

A close-up, low-angle shot of a white jet fighter aircraft against a clear blue sky. The aircraft is angled upwards from the bottom right towards the top left. The nose cone is prominent, and the cockpit canopy is visible. The aircraft's wings and various sensors are also visible, showing a sleek, modern design.

A report on opportunities in the Indian Aerospace and Defence industry

August, 2020

[home. kpmg/in](https://home.kpmg/in)

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List of abbreviations

Abbreviation	Expansion
ADIG	Aerospace & Defence Industry Group
AMCA	Advanced Medium Combat Aircraft
AoN	Acceptance of necessity
BE	Budgeted estimate
CAGR	Cumulative annual growth rate
CAPF	Central Armed Police Force
CRPF	Central Reserved Police Force
DPP	Defence Procurement Procedure
DPSU	Defence Public Sector Undertakings
DRDO	Defence Research and Development Organisation
DSE	UK Defence and Security Exports
EODB	Ease of doing business
Eoi	Expression of interest
FDI	Foreign direct investment
Goi	Government of India
HAL	Hindustan Aeronautics Limited
IAF	Indian Air Force
ICG	Indian Coast Guards
LCA	Light Combat Aircraft
MHA	Ministry of Home Affairs
MoD	Ministry of Defence
NOC	No objection certificate
OEM	Original equipment manufacturer
OF	Ordnance Factory
PMU	Project management unit
RE	Revised estimate
RFI	Request for information
RFP	Request for proposal
SIPRI	Stockholm International Peace Research Institute
UAV	Unmanned aerial vehicle
UGV	Unmanned ground vehicle

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Foreword

Richard McCallum, Vice Chair, UKIBC India



It is a paradox that while India has one of the largest defence industrial complexes in the developing world – with 39 ordnance factories, 9 Defence Public Sector Undertakings (DPSUs), over 50 Defence Research and Development Organisation (DRDO) research laboratories, a small but flourishing private defence sector and a legacy including the design and production of a 4th generation fighter, nuclear submarine, a main battle tank and intercontinental ballistic missile – the country continues to be overwhelmingly dependent on arms and equipment imports. This low level of indigenisation means India spends billions of dollars each year as one of the world's biggest arms importers.

To address the imbalance between the import of defence equipment and indigenous manufacture, the Indian government launched its ambitious 'Make in India initiative' in 2014. Under the initiative, which aims to encourage companies to manufacture in India and attract inward investment, several reforms have been taken to revitalise and promote an indigenous defence industry. Reforms include raising the foreign direct investment (FDI) cap, simplification and streamlining of defence industrial licensing, the articulation of a first ever defence exports strategy, the rationalisation of taxes and, most importantly, an ongoing attempt to simplify

India's Defence Procurement Procedures (DPP). The draft DPP 2020, released in the third week of March 2020, attempts to further strengthen the defence ecosystem in the country.

Defence and Aerospace remains a critical sector for India – and for the success of Make in India. A flourishing Indian defence sector requires increased foreign technology transfer and foreign investment in India which will ultimately lead to co-development and co-creation of capabilities which can meet not just the needs of India but also be exported to third countries.

At the same time, the UK Government is looking to deepen its international relationships after leaving the European Union and is now focused on making India a long-term and strategic partner. This will involve much more than just hardware sales – for example, it means focusing on specific areas of technology collaboration and skills-building in India with a view to involvement in long-term platforms and programmes. The MoU on Defence Technology and Industrial Capability Cooperation, signed in April 2019, represents a major shift in the UK's approach to India and will help UK industry to engage with Indian industry and the Government of India (GoI).



In association with our partner KPMG, the UK India Business Council (UKIBC) has compiled a list of short, medium and long-term opportunities in the Indian Defence and Aerospace industry. We want to catalyse UK firms with appropriate technology to consider (or reconsider) how they engage with India. Owing to the rapidly evolving nature of new technologies in this sector, we also include a separate section on opportunities in Emerging Technologies.

UKIBC is the UK Government's partner for business in the UK-India economic corridor, with a team of 50 across India and the UK. In 2019, at the request of the UK Defence & Security Exports (DSE), UKIBC launched the Aerospace & Defence Industry Group (ADIG), the purpose of which is to enhance UK-India strategic cooperation, advocate for improvements in the operating and procurement environments of both countries, support SMEs with opportunity mapping and connections and act as a voice for British business interests in India.

- **Richard McCallum,**
Vice Chair,
UKIBC India



Foreword

Abhishek Verma, Partner and Lead, Aerospace and Defence, KPMG



The Government of India (GoI), over the past few years, has demonstrated its focus towards bringing the cutting-edge technologies for its armed forces that can augment India's ability to monitor, control and resolve border as well as internal security threats. As India's security concerns grow with its increased engagement in the extended neighborhood, the pressure of enhancing the capabilities of the armed forces is now greater than ever.

The slew of defence reforms and government initiatives have been focussed on adoption of modern technology in the defence sector, while developing indigenous manufacturing capability. India aspires to develop a defence manufacturing ecosystem worth USD 5 billion by 2025. GoI's crucial initiatives such as 'Make in India' and 'Atmanirbhar Bharat' consider defence as a key sector for achieving the target of USD 5 trillion economy.

The defence manufacturing capabilities in the country are still in its nascent phase and will need a lot of support from global defence suppliers. On the other hand, India offers a ocean of growth opportunities for foreign players through partnerships. Through this paper, we intend to highlight key opportunities in the Indian A&D sector.

We would like to thank UKIBC for giving us the opportunity in collaborating with them for circulation of the document to their esteemed members.

- **Abhishek Verma,**
Partner & Lead,
Aerospace and Defence
KPMG in India



2. India's defence manufacturing

- a sunrise sector

India's defence industrialisation immediately after independence in 1947 was influenced by the country's socialistic and centralised planning system. This was reflected in the first Industrial Policy Resolution adopted in 1948. All 18 ordnance factories (OF) that India inherited from British India formed the core of India's state-led defence industry. The OFs were supported by a rudimentary research and development operation, which in 1958 became a full-fledged R&D organisation, called the Defence Research and Development Organization (commonly known as DRDO), and an aircraft plant, Hindustan Aircraft Factory (known as HAL), which was set up in Bangalore in 1940 with the objective of promoting the aviation industry in India.

The events of the 1960s, particularly the 1962 war with China and the India-Pakistan war of 1965, brought about a major change in India's defence policy. Concurrently India's defence budget as percentage of GDP increased in subsequent years and its approach towards arms procurement policy - and indigenous defence production - changed. The US embargo after the India-Pakistan war of 1965 accelerated India's close defence links with the then Soviet Union, marked by cooperation on the MiG-21 aircraft (signed in Oct 1962), which was eventually manufactured under license by HAL. By 1980, roughly 70% of Indian military hardware was of Soviet origin.

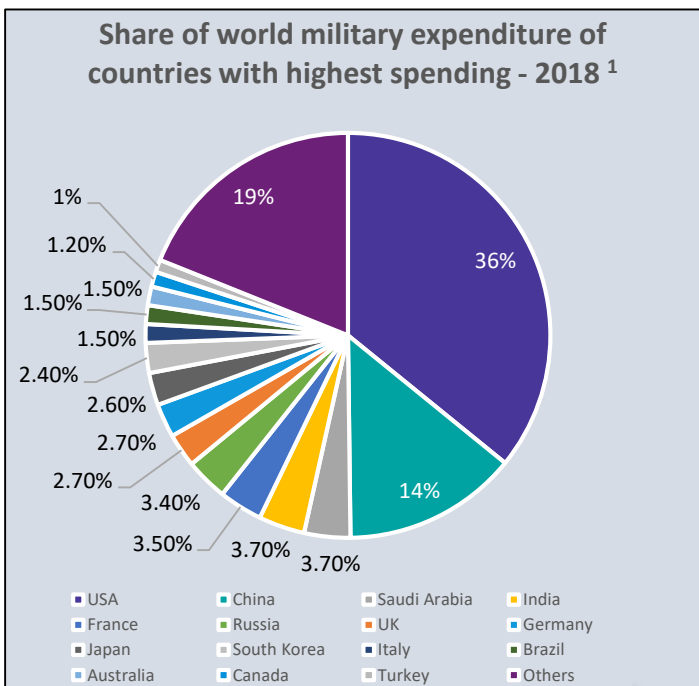
Beginning in the mid-1980s, the Government of India continued to increase spending on R&D to enable DRDO to undertake high-profile projects. However, indigenous efforts were not adequate to meet the growing requirements of the armed forces. This forced the government to look for alternative equipment from external sources. However, unlike in the

past, the focus shifted towards co-development and co-production with foreign companies.

While co-development/co-production remained a distinct feature of India's defence industrialisation process through the 1990s, the Government's approach to self-reliance took a major shift in the early 2000s, when the government permitted 100% participation of the private sector in defence production, with foreign direct investment (FDI) of up to 26%. This did not, however, mean easy access to Indian defence contracts because the MoD's Defence Procurement Procedure (DPP) did not have enough provisions to facilitate private companies' participation in MoD defence contracts. In order to create such provisions, successive DPPs have included a host of enabling provisions to create more opportunity for the private sector.

In search of greater self-reliance and with the objective of building India into a global manufacturing hub, the Make in India initiative was launched in 2014. This covers 25 sectors (of which defence is one) and constitutes a part of the government's larger economic plan to propel manufacturing's share of GDP to 25% from the present 16% - as well as to create 100 million additional jobs by 2022. At the same time, since 2014 the Government has undertaken a number of reforms related to the defence industry, including: industrial licensing; increasing the FDI cap to 49%; a new export strategy; and detailed standard operating procedures (SOPs) for granting no objection certificate (NOC) to the industry for certain defence exports. The March 2020 release of a revised draft Defence Procurement Procedure (DPP) 2020 by the MoD is a further step towards widening private sector participation in this vital part of the economy and advancing Make in India.

According to the SIPRI Yearbook 2019, the 5 biggest defence spenders in 2018 were the United States, China, Saudi Arabia, India and France, which together accounted for 60% of global military spending. Military spending in Asia and Oceania was USD507 billion in 2018 and accounted for 28% of global military spending. Five of the top 15 global spenders in 2018 are in this region- China (rank 2), India (rank 4), Japan (rank 9), South Korea (rank 10) and Australia (rank 13). It is the only region in which annual growth has been continuous since 1988, and the 46% increase between 2009 and 2018 was by far the largest of any region.



India's military spending rose in 2018 for the fifth consecutive year to USD66.5 billion, 3.1% higher than in 2017, and 29% higher than in 2009. Despite this rise in real terms, spending as a percentage of GDP declined from 2.9% (2009) to 2.4% (2018).

Indian A&D manufacturing sector is at an inflection point as the Government of India is expected to spend ~USD250 billion over the next 10 years on upgradation and modernisation of defence equipment/systems.² Robust growth potential of the industry is attracting global

Original Equipment Manufacturers (OEMs) into the Aerospace and Defence (A&D) sector to setup facilities in India thereby providing opportunity for participation of Indian companies as suppliers.

The Defence Procurement Procedure (DPP-2016, and the Draft DPP-2020) focus on institutionalising, streamlining and simplifying the defence procurement to give a boost to the 'Make in India' initiative, by promoting indigenous design, development and manufacturing of defence equipment, platforms, systems/sub-systems.

The Ministry of Defence (MoD), has set a target of doubling the defence production to USD26 billion (INR180,000 crore) by FY25 from USD12 billion (INR90,000 crore) in FY20.³ Defence manufacturing has been identified as one of the prominent sectors under the 'Make in India' initiative to realise USD5 trillion economy by 2024. In order to achieve the target annual growth rate of ~15 per cent in defence production, MoD is focusing on the increasing private sector participation and defence exports.

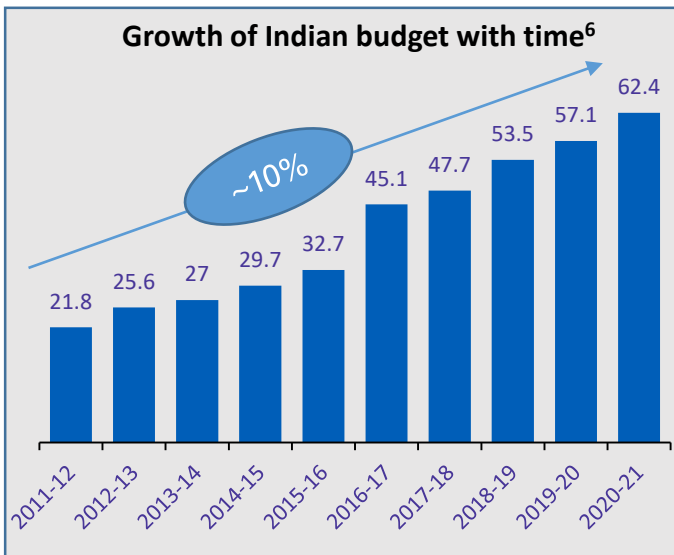
The focus is not only on the expansion of the existing defence market but also looking at arenas to strengthen indigenous manufacturing. Furthermore, with Indian Armed Forces being the second largest armed forces in the world, the country stands fifth in the list of largest spending on A&D equipment and also one of the largest importers of arms with a share of 9.5 per cent of world import between 2014-18.⁴

1. SIDM MSME conclave/MSMEs- An untapped force multiplier for the Indian defence sector/KPMG analysis/May 2020
2. SIPRI Military Expenditure Database, Apr 2019

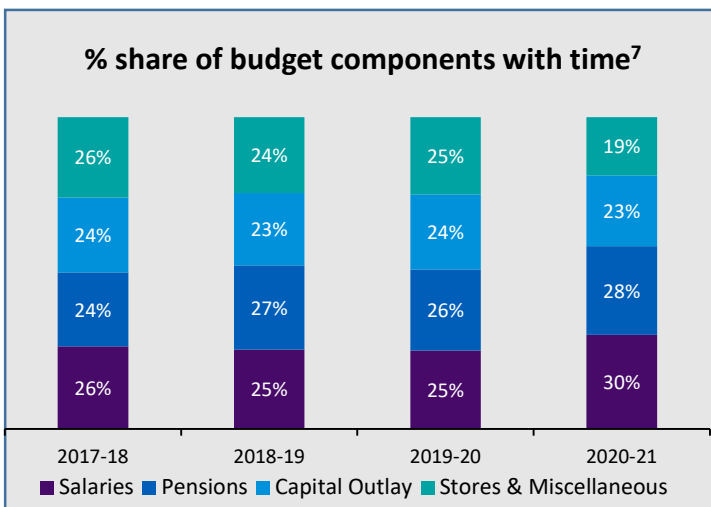
3. Press Information Bureau/India to achieve USD 26 Billion Defence Industry by 2025: Raksha Mantri/Ministry of Defence/Oct 2019
4. Demand for Grants 2020-21 Analysis – Defence/PRS Legislative Research/2020

Defence budget

The defence budget for India has constantly been on a rise for the past 10 years with a Compounded Annual Growth Rate (CAGR) of ~10 per cent.⁵ Over the years, the actual expenditure has been higher than the budgeted expenditure. This increased defence expenditure points at the goal of modernising its forces and technical capabilities in defence.



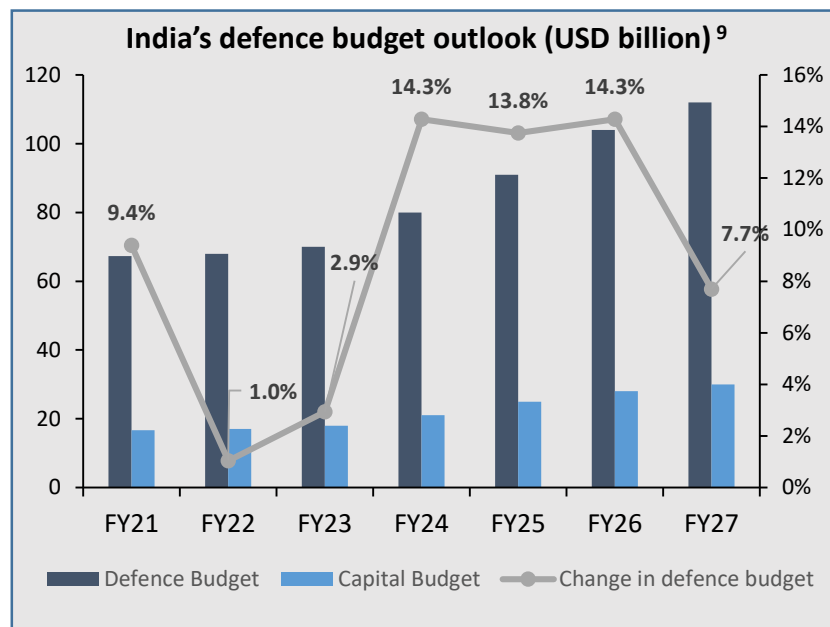
The defence budget includes revenue expenditure, capital outlay, defence pensions and miscellaneous expenditure. It has been recently observed that the share of capital outlay in the budget has been mostly flat owing to the increased expenses for salaries and pensions for defence personnel/ex-personnel.



Analysis of the defence budget for FY21⁸

- For FY21, the MoD has been allocated USD62.4 billion (INR4,71,378 crore) as the defence budget. The expenditure on defence constitutes 15.5 per cent of the central government’s budget and 2.1 per cent of India’s estimated GDP for 2020-21.
- It saw an increase of 9.37 per cent from USD57.1 billion (INR4,31,011 crore) for Budgeted Estimate (BE) of FY 2019-20.
- There has been an increase of 3 per cent (USD15.06 billion), 1.7 per cent (USD27.72 billion), and 13.6 per cent (USD17.72 billion) in the capital outlay, revenue expenditure and defence pensions respectively as compared to the RE FY 2019-20.

The chart below highlights the defence budget outlook/forecast



- It is expected that in the short run, the budget is likely to remain flat due to the current pandemic situation.
- A significant growth is expected post FY23, when most of the big-ticket programmes are expected to be awarded.

5. KPMG analysis
 6. Indian Union Budget/Ministry of Defence/KPMG analysis
 7. Indian Union Budget/Ministry of Defence/KPMG analysis

8. Indian Union Budget/Ministry of Defence/KPMG analysis/Feb 2020
 9. KPMG analysis

3. Impact of COVID-19 on defence spending

- the new challenge

The COVID-19 pandemic has sent shock waves across major industries and defence is no exception to it. The Indian defence industry depends on imports even for the manufacture of indigenous systems and platforms. The major potential setbacks caused due to the pandemic are as follows:

Defence production likely to come down

- India's Defence Public Sector Undertakings (DPSUs) are largely dependent on the import of critical components but owing to global supply chain disruption, manufacturing and rollout is likely to reduce and off-the-shelf purchases from foreign supplies will be needed to fulfil defence requirements.

Supply chain shocks

- The existing contracts with OEMs have been affected by temporary shut down of production facilities due to the pandemic, and hence it might result in a delay of some equipment/platforms and systems.

Flat defence budget

- The government of India responded to the pandemic with a considerable economic stimulus and business revival package which may mean that the budget allocated to defence remains flat for the new few years.

MSMEs to bear the brunt

- MSMEs working as Tier 2/3 suppliers in defence are facing serious challenges in terms of continuation of business due to financial strain. This has led to gap of component manufacturing in the industry, impacting domestic defence production.

Delays in new contracts

- Given that, in the current pandemic situation, final decisions regarding high-value procurement in the pipeline are unlikely to be taken, the MoD has pushed out deadlines for RFIs/EOIs/RFPs – causing a delay to these procurements.

4. Changes In draft DPP 2020 and key reforms

- to boost defence manufacturing

Changes in draft DPP 2020

The draft DPP 2020 was released by the MoD in March for comments/suggestions from industry. The key highlights of the changes in the draft DPP can be categorised under the following sub-headings:

❑ Capital acquisition

- Introduction of the new procurement category of acquisition by leasing under sub-categories namely Lease (Indian) and Lease (Global).
- The Design and Development (D&D) and the Strategic Partnership Model (SPM) categories have been added to give boost to indigenous manufacturing and Research and Development (R&D) in defence sector.
- The newly added category Buy (Global -Manufacture in India) defines procurement of equipment from global OEMs with Indigenous Content (IC) greater than or equal to 50 per cent. This can be achieved by the manufacturing of entire equipment or spares/assemblies/subassemblies/Maintenance, Repair and Overhaul (MRO) facility for the entire life cycle support of the equipment.

❑ Change in definition of Indian vendor

Additional clarity has been provided in the definition of Indian vendor with respect to 'ownership' and 'control' of the company.

❑ Indigenous content

There has been a significant change in the definition and extent of indigenous content in the draft DPP 2020 as compared to that in DPP 2016.

❑ Offset guidelines

New categories have been added along with the increase in the multipliers for existing categories to boost the development of Indian industry by the OEMs who will discharge their offset obligations.

❑ Other changes

Other noticeable changes in the draft DPP 2020 are as follows:

- **Price Valuation Clause (PVC)**
- **Annual Acquisition Plan (AAP)**
- **Shipbuilding**
- **Additional category under Make-in-India.**
- **Post Contract Management (PCM)**
- **Committee for Service Quality Requirements (SQRs)**
- **Provision for miscellaneous issues including core technologies.**

Key reforms by the GoI

The Government of India (GoI) suggested major reforms for the Indian industry in the wake of the COVID-19 pandemic to rejuvenate the Indian economy. The key reforms have been listed as:



FDI limit in defence manufacturing under automatic route raised from 49% to 74%¹⁰

- Enable entities to control the management and processes as well as protect its Intellectual Property (IP) and technology, through a majority stake
- Automatic approval route can help prevent procedural delays



Time bound defence procurement through a Programme Management Unit (PMU), along with rationalised trial and testing procedures

- MoD sensitive to the delays in procurement and need for procedural overhaul.
- Reforms in procurement processes is expected to significantly improve business confidence for both Indian and foreign OEMs.



Make India a global hub for MRO for defence and civil aircraft by rationalising tax regime and associated ecosystem

- Major engine manufacturers expected to set up maintenance facilities in India.
- Aircraft component repairs and airframe maintenance market to increase from ~ USD100 million to ~ USD300 million in three years.¹¹



New policy for Public Sector Enterprises (PSEs) and corporatisation of Ordnance Factory Board (OFB)

- In strategic sectors such as defence, at least one and up to four PSEs allowed
- Professional management in ordnance factories will reduce slag, improve quality of products, timely delivery and enhanced accountability.



Protect domestic industry by disallowing global tenders for contracts upto USD27 million

- MoD to notify a list of weapons/platforms restricted from being imported with emphasis on indigenisation of imported spares and separate budget to be allocated for domestic cap procurement.
- Procurements of value of up to USD27 m to be reserved for domestic industry.¹²



Reforms to encourage greater private participation in the space sector

- The GoI aims to provide level-playing field to private companies in space sector
- Private entities can use facilities owned by ISRO and its other relevant assets to improve their capacities.
- GoI also plans to roll-out a liberal geospatial data policy for providing remote-sensing data to technology start-ups.

10. Press Information Bureau/Highlights of Finance Minister's Stimulus Package – IV/Ministry of finance/May 2020

11. News report/Govt plans to make India global hub for aircraft maintenance, says FM Sitharaman/Business Today/May 2020

12. News report/No global tender for government procurement of up to Rs 200 crore/Financial Express/May 2020

5. Opportunities

- avenues to look for

□ Opportunities in the Indian Navy

The Indian Navy (IN) is modernising its fleet rapidly. The 15-year indigenisation plan (2015-30) aims to increase the navy's fleet size from existing 150 to 200 by 2027¹³. Presently, the Navy has 50 ships and submarines under construction in Indian shipyards, both public and private¹⁴. Major programmes under various stages of procurement stage are mentioned below:

Serial No.	Programme name	Quantity	Programme value (USD million)	Current status
1.	Indian Aircraft Carrier – 2 (IAC2) ¹⁵	01	20,000	In discussion phase; might be stalled for 2 years due to budgetary issues
2.	Multi-Role Carrier-Borne Fighter (MRCBF) Aircraft ¹⁶	57	10,000	Request for Information (RFI) issued in Jan 2017
3.	Naval Multi-Role Helicopters (NMRH) ¹⁷	123	7,200	RFI issued in 2017, to be built under Strategic Partnership Model (SPM)
4.	Project 75I Submarine ¹⁸	06	7,000	To be built under SPM – 2 Indian and 5 foreign companies shortlisted
5.	Light Maritime Utility Helicopter ("Naval Utility Helicopter-NUH") ¹⁹	111	2,800	Defence Acquisition Council (DAC) approved acquisition of NUH
6.	Landing platform Docks (LPD) ²⁰	04	2,667	Approved by DAC for 4 LPDs in 2017
7.	Next Generation Missile Vessel (NGMVs) ²¹	06	1,880	Request for Proposal (RFP) issued for 6 NGMV by MoD in Jul 2019
8.	Naval Shipborne Unmanned Aerial System (NSUAS) ²²	15	-	RFI issued in Feb 2020, RFP expected to issue by Dec 2020
9.	Diesel engine for boats (150-350 HP) ²³	220 for 5 yrs	20	Feasibility study
10.	Expendable underwater target ²⁴	300 @ 60/yr	18	Acceptance of Necessity (AoN) accorded on 2 Apr 2019. Expression of Interest (Eoi) issued on 14 Jun 2019

In addition to the above, the navy aims to acquire Mine Counter Measure vessels (MCMVs) to replace its old fleet .

13. FAQ/Department of Defence Production/Ministry of Defence/Government of India

14. FAQ/Department of Defence Production/Ministry of Defence/Government of India

15. News report/Budgetary woes put India's supercarrier 'INS Vishal' on hold/Business Standard/May 2019

16. News report/Navy launches search to procure 57 carrier-borne fighter jets/Economic Times/Jul 2018

17. News report/Defence Ministry clears proposals worth Rs.46,000 core/Economic Times/Aug 2018

18. News report/India makes initial bid selections for \$7 billion submarine project/Defensenews/Jan 2020

19. News report/India to procure 111 helicopters at cost of Rs 21,000 crore for Navy/Hindustantimes/Aug 2018

20. News report/Navy mulls scrapping Rs 20k-cr tender for building four amphibious warships/Business Standard/Nov 2019

21. News report/Govt issues tenders worth Rs 15,000 crore for a range of warships/Business Standard/Jul 2019

22. News report/Indian navy to buy 15 ship-borne drones to enhance surveillance/Indian Defense News/Jul 2020

23. Department of Defence Production/Make-II projects

24. Department of Defence Production/Make-II projects

❑ Indian Navy's submarine plan - Submarine Perspective Plan

The Indian Navy's blueprint for augmentation of submarine force levels is enshrined in the 30-year Submarine Perspective Plan, which was approved in 2002. As a part of the plan, India was to build 24 submarines, that is, 18 conventional and 6 nuclear-powered submarines, as an effective deterrence to China and Pakistan. The Perspective Plan resulted in the production of two distinct submarine designs, Project 75 and Project 75-I, to be built simultaneously.

As part of Project 75, India signed a deal with Naval Group (erstwhile DCNS) France, in 2005 for building six Scorpene class diesel submarines at Mazagon Dock Ltd (MDL) at an approximate cost of USD3.5 billion, with delivery to commence by 2012. However, due to inordinate delays and teething problems, the first submarine entered service only in Dec 2017 and the second in Sep 2019. Delivery of the remaining four submarines is expected by 2022.

The P75I opportunity: P-75I India requires six Air Independent Propulsion (AIP) submarines to be constructed by an Indian Strategic Partner at a domestic public or private shipyard with 65% indigenous material, in collaboration with a foreign technology partner, approval for which was accorded by the Defence Acquisition Council (DAC) in Jan 2019 at an approximate cost of INR 45,000 crore (USD6.3 billion). In addition, the IN would have the option to manufacture six additional submarines under the project. This is the second project under the Indian MoD's ambitious Strategic Partnership (SP) model that aims at providing a significant fillip to 'Make in India' programme, the first being manufacture of 111 Naval Utility Helicopters (NUH).

As per the contract, the OEM will have to provide full technology transfer of critical systems of the submarines including AIP as also help establish a domestic supply chain for spare parts and material. The OEMs will be free to set up joint ventures or equity partnerships, or make royalty arrangements with Indian prime partners and other domestic suppliers.

Strategic Partnership: Two domestic shipyards companies, state-owned MDL and private sector firm Larsen & Toubro (L&T) were shortlisted in July 2019 to collaborate with five OEMs, Rubin Design Bureau of Russia (Amur 1650), Naval Group of France (Scorpene 2000), Navantia of Spain (S-80), ThyssenKrupp Marine Systems of Germany (HDW 214) and Daewoo Shipbuilding & Marine Engineering of RoK (KSS-III).

In accordance with pre-Covid 19 timelines, Request for Proposals (RFPs) were to be issued to the two shortlisted Indian SPs, who were then to set up a technical partnership with one of the five shortlisted OEMs and submit financial as well as technical bids by end-2020. Thereafter, the technical and financial bids were to be evaluated, with final selection expected in mid-2022. However, given the current economic conditions in the country, these timelines are likely to slip considerably.

Prospects for the UK: Of the five OEMs shortlisted, critical equipment for Navantia's S-80 and DSME's KSS-III platforms have been supplied by UK companies, which includes Weapons Handling Equipment (WHE) by Babcock International and Towed Array Sonar System by QinetiQ. UK Industry have also been supplying pressure hull domes for the S-80. Given that the contract mandates 65% indigenous content, UK companies need to take the initiative and offer their products and services by partnering with companies in India as well as the two Indian SPs, MDL and L&T. In addition to the potential sale of equipment there are other benefits to the UK industry from potential involvement in terms of services/equipment for capability development including training and through long-term life cycle support.

The involvement of UK industry with P 75I project, will open up major avenues for shipbuilding in India, the next core sector likely to attract major investments in future.

❑ Opportunities in the Indian Air Force

The Indian Air Force (IAF), in its 'Indigenisation Roadmap Indian Air Force (2016-2025)', highlighted acquisition projects worth USD33 billion (INR2.5 lakh crore) over the next 15 years. Major programmes under various stages of procurement stage are mentioned below:

Serial No.	Programme name	Quantity	Programme value (USD million)	Current status
1.	Medium weight multi role fighter aircraft ²⁵	114	15,000	RFI issued in 2018
2.	Medium-lift transport aircraft ²⁶	56	1,600	Final Cabinet Committee on Security (CCS) clearance awaited
3.	Infrared Imaging Search & Track System (IRST) ²⁸	100	247	Design and development phase.
4.	Foldable Fiberglass Mat (FFM) for runway repair ²⁹	122 sets/year	26	Eol response received
5.	Chaff and flares ³⁰	Chaffs-1,00,000: Flares-1,50,000	19	Design and development phase.
6.	Light Combat Helicopter (LCH) ³¹	10	-	HAL receives RFP
7.	Medium Altitude Long Endurance (MALE) UAV ³²	-	-	RFI issued in 2016
8.	Advanced Medium Combat Aircraft (AMCA) ³³	100	-	Under design; first flight expected in 2032.
9.	Aerial fuse for bomb ³⁴	3000/Yr	-	AoN stage



25. News report/Indian Air Force restructures \$17 billion fighter jet program/DefenseNews/May 2020
 26. News report/Tata Aerospace & Defence, Airbus await contract to manufacture 56 aircraft/Business Standard/Feb 2019
 27. News report/Defence council finalises proposal for 83 Tejas jets/Indian Express/Mar 2020
 28. Department of Defence Production/Make-II projects
 29. Department of Defence Production/Make-II projects

30. Department of Defence Production/Make-II projects
 31. News report/HAL's Light Combat Helicopter completes weapon trial/Economic Times/Jan 2019
 32. News report/Indian MOD Issues RFI For Medium Altitude Long Endurance (MALE) Drone/Defense World/Jul 2016
 33. News report/IAF to sign contract this fiscal to procure 83 LCAs/The Hindu/Nov 2019
 34. Department of Defence Production/Make-II projects

Upcoming indigenous fighter aircraft programs

Light Combat Aircraft (LCA), Tejas Mk 1

The Light Combat Aircraft (LCA) also known as Tejas Mk 1, is a single-engine, multirole fighter designed by Aeronautical Development Agency (ADA) and Hindustan Aeronautics Limited (HAL) for the Indian Air Force and Indian Navy. It has a tail-less compound delta-wing configuration with a single dorsal fin. It integrates modern technologies such as relaxed static stability, fly-by-wire flight control system and composite materials structures and is the smallest and lightest in its class of contemporary supersonic fighter aircraft. Although a high-tech platform with significant capabilities, the aircraft is hampered by its small size, low radius of action and low mission profile duration.

Future programmes

In order to address the short comings of Tejas Mk 1, ADA has been designated as the lead agency for design and development of India’s 4th generation aircraft, LCA Mk 2 and 5th generation aircraft, Advanced Medium Combat Aircraft (AMCA). Accordingly, three future fighter aircraft programmes are currently in the design stage with planned operational clearance and first flight as outlined in the table below.

Serial No.	Aircraft	Date of First Flight	Total No. of Aircraft	Remarks
1.	LCA Mk-2 (Medium Weight Fighter)	Q4/2023	216	Preliminary Design Review (PDR) approved on 20 March 2020
2.	LCA-Navy Twin Engine Deck Based Fighter (TEDBF)	2026	57, likely to be increased to replace MiG 29K aircraft	Cleared by Defence Minister on 22 May 2020 at ADA’s Annual Board Meeting
3.	AMCA	2028-29	126	Enter service in 2035 to replace Sukhoi 30 MKI aircraft

As part of the programme, it is intended to create a robust indigenous fighter aircraft manufacturing eco-system by means of joint ventures driven by co-design and co-development of radar, EW, sensors, weapons, communication systems, avionics, aggregates and major components like actuators, materials such as carbon prepegs and complete maintenance and training subsystems.

❑ Opportunities for UK Aerospace Industry

During a seminar titled, ‘Building an Integrated UK-India Partnership for India's Future Aerospace & Defence Platforms’ conducted by UKIBC and ADS on 20 July 2020, as part of virtual Farnborough International Airshow (FIA), ADA brought out the requirement for co-development of technologies listed below for its LCA Mk 2 and AMCA programmes, which presents considerable opportunities for the UK aerospace industry.

Serial No.	System / Segment	Sub-system(s)
1.	Avionics and Weapon Systems	<ul style="list-style-type: none"> • Low Profile Lite/Smart Compact Head-Up Display (HUD) • Striker II Digital Helmet-Mounted Display (HMD) • Smart Large Area Display (LAD) • Hemispherical Resonator Gyro (HRG) based compact Inertial Navigation System (INS) for aircraft applications • Smart/digital compact fuel gauging sensors/probes • Advanced technologies on Software Defined Radio (SDR) • Cold gas ejection system for internal weapons. • Multi sensor Data Fusion <ul style="list-style-type: none"> • Tracking and Identification • Sensor Management • Situation Assessment
2.	Aerodynamics	<ul style="list-style-type: none"> • Canard integration • Transonic/Supersonic drag reduction
3.	Structures	<ul style="list-style-type: none"> • Advanced aircraft paints/painting technologies • Stealth coatings • Advanced and Smart Materials
4.	Cockpit	<ul style="list-style-type: none"> • Active Side Stick integration & evaluation • Integrated cockpit controls /switches & indicators with avionics • Cockpit layout/design audit
5.	Aircraft Reliability & Maintainability	<ul style="list-style-type: none"> • Reliability & Maintainability Management • Maintainability evaluation with latest trends and tools • On condition maintenance/task-based maintenance based on legacy data/predicted reliability for electro-mechanical parts • Design parameters to maximize inherent reliability and mission reliability • Ways to optimize maintenance tasks and down time of/in aircraft system for improved Maintenance Man Hours per Flight Hour (MMH/FH) and overhauling • Spares & logistics management for improving aircraft availability and mission reliability • Integrated Vehicle Health Management (IVHM)/Aircraft Health and Usage Monitoring System (AHUMS) • Algorithms for diagnosis and prognosis
6.	RADOME	<ul style="list-style-type: none"> • Latest technology trends for RADOME • ToT and Productionization in India
7.	Manufacturing	<ul style="list-style-type: none"> • Advanced additive manufacturing and qualification/certification • Modular design of airframe and methods & manufacturing process • Robot assisted assembly and tooling • Advanced composite materials and automation in composite processing • Advanced joining technologies for aircraft structure (Friction Stir welding and Laser Beam welding) • Advanced forming technologies (Super plastic forming, etc.) • Titanium casting with Hot Isostatic Pressing (HIPing) • Advanced inspection techniques and equipment • Role of Internet of Things (IoT) in aerospace application

❑ Opportunities in the Indian Army

The Army has a long list of equipment that is of foreign origin and has become obsolete. In order to keep military equipment and platforms battle ready, the army is focusing on both indigenous capability and various procurement strategies to enhance its defence capabilities. Major procurement programmes for the army at various stages of completion are stated below:

Serial No.	Program name	Quantity	Programme value (USD million)	Current status
1.	Future Ready Combat Vehicle (FRCV) ³⁵	1,770	10,800	Under SPM; development of Quality Requirement (QR) is under process.
2.	Futuristic Infantry Combat Vehicle (FICV) ³⁶	2,610	8,000	A fresh RFI to be issued soon
3.	155mm mounted gun system ³⁷	814	1,900	Seeking fresh AoN for acquisition
4.	Auxiliary Power Unit (APU) ³⁸	3,257	177	AoN accorded on 21 Oct 2019. Eol issued on 29 Jan 2020.
5.	125mm APFSDS Ammunition for MBTs ³⁹	85,000	307	AoN accorded on 13 Sept 2019. Eol stage.
6.	Israeli Negev 7.62x51mm Light Machine Guns (LMG) ⁴⁰	16,000	117	Contract under Fast track process
7.	Upgraded assault track way ⁴¹	100	13	Project Sanction Order (PSO) issued in Nov 2018
8.	3 rd generation Anti-Tank Guided Missile (ATGM) ⁴²	101 launchers, & 2,330 missiles	-	EOI issued in Feb 2020
9.	Electronic fuses tech for rockets ⁴³	20,000	-	Feasibility Study
10.	GPS/GIS based minefield recording system ⁴⁴	3,680	-	Being fielded for AoN.

Apart from these, the army is also looking forward to procure sniper rifles, carbines and ammunition in the arms and ammunition category.



35. News report/Army issues fresh rfi for future ready combat vehicle/Indian Defense News/May 2020

36. News report/Technology will be a key driver of future wars, Indian Army is on track': Army Chief Naravane – Exclusive Q&A ahead of DefExpo 2020/Financial Express/Feb 2020

37. News report/Indian Army's Artillery Modernization Programme/Defence ProAc

38. Department of Defence Production/Make-II projects

39. Department of Defence Production/Make-II projects

40. Press Information Bureau/Ministry of Defence signs Rs 880 crore contract for Light Machine Guns with Israeli firm/Ministry of Defence/Mar 2020

41. Department of Defence Production/Make-II projects

42. News report/India Army seeks domestic vendors for 3rd-generation anti-tank missile purchase/DefenceCapital/Feb 2020

43. Department of Defence Production/Make-II projects

44. Department of Defence Production/Make-II projects

❑ Opportunities in the Indian Coast Guard

Major equipment procured by ICG during FY14 to FY19 under various categories are as follows:⁴⁵

Serial No.	Category	Equipment
1.	Aerial	Light and medium helicopters, light reconnaissance aircraft
2.	Marine	Offshore patrol vessels, fast interceptor boats, inshore patrol boats, inceptor class, hovercraft
3.	Mounted	Light mounted guns, 30 and 76 mm cannons, bullet proof jackets, assault rifles and helmets

ICG is expected to continue procurement in the above mentioned categories. Over and above these, the following are the major procurement programmes in the pipeline of ICG⁴⁶

Serial No.	Program Name	Quantity	Programme Value (USD million)	Current status
1.	Fast Patrol Vessels	8	290	RFP issued in Jul 2019
2.	Air Cushion Vehicles	12		
3.	Ammunition Barges	8		



45. Homeland security market in India/KPMG analysis/Dec 2018

46. News report/Indian Navy Issues RFP For 6 Next Generation Missile Vessels Worth \$2 Billion/Defence World/Jul2019

❑ Major offset contracts/programs awarded by MoD, India ⁴⁷

Serial No.	System	Approx. contract value (USD million)	Offset value (USD million)
1.	Rafale aircraft	8,800	4,400
2.	05 S-400 Air Defence System ²²	5,500	-
3.	C 17 Globemaster	3,300	1,100
4.	24 MH-60 Multirole Helicopters	2,200	-
5.	Mirage aircraft upgrade	2,100	800
6.	P-8 I aircraft	2,100	640
7.	AH-64 helicopter	1,400	600
8.	Mi-17 v5 helicopter	1,100	405
9.	C-130J aircraft	1,060	330
10.	Mica missiles	900	386
11.	CH-47 F Chinook helicopters	800	330
12.	06 Apache Helicopters	800	-
13.	100 K-9 self-propelled howitzers	700	-
14.	145 M777 towed howitzers	542	-



47. SIDM MSME conclave/MSMEs- An untapped force multiplier for the Indian defence sector/KPMG analysis/May 2020

❑ Opportunities in the Home Land Security (HLS) market (Ministry of Home Affairs)

Central Armed Police Force (CAPF)

Modernisation of CAPF is a continuous process as per their operational requirements. CAPF have been allocated funds for modernisation and efficiency improvement mainly under the following heads as shown in the table. To streamline the procurement procedure, DGs of CAPF have been delegated enhanced financial powers.⁴⁸

Serial No.	Heads	Earlier Power	Enhanced Power
1.	Arms and ammunition	USD0.6 million (INR5 crore) in each case	USD2.6 million (INR20 crore)
2.	Machinery and equipment	USD1 million (INR8 crore)	USD2.6 million (INR20 crore)
3.	Vehicles	USD 9000 (INR7 lakh) in case of mature condemnation	
4.	Clothing and stores	USD0.8 million (INR6 crore)	USD2 million (INR15 crore)
5.	Information Technology (IT)	USD 30,000 (INR25 lakh) in each case	USD0.1 million (INR1 crore)

During the period of FY16 to FY19 an amount of USD1 billion (INR8,593 crore) was spent for buying arms and ammunitions, new vehicles and availing other latest technology by CAPF.⁴⁹

A. Modernisation of Police Force (MPF) scheme

The MHA has allocated an amount of USD140 million (INR1,053 crore) over two years (2018-2020) for modernisation of the seven CAPF under the MPF scheme. The fund has an allocation of INR531 crore towards procurement of modern weapons, vehicles and other equipment for the Central Reserve Police Force (CRPF).⁵⁰

B. Opportunities

There exists a good opportunity for assault rifles, mine protected vehicles, bullet proof jackets, etc. in both short-term and long-term. This can be understood by analysing the recent procurement by CAPF wherein the last three years (FY16 to FY19), the MHA has bought the following products:-⁵¹

- **89,641** light weight BP jackets
- **2,608** Glock pistols
- **67,965** AK-47 rifles
- **16,430** Assault rifles
- **2,537** X-95 assault rifles
- **34,377** Carbine machines
- **1,805** Automatic grenade launchers
- **1,164** hand-held thermal imagers
- **25** Remote controlled improvised explosive devices
- **105** Mine protected vehicles
- **3,174** Deep search metal detectors
- **9,792** Passive night vision binoculars
- **8,109** PNS weapons sights

48. Central armed police forces and internal security challenges—evaluation and response mechanism/Ministry of Home Affairs/Mar 2018

49. Press Information Bureau/Modernisation of Paramilitary Forces/ Ministry of Home Affairs/Jul 2019

50. Union budget/Ministry of Home Affairs/KPMG analysis

51. News report/Procurement: Homeland security/Defence ProAc

State police

Major equipment procured by various state police during FY14 to FY19 and their capital outlay on equipment procurement are as follows: ⁵²

State	Capital Outlay FY19 (USD million)	Equipment procured (FY14 to FY19)
Telangana state police	48	Integrated traffic management system, CCTVs, AI based facial & license plate recognition software system, comprehensive criminal database software system, transport vehicles, SUVs, patrol cars/bikes, service pistols, wireless communication devices, assault rifles
Uttar Pradesh state police	36	Trinetra' AI-facial recognition software and integrated data management system, pistols service rifles, transport vehicles, SUVs, patrol cars and bikes
Maharashtra state police	52	High resolution CCTV cameras, service pistols, assault rifles, wireless handheld communication devices, patrol bikes and vehicles
West Bengal state police	30	High resolution CCTV cameras, service pistols, service rifles, wireless handheld communication devices, patrol bikes and vehicles
Tamil Nadu state police	N.A.	Facial recognition software, high resolution CCTV cameras (for Chennai city), service pistols, rifles, wireless handheld communication devices
Jammu & Kashmir state police	N.A.	Assault rifles, SUVs, service pistols, batons, riot control protective wear, non-lethal crowd dispersal ammunition, tear-gas, multi-barrelled grenade launchers, patrol cars, transport vehicles, wireless communication devices, special gas masks
Karnataka state police	N.A.	AI-based facial recognition software system, CCTV network, service pistols, rifles, wireless handheld communication devices, SUVs, patrol bikes and cars
Rajasthan state police	09	Artificial Intelligence Based Human Efface Detection (ABHED) software system (Staqu), rifles, service pistols, SUVs, patrol bikes and cars
Madhya Pradesh state police	N.A.	Assault rifles, pistols, patrol cars and bikes

It is clearly evident from the above table that most of the demands of state police came from:

- 1. Patrol vehicles**
- 2. Assault rifles**
- 3. Surveillance system**
- 4. Wireless handheld communication devices**
- 5. Protective gear like gas protected masks.**

52. Homeland security market in India/KPMG analysis/Dec 2018

6. Emerging technologies and indigenisation plans

- a way ahead

❑ Modernisation and technological upgradation of platforms

Modernisation plans cover a wide spectrum of systems, platforms and technologies. The main aim of modernisation is to replace equipment/ platforms in the forces and to arm the forces for joint combat operations. As per the existing trends, it is expected Gol will spend an estimated USD250 billion⁵³ towards modernisation of its defence forces over the next 10 years.

1. Network centric technologies

The COVID-19 pandemic has called out the need to develop actionable intelligence and deliver it to concerned agencies in near real-time to mitigate situations affecting public health, safety and security – termed as internal security.

Nevertheless, there was already an underlying need to establish networks, monitoring systems and command and control systems for internal security. The following are a few potential applications where growth is anticipated and can be targeted by UK companies on account of their technical acumen and leadership position:

Application	Indian scenario	UK advantage
Mobile/remote surveillance equipment; e.g. tactical UAVs and UGVs	<ul style="list-style-type: none"> High demand across users for UAV/UGV based remote surveillance. Indian UAV market is at a nascent stage with companies which are generally a mix of small-scale technology start-ups and large corporations with newly established UAV manufacturing capabilities. 	<ul style="list-style-type: none"> UK companies have design and manufacture capabilities for a wide range UAVs capable of custom-building UAV/UGV platforms for a broad array of military, commercial applications.
Sensors, scanners and detection equipment; such as X-ray, explosive detection, CT scanners, biometric security and authentication systems, etc.	<ul style="list-style-type: none"> The manufacturing capability in India is highly varied, ranging from basic biometric sensors to high-end Electro-Optic (EO)/Infrared (IR) sensors. This market is relatively new to India but is picking up pace. 	<ul style="list-style-type: none"> UK companies are providing X-ray screening and baggage scanning solutions to major airports in India
Command, Control and Communication (C3) equipment <ul style="list-style-type: none"> Software applications for integrating information Hardware equipment for communication purposes 	<ul style="list-style-type: none"> Capability for manufacturing the low-end hardware is well developed in India, however, capabilities for designing and developing high end complex software solutions are limited. 	<ul style="list-style-type: none"> UK suppliers have capability in designing and building both complex software as well as the hardware to serve the needs of security forces.

53. SIDM MSME conclave/MSMEs- An untapped force multiplier for the Indian defence sector/KPMG analysis/May 2020

2. Military materials and alloys

India has been pushing for indigenous development of components and systems for its defence platforms. However, even for indigenously manufactured platforms, up to 90 per cent of the processed and semi-finished raw materials such as ferrous and non-ferrous alloys, composites and ceramics are imported. The key material groups where there are significant requirements, and their major applications, are as follows:⁵⁴

Materials	Some Major Applications
Aluminium alloys	Fuselage body and bulkheads, wing skins, engine components, fittings.
Special steel alloys	Cabin components, landing gears, aircraft fittings, fasteners, actuators, jet engine shafts, structural tubing, ballistic tolerant components.
Titanium alloys	Aircraft structural items, panels, fastening systems, fan & compressor blades; tank armours in army; rigging equipment, shipboard cooling systems, heat exchangers in navy .
Copper and cupronickel alloys	Aircraft landing gear components, bushings and bearings.
Tungsten Alloys	Armour plates, high-speed armour piercing ordnance; high thermal strength machine parts, rotor/propeller blades and anti-vibration weights, flight control surface components such as rudders, elevators and ailerons.
Composites	Wing skins, forward fuselage, flaperons, rudder, rear pressure bulkhead, keel beam, front fairing, upper fuselage shells, crown and side panels, structural elements of modern helicopters.
Ceramics	Engine and exhaust components, thermal protection shields, structures for ultra-high-speed flying objects, lightweight turbine components that require less cooling air such as vanes, nozzles, seals, valves.
Super alloys	Fuel nozzles, washers, bearing races, spacer sleeves, flare castings, engine vanes, bearing supports and other structural parts .

The total demand of the material in the above eight groups of material for defence and aerospace end use is approximately USD190 billion⁵⁵ (INR14,000 crore). The opportunity in these material groups is immense because even though India may have large deposits of basic ores such as alumina, iron ore and ilmenite and rutile (Titanium ores), India currently does not produce the special grade of alloys required for aerospace and defence application.

A case in point is aluminium where India is the fourth largest alumina producer and third largest aluminium producer, nevertheless India imports 50 per cent of its total aluminium consumption and almost 95 per cent of its aluminium consumption in the A&D sector. Similarly, India is the third largest deposit for titanium ores but has only recently started producing sponge titanium.⁵⁶

Further, in non-metallic materials, India has developed capabilities in composite components based on glass, carbon and aramid fibres, but apart from glass fibre the manufacturing capabilities for aramid fibres such as kevlar and high tow strength aerospace grade carbon fibre is absent. The opportunity for these materials is also high and gauged from the fact that nearly 45 per cent of the airframe of the Light Combat Aircraft – Tejas Mk 1A is based on carbon composites. Carbon composites airframe is also expected to be extensively utilised in the development of the following:

- **Light Combat Helicopter (LCH)**
- **Advanced Light Helicopter (ALH) Dhruv**
- **Medium Weight Fighter (MWF) - Tejas MK 2**
- **Fifth generation Advanced Medium Combat Aircraft (AMCA).**

With the planned induction of over 550 new combat aircraft and over 300 new helicopters over the next two decades the demand for carbon fibre and prepregs in India is expected to grow tremendously.⁵⁷

54. KPMG research and analysis

55. Ilmenite and Rutile/Indian Minerals Yearbook 2017-Part III/Indian Bureau of Mines/2017

56. Aluminium and Alumina/Indian Minerals Yearbook 2017-Part III/Indian Bureau of Mines, 2017

57. SIDM MSME conclave/MSMEs- An untapped force multiplier for the Indian defence sector/KPMG analysis/May 2020

3. Semiconductor fabrication (FAB)

The application and significance of electronics in A&D platforms/ systems has increased considerably over the last two decades, and is expected to increase further. The objective of self-reliance cannot be met without robust defence electronics manufacturing ecosystem. India has developed capabilities for designing and manufacturing of electronics systems, sub systems and chips, however, there have long been challenges in setting up of semiconductor wafer Fabrication (FAB) units. Currently, the country only has one factory in Chandigarh that makes semiconductor wafers – Semi Conductor Lab (SCL) under the Department of Space, Government of India. This facility is capable of producing 8 inch wafers based on CMOS process 180 nm lithography.⁵⁸

Silicon and Gallium Nitride (GaN) based semiconductors have massive application in the defence sector. These are used in radars, power systems, electric vehicles, etc. The demand for GaN semiconductors is expected to surge in the coming decade primarily due to its properties and cost-effectiveness. India is expected to be a heavy user of GaN chips for power electronics segment.

A significant opportunity exists in the country, in the field of semiconductor foundry technology, especially for the GaN chips. While India has found early success in research and development of GaN based semiconductors, the UK companies have already found commercial breakthrough in GaN foundry technology. They are well poised to take advantage of this new emerging technology trend.

4. Indigenisation plans

The GoI aims to achieve self-reliance in the defence sector. The latest draft Defence Acquisition Procedure (DAP 2020) for capital procurement also highlights the focus on indigenisation. Indigenisation plans are also aimed at saving valuable foreign exchange, providing ample opportunities to Indian manufacturers. The government is making off-the-shelf procurement owing to emergency requirements, it wishes to prioritise indigenous production in the longer term. A new policy for indigenisation of components and spares in defence platforms for DPSUs and OFB was notified on 8 Mar 2019.



58. 8" wafer fabrication facility/Semi-conductor Laboratory/Department of Space/Government of India

7. About Us

UKIBC Aerospace & Defence Industry Group

The UK India Business Council (UKIBC) supports UK businesses with the insights, networks, policy advocacy, services, and facilities needed to succeed in India. Working with the UK Government and other influential and connected partners, we ensure business interests are conveyed to India's Union and State legislators. The UK India Business Council seeks to influence decisions that will make it easier for UK businesses to operate in India.

On the 28th Nov 2019, at an event in Delhi hosted by the High Commissioner Sir Dominic Asquith, the MOD's Permanent Secretary Sir Stephen Lovegrove announced the launch of the UK India Business Council's Aerospace & Defence Industry Group. This initiative is the culmination of extensive consultation between the UK Defence & Security Exports (DSE), UK Defence Solutions Centre (UK DSC), ADS, the Department for International Trade (DIT), industry and UKIBC. Alongside the recently signed Defence Technology and Industrial Capability Cooperation MoU, and ongoing Defence Industry Dialogues, this industry platform is central to the 'Team UK' strategy for engagement and success in India.

The group is Co-Chaired by Kishore Jayaraman, President, India & South-Asia Rolls-Royce and the current membership includes: Rolls-Royce, BAE Systems, MBDA, Thales UK, Leonardo, TVS Supply Chain Logistics, Pexa, Cobham, Ulta Electronics and HSA Legal. It is our intention that membership grows to reflect the full spectrum of British industry participation in the Indian market; including eventually cyber and security to broaden the narrative beyond land, maritime and air and to allow cross sector work.

The purpose of the group is to enhance UK-India strategic cooperation, drive improvements and efficiency in India's defence acquisition process and to foster longer term technology and hardware transfers between the UK and India. UKIBC will support this by:

- Acting as a voice for British business interest in India in these sectors; articulating collective interests to influencers and stakeholders and facilitating interactions between business, politicians and policymakers to generate a shared understanding of businesses' issues;
- Advocating for reform to India's operating and procurement environment, to reduce or remove market access impediments – landscape issues like IPR, offsets, licensing etc.;
- Providing intelligence, insight and best practice about dealing with ease of doing business challenges in India;
- Interpreting and analysing policy developments in India;
- Allowing HMG to talk one to many in-market and receive feedback directly from businesses;
- Helping companies meet the right stakeholders within India's procurement landscape and – for smaller firms or supply chains – help them identify appropriate potential partner firms in India, including through alliances with Indian defence associations.

The formation of this group comes at a time when the UK-India relationship in aerospace and defence is at a critical turning point, with distinct and powerful drivers on both sides. At the same time, the UK Government is looking to deepen its international relationships after leaving the European Union and aims to replicate in defence the trade success it has achieved in other sectors in India recently. HMG is focused on making India a long-term and strategic partner (replacing the traditional, transactional buyer-seller dynamic), with an emphasis on co-development of technology and capability, 'Make in India' and, ultimately 'export from India'. This will involve much more than just hardware – for example, it means focusing on specific areas of technology collaboration and skills-building in India. We welcome your enquiries about joining our Aerospace & Defence Industry Group or questions you have about the Indian Aerospace & Defence market.

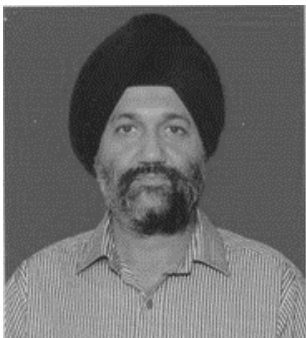
Richard McCallum, Vice-Chair, UKIBC India



Dickie is the Vice Chair of UK India Business Council, India. He is a graduate of the Universities of Durham (History) and Cambridge (International Relations). After University, Dickie joined the John Swire & Sons' management trainee programme based in Hong Kong and Pakistan. From 2005 to 2007 he was Manager Delhi & North India for Cathay Pacific Airways. From 2007 until 2013, Dickie was a founder director of Flying Fox, an innovative adventure tourism company headquartered in Delhi.

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7. About Us

KPMG

KPMG International

KPMG is a global network of professional services firms providing Audit, Tax and Advisory services. We operate in 154 countries and territories and have 200,000 people working in member firms around the world. The independent member firms of the KPMG network are affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. Each KPMG firm is a legally distinct and separate entity and describes itself as such.

KPMG in India

KPMG in India, a professional services firm, is the Indian member firm of KPMG International and was established in September 1993. Our professionals leverage the global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. KPMG has offices across India in Delhi, Chandigarh, Ahmedabad, Mumbai, Pune, Chennai, Bengaluru, Kochi, Hyderabad and Kolkata. We strive to provide rapid, performance based, industry-focussed and technology enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.

Aerospace and Defence practice, KPMG

KPMG has a strong global Aerospace and Defence (A&D) practice that serves most of the leading OEMs across the globe. In India, KPMG recognises the significant opportunity that this sector presents to our clients. We have a dedicated and specialist team to help clients and to provide a complete solution – from strategy formulation to execution. Our professionals have extensive direct industry experience having worked with the defence services, defence procurement and defence programmes. We have a well-defined and robust approach to support our clients effectively across a spectrum of projects in business performance services, transaction services and tax and regulatory services including offset advisory.

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