) (against the required 42), the modernisation of its existing fleet emerges as the most viable and immediate solution. As India pursues parallel advancements in indigenous fighter programmes, the emphasis on self-reliance remains a clear strategic directive from the Gol.

**Exhibit 15: IAF’s current fighter jet fleet**

| Aircraft                    | Procured from         | Generation | Type            | Engine         | Fleet size | Phase out plan    |
|-----------------------------|-----------------------|------------|-----------------|----------------|------------|-------------------|
| IAF Fighter fleet (Current) |                       |            |                 |                |            |                   |
| MiG-21                      | Soviet Union          | 3rd Gen    | Fighter         | Tumanskii R-25 | 36         | 2025              |
| Mirage 2000                 | France                | 4th Gen    | Multirole       | SNECMA M53     | 36         | 2040              |
| MiG-29                      | Russia                | 4th Gen    | Multirole       | Klimov RD-33   | 54         | 2035              |
| Jaguar DARIN III            | United Kingdom        | 4th Gen    | Ground Attack   | Adour 804E/811 | 108        | 2030              |
| Dassault Rafale             | France                | 4.5 Gen    | Multirole       | Safran M88     | 36         | -                 |
| HAL Tejas Mk1               | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 36         | -                 |
| Sukhoi Su-30MKI             | Russia                | 4.5 Gen    | Multirole       | AL-31 FP       | 260        | -                 |
| Total                       |                       |            |                 |                | 566        |                   |
| Aircraft                    | Procured from         | Generation | Type            | Engine         | Fleet size | Induction         |
| IAF Fighter fleet (Planned) |                       |            |                 |                |            |                   |
| HAL Tejas Mk1A              | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 83         | 2025 onwards      |
| HAL Tejas Mk1A              | Indigenous production | 4.5 Gen    | Multirole       | GE-404         | 97         | 2032 onwards      |
| HAL Tejas Mk2               | Indigenous production | 4.5 Gen    | Multirole       | GE-414         | 120        | 2035 onwards      |
| AMCA                        | Indigenous production | 5th Gen    | Stealth fighter | -              | 126        | 2035 onwards      |
| MRFA (SU-57/F-35)           | US/Russia             | 5th Gen    | Stealth fighter | -              | 110        | Ordering 2025/26E |
| Total                       |                       |            |                 |                | 536        |                   |

Source: Nuvama Research

**Bear case:** Slow MRFA induction. AMCA and LCA Mk2 fail to materialise.

**Base case:** No AMCA. Assuming MRFA and LCA Mk2 materialise.

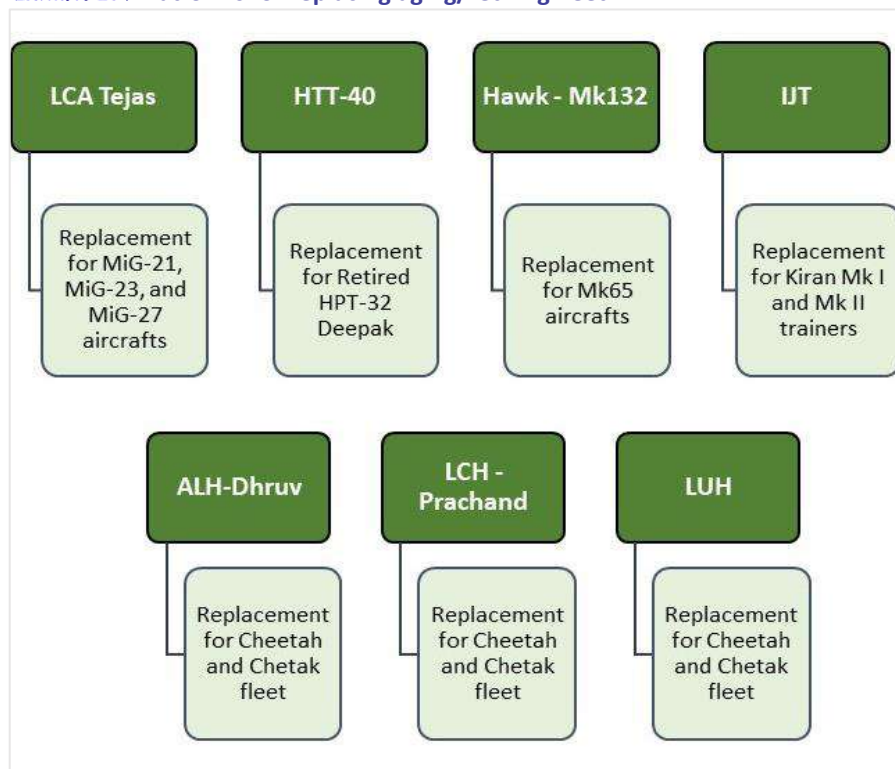
**Bull case:** Assuming all major programmes—MRFA, AMCA, LCA Mk2 execute timely.

**Exhibit 16: Nuvama scenario analysis of Indian Air force combat aircraft fleet**



Source: Nuvama Research

**Exhibit 17: Platforms for replacing aging/retiring fleet**



Source: Company, Nuvama Research

## Why HNAL; what is in it?

HNAL is one of the primary beneficiaries of India's defence capital outlay leveraging indigenous production and strategic ToT tie-ups. We believe HNAL's leadership in the Indian combat production market along with strong GoI support lends the company an edge.

- Macro tailwinds, both domestically (envisage ~USD130bn defence opportunity over the next five years) and internationally (rising geopolitical uncertainties opening up export opportunities for India, especially with respect to NATO), have put HNAL in a sweet spot to benefit from these long-term opportunities.
- HNAL's strategic collaborations with global aerospace leaders (General Electric, Boeing, Dassault, Rosoboronexport, Rolls-Royce, etc) to acquire advanced technologies has strengthened its manufacturing capabilities, enabling indigenous production.
- With 10-plus R&D centres, HNAL is investing heavily in research to build on its indigenous portfolio. HNAL's R&D expenditure is among the highest in the industry at 7–8% of revenue on average.
- Expanding into the non-defence sector through civil aircraft, MRO services and UAVs, leveraging its aerospace expertise for commercial applications.
- The delivery of large platforms is likely to gain momentum over the next two–three years. As a result, we anticipate a strong revenue growth trajectory, accelerating to a robust 25%-plus CAGR over FY25E–27E.

While supplies of the GE-404 engines has resumed for LCA Tejas, there could still be slight delays in subsequent engine deliveries (we reckon in ten Tejas deliveries in FY26E)—but no derailment of HNAL's long-term structural story. We expect the company to deliver an earnings CAGR of ~12% (FY25E–27E) given our expectations of execution ramp-up of large programmes in its order book over the next few years. Industry dynamics appear to be in favour of HNAL due to its monopolistic position along with the GoI's indigenisation initiatives towards procurement/modernisation in the defence sector.

In all, we initiate coverage on Hindustan Aeronautics (HNAL) at **'BUY'**, valuing the stock at 35x FY27E EPS of INR147.1, which yields a TP of INR5,150 in our base case.

**Key risks:** *Reduced defence spending by GoI, order/execution delays, OPM pressure due to higher product mix and increased competition from private sector.*

## Exhibit 18: Nuvama Base case: We envisage ~12% EPS CAGR over FY25E–27E

| FY25E-27E                 | Bear case    | Base case    | Bull case    |
|---------------------------|--------------|--------------|--------------|
| Revenues CAGR             | 16.0%        | 26.1%        | 31.9%        |
| Avg. OPMs                 | 27.1%        | 27.5%        | 27.7%        |
| FY27E OPM                 | 25.5%        | 26.4%        | 27.0%        |
| EPS CAGR                  | -0.8%        | 11.7%        | 15.9%        |
| FY27E EPS                 | 116.2        | 147.1        | 158.4        |
| FY27 target multiple (x)  | 35.0         | 35.0         | 35.0         |
| <b>Price Target (INR)</b> | <b>4,066</b> | <b>5,150</b> | <b>5,545</b> |
| Upside/Downside           | -3.4%        | 22.3%        | 31.7%        |

Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

## Stage set for a leap: HNAL's ~INR4.4tn decadal opportunity

HNAL is one of the strongest plays on the Gol's focus on: i) beefing up defence capabilities in view of the volatile regional security dynamics; and localisation push. Moreover, the company has diversified its portfolio over time and attained a dominant market positioning entailing a large pipeline along with an order book position of ~INR1.84tn as of FY25-end. HNAL is riding on a whopping ~INR4.4tn estimated pipeline over the decade.

Of the total opportunity, we expect [~INR1tn to materialise for HNAL in FY26E/27E](#), constituting large ticket-size programme such as LCA Mk1A, Light Utility Helicopters (LUH) and additional ordering of platforms such as Advanced Light Helicopter (ALH), along with ancillary high-value ROH contracts.

### Exhibit 19: Nuvama reckons ~INR4.4tn opportunity over next five–seven years

| Hindustan Aeronautics Limited (2025-35)   |       |               |                      |
|-------------------------------------------|-------|---------------|----------------------|
| Platforms                                 | Units | Cost (INR bn) | Expected Timeline    |
| <b>Helicopters</b>                        | -     | -             | -                    |
| Light Utility Helicopters (LUH)           | 213   | 266           | Spread over a decade |
| Light Combat Helicopters (LCH) *          | 156   | 627           | Order received       |
| Advanced Light Helicopter (ALH)           | 37    | 88            | FY26-27              |
| Naval Utility Helicopter (NUH)            | 111   | 217           | FY25-26              |
| Indian Multi-Role Helicopter (IMRH)/DBMRH | 314   | 942           | FY28-29              |
| <b>Aircraft</b>                           | -     | -             | -                    |
| Light Combat Aircraft (LCA) Mark 1A       | 97    | 650           | FY25-26              |
| Light Combat Aircraft (LCA) Mark 2        | 120   | 960           | FY29-30              |
| Sukhoi-30 MKI *                           | 12    | 135           | Order received       |
| Dornier-228 Mid Life Upgrade *            | 25    | 29            | Order received       |
| Advanced Medium Combat Aircraft (AMCA)    | 126   | 1,134         | FY34-35              |
| Twin Engine Deck Based Fighter (TEDBF)    | 45    | 140           | FY32-33              |
| <b>Engine</b>                             | -     | -             | -                    |
| AL-31 FP *                                | 240   | 260           | Order received       |
| <b>Total opportunity</b>                  |       | <b>4,397</b>  |                      |

Source: Company, Nuvama Research

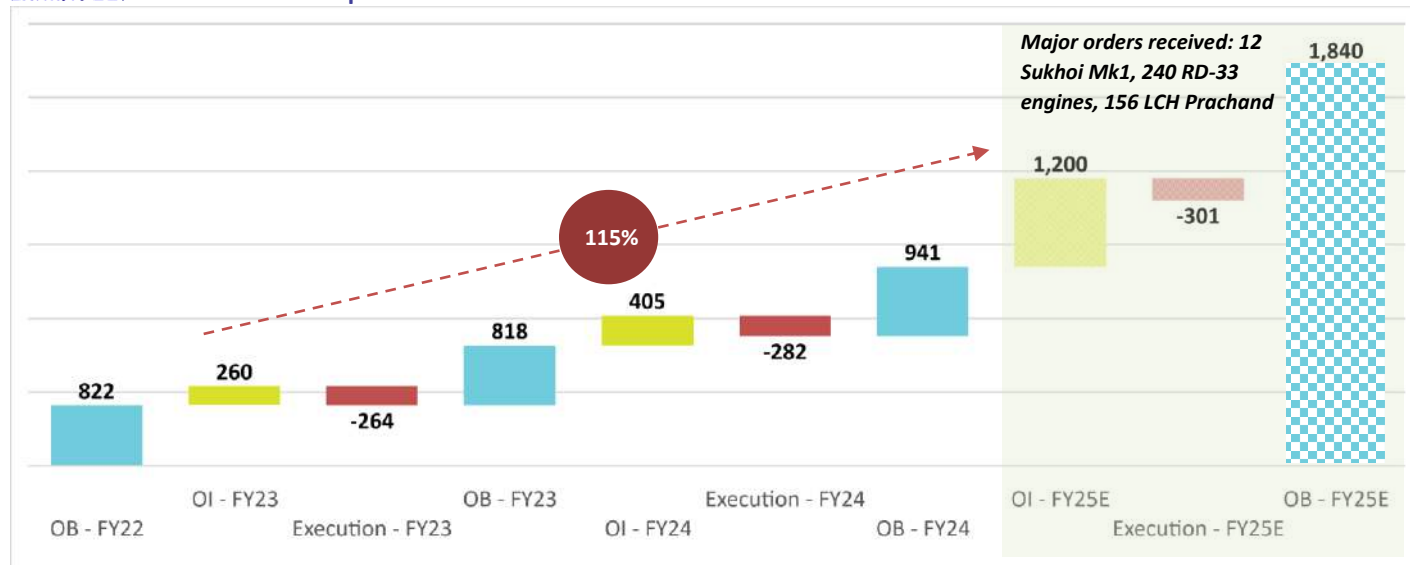
\*orders received in FY25

### Exhibit 20: Large orders likely to flow in during FY26E/27E

| Platforms                             | Units | Cost (INR bn) |
|---------------------------------------|-------|---------------|
| Light Utility Helicopter (LUH)        | 12    | 15            |
| LCA Mark 1A                           | 97    | 650           |
| Light Combat Helicopters – Prachand * | 156   | 627           |
| Advanced Light Helicopter - Dhruv     | 43    | 102           |
| Utility Helicopter Marine             | 60    | 118           |
| Additional ROH                        |       | 200           |
| <b>Total pipeline</b>                 |       | <b>1,085</b>  |

Source: Company, Nuvama Research, \*orders received in FY25

Exhibit 21: HNAL's order book position



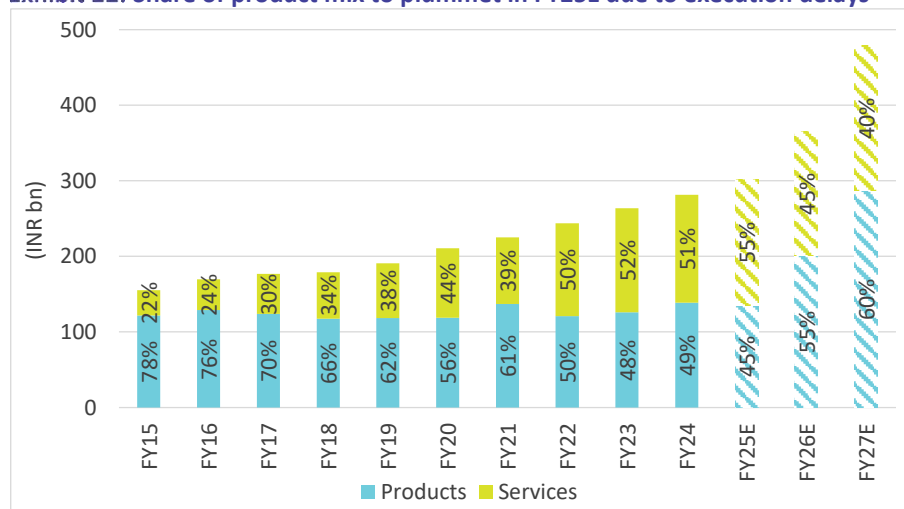
Source: Company, Nuvama Research

## GE-404 engine delay; revenue likely to spill over to FY26E/27E

The IAF is bothered by the delays in the Tejas LCA Mk1A programme as it could affect the force's fighting capabilities. The issue is attributed to prolonged delays in receiving the F404 engines from the US-based GE Aerospace. The Defence Ministry in 2021 signed an agreement with HNAL to supply 83 LCA Tejas Mk-1A – 73 fighters and ten trainers—to the IAF. For these aircraft, GE Aerospace had to supply 99 engines. The shipment of these engines, essential to LCA Mk-1A's functionality, has been postponed by more than two years because of global supply chain dislocations in the aerospace sector.

The LCA Mk1A remains a cornerstone of HNAL's order book, accounting for 25–30% of current orders (83 aircraft valued at INR480bn). While the recent engine delivery marks progress, we anticipate a slight slowdown in subsequent engine supplies, potentially affecting the overall delivery schedule through FY28E. In light of these challenges, we project only ten Tejas deliveries in FY26E. Consequently, we expect revenue spill-over extending to FY26E/27E, and beyond.

Exhibit 22: Share of product mix to plummet in FY25E due to execution delays



Source: Company, Nuvama Research

## Evolving from licence-based to indigenous production model

Over past decades, HNAL has been largely manufacturing products under licence agreements with global players such as Rosoboronexport (Russia), BAE Systems (UK), RUAG Holding AG (Switzerland), Safran (France), etc. This results in the company not owning any product-related intellectual property, which keeps costs high owing to licence fees.

To reduce dependency on foreign OEMs in a volatile geopolitical situation and augment its IP-related competencies, HNAL has been focusing on developing and manufacturing indigenous platforms over the past few years. Apart from full systems, the company plans to invest in building strategic assets such as a 20,000-ton isothermal press and a 50,000-ton hydraulic press to manufacture forgings for engines and aero structures. The company also plans to build a carbon fibre facility at an investment of about INR6bn for its various platforms.

### Exhibit 23: Indigenously developed platforms by HNAL

| Aircraft                        | Helicopters                        |
|---------------------------------|------------------------------------|
| LCA Tejas                       | ALH Dhruv                          |
| Jaguar upgrade (Darin I/II/III) | ALH Mk IV (Rudra)                  |
| HTT-40                          | Light Combat Helicopter – Prachand |
| Mini UAV - 8tn                  | Light Utility Helicopter           |
| Kiran MK I/ IA & IIA            |                                    |

Source: Company, Nuvama Research

### Exhibit 24: Indigenous content by HNAL platform

| Platform                                    | Type       | Indigenous content by value |
|---------------------------------------------|------------|-----------------------------|
| LCA Tejas                                   | Aircraft   | 59.7%                       |
| LCA Tejas Mark 1A                           | Aircraft   | 65.0%                       |
| Hindustan Turbo Trainer (HTT)-40            | Aircraft   | 56.0%                       |
| Dornier - 228                               | Aircraft   | 44.2%                       |
| Sukhoi - SU-30 MKI                          | Aircraft   | 62.0%                       |
| Advanced Light Helicopter (ALH-DHRUV)       | Helicopter | 55.0%                       |
| Advanced Light Helicopter (ALH-WSI) - Rudra | Helicopter | 45.0%                       |
| Light Combat Helicopter (LCH)               | Helicopter | 65.0%                       |
| Light Utility Helicopter (LUH)              | Helicopter | 52.0%                       |
| AL-31FP                                     | Engine     | 54.0%                       |

Source: Nuvama Research



**Exhibit 25: Platforms manufactured by HNAL under ToT/licence**

| Platform                            | Manufactured under ToT/Licence                             |
|-------------------------------------|------------------------------------------------------------|
| <b>Aircraft</b>                     |                                                            |
| Su-30 MKI                           | Rosoboronexport, Russia                                    |
| MiG-21 variants                     | Mikoyan, Russia                                            |
| MiG-27 M                            | Mikoyan, Russia                                            |
| Hawk Mk 132 AJT                     | BAE Systems, UK                                            |
| Dornier 228                         | RUAG Holding AG, Russia (previously known as Dornier GmbH) |
| Jaguar                              | BAE Systems, UK                                            |
| Mirage 2000                         | M/s. Dassault Aviation, France                             |
| <b>Helicopter</b>                   |                                                            |
| Cheetah                             | Aérospatiale SA, France                                    |
| Chetak                              | M/s SUD Aviation, France                                   |
| Lancer                              | Aérospatiale SA, France                                    |
| <b>Engine</b>                       |                                                            |
| AL-31 FP                            | Rosoboronexport, Russia                                    |
| Adour 871-07 (Hawk)                 | M/s. Rolls Royce/Turbomeca                                 |
| Adour 804E/811 (Jaguar)             | M/s. Rolls Royce/Turbomeca                                 |
| Shakti 1H1 (Ardiden)                | Safran Helicopter Engines (previously known as Turbomeca)  |
| Garrett TPE-331-5 (Dornier)         | Honeywell USA                                              |
| Artouste IIIB/B1 (Cheetah & Chetak) | Safran Helicopter Engines (previously known as Turbomeca)  |
| Dart 533-2 & 536-2t (Avro)          | Rolls Royce, UK                                            |
| LM-2500                             | General Electric Aviation, US                              |

Source: Company, Nuvama Research

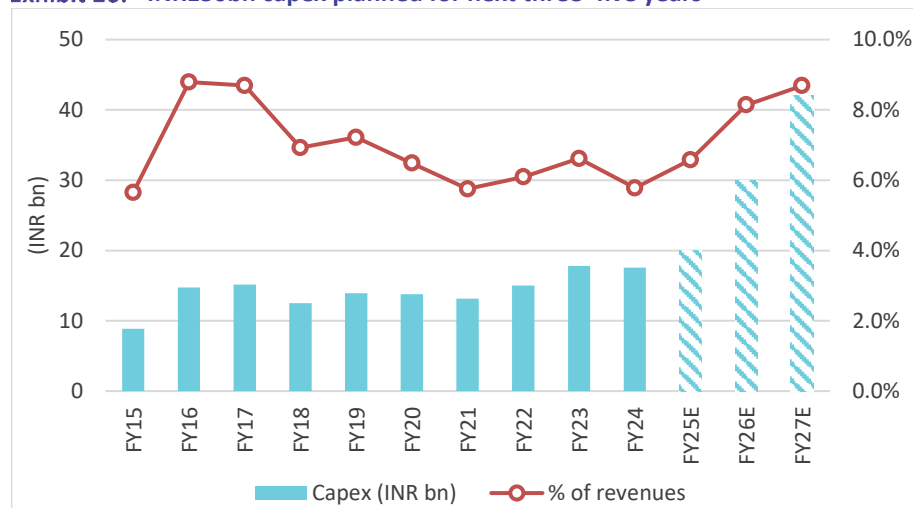
## Capex and R&D burnish long-term visibility

To propel its current standing, it is imperative for HNAL to make investments in capex along with research & development. The company is working towards capacity expansion for quick execution of existing projects, and simultaneously work on upcoming developmental programmes.

According to management, capex plan for the next three–five years will have an estimated value of INR140–150bn, translating to annual capex of INR30–50bn on average. This will be utilised for establishing additional manufacturing and ROH facilities for its various platforms. With HNAL moving towards embarking on large programmes such as LCA Mk2, development of IMRH engines with Safran, ToT manufacturing of GE-414 engine, and design and development of futuristic programmes such as IMRH and AMCA, capex is non-negotiable.

To meet the lag in delivery of Tejas Mk1 and Tejas Mk1A, HNAL is now planning a second assembly line at Nashik, which would come up only after the supply of engines from GE becomes regular. The company will need about one and a half years to establish the new facility.

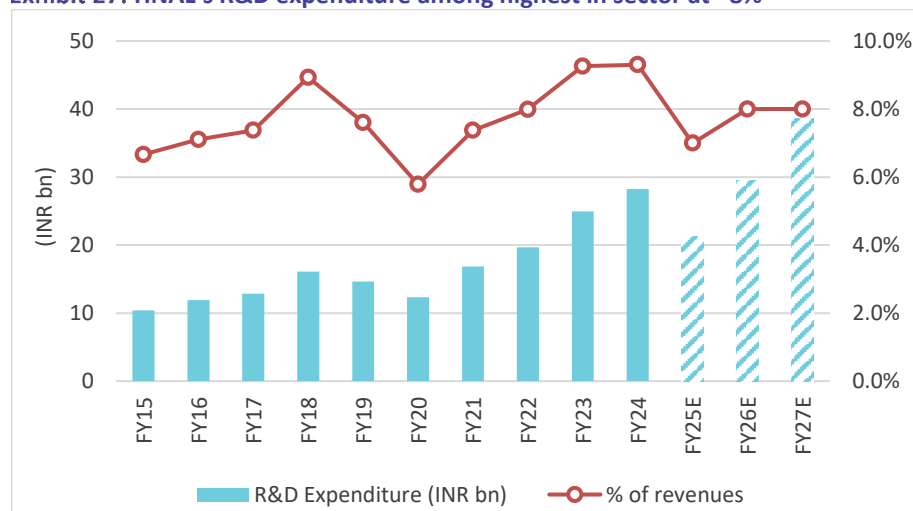
**Exhibit 26: ~INR150bn capex planned for next three–five years**



Source: Company, Nuvama Research

The company also contributes 15% of operating PAT to R&D reserve for contribution to the R&D corpus. It holds 1,026 intellectual property rights (IPRs; at end-FY24) including 348 patents, 136 industrial designs, 540 copyrights and two trademarks. The board at HNAL has sanctioned INR40bn for IMRH development, and the company has launched utility helicopter Marine with an internal funding of INR20bn.

**Exhibit 27: HNAL's R&D expenditure among highest in sector at ~8%**



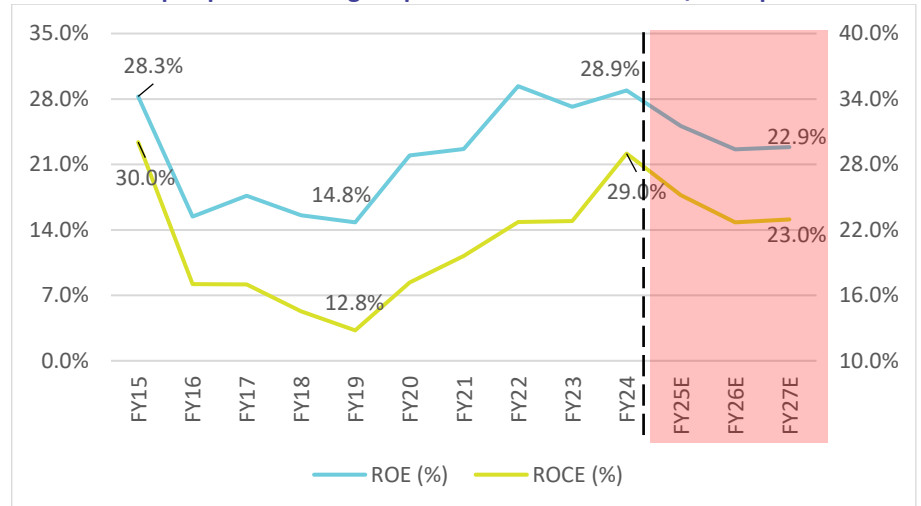
Source: Company, Nuvama Research

## Investment phase to improve visibility but lower return profiles

We argue HNAL is set to deliver consistent growth over the next decade as the overall opportunity pie of ~USD130tn (addressable opportunity of ~INR4.4tn over next five years) will keep the company's order book ticking. We estimate it would report revenue/EBITDA CAGR of 26%/19% over FY25E–27E led by execution of larger programmes while maintaining its share of MRO (evaluate ~40% of sales by FY27E compared to 47% in FY24).

The upcoming capex phase and a higher product mix are likely to hurt medium-term return profiles in our view—with RoE/RoCE to dip from ~29% in FY24 to ~23% over FY26E/27E.

**Exhibit 28: Capex phase and higher product mix to affect RoE/RoCE profiles**



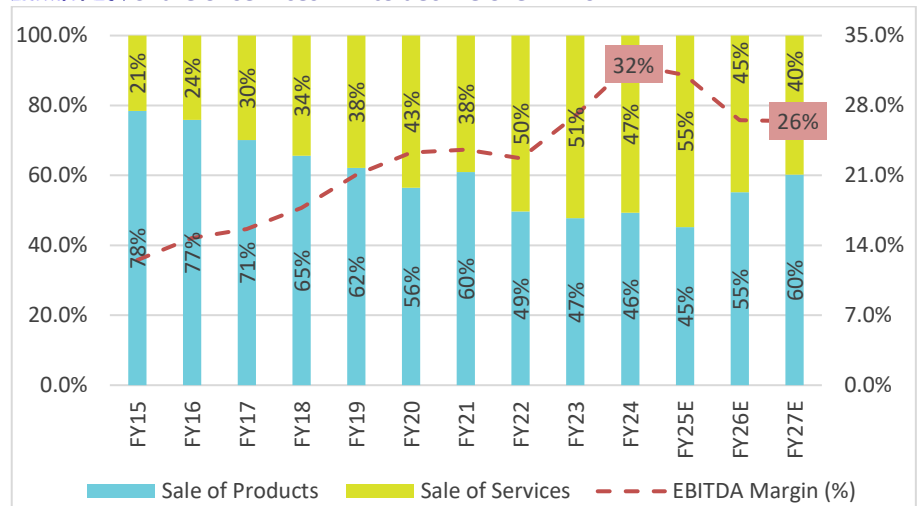
Source: Company, Nuvama Research

## MRO segment: Fuelling top-line growth

The services segment comprising maintenance, repair and overhaul (MRO) has been significantly contributing to HNAL's business over the years. The company has been providing this support for both indigenous and licensed manufactured aircraft, helicopters, engines, avionics and other accessories.

Historically, a higher services mix resulted in high operating profit margins. We expect the ramp up in revenue from increasing sales of products such as LCA Mk1A, HTT-40 Trainers aircraft, AL-31FP engines, RD-33 engines, ALH-Dhruv, LCH Prachand, etc over FY26E-27E to lower the services mix, which in turn shall pressure OPMS down to 25-26% over FY26E/27E.

**Exhibit 29: Share of services mix to decline over FY26E-27E**



Source: Company, Nuvama Research

Recently, HNAL and Airbus signed a contract to set up a Maintenance, Repair and Overhaul (MRO) facility dedicated to the A-320 fleet of aircraft. Under this agreement, Airbus will provide access to AirbusWorld, a digital platform that offers support, technical data and training solutions along with specific consulting services to HNAL.

**Exhibit 30: MRO services across platforms**

| Repair and Overhaul (ROH)        |             |                             |                                                          |
|----------------------------------|-------------|-----------------------------|----------------------------------------------------------|
| Aircraft                         | Helicopters | Engines – HNAL manufactured | Engines – Others                                         |
| Su-30 MKI                        | Cheetah     | AL-31 FP                    | RD-33 Engine                                             |
| MiG-21                           | Chetak      | Adour Mk 871-07             | R 25 Engine                                              |
| Hawk Mk 132                      |             | Adour 804E/811 (Jaguar)     | R-29B                                                    |
| Dornier 228                      |             | Shakti 1H1                  | TM333-2B2                                                |
| Jaguar (Strike/Maritime/Trainer) |             | Garrett TPE-331-5           | Gnome 1400-1T (Seaking)                                  |
| Mirage 2000                      |             | Artouste IIIB               | Industrial Avon MK 1535 /A200 Engine/SGT A20 Engine      |
| AN-32                            |             | LM-2500                     | Industrial 501K Engine/SGT A05 Engine Models KB5 And KC5 |
| Kiran MK I/ IA & IIA             |             |                             | Dart 533-2 & 536-2t (Avro)                               |
| Jaguar Upgrade (Darin III)       |             |                             |                                                          |
| Mirage 2000 Upgrade              |             |                             |                                                          |

Source: Company, Nuvama Research

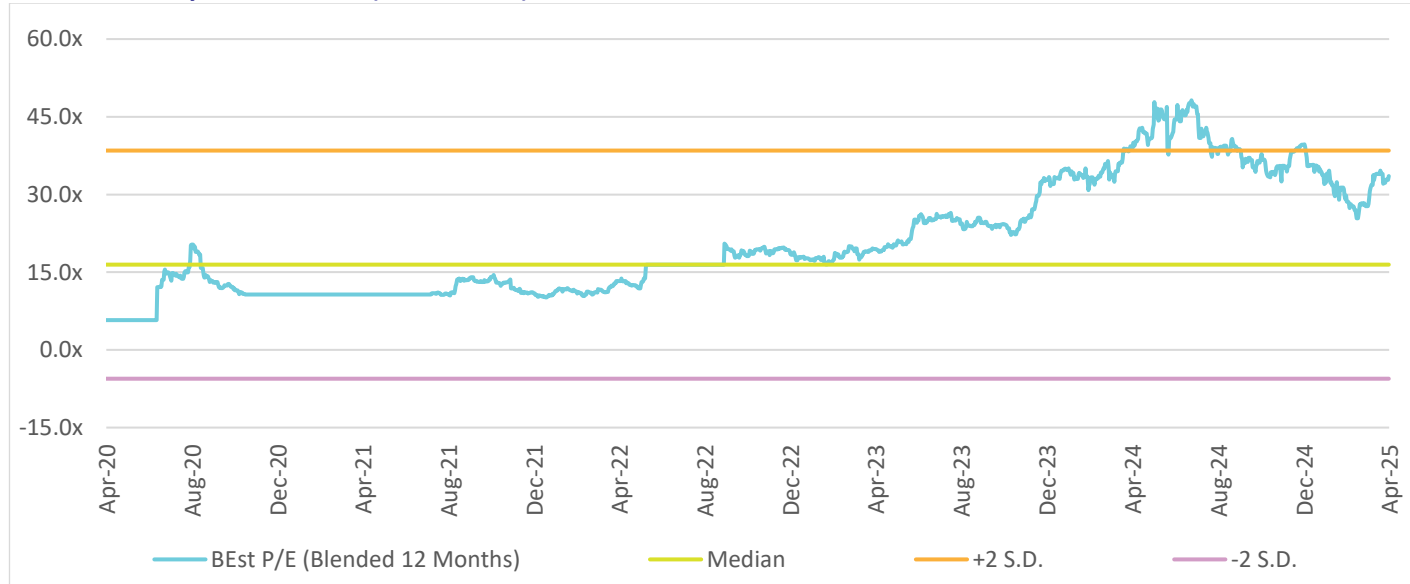
## Valuation

### Sector heavyweight; long runway of growth in sight

- HNAL is well-positioned in the fighter jets and combat helicopter space based on its strong capabilities built over the past few decades (ToT from DRDO and foreign OEMs) such as design, development and manufacturing of such systems.
- Massive backlog of ~INR1.84tn at end-FY25E and ~INR4.4tn pipeline lend long-term visibility given IAF's critical shortfall (~31 squadrons of fighter jets currently versus need for ~42) and the ongoing modernisation drive. With limited/no competition from private sector for now, HNAL has an impregnable moat.
- Initiate at 'BUY' as we factor in a revenue/EBITDA/EPS CAGR of 26%/19%/12% over FY25E–27E. We value the stock at 35x FY27E EPS of INR147.1, and expect OPMs to moderate to 25–26% over coming years (from 32.1% in FY24) led by a higher mix of products, translating to ~23% RoE/RoCE by FY27E.

We reckon HNAL shall deliver an earnings CAGR of ~12% over FY25E–27E based on our expectations of a ramp-up in execution of large programmes present in its order book as well as a growing pipeline over the next two–five years. Industry dynamics appear to be in favour due to its monopolistic position along with GoI's indigenisation initiatives towards procurement/modernisation in the defence sector. We are initiating coverage on HNAL with a '**BUY**', valuing the stock at 35x FY27E EPS of INR147.1, yielding a TP of INR5,150 in our base case.

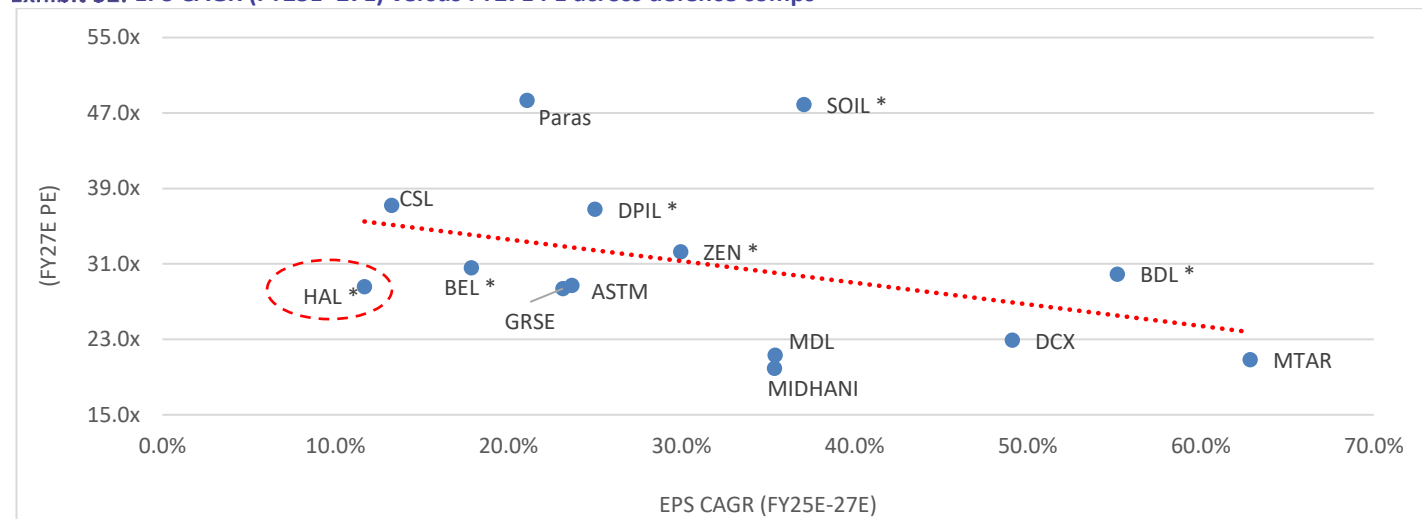
Exhibit 31: One-year forward PE (median ~16x)



Source: Bloomberg, Nuvama Research

# HINDUSTAN AERONAUTICS

Exhibit 32: EPS CAGR (FY25E–27E) versus FY27E PE across defence comps



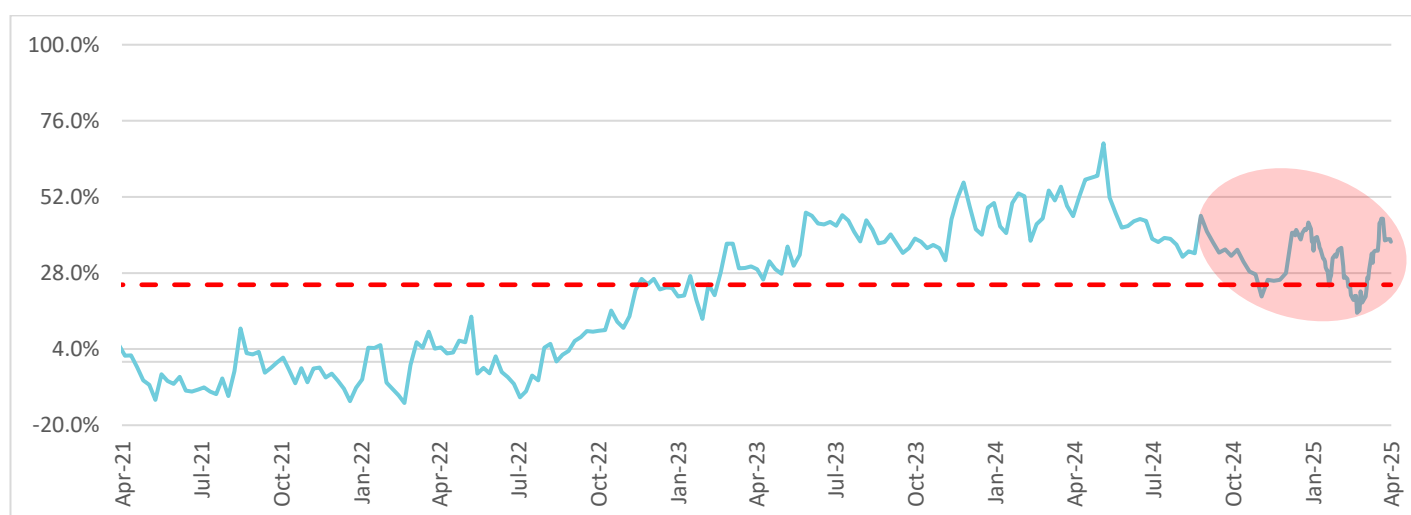
Source: Bloomberg, \*Nuvama Estimates

Exhibit 33: BEL versus HNAL – A financial snapshot

| Particulars (INR mn)       | Bharat Electronics |          |          |          |          | Hindustan Aeronautics |          |           |           |           |
|----------------------------|--------------------|----------|----------|----------|----------|-----------------------|----------|-----------|-----------|-----------|
|                            | FY23               | FY24     | FY25E    | FY26E    | FY27E    | FY23                  | FY24     | FY25E     | FY26E     | FY27E     |
| Order inflows              | 2,03,440           | 3,54,134 | 1,87,150 | 5,00,000 | 3,50,000 | 2,59,906              | 4,05,069 | 12,00,000 | 9,00,000  | 5,00,400  |
| Order book                 | 6,06,900           | 7,59,340 | 7,16,490 | 9,48,862 | 9,78,521 | 8,17,840              | 9,41,290 | 18,40,000 | 23,74,667 | 23,95,889 |
| Book to bill rate          | 3.4x               | 3.8x     | 3.1x     | 3.5x     | 3.0x     | 3.0x                  | 3.1x     | 6.1x      | 6.4x      | 5.0x      |
| Revenues                   | 1,76,462           | 2,01,694 | 2,33,774 | 2,71,515 | 3,24,345 | 2,69,279              | 3,03,808 | 3,04,000  | 3,68,552  | 4,83,300  |
| Gross margin (%)           | 44.4%              | 47.6%    | 49.7%    | 48.8%    | 48.8%    | 62.4%                 | 63.5%    | 58.8%     | 53.8%     | 52.7%     |
| EBITDA margin (%)          | 22.9%              | 24.8%    | 27.2%    | 26.5%    | 27.0%    | 27.0%                 | 32.1%    | 29.7%     | 26.5%     | 26.4%     |
| PAT margin (%)             | 17.0%              | 19.9%    | 21.6%    | 21.0%    | 21.6%    | 21.6%                 | 25.0%    | 26.0%     | 22.5%     | 20.4%     |
| Receivable days            | 202                | 130      | 124      | 132      | 138      | 180                   | 184      | 180       | 180       | 180       |
| Payable days               | 142                | 121      | 122      | 130      | 138      | 103                   | 108      | 100       | 100       | 100       |
| Inventory days             | 223                | 239      | 243      | 233      | 230      | 478                   | 418      | 420       | 500       | 500       |
| Cash conversion cycle      | 282                | 248      | 245      | 236      | 230      | 556                   | 494      | 500       | 580       | 580       |
| Cash from operations (CFO) | 10,866             | 46,480   | 57,494   | 40,362   | 50,207   | 88,355                | 82,257   | 67,410    | -38,505   | -25,526   |
| ROE                        | 23.5%              | 27.1%    | 29.1%    | 28.4%    | 30.2%    | 27.2%                 | 28.9%    | 25.1%     | 22.6%     | 22.9%     |
| ROCE                       | 31.3%              | 36.0%    | 38.9%    | 38.0%    | 40.4%    | 22.8%                 | 29.0%    | 25.2%     | 22.7%     | 23.0%     |
| Fixed asset turn (x)       | 6.8x               | 7.4x     | 7.9x     | 8.4x     | 9.6x     | 3.0x                  | 3.4x     | 3.2x      | 3.4x      | 3.8x      |
| Sale of services           | 9.9%               | 9.9%     | 9.4%     | 8.9%     | 8.2%     | 51.1%                 | 47.0%    | 54.5%     | 44.6%     | 39.7%     |

Source: Company, Nuvama Research

Exhibit 34: HNAL premium/discount to BEL on one-year forward PE



Source: Nuvama Research, Bloomberg

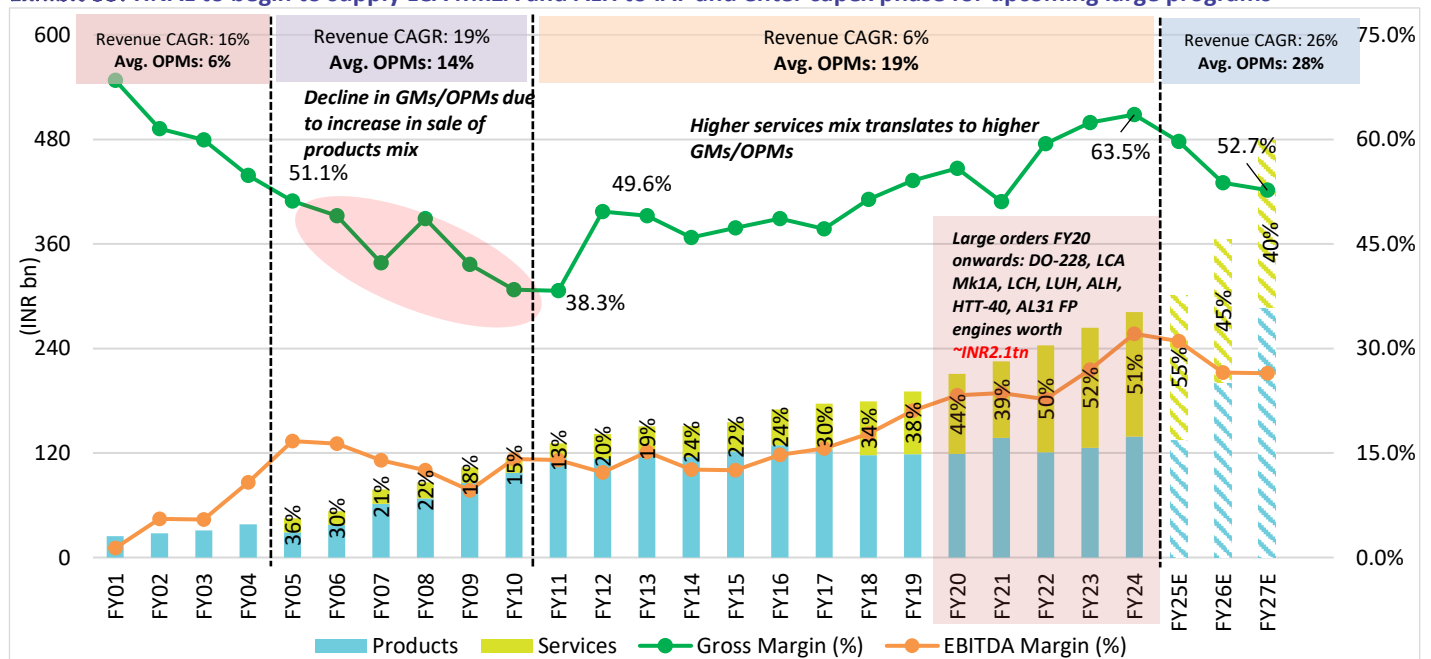


## Financial Outlook

- We envisage higher growth in the products segment over the next two–three years; its share in revenue mix would thus rise from ~46% in FY24 to ~60% by FY27E. Manufacturing capacity expansion and timely procurement from domestic/foreign OEMs will be the key enablers for HNAL.
- Sitting on a backlog of INR1.84tn at end-FY25E coupled with a staggering order pipeline of ~INR4.4tn over the next five years; large ticket-size orders include LUH, ALH, LCA Mk1A, etc accompanied by development of futuristic programmes such as IMRH, AMCA and Tejas Mk2.
- With a pickup in government ordering towards fleet expansion/modernisation, we estimate HNAL's backlog to surge to INR2.5tn by FY27E from INR940bn in FY24. We reckon revenue would expand at a CAGR of ~26% over FY25E–27E, but OPMs shall dip to 25–26% by FY26E/27E as manufacturing ramps up.

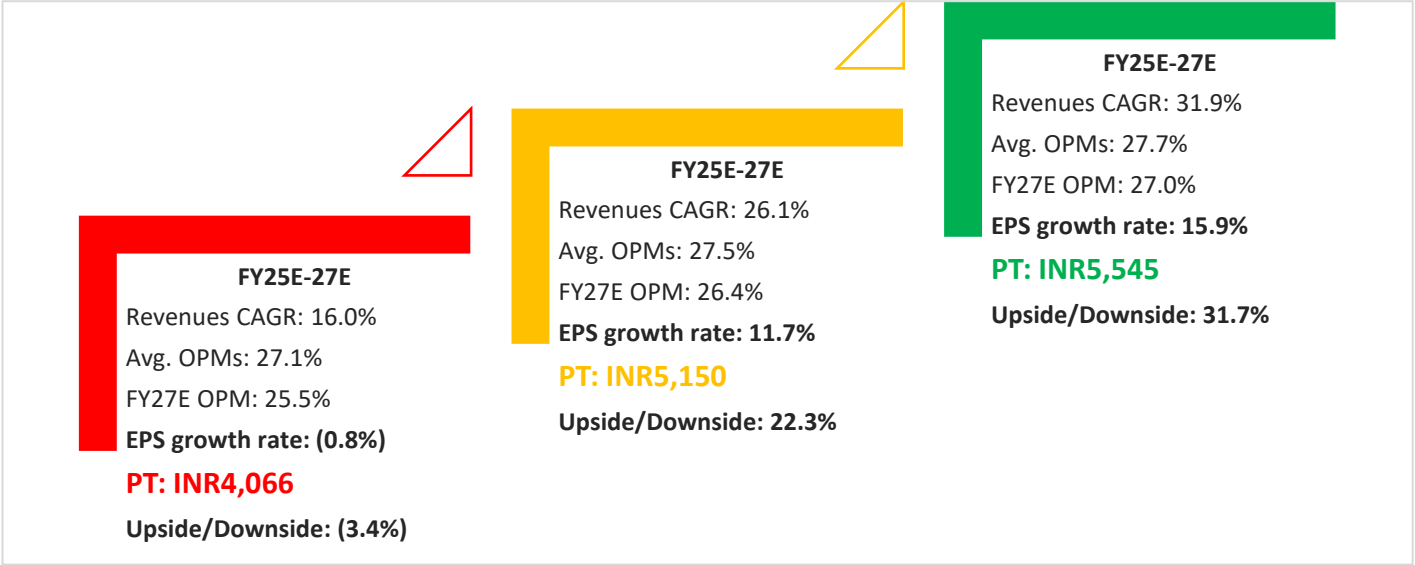
We expect product deliveries (LCA Mk1A, LCH, RD-33 engines, etc) to now pick up after a subdued execution phase of ~two years held back by supply chain bottlenecks. We factor in a revenue/EBITDA/EPS CAGR of ~26%/19%/12% over FY25E–27E. Valuing the stock at 35x (~12.5% discount to BEL at 40x) FY27E EPS of INR147.1 yields a TP of INR5,150 (22.3% upside) in our base case.

**Exhibit 35: HNAL to begin to supply LCA Mk1A and ALH to IAF and enter capex phase for upcoming large programs**



Source: Company, Nuvama Research

Exhibit 36: Nuvama scenario analysis: ~12% EPS CAGR over FY25E–27E in our base case



Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

Exhibit 37: FY27E EPS sensitivity

|                |       | Revenue CAGR (FY25E–27E) |       |       |       |       |
|----------------|-------|--------------------------|-------|-------|-------|-------|
|                |       | 15.0%                    | 18.0% | 21.0% | 25.0% | 30.0% |
| FY27E OPMs (%) | 25.0% | 123.9                    | 130.5 | 137.3 | 146.6 | 158.6 |
|                | 26.0% | 128.9                    | 135.8 | 142.8 | 152.5 | 165.0 |
|                | 27.0% | 133.9                    | 141.1 | 148.4 | 158.4 | 171.4 |
|                | 28.5% | 141.5                    | 149.0 | 156.7 | 167.3 | 181.1 |
|                | 30.0% | 149.0                    | 156.9 | 165.0 | 176.2 | 190.7 |

Source: Company, Nuvama Research

## Key Risks

### High dependency on Ministry of Defence for contracts

The majority of orders for HNAL come from the Indian defence industry. Hence, the company's future depends on the defence budget and a consistent flow of orders from the defence sector.

There have been instances when payment delays from the Ministry of Defence depleted HNAL's working capital. A major factor affecting HNAL's sales and cash flows is the amount and timeliness of the MoD's financial allocations. Any modifications to the government system may have ramifications for the defence budget allocation, domestic procurement practices and HNAL's status as the only manufacturer of fighter aircraft.

### Dependency on imports from foreign OEMs

HNAL depends on foreign OEMs to supply of essential parts needed for manufacturing and maintenance of aircraft and helicopters. Given trade barriers and geopolitical tensions, HNAL is susceptible to supply chain disruptions, which could lead to cost overruns and production schedule delays, in turn affecting HNAL's ability to fulfil contractual obligations.

Additionally, HNAL's dependence on foreign OEMs would restrict its access to intellectual property rights and proprietary technology, which would reduce its technical expertise. The company may suffer from supply chain disruptions for vital supplies from foreign OEMs, as was the case during the conflict between Russia and Ukraine. Delays in the execution of manufacturing platforms is another possible upshot, which could further impact revenue recognition and increase expenses.

### Competition from foreign OEMs

HNAL's prospects of receiving orders may be affected by potential competition from global OEMs in the Indian market, either directly or through the Strategic Partnership model. Intense competition from major international OEMs—including Pratt and Whitney, Rolls Royce, Honeywell, Dassault Aviation, Lockheed Martin, Airbus Helicopters, Boeing, BAE Systems, Safran Helicopter Engines, and several Russian producers in export markets—can affect HNAL's order book.

### Increase in private sector participation

The Government of India has increased foreign direct investment (FDI) in the defence industry up to 74% through the automatic route for businesses bidding for new defence industrial licences and up to 100% through the government route, wherein it is expected to provide access to modern technology. HNAL may also suffer from increased competition from overseas defence companies that provide cutting-edge technology.

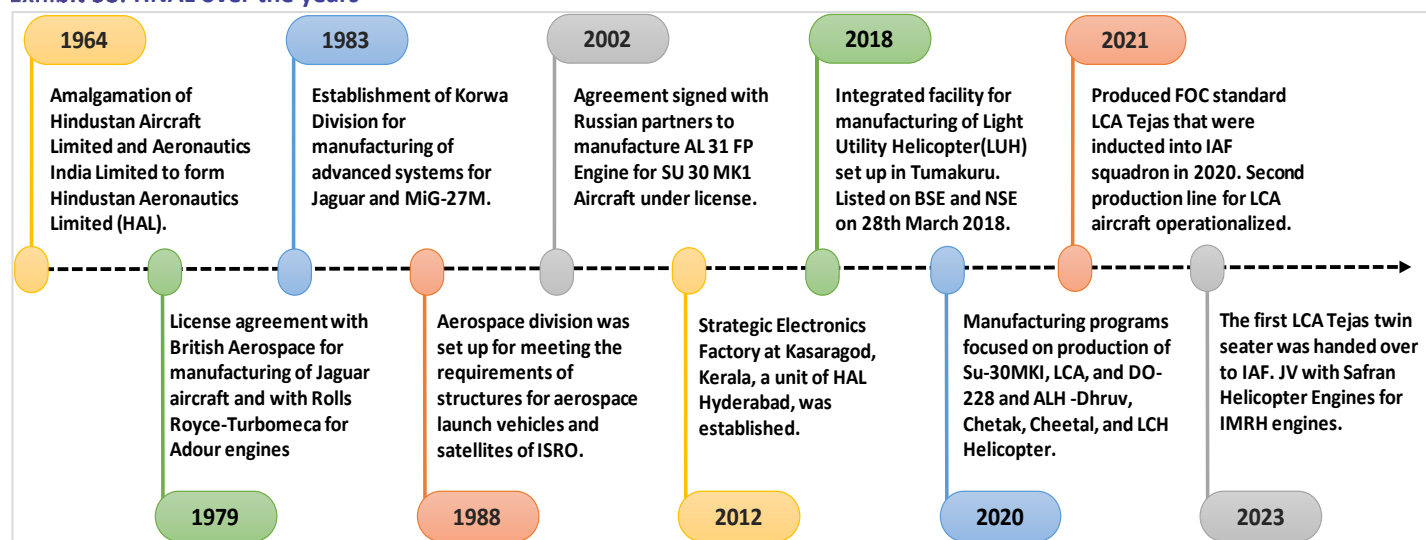
## Company Description

HNAL is the largest defence PSU under the Department of Defence Production, Ministry of Defence. Headquartered in Bengaluru, the company was established in 1940 and operates as an aerospace and defence company supporting the fleet of Indian defence for over five decades. The Government of India has also conferred HNAL with the Maharatna status.

The company has developed extensive expertise in design, development, manufacture, maintenance and upgrade of fighter, trainers, helicopters, transport aircraft, aero-engines, avionics, systems and accessories. It has also diversified its business into Aerospace structure and Industrial Marine Gas Turbines.

Currently, HNAL manufactures Light Combat Aircraft (LCA) Tejas Mk1A, LCA Tejas Trainer, Dornier Do-228, Advanced Light Helicopter (ALH) and Light Utility Helicopter (LUH) in addition to the production of new engines and various accessories. It has also been providing Repairs and Overhaul (ROH) services for various aircraft, helicopters and engines for the Indian Defence Services and other customers.

**Exhibit 38: HNAL over the years**

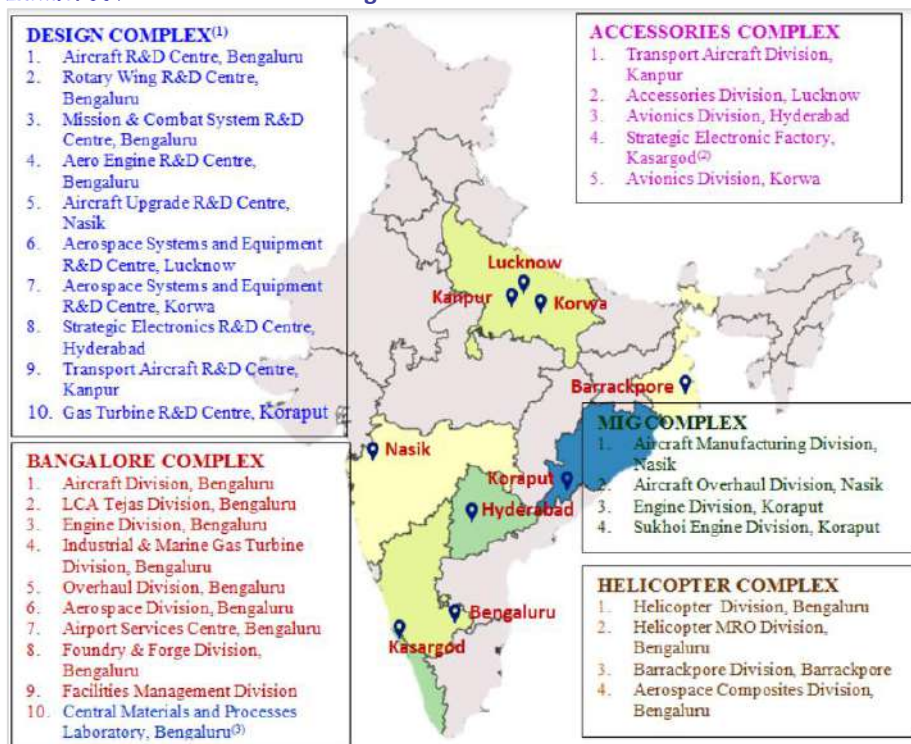


Source: Company, Nuvama Research

HNAL has 20-plus production divisions, 11-plus R&D centres and eight support offices located across India. These divisions and R&D centres are organised into five complexes with current and future operations.

For manufacturing its products, HNAL focuses on indigenous research as well as enters into technology transfer and licence agreements. The R&D centres are approved by, among others, the Department of Scientific and Industrial Research (DSIR) and the Centre for Military Airworthiness and Certification (CEMILAC). HNAL has produced over 4,200 aircraft and over 5,200 engines, including 17 types of indigenous design. It has also overhauled 11,000-plus aircraft and 33,000 engines.

Exhibit 39: HNAL's manufacturing locations and R&D centres across India



Source: Company, Nuvama Research

## Exhibit 40: HNAL's product portfolio

### Aircrafts



LCA



HTT-40



Dornier



IJT



SU-30 MKI



Hawk



Do-228 (Civil)

### Helicopters



Dhruv



Rudra



LCH



LUH



Cheetal



Lancer



Chetak



Cheetah

### Engines



AL-31 FP



RD-33



Adour MK 811



Garrett



Artouste IIIB



Dart



Shakti 1H1

Source: Company, Nuvama Research



**Exhibit 41: HNAL's product portfolio – Aircraft in a snapshot**

| Aircrafts              |                                             |                                           |                                            |                                   |                                          |                                     |
|------------------------|---------------------------------------------|-------------------------------------------|--------------------------------------------|-----------------------------------|------------------------------------------|-------------------------------------|
|                        | LCA-Tejas                                   | Do-228                                    | Su-30 MK1                                  | HTT-40                            | Hawk - Mk132                             | IJT                                 |
| Type                   | 4.5 generation                              | Multi-purpose light transport vehicle     | 4th generation                             | Ab-initio basic trainer aircraft  | Advanced Jet Trainer                     | Intermediate Jet Trainer            |
|                        | Most advanced version - LCA Mk1A            | Military and civil version                | Twin engine supersonic aircraft            | -                                 | -                                        | -                                   |
| Dimensions             | L -13.2m, W - 8.2m, H - 4.4m                | L -16.6m, W - 16.9m, H - 4.9m             | L -21.9m, W- 14.7m, H - 6.4m               | L -10m, W- 11m, H - 3.6m          | L - 11m, W - 10m, H - 4.4m               | L -12.4m, W- 9.9m, H - 3.9m         |
| Max. take-off weight   | 13,500 kg                                   | 6,400 kg                                  | 38,800 kg                                  | 3,040 kg                          | 9,100 kg                                 |                                     |
| Engine                 | GE-F404 IN20                                | Garrett TPE 331-5-252D                    | AL-31 FP                                   | Honeywell TPE331-12B Turboprop    | Adour Mk 871 turbofan                    | AL-55i NPO Saturn Engine            |
| Indigenization %       | ~ 60%                                       | ~ 44%                                     | ~ 51%                                      | ~ 56%                             | -                                        | -                                   |
| Replacement for        | MiG-21, MiG-23, and MiG-27 aircrafts        | -                                         | -                                          | Retired HPT-32 Deepak             | Mk65 aircrafts                           | Kiran Mk I and Mk II trainers       |
| Cost per unit (INR bn) | ~ INR 5bn to 7bn                            | ~ INR 1bn to 2bn                          | ~ INR 9bn to 11bn                          | ~ INR 1bn to 1.5bn                | ~ INR 0.5bn to 1bn                       | ~ INR 0.4bn to 1bn                  |
| Purpose                | Frontline, multi-mission, tactical aircraft | Utility and commuter transport            | Multi-purpose aircraft                     | For primary training requirements | For basic, advanced and weapons training | For stage II training of IAF pilots |
| Partnership            | -                                           | Technical transfer agreement from RUAG AG | Under license from Rosoboronexport, Russia | -                                 | Under license from BAE Systems           | -                                   |
| Existing Fleet         | 33                                          | 116                                       | 260                                        | -                                 | 123                                      | -                                   |
| In pipeline            | 187                                         | 5                                         | 12                                         | 70                                | -                                        | 70                                  |

Source: Company, Nuvama Research

**Exhibit 42: HNAL's product portfolio – Helicopters in a snapshot**

| Helicopters            |                              |                                                  |                                                          |                                                   |                                                               |                                                     |                                                                 |
|------------------------|------------------------------|--------------------------------------------------|----------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------|
|                        | ALH-Dhruv                    | LCH - Prachand                                   | LUH                                                      | Cheetah                                           | Lancer                                                        | Chetak                                              | Cheetah                                                         |
| Type                   | Advanced Light Helicopter    | Light Combat Helicopter                          | New generation light helicopter                          | Re-engined version of the Cheetah helicopter      | Light attack helicopter                                       | Light utility helicopter                            | High-performance utility vehicle                                |
|                        | Armed version - Rudra        | -                                                | -                                                        | -                                                 | -                                                             | -                                                   | -                                                               |
| Dimensions             | L -15.9m, W- 13.2m, H - 4.9m | L -15.9m, W- 13.2m, H - 4.7m                     | L -11.5m, W- 11.6m, H - 3.4m                             | L - 12.9m, W- 2.4m, H - 3.1m                      | L - 12.9m, W- 3.9m, H - 3.1m                                  | L - 12.9m, W- 2.6m, H - 2.9m                        | L - 12.9m, W- 2.4m, H - 3.1m                                    |
| Max. take-off weight   | 5,500 kg                     | 5,800 kg                                         | 3,150 kg                                                 | 1,950 kg                                          | 1,950 kg                                                      | 2,200 kg                                            | 1,950 kg                                                        |
| Engine                 | Twin - Shakti 1H1            | Twin - Shakti 1H1                                | Single - Shakti 1H1                                      | TM333-2M2                                         | Artouste IIIB                                                 | Artouste IIIB                                       | Artouste IIIB                                                   |
| Indigenization %       | ~ 55%                        | ~ 54%                                            | ~ 52%                                                    | -                                                 | -                                                             | -                                                   | -                                                               |
| Replacement for        | Cheetah and Chetak fleet     | Cheetah and Chetak fleet                         | Cheetah and Chetak fleet                                 | -                                                 | -                                                             | -                                                   | -                                                               |
| Cost per unit (INR bn) | ~ INR 2bn to 3bn             | ~ INR 2bn to 3bn                                 | ~ INR 1bn to 1.5bn                                       | ~ INR 0.2bn to 0.25bn                             | ~ INR 0.15bn to 0.2bn                                         | ~ INR 0.15bn to 0.2bn                               | ~ INR 0.15bn to 0.2bn                                           |
| Purpose                | Multi-role, multi-mission    | Dedicated light helicopter for combat operations | For high altitude military missions and civil operators. | To enhance high altitude operational capabilities | For paramilitary surveillance duties and extensive operations | For commuting, cargo transport, casualty evacuation | Multi role, multi purpose and specifically for higher altitudes |
| Partnership            | -                            | -                                                | -                                                        | -                                                 | Under license from Aérospatiale SA                            | Under license from M/s SUD Aviation                 | Under license from Aérospatiale SA                              |
| Existing Fleet         | 354                          | 15                                               | -                                                        | 20                                                | 70                                                            | 187                                                 | 200                                                             |
| In pipeline            | 43                           | 156                                              | 225                                                      | -                                                 | -                                                             | -                                                   | -                                                               |

Source: Company, Nuvama Research

**Exhibit 43: HNAL's product portfolio – Engines in a snapshot**

| Engines                |                                               |                                                 |                                                  |                                            |                                  |                                    |
|------------------------|-----------------------------------------------|-------------------------------------------------|--------------------------------------------------|--------------------------------------------|----------------------------------|------------------------------------|
|                        | Shakti 1H1                                    | AL-31 FP                                        | RD-33                                            | Adour Mk 811                               | Garrett                          | Artouste IIIB                      |
| Type                   | High power engine                             | Turbofan aircraft engine                        | Turbofan aircraft engine                         | Turbofan aircraft engine                   | Turbo prop engine                | Turbofan aircraft engine           |
| Dimensions             | L - 1.28m, intake diameter - 0.57m            | L - 4.99m, intake diameter - 0.743m             | L - 4.23m, intake diameter - 1.04m               | L - 2.9m, intake diameter - 0.56m          | L - 1.1m, intake diameter - 0.7m | L - 1.8m, intake diameter - 0.5m   |
| Max. take-off weight   | 205 kg                                        | 1,500 kg                                        | 1,055 kg                                         | 794 kg                                     | 164 kg                           | 182 kg                             |
| Indigenization %       | ~ 20%                                         | ~ 54%                                           | -                                                | -                                          | -                                | -                                  |
| Replacement for        | Turbomeca TM 332-2B2                          | Existing engines on over 110 Su-30MKI aircrafts | -                                                | -                                          | -                                | -                                  |
| Cost per unit (INR bn) | -                                             | ~ INR 1bn                                       | -                                                | -                                          | -                                | -                                  |
| Purpose                | For ALH MkIII (Dhruv), Mk IV (Rudra), and LCH | For Su-30MKI aircraft                           | For MiG-29 fighter aircraft's lifespan extension | For Jaguar aircraft                        | For Dornier 228 aircraft         | For Cheetah and Chetak helicopters |
| Partnership            | Co-developed with Safran                      | Under ToT license with Rosoboronexport,         | Under ToT license with Russia's OEM              | Under license with M/s. Rolls Royce/Safran | Under ToT license with Honeywell | Under license from Safran          |
| Existing Fleet         | 250                                           | -                                               | > 5000                                           | > 5000                                     | > 11000                          | > 700                              |
| In pipeline            | -                                             | 240                                             | -                                                | -                                          | -                                | -                                  |

Source: Company, Nuvama Research

## HNAL – Platform evolution

HNAL has its origin in Hindustan Aircraft Limited, which was formed with the primary objective of manufacturing aircraft indigenously. Established by Shri Walchand Hirachand in collaboration with the Government of Mysore in 1940, the company was nationalised in 1942 and the Government of India assumed its complete management control. In the early years, the company forged partnerships with global aviation companies that resulted in the production of prominent aircraft such as Harlow Trainer, Curtiss Hawk Fighter and Vultee Bomber. The company focused on innovation and diversification, leading to the production of aircraft such as 'Pushpak' for flying clubs, 'Krishak' for Air Observatory Post (AOP) role, HF-24 Jet Fighter ('Marut') and the HJT-16 Basic Jet Trainer ('Kiran').

In 1964, Hindustan Aircraft Limited and Aeronautics India Limited (AIL), incorporated to undertake the production of MiG-21 aircraft, were amalgamated to form "Hindustan Aeronautics Limited (HNAL)". HNAL successfully developed an advanced version of the MiG-21 aircraft. In 1970, the company set up a separate division for the manufacturing the 'Chetak' and 'Cheetal' helicopters. During the 1970s, HNAL actively focused on the design and development of 'Basant', an agricultural aircraft, and 'Ajeet', an improved version of Gnat aircraft. The company also received contracts to build aircraft parts for Boeing, Airbus, and Honeywell.

HNAL entered in a licence agreement with British Aerospace in 1979 to manufacture the 'Jaguar' aircraft and with the USSR in 1982 for the production of swing-wing 'MiG-27M'. To succeed MiG-21 aircraft, the Indian government launched the Light Combat Aircraft (LCA) programme. Subsequently, the Aeronautical Development Agency (ADA) was established as the nodal agency under the Defence Research & Development Organisation (DRDO) in 1984 to supervise the LCA program, with HNAL selected as the production collaborator. HNAL established a separate Aerospace division in 1988 to meet the requirements of structures for aerospace launch vehicles and satellites of ISRO. Structures for GSLV Mk-III, the Mars Mission and human crew module were supplied by HNAL to ISRO. In 1988, the company formed a new division called the Industrial & Marine Gas Turbine Division to produce the LM-2500 marine gas turbine engines under licence. The division overhauls multiple existing gas turbines for ONGC, GAIL, TNEB, RSEB, etc.

In 2002, HNAL signed an agreement with Russian partners for license manufacturing of Sukhoi-30 MK1 aircraft at the Nasik division. Consequently, HNAL decided to manufacture AL-31 FP engines for Su-30 MK1 aircraft under licence from the Russian manufacturer. The Advanced Light Helicopter (ALH Dhruv) programme's certification for utility military variant was completed in 2002 and that of the civil variant was completed in 2004. HNAL unveiled its plan to build the Light Combat Helicopter (LCH Prachand) in 2006, derived from the existing Dhruv helicopter to meet the requirements of the Indian Air Force and the Indian Army. As a replacement to the Cheetah and Chetak fleet, the Light Utility Helicopter (LUH) project was approved in 2009 and the first flight happened in 2016.

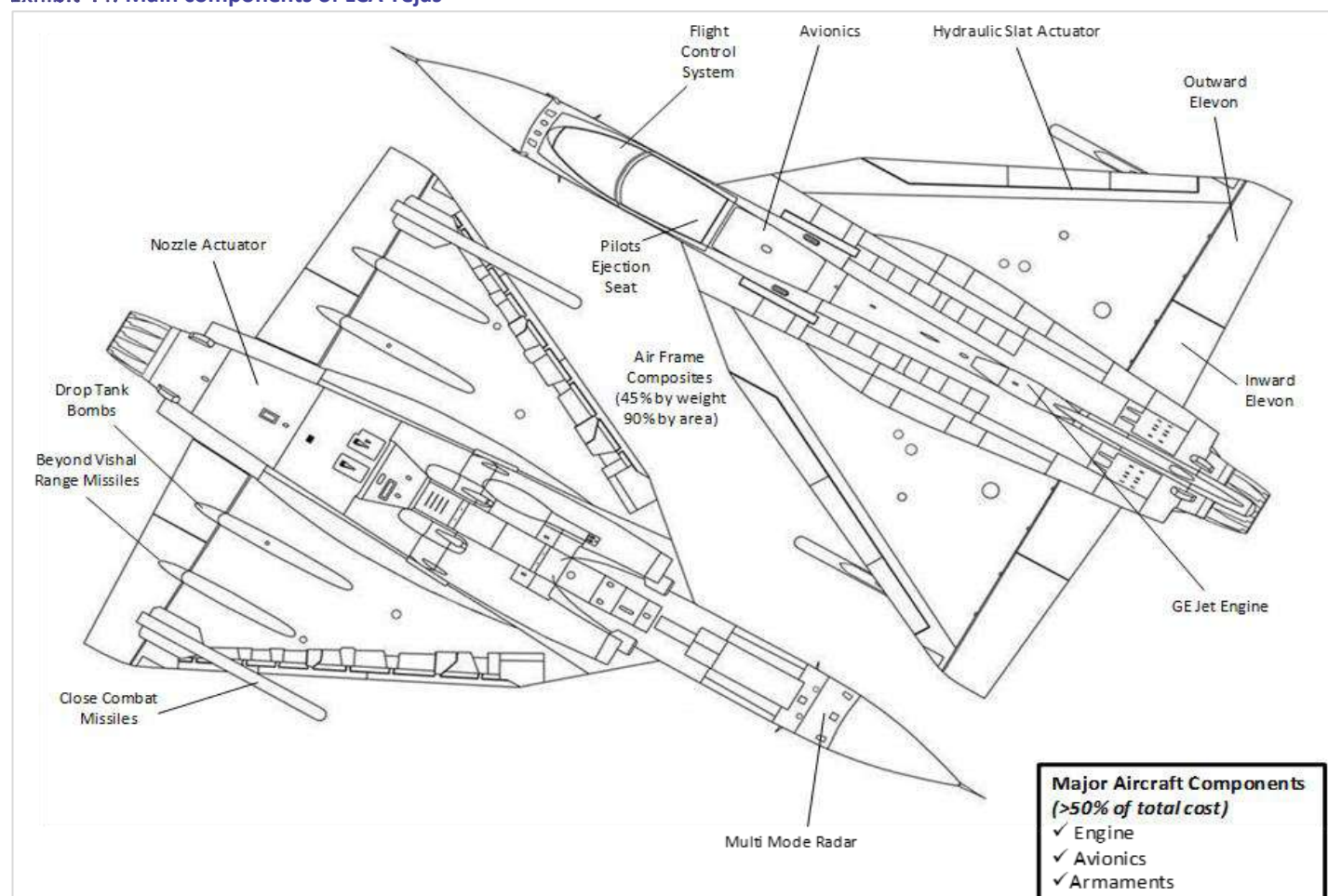
At present, the Indian Air Force is progressing towards becoming self-reliant in the defence segment. The LCA Tejas Mark 1A is set to serve as the foundation of its single-engine fighter fleet, with 83 aircraft currently ordered and an additional 97 approved. Furthermore, a more advanced and powerful variant, the LCA Mark 2, is in development and anticipated to be completed by 2028. Concurrently, the Air Force's fifth-generation fighter jet initiative, the AMCA, has gained significant traction following the funding approval on March 7, 2024. The AMCA is projected to be ready for induction into the Air Force by 2035.

## Advanced fighter aircraft projects

### LCA Tejas – Focus on indigenous aircraft

Light combat aircraft (Tejas) Mark (Mk)-1 is a 4.5-generation single seat multirole fighter aircraft designed by the Aeronautical Development Agency (ADA) and manufactured by HNAL for the IAF and the Indian Navy. LCA Tejas represents a significant achievement for India's defence ambitions as it highlights the success story of indigenous design, development, production and induction of a '4+ Generation Fighter' into the IAF. In July 2016, the IAF received the first two Tejas aircraft from HNAL.

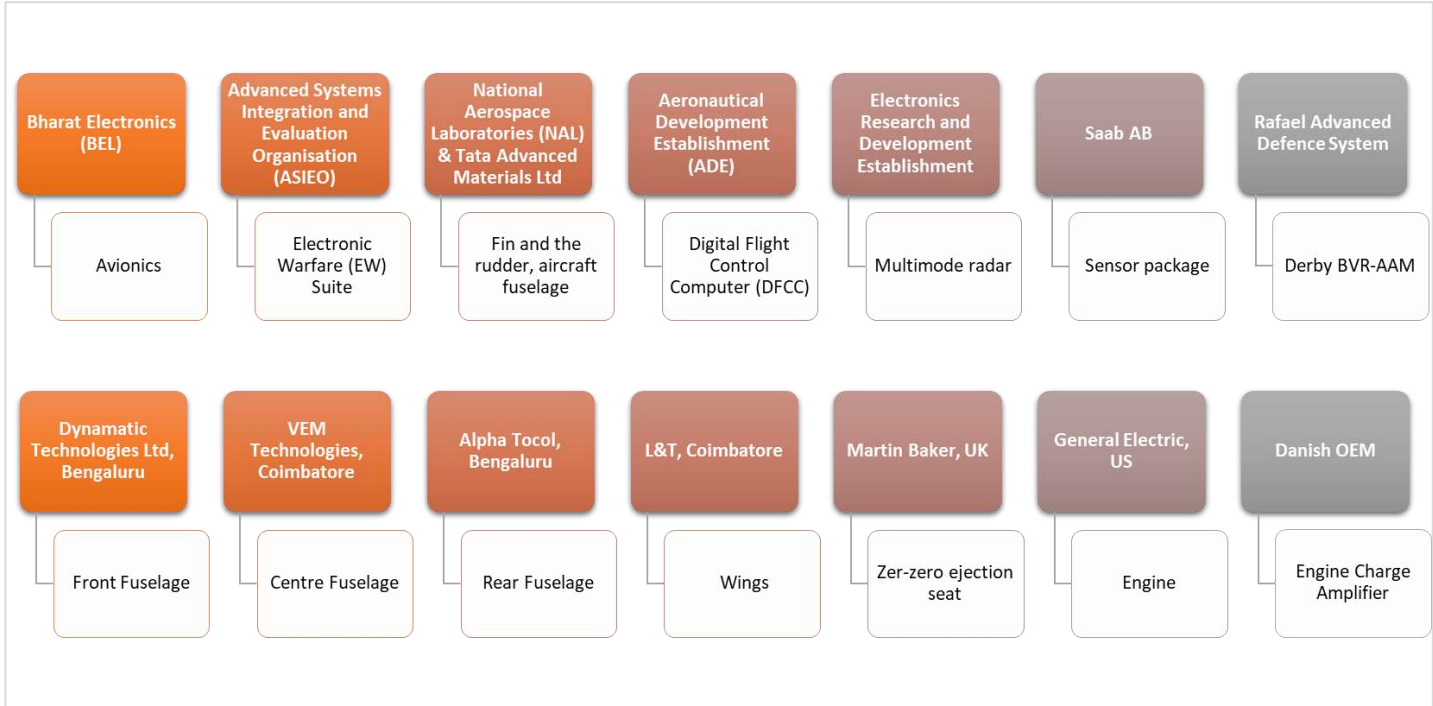
Exhibit 44: Main components of LCA Tejas



Source: Industry

About 85 vendors (private firms) will be involved in the production of LCA. Some major players are: Dynamatic Technologies Ltd, Bengaluru; VEM Technologies, Hyderabad; Alpha Tocol, Bengaluru; L&T, Coimbatore; National Aerospace Laboratory; Tata Advanced Materials Limited; Martin Baker (UK); BEL; General Electric; Rafael Advanced Defence System; and Saab AB.

Exhibit 45: Major contractors involved in LCA Tejas Programme



Source: Company, Nuvama Research

Initially, HNAL received an order for 40 LCA Tejas Mk-1, which comprised 20 IOC and 20 FOC standard aircraft. Of these, the IAF has inducted 35 aircraft from HNAL. Moreover, the government contracted with HNAL for 83 Tejas aircraft, including 73 Tejas Mk-1A fighter aircraft and 10 Tejas Mk-1 trainer aircraft at a value of INR480bn in February 2021. HNAL has assured the delivery of all 83 aircraft by 2028–29. In line with making Tejas one of the most important resources for the IAF, the Defence Acquisition Council (DAC) has awarded the acceptance of necessity for another 97 Tejas Mk-1A aircraft.

Exhibit 46: LCA Tejas Mk-1A fighter jet



Source: Defence & Aerospace Research Forum



**Exhibit 47: Tejas – Planned variants**

|                                                                                                     |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tejas Trainer:</b> 2-seater operational conversion trainer for training air force pilots.        | <b>LCA Navy:</b> Twin- and single-seat carrier-capable for the Indian Navy. However, the Navy has declared that the Tejas is too heavy for it to be operational from aircraft carriers (like INS Vikrant, INS Vikramaditya, etc.) |
| <b>LCA Tejas AF MK2:</b> This is an improvement over the LCA Tejas Mk1 with a higher thrust engine. | <b>LCA Tejas Navy MK2:</b> This is phase 2 of the LCA Navy variant.                                                                                                                                                               |

Source: Nuvama Research

## Tejas Mark 2

The Tejas Mark 2, alias the Medium Weight Fighter (MWF), represents an advanced iteration of the original Tejas. The Mk2 fighters are crucial for the IAF as they are set to replace India's Jaguar, Mirage-2000 and MiG-29 fleets by 2030-35. The IAF plans to induct approximately 108 aircraft to be used in both defensive and offensive operations.

**Exhibit 48: Tejas Mk 2**



Source: Janes

## Delays and challenges

The IAF is perturbed about the delays in the Tejas LCA Mk-1A programme as it could affect their fighting capabilities. The issue can be attributed to prolonged delays in receiving the F-404 engines from US-based GE Aerospace used in these aircraft.

The shipment of these engines, essential for the LCA Mk-1A's functionality, is running behind schedule by more than two years now because of global supply chain problems in the aerospace sector. Moreover, the certification of new systems in the aircraft remains unresolved, making the delivery timeline more complex.

Further delays can be expected in delivery of LCA Mk-1A fighter jets as a key component—engine charge amplifier—that is imported from Denmark has been put on an export blacklist by the country. The export restriction is likely due to the ongoing Russia-Ukraine conflict. HNAL has contracted a Bangalore-based firm to indigenise the charge amplifier.



**Exhibit 49: GE 404 powers Tejas LCA Mk-1A**



*Source: Company*

The core problem with the engine issue stems from the DRDO's inability to manufacture the indigenous Kaveri engine, which was supposed to power the Tejas. The Kaveri project, launched in the 1980s, faced multiple technical and funding challenges, which led to its abandonment. Relying on foreign suppliers such as General Electric for a viable indigenous engine left India vulnerable to disruptions in the external supply chain.

## **Indian Multi-Role Helicopter (IMRH)**

Indian Multi-Role Helicopter (IMRH) is a twin-engine for the IAF, a 13-ton class helicopter to be equipped with an automatic flight control system (AFCS), mission systems and advanced cockpit displays. Its naval version, 12.5-ton DBMRH, is being developed for the Indian Navy.

The IMRH programme is being drafted to replace India's large fleet of Russian Mi-8/17s along with a few naval helicopters. The phasing out of the Mi-17s is anticipated in 2028. The platform is likely to have a huge market as around 40 air forces across the globe operate Mi-17 type helicopters.

Recently, HNAL signed a contract with SAFHAL Helicopter Engines to jointly develop and produce the 'Aravalli' engine, a new-generation high-power engine set to power these platforms. The engines will be designed to operate in extreme environments. Later, the engines would be used in civil markets for offshore operations and utility.

**Exhibit 50: Indian Multi-Role Helicopter (IMRH)**



*Source: Safran Group*

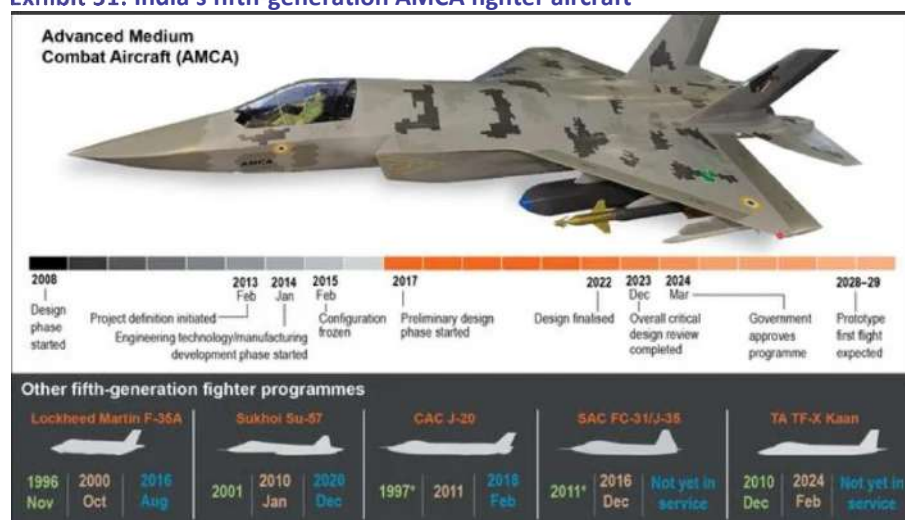
## Advanced Medium Combat Aircraft (AMCA)

The Advanced Medium Combat Aircraft (AMCA) is India's fifth-generation multirole fighter jet being designed and built indigenously. Currently under the planning stage, the aircraft's prototype is expected to be completed by 2028–29 and the production is expected to begin from 2032–33.

A special purpose vehicle (SPV) consisting of Aeronautical Development Agency (ADA), Hindustan Aeronautics Limited (HAL) and a private company is being formed for the development and production of AMCA. The aircraft will have two variants, Mark-1 variant of the aircraft will be a fifth-generation fighter while the Mark-2 variant will be capable of sixth-generation technologies.

AMCA will be capable of performing a multitude of missions, including air supremacy, ground-strike, suppression of enemy air defences (SEAD), and electronic warfare (EW) missions, and is intended to replace the Sukhoi-30MK1 air fighters.

### Exhibit 51: India's fifth-generation AMCA fighter aircraft



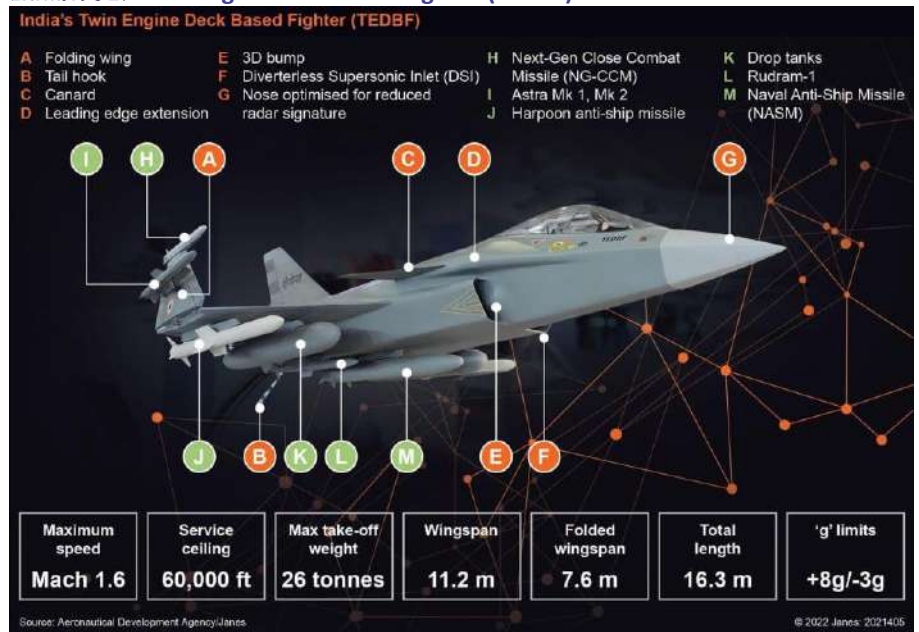
India's Advanced Medium Combat Aircraft programme began in 2008 and is intended to produce aircraft for induction into the Indian Air Force by 2030. Data shows that the fifth-generation fighter aircraft requires about two decades of development before entering service. (Janes)

Source: Janes

## Twin Engine Deck-Based Fighter (TEDBF)

The Twin Engine Deck-Based Fighter (TEDBF) is being developed by the ADA as Indian Navy's carrier-borne aircraft. It will be manufactured by HAL to replace the Mikoyan MiG-29K fleet on aircraft carriers INS Vikramaditya and the INS Vikrant. The Indian Navy has a procurement plan of two batches with 45 units in each. The GE-414 engines will power the preliminary prototypes whereas the production variant might utilise the 110Kn engine, which is being developed for the AMCA Mk-II program. Due to the TEDBF project, the Indian Navy reduced their import orders for fighters from 57 aircraft to 26, including trainer variants.

**Exhibit 52: Twin engine deck-based fighter (TEDBF)**



Source: Janes

## International partnerships

### Airbus

A significant advancement towards attaining aviation self-sufficiency has been marked by the recent announcement of a contract between Hindustan Aeronautics Limited (HNAL) and Airbus for the establishment of a Maintenance, Repair and Overhaul (MRO) facility dedicated to the A-320 fleet of aircraft. Under this agreement, Airbus will provide access to AirbusWorld, a digital platform that offers support, technical data, and training solutions. Airbus will also offer specific consulting services to HNAL.

### GE Aerospace

GE Aerospace signed a memorandum of understanding with HNAL to produce F414 fighter jet engines for the Indian Air Force. Under the agreement, GE and HNAL will co-produce 99 F414 engines as part of the LCA Mk-2 programme. The deal, which is estimated at USD1bn, will involve 80% transfer of technology (ToT). This scale of technology transfer will result in the LCA Mk-2 aircraft having a significantly improved indigenous content compared with the other two LCA variants.

### Safran Helicopter Engines

Safran and HNAL, through their joint venture SAFHAL, are developing and producing the 'Aravalli' engine for HNAL's IMRH and DBMRH platforms. These are new generation, high-power engines that will be equipped to perform in diverse and extensive environments. Through Helicopter Engine MRO (HE-MRO) joint venture in Goa, Safran Helicopter Engines and HNAL will also provide MRO (Maintenance, Repair and Overhaul) services for TM333 and Shakti engines in the service of Indian Armed Forces.

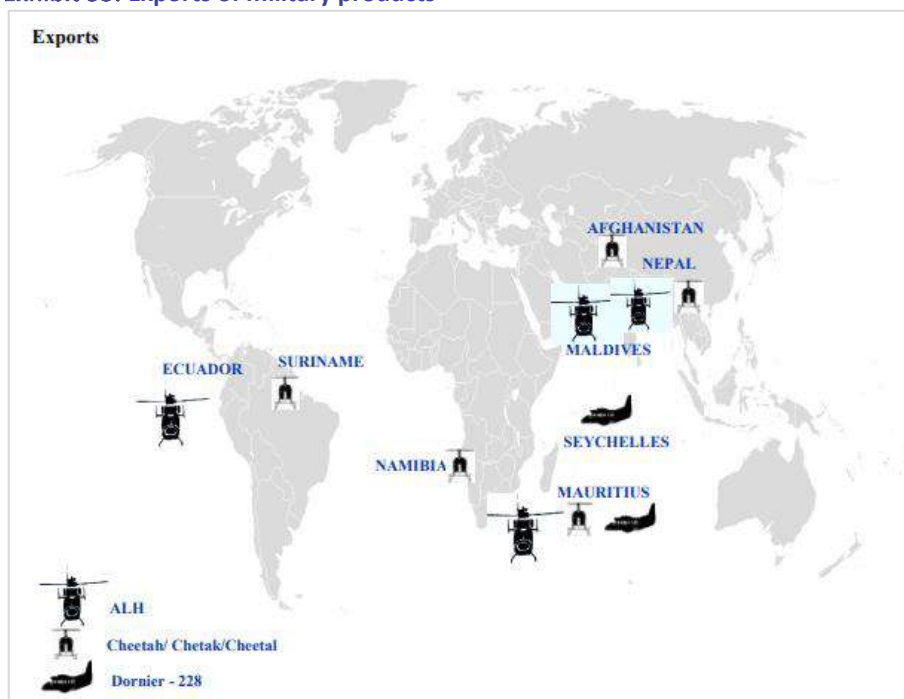
## Israel Aerospace Industries, Dynamatic Technologies

HNAL has signed an MoU with Israel Aerospace Industries (IAI) and Dynamatic Technologies (DTL) for manufacturing and marketing IAI's unmanned aerial vehicles (UAVs) to potential customers in India such as the defence forces, paramilitary forces and central armed police forces. HNAL's capability and infrastructure to manufacture battle-proven UAVs helped it expand product offerings to defence customers. In this agreement, IAI is the design authority, HNAL is the principle contractor and DTL is the principle sub-contractor.

## Export orders

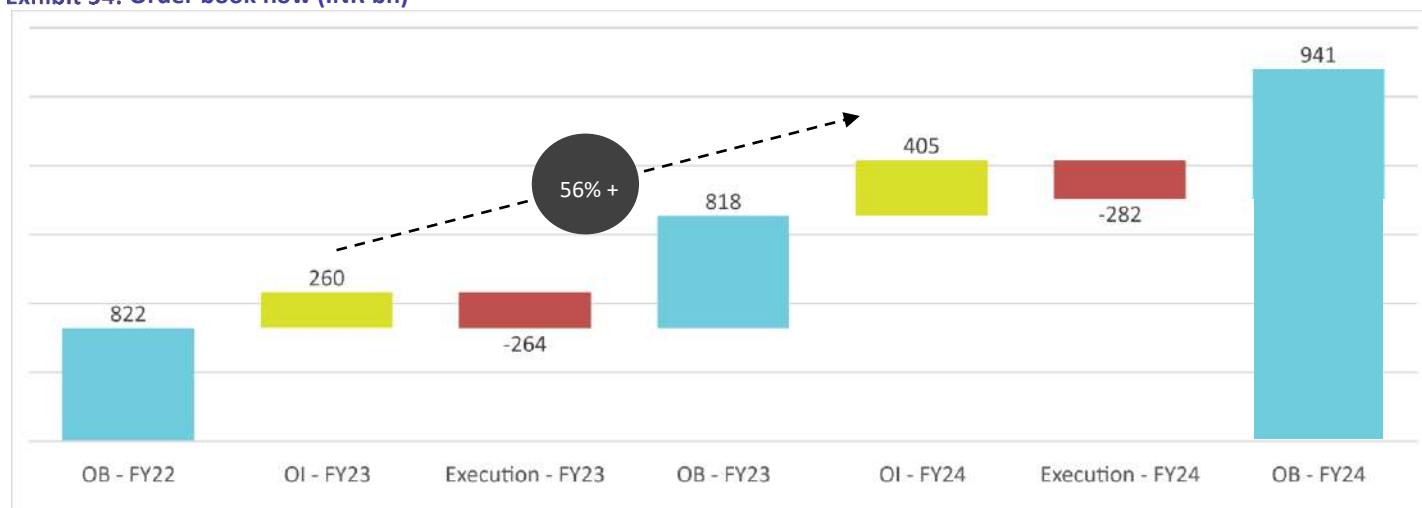
HNAL is taking proactive measures to promote exports and its international business with its indigenous range of LCA Tejas, ALH, LUH, and LCH. The Ministry of Defence of The Republic of Argentina has signed a letter of intent (LoI) with HNAL to acquire light and medium utility helicopters for Argentina's armed forces. Furthermore, Argentina has projected a requirement for 15 new fighter aircraft, and HNAL believes the LCA Mk-1A will meet the country's needs. Countries such as the Philippines, Argentina, Egypt and Nigeria have also shown interest in procuring LCH Prachand and LCA Tejas.

## Exhibit 53: Exports of military products



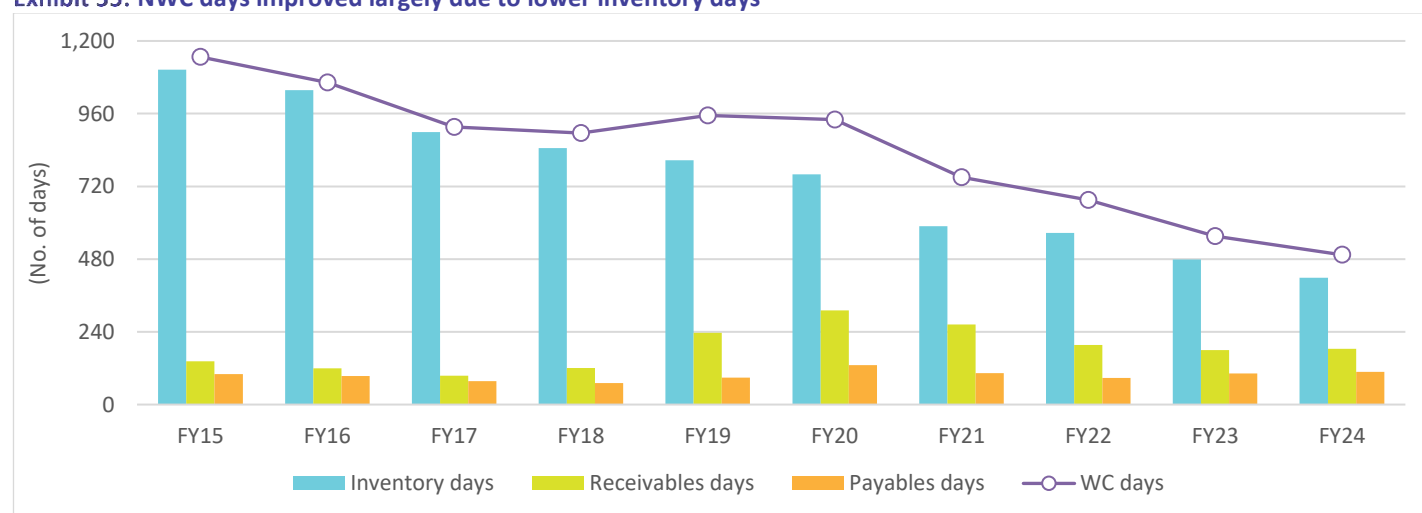
Source: Company, Nuvama Research

Exhibit 54: Order book flow (INR bn)



Source: Company, Nuvama Research

Exhibit 55: NWC days improved largely due to lower inventory days



Source: Company, Nuvama Research

## Management Overview

### Dr DK Sunil – Chairman & MD

Dr Sunil joined HNAL in 1987 and has about 37 years of experience in multiple roles, contributing significantly to design, production, quality enhancement and customer support issues. Prior to taking over as Chairman & Managing Director, he was Director (Engineering and R&D) beginning September 2022.

New technologies including the Voice Activated Control System, Combined Interrogator Transponder, and High Power Radar Power Supply were created under his direction and have since become new development areas for the company. Dr Sunil collaborated with organisations such as IIIT Hyderabad for voice recognition technology and IIT Kanpur for datalinks. His innovative strategy improved HNAL's standing in cutting-edge technologies.

During his tenure at the Mission Combat System R&D Centre in Bengaluru, he led teams focused on extensive projects such as Active ESA Radar, Automatic Flight Control System for Light Combat Helicopter (LCH), and Mission Computers for helicopter and fighter platforms. Dr Sunil has a patent to his credit for Robust Variance Based Squelch for Airborne V/UHF radio in RF interference Dominated Environment, which was received in Mar-24.

### Mr Atasi Baran Pradhan – Director (HR)

Mr Atasi Baran Pradhan joined HNAL in 2005 and has 35 years of experience in the Human Resource function in both the public and private sectors with exposure to various industries such as Engineering, Metallurgy, Paper and Aerospace & Defence situated in various parts of India. Prior to taking over as Director (Human Resources), he was Executive Director (Human Resources).

Mr Pradhan has played a key role in the adoption of IT-enabled HR systems over his time in service, including ERP, Performance Management System, Personnel Information System, and other online HR interventions. Among Shri Pradhan's notable achievements are a significant number of collective bargaining wage agreements, increasing worker productivity through piece rate pay and other techniques, lowering standard man-hours and overtime, and introducing TPM concepts such as Fugai and Kaizen.

When needed, he has streamlined the Contract Labour System and been instrumental in the outsourcing of non-core HR functions such as canteens, transportation services, township security and guesthouse maintenance.

### Chief Executive Officers by complex

The CEOs of various complexes at Hindustan Aeronautics Limited (HNAL):

- **Accessories Complex** – Shri Sajal Prakash
- **Helicopter Complex** – Shri S Anbuvelan
- **MiG Complex** – Shri Saket Chaturvedi
- **Bangalore Complex** – Shri Jayakrishnan S



Additional Data

Management

|                         |                  |
|-------------------------|------------------|
| Chairman/MD             | Dr D K Sunil     |
| General Manager:Finance | K T Venkatesh    |
| Dir:Operations          | Ravi K           |
| Dir:Operations          | Jayadeva E P     |
| Auditor                 | K.C. Mehta & Co. |

Holdings – Top 10\*

| % Holding       |      | % Holding         |      |
|-----------------|------|-------------------|------|
| FMR LLC         | 2.03 | ICICI Prudentia   | 0.46 |
| Vanguard Group  | 1.16 | Axis Asset Mana   | 0.37 |
| HDFC Asset Mana | 1.14 | Motilal Oswal AMC | 0.35 |
| Blackrock Inc   | 1.10 | JPMorgan Chase    | 0.29 |
| Nippon Life Ind | 0.53 | Dimensional Fun   | 0.22 |

\*Latest public data

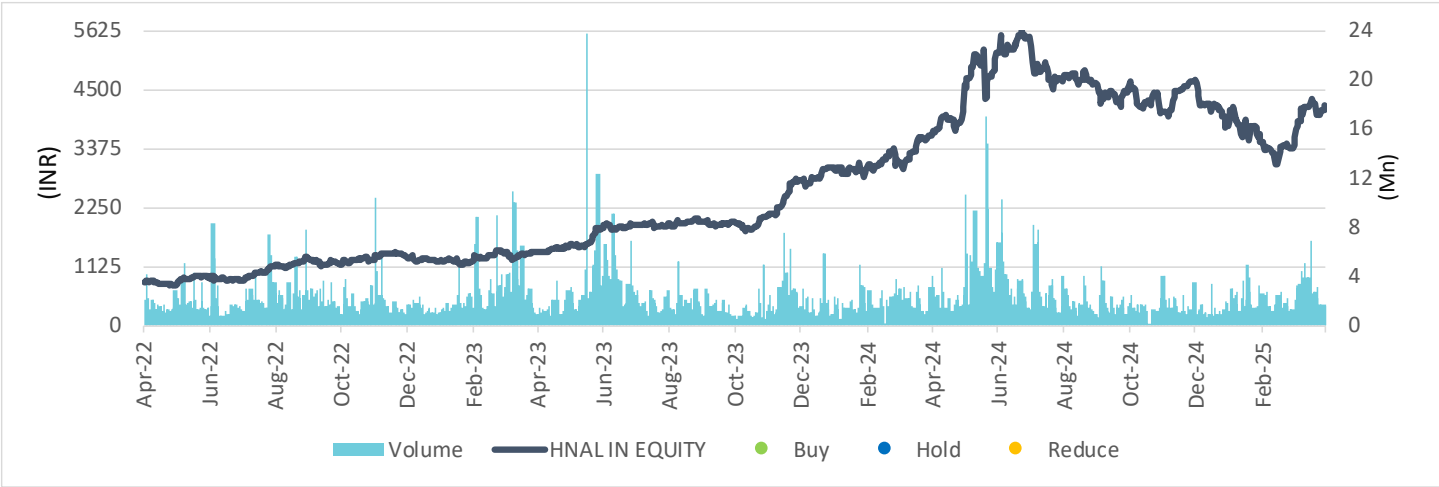
Recent Company Research

| Date | Title | Price | Reco |
|------|-------|-------|------|
|      |       |       |      |
|      |       |       |      |
|      |       |       |      |

Recent Sector Research

| Date      | Name of Co./Sector | Title                                                          |
|-----------|--------------------|----------------------------------------------------------------|
| 18-Feb-25 | Zen Technologies   | Muted results; OI ramp-up remains key as; <i>Result Update</i> |
| 07-Feb-25 | Solar Industries   | Positioning for future growth; <i>Result Update</i>            |
| 30-Jan-25 | Bharat Electronics | Befitting optimism on a growing giant; <i>Result Update</i>    |

Rating and Daily Volume Interpretation



Source: Bloomberg, Nuvama research

Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

# BHARAT ELECTRONICS

## COMPANY UPDATE

### KEY DATA

|                                  |              |
|----------------------------------|--------------|
| <b>Rating</b>                    | <b>BUY</b>   |
| Sector relative                  | Outperformer |
| Price (INR)                      | 294          |
| 12 month price target (INR)      | 385          |
| 52 Week High/Low                 | 341/221      |
| Market cap (INR bn/USD bn)       | 2,146/25.0   |
| Free float (%)                   | 48.9         |
| Avg. daily value traded (INR mn) | 6,735.1      |

### SHAREHOLDING PATTERN

|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 51.14% | 51.14% | 51.14% |
| FII      | 17.34% | 17.27% | 17.56% |
| DII      | 20.94% | 20.22% | 22.63% |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

### FINANCIALS

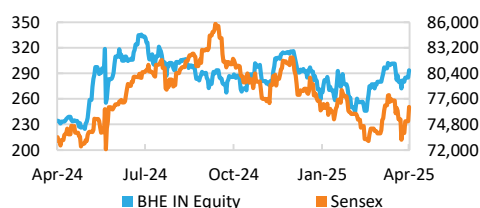
(INR mn)

| Year to March      | FY24A    | FY25E    | FY26E    | FY27E    |
|--------------------|----------|----------|----------|----------|
| Revenue            | 2,01,694 | 2,33,774 | 2,71,515 | 3,24,345 |
| EBITDA             | 49,982   | 63,586   | 71,952   | 87,573   |
| Adjusted profit    | 40,200   | 50,538   | 56,964   | 70,200   |
| Diluted EPS (INR)  | 5.5      | 6.9      | 7.8      | 9.6      |
| EPS growth (%)     | 33.7     | 25.7     | 12.7     | 23.2     |
| RoAE (%)           | 27.1     | 29.1     | 28.4     | 30.2     |
| P/E (x)            | 53.4     | 42.5     | 37.7     | 30.6     |
| EV/EBITDA (x)      | 40.7     | 31.5     | 27.7     | 22.5     |
| Dividend yield (%) | 0.7      | 1.2      | 1.3      | 1.6      |

### CHANGE IN ESTIMATES

|                   | Revised estimates |          | % Revision |       |
|-------------------|-------------------|----------|------------|-------|
| Year to March     | FY25E             | FY26E    | FY25E      | FY26E |
| Revenue           | 2,33,774          | 2,71,515 | -6.4%      | -2.9% |
| EBITDA            | 63,586            | 71,952   | -5.7%      | -2.9% |
| Adjusted profit   | 50,538            | 56,964   | -5.4%      | -1.8% |
| Diluted EPS (INR) | 6.9               | 7.8      | -5.4%      | -1.8% |

### PRICE PERFORMANCE



## Biggest beneficiary of defence electronics

Bharat Electronics (BEL) is a leading supplier to all the three Indian Armed Forces (Air Force, Navy and Army) and the biggest defence electronics beneficiary of the [INR1.1tn-plus pipeline](#) over the next one–two years. Expansion of the IAF's existing fleet size, the ongoing modernisation drive and exports shall drive its growth.

We reckon BEL has strong growth potential given its INR715bn of backlog and ~INR1.1tn pipeline-led visibility along with [sustained OPMs beating Street's/management's guidance](#) (under-appreciated). The growth shall be driven by higher localisation, favourable product mix and cost efficiencies. Retain 'BUY' as sector top pick; revising FY25E/FY26E/27E EPS by (5%)/(2%)/9%, to a revised TP of INR385.

### Earnings upgrade machine; modernisation/exports key growth drivers

BEL is a multi-product, multi-technology DPSU that designs, develops and manufactures state-of-the-art products & systems for defence forces—radars, missile systems, military communications, naval systems, electronic warfare & avionics, C4I systems, electro optics, tank electronics, gun/weapon system upgrades, etc. In non-defence, BEL works in areas such as homeland security, smart cities, satellite integration, space electronics, transportation solutions (rail/metro), AI, cyber security and EVMs.

**What has happened so far?** Starting Q2FY24, OPM has risen led by multiple catalysts—favourable product mix, better pricing power and negotiations with MoD, operational efficiencies, higher localised content, etc. BEL has surpassed its OPM guidance for the last two years—FY24 OPM guidance was 21–23% and it reported ~24.8%, and FY25 OPM guidance was 23–25% and it reported ~27.4% for 9MFY25.

BEL is sitting on a healthy backlog of INR715bn-plus coupled with an INR1.1tn pipeline to materialise over the next one–two years, providing strong revenue visibility. It has guided for FY26E OI of INR500bn, broadly made up of base orders (INR200–250bn) + QRSAM (INR250bn).

**Order book breakdown:** Five projects worth INR180–250bn are LRSAM, Akash Prime, BMP-2-upgrade, Himshakti radar and Arudhra radar.

### Key variables to watch out for over 12–18 months; maintain 'BUY'

India's long-term defence growth story is intact given the GoI's push to build out the local defence ecosystem to be self-reliant. It would not only cater to domestic market, but also exports-related demand. Timely ordering of large ticket-size orders in the pipeline ([Exhibit1](#)), sustainability/improvement of execution and OPMs shall further drive a re-rating of the stock, in our view. We believe BEL has more positive catalysts/triggers than negative ones, and has further scope for a re-rating given it has been consistently beating its own guidance/Street's estimates on profitability. BEL remains our top sector pick; we continue to prefer it over HNAL since it remains one of the biggest beneficiaries of the ongoing/upcoming IAF modernisation drive.

*\*This note marks transfer of coverage.*

## Financial Statements

### Income Statement (INR mn)

| Year to March          | FY24A    | FY25E    | FY26E    | FY27E    |
|------------------------|----------|----------|----------|----------|
| Total operating income | 2,01,694 | 2,33,774 | 2,71,515 | 3,24,345 |
| Gross profit           | 96,035   | 1,16,186 | 1,32,499 | 1,58,280 |
| Employee costs         | 24,667   | 28,053   | 32,039   | 37,300   |
| Other expenses         | 21,386   | 24,546   | 28,509   | 33,408   |
| EBITDA                 | 49,982   | 63,586   | 71,952   | 87,573   |
| Depreciation           | 4,124    | 4,209    | 4,468    | 4,553    |
| Less: Interest expense | 70       | 88       | 92       | 97       |
| Add: Other income      | 7,558    | 8,094    | 8,561    | 10,677   |
| Profit before tax      | 53,346   | 67,384   | 75,953   | 93,601   |
| Prov for tax           | 13,146   | 16,846   | 18,988   | 23,400   |
| Less: Other adj        | 0        | 0        | 0        | 0        |
| Reported profit        | 40,200   | 50,538   | 56,964   | 70,200   |
| Less: Excp.item (net)  | 0        | 0        | 0        | 0        |
| Adjusted profit        | 40,200   | 50,538   | 56,964   | 70,200   |
| Diluted shares o/s     | 7,310    | 7,310    | 7,310    | 7,310    |
| Adjusted diluted EPS   | 5.5      | 6.9      | 7.8      | 9.6      |
| DPS (INR)              | 2.2      | 3.5      | 3.9      | 4.8      |
| Tax rate (%)           | 24.6     | 25.0     | 25.0     | 25.0     |

### Important Ratios (%)

| Year to March            | FY24A | FY25E | FY26E | FY27E |
|--------------------------|-------|-------|-------|-------|
| COGS (% of rev)          | 52.4  | 50.3  | 51.2  | 51.2  |
| Employee cost (% of rev) | 12.2  | 12.0  | 11.8  | 11.5  |
| Other exp (% of rev)     | 10.6  | 10.5  | 10.5  | 10.3  |
| EBITDA margin (%)        | 24.8  | 27.2  | 26.5  | 27.0  |
| Net profit margin (%)    | 19.9  | 21.6  | 21.0  | 21.6  |
| Revenue growth (% YoY)   | 14.3  | 16.0  | 16.4  | 19.7  |
| EBITDA growth (% YoY)    | 23.5  | 27.2  | 13.2  | 21.7  |
| Adj. profit growth (%)   | 33.7  | 25.7  | 12.7  | 23.2  |

### Assumptions (%)

| Year to March          | FY24A   | FY25E   | FY26E   | FY27E   |
|------------------------|---------|---------|---------|---------|
| GDP (YoY %)            | 6.7     | 6.0     | 6.2     | 7.0     |
| Repo rate (%)          | 6.5     | 6.0     | 5.0     | 5.0     |
| USD/INR (average)      | 83.0    | 84.0    | 82.0    | 81.0    |
| Order inflow           | 354.1   | 187.2   | 500.0   | 350.0   |
| Rev growth (% YoY)     | 14.3    | 15.9    | 16.1    | 19.5    |
| EBITDA margin (%)      | 24.8    | 27.2    | 26.5    | 27.0    |
| Depreciation (% of FA) | 7.7     | 7.0     | 6.7     | 6.2     |
| Tax rate (%)           | 24.6    | 25.0    | 25.0    | 25.0    |
| Capex (INR mn)         | 6,422.9 | 8,050.0 | 6,050.0 | 6,050.0 |

### Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 53.4  | 42.5  | 37.7  | 30.6  |
| Price/BV (x)       | 13.3  | 11.5  | 10.0  | 8.6   |
| EV/EBITDA (x)      | 40.7  | 31.5  | 27.7  | 22.5  |
| Dividend yield (%) | 0.7   | 1.2   | 1.3   | 1.6   |

Source: Company and Nuvama estimates

### Balance Sheet (INR mn)

| Year to March        | FY24A    | FY25E    | FY26E    | FY27E    |
|----------------------|----------|----------|----------|----------|
| Share capital        | 7,310    | 7,310    | 7,310    | 7,310    |
| Reserves             | 1,53,514 | 1,78,783 | 2,07,265 | 2,42,366 |
| Shareholders funds   | 1,60,824 | 1,86,093 | 2,14,575 | 2,49,675 |
| Minority interest    | 0        | 0        | 0        | 0        |
| Borrowings           | 0        | 0        | 0        | 0        |
| Trade payables       | 36,937   | 41,881   | 57,130   | 68,246   |
| Other liabs & prov   | 1,77,223 | 2,13,209 | 2,35,791 | 2,63,714 |
| Total liabilities    | 3,85,815 | 4,52,015 | 5,18,327 | 5,92,467 |
| Net block            | 26,992   | 30,815   | 32,382   | 33,865   |
| Intangible assets    | 598      | 615      | 631      | 644      |
| Capital WIP          | 8,911    | 8,911    | 8,911    | 8,911    |
| Total fixed assets   | 36,500   | 40,341   | 41,923   | 43,420   |
| Non current inv      | 7,678    | 7,678    | 7,678    | 7,678    |
| Cash/cash equivalent | 1,09,681 | 1,40,352 | 1,54,743 | 1,74,477 |
| Sundry debtors       | 73,622   | 85,332   | 1,11,582 | 1,33,293 |
| Loans & advances     | 84       | 0        | 0        | 0        |
| Other assets         | 1,58,250 | 1,78,312 | 2,02,402 | 2,33,599 |
| Total assets         | 3,85,815 | 4,52,015 | 5,18,327 | 5,92,467 |

### Free Cash Flow (INR mn)

| Year to March         | FY24A    | FY25E   | FY26E    | FY27E    |
|-----------------------|----------|---------|----------|----------|
| Reported profit       | 40,200   | 50,538  | 56,964   | 70,200   |
| Add: Depreciation     | 4,124    | 4,209   | 4,468    | 4,553    |
| Interest (net of tax) | 53       | 66      | 69       | 73       |
| Others                | 18,608   | (8,160) | (8,631)  | (10,750) |
| Less: Changes in WC   | (16,506) | 10,841  | (12,510) | (13,869) |
| Operating cash flow   | 46,480   | 57,494  | 40,362   | 50,207   |
| Less: Capex           | 6,423    | 8,050   | 6,050    | 6,050    |
| Free cash flow        | 40,057   | 49,444  | 34,312   | 44,157   |

### Key Ratios

| Year to March         | FY24A | FY25E | FY26E | FY27E |
|-----------------------|-------|-------|-------|-------|
| RoE (%)               | 27.1  | 29.1  | 28.4  | 30.2  |
| RoCE (%)              | 36.0  | 38.9  | 38.0  | 40.4  |
| Inventory days        | 239   | 243   | 233   | 230   |
| Receivable days       | 130   | 124   | 132   | 138   |
| Payable days          | 121   | 122   | 130   | 138   |
| Working cap (% sales) | 6.1   | 0.5   | 5.1   | 8.6   |
| Gross debt/equity (x) | 0     | 0     | 0     | 0     |
| Net debt/equity (x)   | (0.7) | (0.8) | (0.7) | (0.7) |
| Interest coverage (x) | 653.2 | 676.7 | 732.4 | 858.1 |

### Valuation Drivers

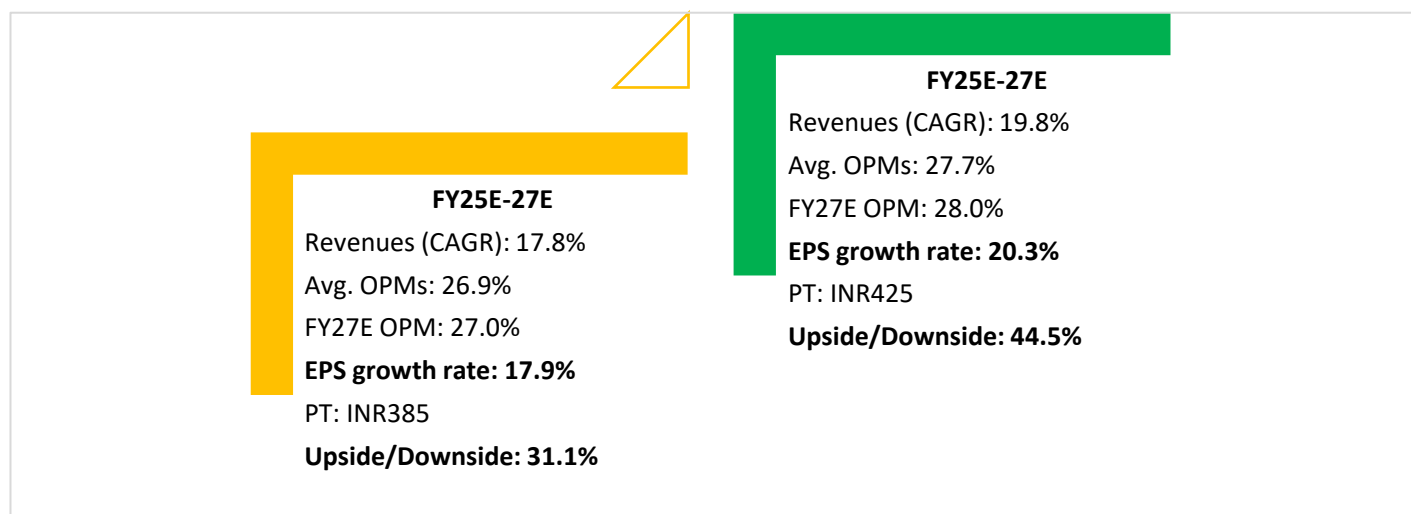
| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 33.7  | 25.7  | 12.7  | 23.2  |
| RoE (%)           | 27.1  | 29.1  | 28.4  | 30.2  |
| EBITDA growth (%) | 23.5  | 27.2  | 13.2  | 21.7  |
| Payout ratio (%)  | 40.0  | 50.0  | 50.0  | 50.0  |

Exhibit 1: Pipeline for 12–18 months

| Bharat Electronics (12-18 months)                |               |                       |
|--------------------------------------------------|---------------|-----------------------|
| Platforms                                        | Cost (INR bn) | Expected Timeline     |
| Base orders (upgrades, maintenance, spares etc.) | 200           | INR200bn p.a.         |
| Weather radar                                    | 25            | FY26-28               |
| EW Suite for MI-17                               | 20            | FY26-28               |
| Atulya radar                                     | 20            | FY26-28               |
| <b>Ashwini radar *</b>                           | <b>25</b>     | <b>Order received</b> |
| Shakti Phase-4                                   | 20            | FY26-28               |
| QRSAM (weapon system)                            | 250           | FY26-28               |
| MFR-X radar for NGME ships                       | 20            | FY26-28               |
| GBMES system                                     | 20            | FY26-28               |
| Mountain radar                                   | 20            | FY26-28               |
| MRSAM                                            | 70            | FY26-28               |
| MF STAR variants for NGC (P75-I)                 | 70            | FY26-28               |
| Other large programs                             | 400           | FY26-28               |
| <b>Total opportunity</b>                         | <b>1,135</b>  |                       |

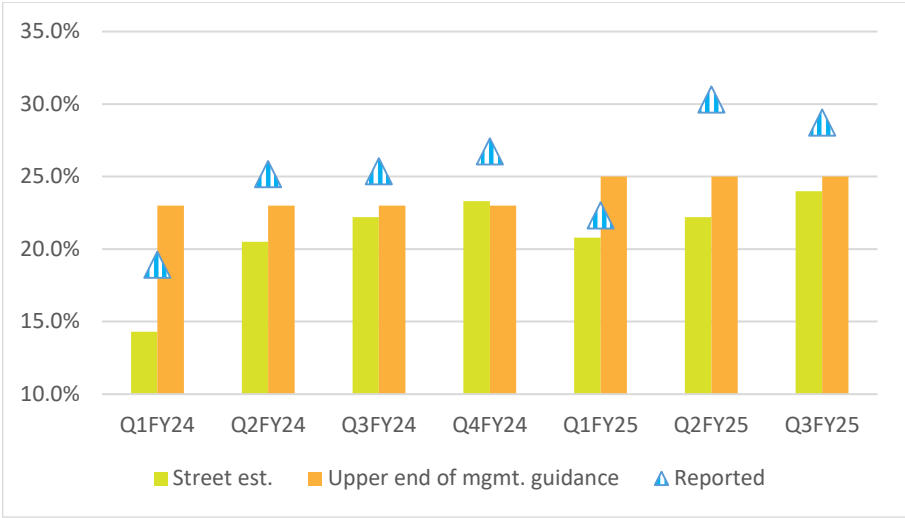
Source: Company, Nuvama Research

Exhibit 2: Nuvama scenario analysis



Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

Exhibit 3: OPMs over last seven quarters: Guidance versus Reported and Street



Source: Company, Nuvama Research

Exhibit 4: Company units



Source: Company, Nuvama Research

Exhibit 5: Business segments



Source: Company, Nuvama Research



## Exhibit 6: Exports



Source: Company, Nuvama Research

## Company Description

Established by Government of India under the Ministry of Defence in 1954 to meet the specialised electronic needs of the Indian defence services, Bharat Electronics (BEL) has grown into a multi-product, multi-technology and multi-unit company, serving the needs of customers in diverse fields in India and abroad. BEL offers products and services in a wide spectrum of technology like radars, military communications, naval systems, electronic warfare systems, telecommunications, sound & vision broadcasting, opto-electronics, tank electronics, solar photovoltaic systems, embedded software and electronic components. The company also provides turnkey systems solutions like command control communication & computer intelligence (C4I), covering requirements of all the three forces.

## Investment Theme

BEL, one of India's largest defence public sector undertakings (PSU), specialises in manufacturing defence electronics. It is emerging as a key beneficiary of increase in defence capital expenditure. The government's Make in India drive is likely to encourage domestic manufacturing. Further, domestic companies, including BEL, are likely to benefit from key changes in government policies, which clearly articulates defence PSUs like BEL as tier I system integrators. With strong order book in hand and parallel execution capability for multiple platforms, BEL has a strong P/L growth visibility. Also, with structural need to ensure higher systems availability and many more surface to missile (SAMs) system requirements, BELs order intake visibility remains high with limited headroom for competition.

## Key Risks

Delay/lumpiness in execution / awarding of defence contracts - The defence market is monopolistic with GoI being the sole buyer of defence equipment, which puts suppliers such as BEL at a disadvantage. Further, defence procurement procedures are complex and past experience indicates that they have tended to move at an extraordinarily slow pace. This has a dual impact—the equipment flow may not occur and it leads to a high degree of lumpiness in order book. Increased competition from private players - The government has shown increased intent of involving private players in the defence procurement process and to develop an active private sector supply to the armed forces. We believe, DPSUs have strong competitive advantages over the private sector in the near-to-medium term. However, incremental competition, particularly for offset contracts, could have a negative impact on BEL's margins. Changes in government policy- Any change in government policy/terms for DPSUs might hurt BEL and other DPSUs over the longer term, especially w.r.t operating margins/cash flows.

Additional Data

Management

|                          |                   |
|--------------------------|-------------------|
| CMD                      | Manoj Jain        |
| Director (Finance) & CFO | Damodar S Bhattad |
| Director (R&D)           | Manoj Jain        |
| Director (Marketing)     | K V Suresh Kumar  |
| Auditor                  | P G Bhagwat LLP   |

Holdings – Top 10\*

| % Holding       |      | % Holding       |      |
|-----------------|------|-----------------|------|
| Nippon Life Ind | 3.62 | Hdfc Asset Mana | 1.16 |
| Kotak Mahindra  | 2.63 | Canara Robeco A | 1.13 |
| Vanguard Group  | 1.98 | LIC             | 1.04 |
| Blackrock Inc   | 1.76 | FMR LLC         | 0.90 |
| SBI Funds Manag | 1.44 | UTI AMC         | 0.89 |

\*Latest public data

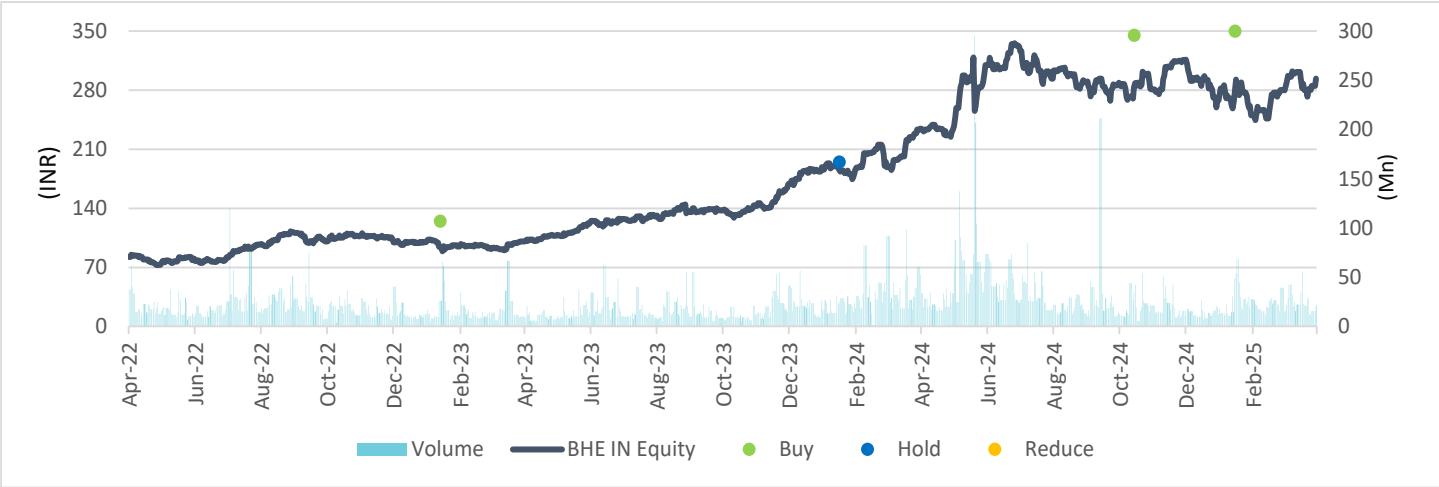
Recent Company Research

| Date      | Title                                                          | Price | Reco |
|-----------|----------------------------------------------------------------|-------|------|
| 30-Jan-25 | Befitting optimism on a growing giant; <i>Result Update</i>    | 268   | Buy  |
| 29-Oct-24 | Earnings growth machine; high on surpris; <i>Result Update</i> | 284   | Buy  |
| 29-Jul-24 | Near-term positives priced in; <i>Result Update</i>            | 321   | Hold |

Recent Sector Research

| Date      | Name of Co./Sector | Title                                                          |
|-----------|--------------------|----------------------------------------------------------------|
| 18-Feb-25 | Zen Technologies   | Muted results; OI ramp-up remains key as; <i>Result Update</i> |
| 07-Feb-25 | Solar Industries   | Positioning for future growth; <i>Result Update</i>            |
| 23-Dec-24 | Defence            | Geopolitical chessboard calls for Defenc; <i>Sector Update</i> |

Rating and Daily Volume Interpretation



Source: Bloomberg, Nuvama research

Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

# SOLAR INDUSTRIES

## COMPANY UPDATE

### KEY DATA

|                                         |                     |
|-----------------------------------------|---------------------|
| <b>Rating</b>                           | <b>BUY</b>          |
| <b>Sector relative</b>                  | <b>Outperformer</b> |
| <b>Price (INR)</b>                      | <b>11,948</b>       |
| <b>12 month price target (INR)</b>      | <b>13,750</b>       |
| <b>52 Week High/Low</b>                 | <b>13,300/7,888</b> |
| <b>Market cap (INR bn/USD bn)</b>       | <b>1,081/12.6</b>   |
| <b>Free float (%)</b>                   | <b>26.9</b>         |
| <b>Avg. daily value traded (INR mn)</b> | <b>1,149.5</b>      |

### SHAREHOLDING PATTERN

|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 73.15% | 73.15% | 73.15% |
| FII      | 7.23%  | 7.53%  | 6.10%  |
| DII      | 12.78% | 12.68% | 14.52% |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

### FINANCIALS

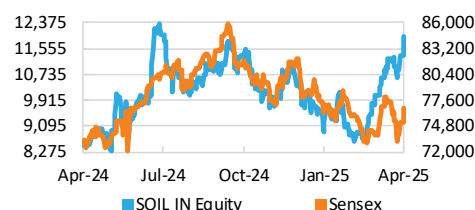
(INR mn)

| Year to March      | FY24A  | FY25E  | FY26E  | FY27E    |
|--------------------|--------|--------|--------|----------|
| Revenue            | 60,695 | 73,894 | 92,468 | 1,20,702 |
| EBITDA             | 13,692 | 19,433 | 24,012 | 32,574   |
| Adjusted profit    | 8,357  | 12,022 | 15,656 | 22,589   |
| Diluted EPS (INR)  | 92.3   | 132.8  | 173.0  | 249.6    |
| EPS growth (%)     | 10.3   | 43.9   | 30.2   | 44.3     |
| RoAE (%)           | 28.3   | 30.5   | 29.5   | 32.0     |
| P/E (x)            | 129.4  | 89.9   | 69.1   | 47.9     |
| EV/EBITDA (x)      | 59.3   | 41.7   | 33.6   | 24.6     |
| Dividend yield (%) | 0.1    | 0.1    | 0.1    | 0.1      |

### CHANGE IN ESTIMATES

|                   | Revised estimates |        | % Revision |       |
|-------------------|-------------------|--------|------------|-------|
| Year to March     | FY25E             | FY26E  | FY25E      | FY26E |
| Revenue           | 73,894            | 92,468 | 0.0%       | 0.0%  |
| EBITDA            | 19,433            | 24,012 | 0.0%       | 2.0%  |
| Adjusted profit   | 12,022            | 15,656 | 0.0%       | 2.5%  |
| Diluted EPS (INR) | 132.8             | 173.0  | 0.0%       | 2.5%  |

### PRICE PERFORMANCE



## Defence segment expanding rapidly

Solar Industries (SOIL) is the largest manufacturer of industrial explosives and initiating systems in India with an established global presence (82-plus countries). Defence is its fastest-growing segment (~43% revenue CAGR over FY20–24) with its mix in revenue increasing from ~2% in FY18 to ~20% now, spurred by huge defence investments (INR1–3bn yearly) in building capabilities over the last few years.

Retain 'BUY' as we reckon defence and exports shall be the prime growth drivers (with their revenue mix rising to 75–80% in two–three years from 60–65% currently). We are raising FY26E/27E EPS by 3%/12% factoring in ~28% revenue CAGR and 26–27% OPMs over FY25E–27E; this yields a revised TP of INR13,750 at 55x FY27E EPS.

### Defence and exports to be dual engines of high growth

SOIL is one of the largest domestic manufacturers of bulk and cartridge explosives, detonators, detonating cords and components, which find applications in the mining, infrastructure and construction industries. Product range includes packaged explosives, initiating systems, UAV drones, ammunitions, military explosives, rocket integration, loitering munitions, counter drone, space motors, bombs and warheads.

SOIL has been aggressively expanding its product basket in defence and is now among the largest players in the category of explosives. It has successfully developed and covered complete missile integration and is working on drones and related technology. SOIL's share of defence rose to ~20% in 9MFY25 (versus ~5% three years ago), and we expect it to reach 30–35% over next two–three years given an [enlarging defence backlog](#) and huge prospects (INR1.8tn defence capital outlay for FY26BE). Exports is another high-growth segment with ~35-40% share in revenue mix; it has compounded at ~1.5x over FY20–24. [Click here](#) to see defence segment portfolio.

SOIL recently signed an MoU with the Government of Maharashtra to invest ~INR127bn over the next decade. This strategic move shall establish SOIL as a key player in major defence projects, including UAVs, drones and military transport aircraft. Its order book stands tall at [~INR134bn](#) post-winning the *much-awaited Pinaka order worth ~INR61bn (its largest-ever single order)*. Given deliveries spanning over seven–eight years, this win, along with other sizable wins on the MoD and exports fronts, underscores SOIL's growing dominance in the defence sector.

### Key variables to watch out for over next 12–24 months

In Q3FY25, management highlighted they shall fall short of the FY25 volume guidance (15% earlier to now 10–12%) and revenue (25–30% earlier to now 20–22%). However, we do not reckon much impact on FY26E/27E EPS since the defence and exports pieces are burgeoning. We forecast higher bunched-up defence orders over FY26E/27E given Gol's continued focus on modernisation and indigenisation.

Timely ordering of large ticket-size defence orders (both domestic and exports) and sustenance/improvement in OPMs are the key catalysts going forward.

## Financial Statements

### Income Statement (INR mn)

| Year to March          | FY24A  | FY25E  | FY26E  | FY27E    |
|------------------------|--------|--------|--------|----------|
| Total operating income | 60,695 | 73,894 | 92,468 | 1,20,702 |
| Gross profit           | 28,734 | 36,147 | 44,047 | 57,378   |
| Employee costs         | 4,335  | 5,852  | 6,905  | 8,148    |
| Other expenses         | 10,707 | 8,054  | 13,131 | 16,657   |
| EBITDA                 | 13,692 | 19,433 | 24,012 | 32,574   |
| Depreciation           | 1,434  | 1,760  | 1,965  | 2,219    |
| Less: Interest expense | 1,094  | 1,177  | 1,105  | 1,105    |
| Add: Other income      | 445    | 800    | 645    | 1,252    |
| Profit before tax      | 11,609 | 17,296 | 21,587 | 30,501   |
| Prov for tax           | 2,861  | 4,524  | 5,181  | 7,161    |
| Less: Other adj        | 0      | 0      | 0      | 0        |
| Reported profit        | 8,357  | 12,022 | 15,656 | 22,589   |
| Less: Excp.item (net)  | 0      | 0      | 0      | 0        |
| Adjusted profit        | 8,357  | 12,022 | 15,656 | 22,589   |
| Diluted shares o/s     | 91     | 91     | 91     | 91       |
| Adjusted diluted EPS   | 92.3   | 132.8  | 173.0  | 249.6    |
| DPS (INR)              | 7.5    | 7.5    | 7.5    | 7.5      |
| Tax rate (%)           | 24.6   | 26.2   | 24.0   | 23.5     |

### Important Ratios (%)

| Year to March             | FY24A    | FY25E    | FY26E    | FY27E    |
|---------------------------|----------|----------|----------|----------|
| Explosive volume (%)      | 19.7     | 12.0     | 15.0     | 15.0     |
| Explosive realz. (INR MT) | 47,700.0 | 47,199.0 | 49,559.0 | 52,037.0 |
| COGS as % sales           | 55.0     | 50.0     | 51.5     | 51.8     |
| EBITDA margin (%)         | 22.6     | 26.3     | 26.0     | 27.0     |
| Net profit margin (%)     | 13.8     | 16.3     | 16.9     | 18.7     |
| Revenue growth (% YoY)    | (12.3)   | 21.7     | 25.1     | 30.5     |
| EBITDA growth (% YoY)     | 6.2      | 41.9     | 23.6     | 35.7     |
| Adj. profit growth (%)    | 10.3     | 43.9     | 30.2     | 44.3     |

### Assumptions (%)

| Year to March       | FY24A | FY25E | FY26E | FY27E |
|---------------------|-------|-------|-------|-------|
| GDP (YoY %)         | 5.8   | 6.3   | 6.3   | 6.3   |
| Repo rate (%)       | 5.5   | 5.0   | 5.0   | 5.0   |
| USD/INR (average)   | 78.0  | 77.0  | 77.0  | 77.0  |
| Overhead as % sales | 7.5   | 7.1   | 7.0   | 7.0   |
| Debtor days         | 50.0  | 46.0  | 45.0  | 49.0  |
| Inventory days      | 111.0 | 90.0  | 92.0  | 96.0  |
| Payable days        | 59.0  | 56.0  | 47.0  | 43.0  |

### Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 129.4 | 89.9  | 69.1  | 47.9  |
| Price/BV (x)       | 32.7  | 23.6  | 17.9  | 13.4  |
| EV/EBITDA (x)      | 59.3  | 41.7  | 33.6  | 24.6  |
| Dividend yield (%) | 0.1   | 0.1   | 0.1   | 0.1   |

Source: Company and Nuvama estimates

### Balance Sheet (INR mn)

| Year to March        | FY24A  | FY25E  | FY26E  | FY27E    |
|----------------------|--------|--------|--------|----------|
| Share capital        | 181    | 181    | 181    | 181      |
| Reserves             | 32,875 | 45,545 | 60,185 | 80,768   |
| Shareholders funds   | 33,056 | 45,726 | 60,366 | 80,949   |
| Minority interest    | 1,217  | 1,467  | 1,717  | 1,967    |
| Borrowings           | 11,050 | 11,050 | 10,050 | 10,050   |
| Trade payables       | 5,527  | 6,073  | 6,523  | 8,565    |
| Other liabs & prov   | 4,887  | 5,338  | 5,835  | 6,380    |
| Total liabilities    | 55,770 | 69,692 | 84,532 | 1,07,956 |
| Net block            | 19,191 | 29,431 | 34,466 | 40,247   |
| Intangible assets    | 1,086  | 1,086  | 1,086  | 1,086    |
| Capital WIP          | 4,898  | 4,898  | 4,898  | 4,898    |
| Total fixed assets   | 25,175 | 35,415 | 40,450 | 46,231   |
| Non current inv      | 1,565  | 1,565  | 1,565  | 1,565    |
| Cash/cash equivalent | 5,007  | 5,361  | 8,392  | 14,369   |
| Sundry debtors       | 8,449  | 10,122 | 12,667 | 19,841   |
| Loans & advances     | 358    | 358    | 358    | 358      |
| Other assets         | 15,217 | 16,872 | 21,101 | 25,592   |
| Total assets         | 55,770 | 69,692 | 84,532 | 1,07,956 |

### Free Cash Flow (INR mn)

| Year to March         | FY24A   | FY25E    | FY26E    | FY27E    |
|-----------------------|---------|----------|----------|----------|
| Reported profit       | 8,357   | 12,022   | 15,656   | 22,589   |
| Add: Depreciation     | 1,434   | 1,760    | 1,965    | 2,219    |
| Interest (net of tax) | 733     | 789      | 740      | 741      |
| Others                | 10,804  | (3,515)  | (12,042) | (20,141) |
| Less: Changes in WC   | 2,745   | (2,327)  | (5,824)  | (9,074)  |
| Operating cash flow   | 18,582  | 13,382   | 12,143   | 14,483   |
| Less: Capex           | (6,770) | (12,000) | (7,000)  | (8,000)  |
| Free cash flow        | 11,812  | 1,382    | 5,143    | 6,483    |

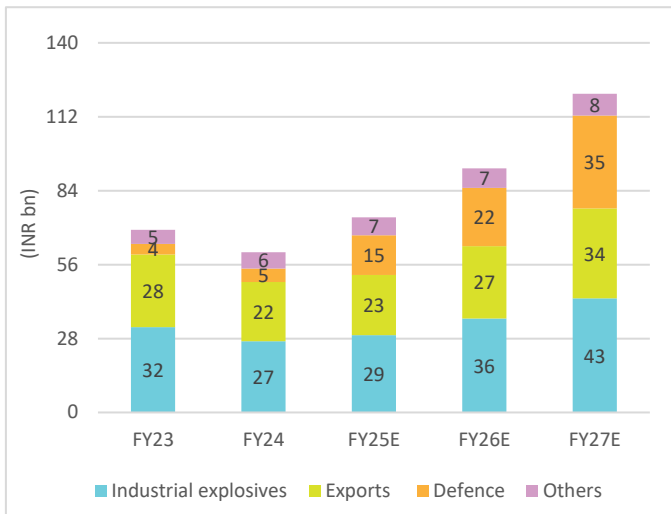
### Key Ratios

| Year to March         | FY24A | FY25E | FY26E | FY27E |
|-----------------------|-------|-------|-------|-------|
| RoE (%)               | 28.3  | 30.5  | 29.5  | 32.0  |
| RoCE (%)              | 30.1  | 35.7  | 34.8  | 38.3  |
| Inventory days        | 111   | 90    | 92    | 96    |
| Receivable days       | 50    | 46    | 45    | 49    |
| Payable days          | 59    | 56    | 47    | 43    |
| Working cap (% sales) | 23.0  | 22.1  | 23.9  | 25.9  |
| Gross debt/equity (x) | 0.3   | 0.2   | 0.2   | 0.1   |
| Net debt/equity (x)   | 0.2   | 0.1   | 0     | (0.1) |
| Interest coverage (x) | 11.2  | 15.0  | 20.0  | 27.5  |

### Valuation Drivers

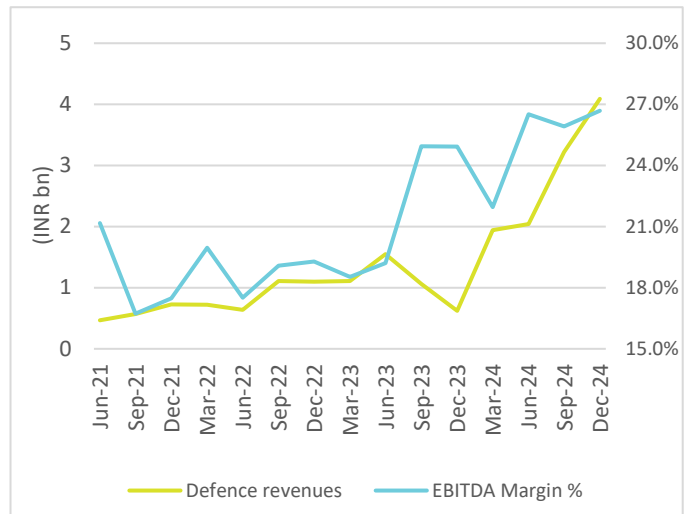
| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 10.3  | 43.9  | 30.2  | 44.3  |
| RoE (%)           | 28.3  | 30.5  | 29.5  | 32.0  |
| EBITDA growth (%) | 6.2   | 41.9  | 23.6  | 35.7  |
| Payout ratio (%)  | 8.1   | 5.6   | 4.3   | 3.0   |

**Exhibit 1: Defence revenue mix (8%/29% in FY24/27E)**



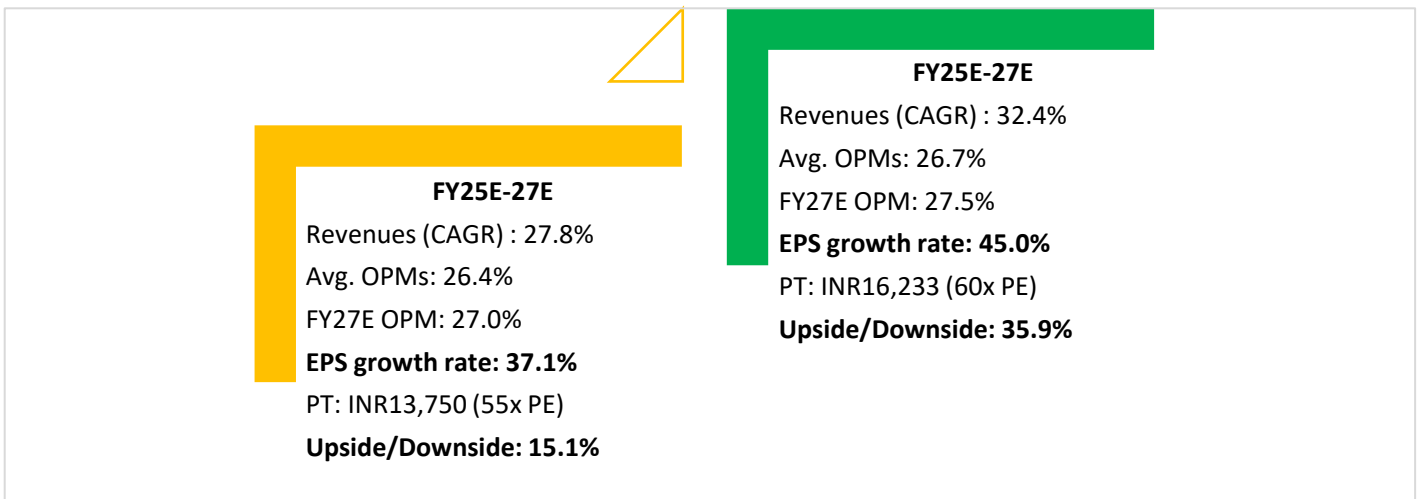
Source: Company, Nuvama Research

**Exhibit 2: Higher defence revenue mix lifting OPMs**



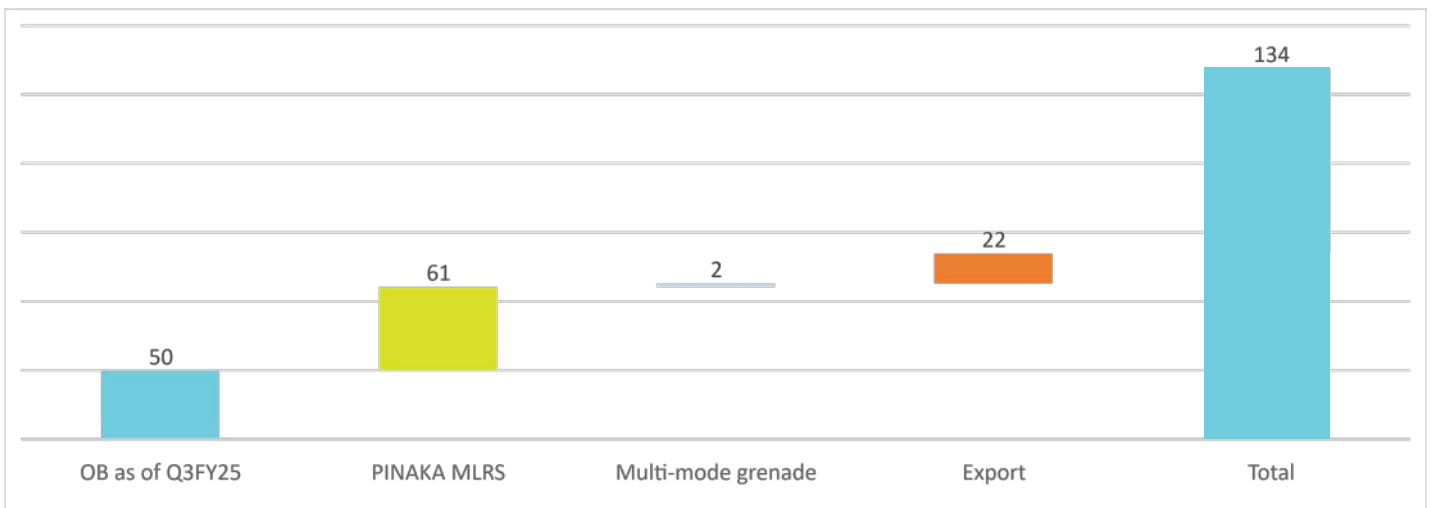
Source: Company, Nuvama Research

**Exhibit 3: Nuvama scenario analysis**



Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 4: Defence order book now stands at ~INR134bn**



Source: Company, Nuvama Research



Exhibit 5: Products portfolio



Source: Company, Nuvama Research

Exhibit 6: Defence products portfolio



Source: Company, Nuvama Research

## Defence offers strong growth potential

SOIL has been aggressively expanding its product basket in defence and is now among the largest players in the category of explosives. The company has successfully developed and covered complete missile integration and is working on drones and related technology (loitering munitions). Given the government's thrust on increasing domestic procurement, SOIL is likely to be a strong beneficiary of large growth opportunities in the segment and "Make in India" initiative.

In the Union Budget, FY26BE, Ministry of Defence was allocated a total expenditure of INR6.81tn with a capital outlay of INR1.8tn. Furthermore, the government has allowed up to [74% FDI in Defence Sector](#) through the automatic route for companies seeking new defence industrial licenses. These measures shall likely reduce the dependence of defence equipment imports and drive domestic defence procurement.

### In defence, six major areas of product development

- High energy materials (HMX, RDX, TNT and compounds)
- Composite propellants for (Pinaka, Akash and Brahmos)
- Explosives filling of ammunitions
- Mines, multi-mode hand grenade, warheads
- Fuses, pyros and ignitors
- Rocket integration

**Exhibit 7: Air bombs**



Source: Company, Nuvama Research

**Exhibit 8: Torpedoes**



Source: Company, Nuvama Research

Exhibit 9: Defence product basket

|         |                              |                                                        |
|---------|------------------------------|--------------------------------------------------------|
| Defence | UAS & Drones                 | Loiter Munition (LM-0)                                 |
|         |                              | Loiter Munition (LM-1)                                 |
|         |                              | Loiter Munition (LM-2)                                 |
|         | Ammunitions                  | Multi Mode Hand Grenades                               |
|         |                              | Medium Calibre                                         |
|         |                              | Large Calibre                                          |
|         | Military Explosives          | HMX*                                                   |
|         |                              | TNT*                                                   |
|         |                              | RDX*                                                   |
|         | Bombs & Warheads             | Air Bombs                                              |
|         |                              | Rockets                                                |
|         |                              | Torpedoes                                              |
|         |                              | War Heads for Rockets and Mis                          |
|         | Integration of Rockets       | Composite Propellants                                  |
|         | Initiating Systems and Pyros | Fuzes                                                  |
|         |                              | Detonators                                             |
|         |                              | Ignitors                                               |
|         |                              | Decoys & Flare                                         |
|         |                              | Riot Control Devices                                   |
|         | Counter Drone Systems        | Counter Drone Systems- Under development by EEL        |
|         | Drones Armed with Guided M   | Counter-Drone Micro-missile (CDM-1)- Under Development |

Source: Company, Nuvama Research

## Multi-mode hand grenade accelerates defence revenue growth

Economic Explosives (EEL)—a 100% subsidiary of SOIL—has successfully established production of multi-mode hand grenades as per ToT obtained from TBRL (DRDO).

SOIL provides a complete range of high-performance explosives and its compositions from its state-of-the-art manufacturing plants. The company has facilities to produce HMX and HMX compounds with high purity and fineness.

SOIL also produces HMX compounds coated with high melting waxes and synthetic polymers such as Viton for pressing applications providing an enhanced phlegmatisation effect, resulting in less sensitivity. HMX composition has uses in a variety of military and civil applications.

**Exhibit 10: Multi-mode hand grenade**



Source: Company, Nuvama Research

**Exhibit 11: Bullets**

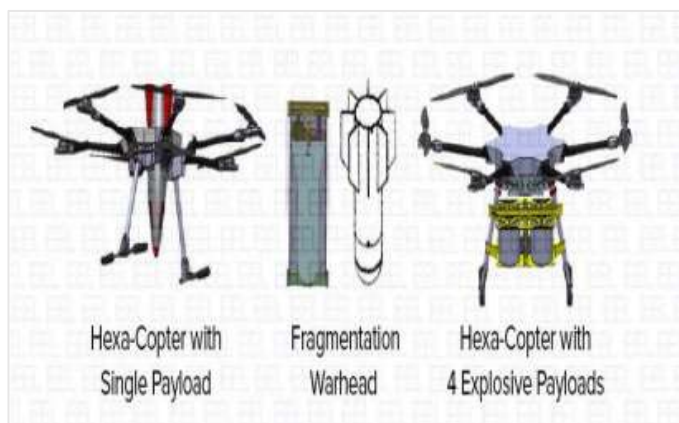


Source: Company, Nuvama Research

## Unmanned aerial systems (UAS) enlarge growth potential

Countering the threat caused by disruptive drones is now an issue of concern for everyone as hostile countries and non-state actors shall try to use drones for surveillance of vital installations and for targeting military assets. Even non-state actors are adept at use of UAS for malicious purpose such as terrorism, violent extremism, espionage, sabotage, propaganda and smuggling of arms, ammunition, drugs, fake currency and other disruptive material. Keeping in mind the futuristic requirements of armed forces, EEL is developing a micro-missile based Counter Drone System (CDS) with both soft-kill and hard-kill capability.

**Exhibit 12: Weaponised drones**



Source: Company, Nuvama Research

**Exhibit 13: Loiter munition drones**



Source: Company, Nuvama Research

## Accelerated capability in long-range missile

Multi-barrel 'Pinaka' rocket system with a strike range of about 40km is being used by Indian artillery. The other variants Pinaka-Enhanced and Pinaka Guided are in the process of development. These shall enhance the strike range to up to 45km and 75km. India is using Russian origin Smerch – multi-barrel unguided rocket system with a strike range up to 90km. Given product development in high range, SOIL is likely to gain significant traction in long-range missiles. SOIL's product under development in long-range category – Maheshvarastra-1 will be a multi-barrel guided rocket launch system with a range of 130km. Maheshvarastra-2 will be a guided rocket system with a range of 250km.

## Strong export opportunity

SOIL has recently bagged an order worth INR21.5bn for supply of defence products, to be delivered over six years. Previously, SOIL has won export orders for its Pinaka MBLR from Armenia (worth USD250mn) and European countries. This endorses SOIL's capability in complete missile integration and is the only player in India in the private space to bag such an opportunity. These major exports wins highlight the growing demand for India-made defence products and further strengthen SOIL's role in the global defence supply chain.

## Company Description

Founded in 1984, SIIL (erstwhile Solar Explosives) is the largest manufacturer of industrial explosives and explosive initiating systems in India. With a licensed explosives capacity of over 250,000 MT/annum, the company has ~27% market share in India. It is the largest supplier of explosives to Coal India and exports to over 20 countries in Middle-East, Africa and South East Asia, with ~65% market share in exports from India. SIIL has manufacturing facilities spread across 16 locations and eight states in India. Economic Explosives, its 100% subsidiary, manufactures detonators. Key top management personnel include Mr. Satyanarayan Nuwal (Chairman), Mr. Kundan Singh Talesra (Executive Director), Mr. Roomie Dara Vakil (Executive Director), Mr. Manish Nuwal (Executive Director).

## Investment Theme

Solar Industries is a market leader in the high entry barrier Indian industrial explosives market. India, a potential market for industrial explosives and its accessories, has witnessed a radical shift from complete import dependence in the past decades to self-sufficiency with an exportable surplus presently and SOIL on back of its excellent project execution track record and a strong brand name in industrial explosives. SOIL has also successfully forayed into various offshore markets including Nigeria, Zambia, Turkey and South Africa and have already ventured in to Australia and Ghana. These global markets offer strong growth potential for the company with revenue contribution of ~25% from offshore regions. SOIL in past three-four years has aggressively invested in defence (approx INR3.5bn) in creating capacities and taking various approvals. Today SOIL can offer entire basket of products including bombs, warheads and has integrated up to providing rockets and missiles.

## Key Risks

- Slowdown in mining and infrastructure sectors Regulatory risk - Explosives industry is heavily regulated by the government. Any adverse change in these regulations may impact the company's operations.
- Volatility of raw material prices may impact the company's profitability.
- High dependence on limited number of buyers - Over the years, while SIIL has been widening its customer base, even currently the top three customers contribute over 30% to the company's revenue.
- Any delay in overseas expansion or in defence venture.



## Additional Data

### Management

|                      |                       |
|----------------------|-----------------------|
| CEO                  | Manish Nuwal          |
| Joint CFO            | Moneesh Agrawal       |
| Chairman             | Satyanarayan Nuwal    |
| Secy/Compliance Ofcr | Khushboo Anish Pasari |
| Sr Mgr:Finance/IR    | Aanchal Kewlani       |

### Holdings – Top 10\*

|                 | % Holding |                 | % Holding |
|-----------------|-----------|-----------------|-----------|
| SBI Fund Mgmt   | 4.33      | Axis AMC        | 1.04      |
| Kotak Asset Mgm | 3.17      | BlackRock Inc   | 0.97      |
| HDFC AMC        | 1.73      | FMR LLC         | 0.58      |
| Fidelity Emergi | 1.13      | PGIM AMC        | 0.53      |
| Vanguard Group  | 1.10      | Motilal Oswal A | 0.42      |

\*Latest public data

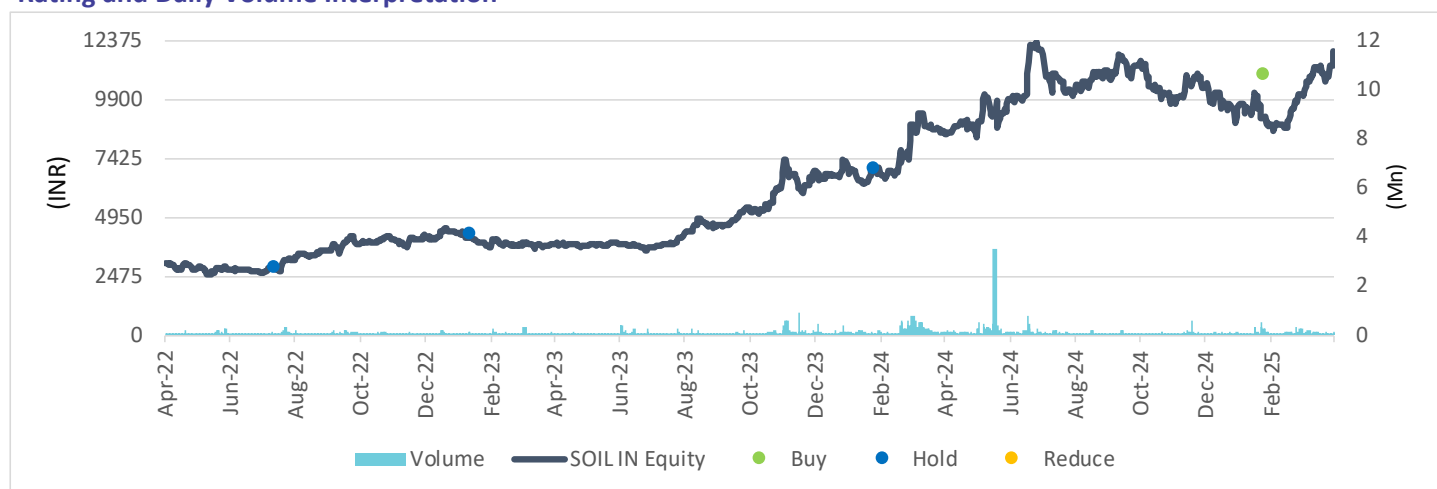
### Recent Company Research

| Date      | Title                                                        | Price  | Reco |
|-----------|--------------------------------------------------------------|--------|------|
| 07-Feb-25 | Positioning for future growth; <i>Result Update</i>          | 9,115  | Buy  |
| 14-Nov-24 | Margins sustain; <i>Result Update</i>                        | 9,688  | Hold |
| 07-Aug-24 | Margins light up, lift earnings growth; <i>Result Update</i> | 10,219 | Hold |

### Recent Sector Research

| Date      | Name of Co./Sector | Title                                                           |
|-----------|--------------------|-----------------------------------------------------------------|
| 18-Feb-25 | Zen Technologies   | Muted results; OI ramp-up remains key as; <i>Result Update</i>  |
| 30-Jan-25 | Bharat Electronics | Befitting optimism on a growing giant; <i>Result Update</i>     |
| 23-Dec-24 | Defence            | Geopolitical chessboard calls for Defence; <i>Sector Update</i> |

### Rating and Daily Volume Interpretation



### Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

## ZEN TECHNOLOGIES

## COMPANY UPDATE

## KEY DATA

|                                  |              |
|----------------------------------|--------------|
| <b>Rating</b>                    | <b>BUY</b>   |
| Sector relative                  | Outperformer |
| Price (INR)                      | 1,493        |
| 12 month price target (INR)      | 1,850        |
| 52 Week High/Low                 | 2,628/886    |
| Market cap (INR bn/USD bn)       | 135/1.6      |
| Free float (%)                   | 49.1         |
| Avg. daily value traded (INR mn) | 1,356.2      |

## SHAREHOLDING PATTERN

|          | Dec-24 | Sep-24 | Mar-24 |
|----------|--------|--------|--------|
| Promoter | 49.05% | 51.26% | 55.07% |
| FII      | 8.29%  | 5.72%  | 3.84%  |
| DII      | 8.97%  | 8.05%  | 3.31%  |
| Pledge   | 0.0%   | 0.0%   | 0.0%   |

## FINANCIALS

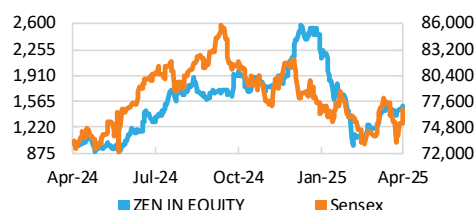
(INR mn)

| Year to March      | FY24A | FY25E | FY26E  | FY27E  |
|--------------------|-------|-------|--------|--------|
| Revenue            | 4,303 | 8,497 | 11,713 | 16,601 |
| EBITDA             | 1,772 | 2,914 | 3,865  | 5,478  |
| Adjusted profit    | 1,268 | 2,473 | 3,081  | 4,175  |
| Diluted EPS (INR)  | 15.1  | 27.4  | 34.1   | 46.2   |
| EPS growth (%)     | 236.7 | 81.5  | 24.6   | 35.5   |
| RoAE (%)           | 33.5  | 23.1  | 16.8   | 19.2   |
| P/E (x)            | 98.9  | 54.5  | 43.7   | 32.3   |
| EV/EBITDA (x)      | 75.3  | 43.9  | 33.2   | 23.1   |
| Dividend yield (%) | 0.1   | 0.1   | 0.1    | 0.2    |

## CHANGE IN ESTIMATES

|                   | Revised estimates |        | % Revision |       |
|-------------------|-------------------|--------|------------|-------|
| Year to March     | FY25E             | FY26E  | FY25E      | FY26E |
| Revenue           | 8,497             | 11,713 | 0.0%       | 7.1%  |
| EBITDA            | 2,914             | 3,865  | 0.0%       | 4.0%  |
| Adjusted profit   | 2,473             | 3,081  | 2.4%       | 6.2%  |
| Diluted EPS (INR) | 27.4              | 34.1   | 2.4%       | 6.2%  |

## PRICE PERFORMANCE



## Niche play on tech-based war training

Zen Technologies (ZTL) is an IP-focused defence proxy (*second/third derivative beneficiary*) with key offerings in land-based military training simulators (~20% of overall simulation market), anti-drone systems and modern defence equipment ([Hawkeye](#), [Barbarick](#), etc). ZTL announced [four strategic acquisitions](#) last quarter, foraying into naval simulation, equipment for drones, robotics—all of which shall expand its addressable market going forward.

Retain 'BUY' factoring in ~40% revenue CAGR and ~33% OPMs over FY25E–27E (*conservative versus guidance of ~50% revenue CAGR and ~35% OPM*). We are revising FY25E/26E/27E EPS by 2%/6%/(2%). At 40x FY27E EPS, the TP works out to INR1,850.

## An intellectual property-driven defence pure-play

Zen Technologies (ZTL) is among the few suppliers of critical defence simulators that beef up armed forces' readiness and capabilities; its growth arsenal is in-house IP design (~75-plus patents) and next-gen anti-drone systems. Having spent INR1.5bn-plus on R&D over the past decade, the company continues to deepen its strategic focus by enhancing the current product portfolio using Artificial Intelligence (AI) and Machine Learning (ML) as well as expanding its serviceable addressable market through organic/inorganic moves.

**India Defence and Security:** A multi-decadal structural story is playing out. India is targeting FY29E defence production/export targets of INR3tn/INR500bn from currently being the world's second-largest importer of defence equipment.

**'Fight as you train – train as you fight':** Defence simulators play an important role in enhancing armed forces' readiness in a cost-effective and realistic way before they hit the battlefield. Key catalysts: Framework for simulators in armed forces (2021), Agnipath Scheme (2022), preference for BUY-IDDM category, etc.

**ZTL's USP:** One of the only few manufacturers of defence simulation in India with in-house IP/tech and an 80–90% market share in its land-based simulation offerings.

**More than meets the eye:** Given focus on in-house design and development, premium valuation is justifiable given high earnings growth potential (~50% over FY25E–27E) and RoE/RoCE profiles (20–25%) in the entire defence pack.

## Key variables to watch out for over next 12–18 months

ZTL is a prominent second/third-order beneficiary of India's defence capital outlay (total defence budget allocation for FY26BE is ~INR1.8tn) with focus on in-house design/development of simulators, and it is expanding the footprint to new-age segments such as anti-drone systems, coupled with others. We believe timely tendering/ordering by the MoD is one of the key asks alongside meeting its ~50% revenue CAGR, ~35% OPM and ~25% PAT margin guidance for the next two–three years.

## Financial Statements

## Income Statement (INR mn)

| Year to March          | FY24A | FY25E | FY26E  | FY27E  |
|------------------------|-------|-------|--------|--------|
| Total operating income | 4,303 | 8,497 | 11,713 | 16,601 |
| Gross profit           | 2,930 | 4,231 | 5,681  | 7,968  |
| Employee costs         | 432   | 552   | 820    | 1,162  |
| Other expenses         | 726   | 765   | 996    | 1,328  |
| EBITDA                 | 1,772 | 2,914 | 3,865  | 5,478  |
| Depreciation           | 73    | 99    | 153    | 186    |
| Less: Interest expense | 18    | 85    | 102    | 112    |
| Add: Other income      | 139   | 567   | 498    | 386    |
| Profit before tax      | 1,820 | 3,297 | 4,109  | 5,567  |
| Prov for tax           | 552   | 824   | 1,027  | 1,392  |
| Less: Other adj        | 24    | 0     | 0      | 0      |
| Reported profit        | 1,292 | 2,473 | 3,081  | 4,175  |
| Less: Excp.item (net)  | (24)  | 0     | 0      | 0      |
| Adjusted profit        | 1,268 | 2,473 | 3,081  | 4,175  |
| Diluted shares o/s     | 84    | 90    | 90     | 90     |
| Adjusted diluted EPS   | 15.1  | 27.4  | 34.1   | 46.2   |
| DPS (INR)              | 1.0   | 1.4   | 1.7    | 2.3    |
| Tax rate (%)           | 30.3  | 25.0  | 25.0   | 25.0   |

## Important Ratios (%)

| Year to March            | FY24A | FY25E | FY26E | FY27E |
|--------------------------|-------|-------|-------|-------|
| COGS (% of rev)          | 31.9  | 50.2  | 51.5  | 52.0  |
| Employee cost (% of rev) | 10.0  | 6.5   | 7.0   | 7.0   |
| Other exp (% of rev)     | 16.9  | 9.0   | 8.5   | 8.0   |
| EBITDA margin (%)        | 41.2  | 34.3  | 33.0  | 33.0  |
| Net profit margin (%)    | 29.5  | 29.1  | 26.3  | 25.1  |
| Revenue growth (% YoY)   | 166.5 | 97.5  | 37.9  | 41.7  |
| EBITDA growth (% YoY)    | 245.6 | 64.4  | 32.6  | 41.7  |
| Adj. profit growth (%)   | 255.9 | 95.0  | 24.6  | 35.5  |

## Assumptions (%)

| Year to March         | FY24A   | FY25E     | FY26E     | FY27E   |
|-----------------------|---------|-----------|-----------|---------|
| GDP (YoY %)           | 6.7     | 6.0       | 6.2       | 7.0     |
| Repo rate (%)         | 6.5     | 6.0       | 5.0       | 5.0     |
| USD/INR (average)     | 83.0    | 84.0      | 82.0      | 81.0    |
| Products rev gwth (%) | 216.3   | (24.4)    | 50.2      | 89.9    |
| Exports rev gwth (%)  | 567.9   | (90.0)    | 600.0     | 90.0    |
| Gross margin (%)      | 68.1    | 49.8      | 48.5      | 48.0    |
| EBITDA margin (%)     | 41.2    | 34.3      | 33.0      | 33.0    |
| Tax rate (%)          | 30.3    | 25.0      | 25.0      | 25.0    |
| Capex (INR mn)        | (272.0) | (3,500.0) | (2,000.0) | (500.0) |

## Valuation Metrics

| Year to March      | FY24A | FY25E | FY26E | FY27E |
|--------------------|-------|-------|-------|-------|
| Diluted P/E (x)    | 98.9  | 54.5  | 43.7  | 32.3  |
| Price/BV (x)       | 27.7  | 8.0   | 6.8   | 5.7   |
| EV/EBITDA (x)      | 75.3  | 43.9  | 33.2  | 23.1  |
| Dividend yield (%) | 0.1   | 0.1   | 0.1   | 0.2   |

Source: Company and Nuvama estimates

## Balance Sheet (INR mn)

| Year to March        | FY24A | FY25E  | FY26E  | FY27E  |
|----------------------|-------|--------|--------|--------|
| Share capital        | 84    | 90     | 90     | 90     |
| Reserves             | 4,447 | 16,790 | 19,717 | 23,684 |
| Shareholders funds   | 4,531 | 16,880 | 19,808 | 23,774 |
| Minority interest    | 0     | 0      | 0      | 0      |
| Borrowings           | 0     | 500    | 500    | 500    |
| Trade payables       | 262   | 701    | 992    | 1,419  |
| Other liabs & prov   | 164   | 164    | 164    | 164    |
| Total liabilities    | 7,184 | 20,473 | 23,690 | 28,084 |
| Net block            | 785   | 4,186  | 6,033  | 6,347  |
| Intangible assets    | 6     | 6      | 6      | 6      |
| Capital WIP          | 101   | 101    | 101    | 101    |
| Total fixed assets   | 892   | 4,293  | 6,139  | 6,454  |
| Non current inv      | 263   | 263    | 263    | 263    |
| Cash/cash equivalent | 1,422 | 7,452  | 6,898  | 8,871  |
| Sundry debtors       | 1,691 | 2,793  | 3,851  | 5,003  |
| Loans & advances     | 361   | 361    | 361    | 361    |
| Other assets         | 2,554 | 5,310  | 6,178  | 7,133  |
| Total assets         | 7,184 | 20,473 | 23,690 | 28,084 |

## Free Cash Flow (INR mn)

| Year to March         | FY24A   | FY25E   | FY26E   | FY27E   |
|-----------------------|---------|---------|---------|---------|
| Reported profit       | 1,292   | 2,473   | 3,081   | 4,175   |
| Add: Depreciation     | 73      | 99      | 153     | 186     |
| Interest (net of tax) | 18      | 85      | 102     | 112     |
| Others                | 0       | 0       | 0       | 0       |
| Less: Changes in WC   | (1,122) | (3,418) | (1,635) | (1,679) |
| Operating cash flow   | 262     | (761)   | 1,702   | 2,793   |
| Less: Capex           | 272     | 3,500   | 2,000   | 500     |
| Free cash flow        | (10)    | (4,261) | (298)   | 2,293   |

## Key Ratios

| Year to March         | FY24A | FY25E | FY26E | FY27E |
|-----------------------|-------|-------|-------|-------|
| RoE (%)               | 33.5  | 23.1  | 16.8  | 19.2  |
| RoCE (%)              | 47.3  | 30.9  | 22.3  | 25.5  |
| Inventory days        | 232   | 232   | 274   | 230   |
| Receivable days       | 100   | 96    | 104   | 97    |
| Payable days          | 40    | 41    | 51    | 51    |
| Working cap (% sales) | 98.7  | 90.2  | 79.4  | 66.1  |
| Gross debt/equity (x) | 0     | 0     | 0     | 0     |
| Net debt/equity (x)   | (0.3) | (0.4) | (0.3) | (0.4) |
| Interest coverage (x) | 92.3  | 32.9  | 36.5  | 47.3  |

## Valuation Drivers

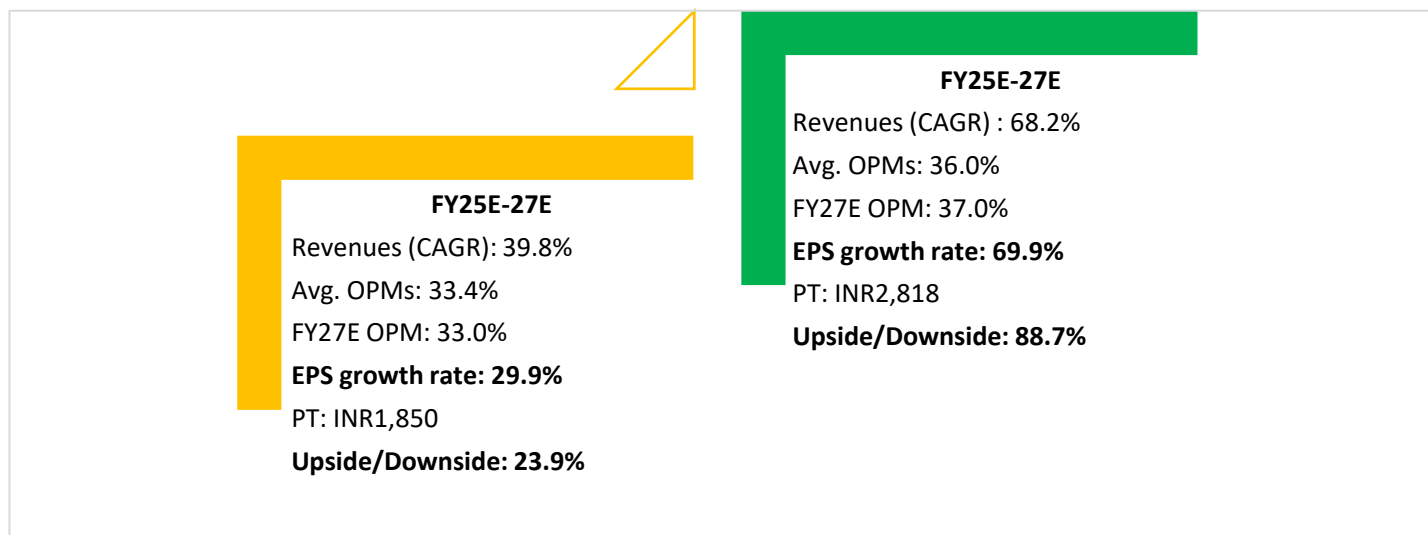
| Year to March     | FY24A | FY25E | FY26E | FY27E |
|-------------------|-------|-------|-------|-------|
| EPS growth (%)    | 236.7 | 81.5  | 24.6  | 35.5  |
| RoE (%)           | 33.5  | 23.1  | 16.8  | 19.2  |
| EBITDA growth (%) | 245.6 | 64.4  | 32.6  | 41.7  |
| Payout ratio (%)  | 6.5   | 5.0   | 5.0   | 5.0   |

**Exhibit 1: Order pipeline of ~INR40bn for ZTL**

| Equipment pipeline                           | INR bn      |
|----------------------------------------------|-------------|
| Integrated Air Defence Combat Simulator      | 1.4         |
| Infantry Weapons Training Simulator (2 nos.) | 11          |
| T72 Driving Simulator                        | 1.1         |
| T72 Crew Gunnery Simulator                   | 1.3         |
| ADFCR Simulator                              | 8.5         |
| GPS/GIS based minefiled recording system     | 0.8         |
| Containerised Small Arms Firing Range        | 2.5         |
| Armour Combat Training System                | 1.7         |
| Tactical Engagement Simulator                | 5.9         |
| Anti-dron system for IAF (2 nos.)            | 3.4         |
| CTN (2 nos.)                                 | 2.1         |
| <b>Total</b>                                 | <b>39.8</b> |

Source: Company, Nuvama Research

**Exhibit 2: Nuvama scenario analysis**



Source: Nuvama Research. Note: CMP is as of 15<sup>th</sup> Apr.

**Exhibit 3: ZTL's acquisitions over past few years**

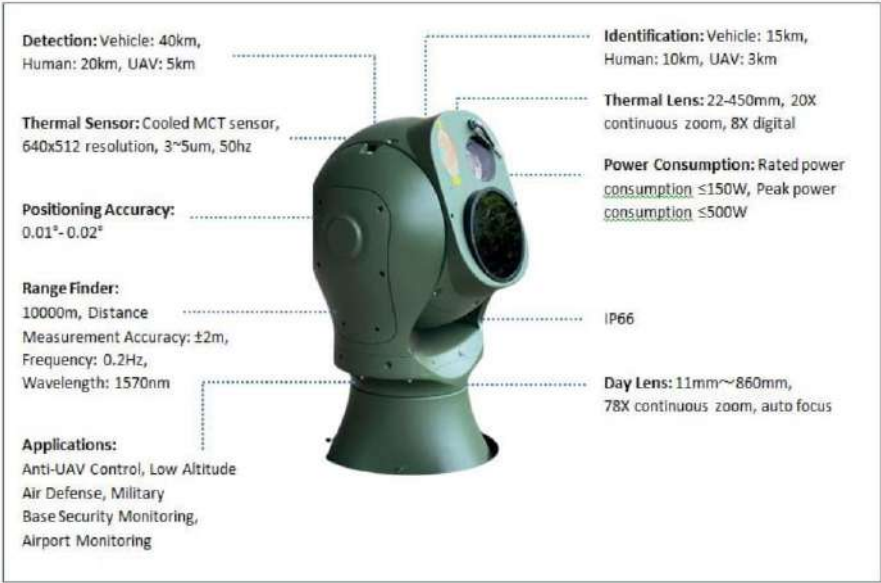
| Announced Date | Target                                 | Stake bought (%) | Value (INR mn) | Business description                                                                                                                                                                                                                                                                                                                                                            |
|----------------|----------------------------------------|------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14-02-2025     | Bhairav Robotics Pvt Ltd               | 45.3%            | 40             | It has product offerings, which include robotic products like quadrupedal robots and autonomous weapon systems.                                                                                                                                                                                                                                                                 |
| 14-02-2025     | Vector Technics Pvt Ltd                | 51.0%            | 250            | Vector specialises in propulsion and power distribution solutions for drones and UAVs. Existing product offerings include BLDC motors, electronic speed controllers (ESC), propellers and starter generators that are major components for drones, UAVs and robotic products. All the products are "Made in India".                                                             |
| 14-02-2025     | Applied Research International Pvt Ltd | 100.0%           | 1,275          | i) Provides simulation and assessment tools for the marine, offshore, naval, ports & terminals, and construction & mining industries; ii) Provides services relating to maintenance, certification and assessment solutions with respect to (i) above; iii) fleet-view monitoring of ships; and iv) maintenance and module development for e-governance of DG Shipping of India |
| 14-02-2025     | ARI Labs Pvt Ltd                       | 100.0%           | 25             | Engaged in the business of providing simulation and assessment tools for marine and naval industries                                                                                                                                                                                                                                                                            |
| 13-01-2025     | Zen Technologies USA Inc               | 100.0%           | NA             | Fully owned subsidiary established on 9th March 2018, focuses on developing advanced combat training simulators and systems for military and security forces                                                                                                                                                                                                                    |
| 24-02-2024     | AiTuring Technologies Pvt Ltd          | 51.0%            | 39             | Provides solutions for robotics and electronic optics                                                                                                                                                                                                                                                                                                                           |
| 16-11-2022     | Zen Defence Technologies LLC           | 100.0%           | NA             | Wholly owned subsidiary in UAE                                                                                                                                                                                                                                                                                                                                                  |
| 01-08-2022     | Paladin AI Inc                         | 5.0%             | 26             | Mainly involved in the aviation industry deploying AT-powered aviation training analytics. The company's platform accelerates training and assures pilot qualification for greater safety                                                                                                                                                                                       |
| 29-09-2020     | Zen Medical Technologies Pvt Ltd       | 100.0%           | NA             | Designs, develops and manufactures state-of-the-art combat training solutions for the training of defence and security forces worldwide                                                                                                                                                                                                                                         |
| 14-08-2018     | Unistring Tech Solutions Pvt Ltd       | 51.0%            | 70             | UTS is in the business of development of electronic warfare (EW) solutions, advanced communication systems for defence, telemetry systems and simulators for radar and EW system evaluation                                                                                                                                                                                     |

Source: Company, Nuvama Research

Recent product introductions

**Hawkeye** epitomises a state-of-the-art anti-drone system camera, featuring multiple sensor detection modules for all-weather drone tracking up to 15km. It ensures continuous threat detection and enhanced security.

Exhibit 4: Hawkeye



Source: Company

**Barbarik – URCWS** is the world's lightest remote-controlled weapon station, offering precise targeting capabilities (5.56mm to 7.62mm calibres) for ground vehicles and naval vessels, maximising battlefield effectiveness while minimising personnel risk. The URCWS has undergone recent firing trials at Infantry School Mhow and Armoured School Ahmednagar, and performed well.

Exhibit 5: Barbarik – URCWS



Source: Company, Nuvama Research

**Prahasta** is a revolutionary automated quadruped that uses LIDAR and reinforcement learning to understand and create real-time 3D terrain mapping for unparalleled mission planning, navigation and threat assessment. The quadruped can be armed with various calibre weapons such as 9mm, 5.56mm and 7.62mm. The quadruped can be used as the first line of defence for commandos during CI operations such as 26/11, thereby saving lives.



Exhibit 6: Prahasta



Source: Company

**Sthir Stab 640** is a rugged stabilised sight designed mainly for armoured vehicles, ICVs and boats. The sight encompasses an intelligent fibre optic gyro-stabilised system and delivers exceptional situational awareness with automatic search and tracking capabilities. The sight can be used in different weapon mounts such as 7.62mm, 12.7mm, 20mm and 30mm.

Exhibit 7: Sthir Stab 640



Source: Company

Products portfolio

Exhibit 8: Training and simulation: Live ranges

|                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Pop up/down      Slice in/out      Rotate 90°/180°</p>                                                                                                                                                          |                                                                                                             |                                                                                                                                                                                                                         |
| <p><b>Zen STS</b> is a state-of-the art, location of miss and hit (LOMAH) bullet detection system for small arms marksmanship training. The system detects the passage of all supersonic projectiles in single shot, rapid and automatic fire modes. The STS also has a 'Pop-up' target feature.</p> | <p><b>Zen MFTS</b> is a portable, electro- mechanical target system used at firing ranges for live-fire training. The System comprises a target system and a handheld remote controller.</p> | <p>Zen Technologies offers the static as well as the moving Tank Target Systems: The Pop- up <b>Static Tank Target Mechanism</b> or STTM and <b>Rail Moving Tank Target Mechanism</b> or MTTM. These targets are ideal for range firing and for tactical firing practices.</p>                             |
|                                                                                                                                                                                                                     |                                                                                                             |                                                                                                                                                                                                                         |
| <p>Built into a standard 40 foot shipping container for easy portability, the <b>Zen CISR</b> is a 'plug and play' kind of shooting range for live fire of hand guns and rifles.</p>                                                                                                                 | <p><b>Zen Shoot House</b> has been designed to train combat troops in close quarter battle situations in the closed environment of a built-up area.</p>                                      | <p><b>Zen Air-to-Ground Firing Range and Scoring System</b> offers real-time tracking and score in highest accuracy and the ability to be modular and the capacity to handle various ammunition types, in the most demanding environments using advanced algorithms and machine learning technologies.</p> |
|                                                                                                                                                                                                                   |                                                                                                          |                                                                                                                                                                                                                                                                                                            |
| <p><b>Zen Containerized Tubular Shooting Range</b> is a secure, transportable indoor live-firing range built into a standard 40 foot shipping container. Weapons that can be fired: Hand Guns and Rifles.</p>                                                                                        | <p><b>Zen Technology Shooting Ranges</b> are state of the art ranges enabled to facilitate maximum training in minimum time with the highest of safety.</p>                                  |                                                                                                                                                                                                                                                                                                            |

Source: Company

### Exhibit 9: Training and simulation: Live simulation



**Zen TacSim** is a force-on-force training system that enables conduct of 'live' exercises and mission rehearsals. Suitable for both outdoor and indoor training. It is a Laser and Sensor based 'Live' Training System. It is realistic and provides for mission rehearsals and tactical exercises.



Force-on-Force' exercises in operational environment are a most realistic form of mission oriented training for Mechanised Forces. **Zen ACTSTM** is a holistic laser based live training system. It facilitates realistic crew training and enables commanders to validate their plans and combat effectiveness of their command. It Integrates with Zen Tactical Engagement Simulator (TacSim) for an all arms combat training environment.



**Zen HE36S** is a patented 'pyrotechnic' hand grenade simulator that helps trainees develop a high degree of mindbody coordination essential for effectively firing hand grenades. It is a non-fragmenting reusable hand grenade and a useful aid for soldiers for handling and practicing grenade lobbing techniques.

Source: Company

### Exhibit 10: Training and simulation: Virtual and constructive simulation (1/2)



**Zen Infantry Weapons Training Simulator (Zen IWTS)** is an indoor training System to enhance firing standards in all section level small arms and also company support weapons MMG and AGL.



**Zen Advanced Weapons Simulator (Zen AWeSim)** is an indoor training System to enhance firing standards in all section level small arms such as handguns, rifles and light machine gun.



**Zen MMG Sim** is an interactive simulator to train MMG detachment numbers in techniques of engagement of various targets, fire control and tactical employment of the weapon system.



**Zen AGL Sim** is an interactive training system to train AGL detachments in techniques of engagement of various targets, fire control and tactical employment of the weapon system.



**Zen ATGM Sim** is a state-of-the-art indoor anti-tank guided missile pilot training simulator to meet the challenging requirements of missile pilots.



**Zen 81mm MIS** is an indoor simulator to train the complete Mortar Platoon on drills and fire control with replicated 81mm Mortar equipment and ammunition.

Source: Company

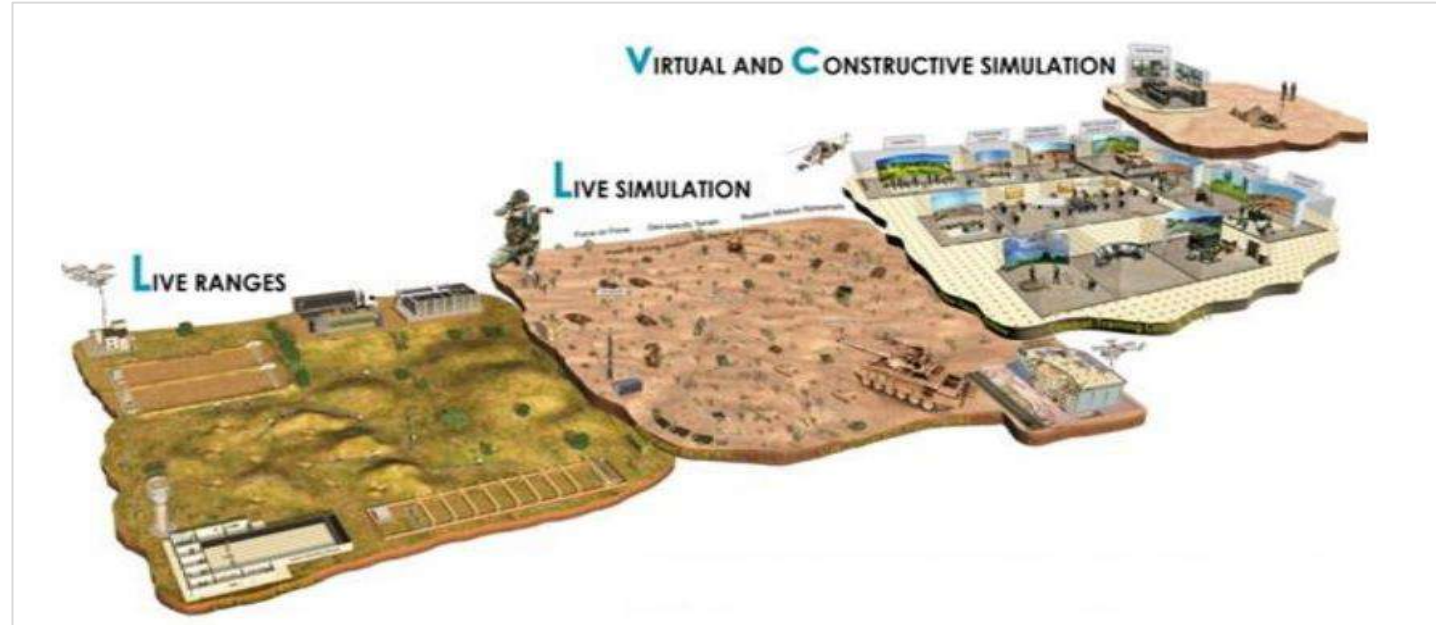


Exhibit 11: Training and simulation: Virtual and constructive simulation (2/2)

|                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>81mm Mortar mounted on Carrier Vehicle<br/>Replica Carrier Platform</p>                                                                         |                                                                                                                                                                                                      |                                                                                                                                          |
| <p><b>Zen CMT Sim</b> is a fully integrated state-of-the-art indoor simulator. The system is designed to seek total realism for operational training needs of mechanised forces.</p>                                                | <p><b>Zen 3ADS (Anti-Aircraft Air Defence Simulator)</b> is designed to train IGLA missile pilots. It is user-friendly and provides data of missile launch, details of target movements and hit-miss information for after action review (analysis).</p>                               | <p><b>Zen IADCS</b> is a state-of-the-art virtual simulator for training the crews of L-70 and ZU 23-2 guns. It provides unlimited opportunities for simulated live-fire practice with zero ammunition expenditure.</p>     |
|                                                                                                                                                     |                                                                                                                                                                                                      |                                                                                                                                          |
| <p><b>Zen Tank T-72/T-90 Driving Simulator (DS)</b> is a 6 Degrees of Freedom (6 DoF) motion platform based simulator. It replicates the driver cabin and all the controls to deliver a most realistic tank driving experience.</p> | <p><b>Zen BMP II Driving Simulator</b> has been designed to deliver most realistic driving training for the Infantry Combat Vehicle (ICV). It offers right from basic training all the way up to tactical and very challenging driving exercises for the driver and the commander.</p> | <p>The <b>Zen Infantry Combat Vehicle Integrated Missile Simulator (Zen BMP II IMS)</b> is a state-of-the-art indoor gunnery simulator and meets the exacting training requirements of gunner and commander of the ICV.</p> |

Source: Company

Exhibit 12: Zen’s combat training centre is capable of providing an integrated platform (virtual/live simulation, live ranges)



Source: Company

Exhibit 13: Zen's anti-drone system — provides security against UAV attack



Source: Company

Exhibit 14: Operational equipment: ShootEdge



**ShootEdge** is an advanced adapter engineered specifically for pistols, Glock 17, Glock 19 or UBGLs revolutionizing tactical operations by enabling secure shooting around corners without exposing the operator to direct fire. Its pivotal feature is the capability to swivel the weapon up to 65 degrees to either side, allowing effective firing from positions that minimize exposure. The system integrates cutting-edge technology, including a high-resolution day and night camera that delivers clear visuals regardless of lighting conditions. This is complemented by an IR illuminator for enhanced visibility in low-light environments, a precise red dot laser for accurate aiming, and a tactical torch for supplementary functionality.

Source: Company

## Company Description

Zen Technologies (ZTL) was incorporated in 1993 by three co-founders, who set it up as a low value integration solutions company. Now, the company designs, manufactures and develops land-based military training simulators, driving simulators, live-range equipment and anti-drone systems. ZTL has its own training platform to provide a simulated battle experience by integrating its entire range of products offerings. It also provides counter-drone solutions for safeguarding borders, critical infrastructures, etc. ZTL is headquartered in Hyderabad (India) and has offices in India, the UAE and USA.

The company has applied for 150+ patents (75+ granted), and has shipped more than 1,000 training systems around the world. Its demonstration centre at Abu Dhabi is progressing as per plans and shall soon be operational. Going forward, the company would also focus on products that use Artificial Intelligence (AI) to scale up its product portfolio. The company's employee strength was 360 at end-June'24.

In 2014, Zen signed an MoU with Rockwell Collins for design and development of full-mission level D simulators for fixed and rotary wing helicopters, wherein ZTL was to provide structure and design and Rockwell to deliver the display and graphics.

## Investment Rationale

**India Defence and Security:** A multi-decadal structural story playing out (FY29 defence production/export targets of INR3tn/INR500bn) from currently being the world's largest importer of defence equipment.

**'Fight as you train – train as you fight':** Defence simulators play an important role in enhancing armed forces' readiness in a cost-effective and realistic way before they hit the battlefield. *Key catalysts:* Framework for simulators in armed forces (2021), Agnipath scheme (2022), preference for BUY-IDDM category etc.

**IP-driven defence pure-play:** ZTL is an IP-focused defence proxy (owning 75-plus patents) working on an asset-light model with 80–90% of its products designed/developed in-house, having spent INR1.5bn-plus on R&D over the last ten years. Strategic initiatives via organic/inorganic moves are underway, which would expand the serviceable addressable market significantly over the coming years.

## Key Risks

- High competitive intensity
- Delay in fresh order inflows; slower execution rate
- Stable geopolitical landscape; decline in Gol's defence budget
- Highly working capital-intensive



Additional Data

Management

|                                 |                                   |
|---------------------------------|-----------------------------------|
| CMD                             | Ashok Atluri                      |
| Joint MD/Founder                | Kishore Dutt Atluri               |
| CFO                             | Afzal Harunbhai Malkani           |
| Senior Manager: R&D Electronics | M Vijaya Rama                     |
| Auditor                         | Ramasamy Koteswara Rao and Co LLP |

Holdings – Top 10\*

| % Holding       |      | % Holding       |      |
|-----------------|------|-----------------|------|
| Motilal Oswal A | 3.80 | WBC Holdings    | 0.24 |
| Kotak Mahindra  | 3.63 | Dimensional Fun | 0.13 |
| Vanguard Group  | 1.89 | Samsung Life In | 0.12 |
| BlackRock Inc   | 0.74 | Aditya Birla Su | 0.11 |
| Capital Securit | 0.39 | State Street Co | 0.09 |

\*Latest public data

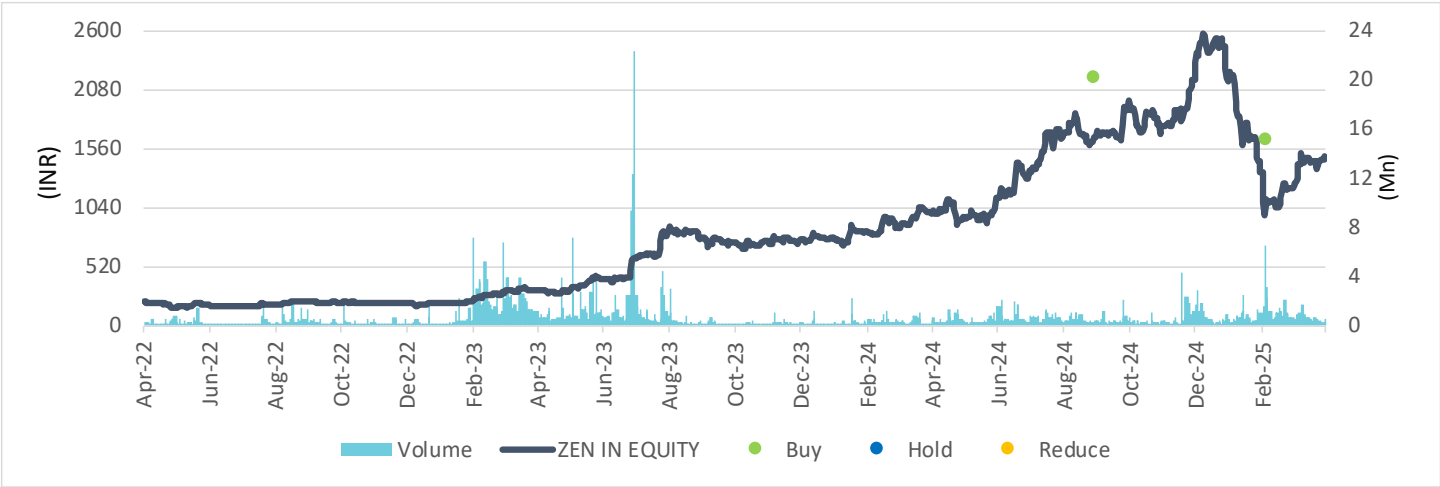
Recent Company Research

| Date      | Title                                                          | Price | Reco |
|-----------|----------------------------------------------------------------|-------|------|
| 18-Feb-25 | Muted results; OI ramp-up remains key as; <i>Result Update</i> | 1,080 | Buy  |
| 05-Dec-24 | Gearing up for the right markets; <i>Nuvama Flash</i>          | 1,887 | Buy  |
| 08-Nov-24 | Solid H1; positive outlook reinforced; <i>Result Update</i>    | 1,824 | Buy  |

Recent Sector Research

| Date      | Name of Co./Sector | Title                                                           |
|-----------|--------------------|-----------------------------------------------------------------|
| 07-Feb-25 | Solar Industries   | Positioning for future growth; <i>Result Update</i>             |
| 30-Jan-25 | Bharat Electronics | Befitting optimism on a growing giant; <i>Result Update</i>     |
| 23-Dec-24 | Defence            | Geopolitical chessboard calls for Defence; <i>Sector Update</i> |

Rating and Daily Volume Interpretation



Source: Bloomberg, Nuvama research

Rating Rationale & Distribution: Nuvama Research

| Rating | Expected absolute returns over 12 months | Rating Distribution |
|--------|------------------------------------------|---------------------|
| Buy    | 15%                                      | 205                 |
| Hold   | <15% and >-5%                            | 59                  |
| Reduce | <-5%                                     | 34                  |

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