



# India-US Defence Partnership

**The Road Ahead**

September 2021

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# Foreword by KPMG in India

The alliance between India and the US is one of the defining relationships of the 21st century. The bi-lateral trust has grown into a global strategic partnership driven by convergence of interest on regional and global issues. Both countries have more than 50 dialogue mechanisms covering cooperation in areas of defence & security, trade & investment, civil nuclear energy, cyber security etc.

Defence cooperation has been a critical element of Indo-US friendship as this has both strategic and economic shared interests, based on the democratic ideology of both countries.

As India aspires to achieve a USD 5 trillion economy, self-reliance in defence manufacturing has been recognised as one of the key areas of focus. With India's liberalised policy regime, the stage is set in favour of India's establishment as a key defence manufacturer in the global defence supply chain. Establishment of defence industrial corridors (Uttar Pradesh and Tamil Nadu) to support start-ups and innovation is a testimony to the Government's vision of indigenisation. These corridors already boast a significant development potential, with 67 MoUs underway for developing Uttar Pradesh corridor and an initial investment commitment of INR 3,123 crores (USD 426 million) in Tamil Nadu corridor. Further, introduction of Strategic Partnership policy as well as avenues like 'Buy (Global)- Manufacture in India' for sourcing large platforms in the future will require overseas Original Equipment Manufacturers to establish a robust manufacturing presence in India.

This report talks about the evolving India-US defence relationship and also showcases that while US has only recently started supplying defence equipment to India in the last decade (collectively worth USD 18 billion),<sup>1</sup> there have been significant investments of American companies already in India which are generating employment, exports and helping India make strides in its defence capabilities and prowess. This report also highlights the way forward and expected synergies between the two nations. It details the roadblocks, which require tangible action from both sides. From an Indian standpoint, while the Government has taken considerable steps towards policy liberalisation, more needs to be done to bring the procurement process in line with best global practices which will facilitate 'Ease of Doing Business' as well as cut down procurement timelines. On the other hand, US needs to remedy the challenges faced by India in relation to transfer of technology which will help unleash many untapped opportunities.

Considering the entire ecosystem, Indo-US partnership, specifically in the area of defence is expected to flourish in the years to come, with India gaining from the sophisticated technology & manufacturing prowess of the US and the US playing a significant part in opportunities emerging from the growing Indian defence sector.



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1. India's weapons procurement from US jumps to \$3.4 billion: What is India buying?, December 09, 2020, Times Now



# Foreword by AMCHAM

U.S.-India relationship has developed into a “global strategic partnership”, based on shared democratic values and increasing convergence of interests on bilateral, regional and global issues. Both governments of India and the United States took actions that demonstrate a serious commitment to defense cooperation. The U.S. government recognized India as “Major Defense Partner” and committed “to work towards facilitating technology sharing with India” to a level commensurate with that of its closest allies and partners. The Major Defense Partner designation is unique to India. The recognition of India as a Strategic Trade Authorisation (STA-1) country, by the U.S. also eases restrictions for high-technology product sales to India.

India offers a unique opportunity to U.S. companies, supporting manufacturing facilities to serve global markets by incorporating the best global technologies and practices. U.S.-India defense partnership has grown to over \$21 Billion and has tremendous potential. The 2+2 Ministerial Dialogues led by Secretary of Defense and Secretary of State from the U.S. and their counterparts in India, have been the driving force of the partnership and the signing of all four foundational agreements – GSOMIA, LEMOA, COMCASA, ISA (an annex to the GSOMIA) and BECA has reinforced the strong U.S. – Indian defense cooperation while building upon the strategic partnership focussing on shared common values and core interests.

The U.S.-India Defense Technology and Trade Initiative (DTTI) is a mechanism focused on creating new areas of technology cooperation through co-development and co-production in the defense sector, even as India both privatizes and indigenizes its defense industrial base through the “Make in India” initiative. U.S. defence companies have a number of joint ventures with large Indian corporations, including Tata and Mahindra, among others.

India is a major player in the “Indo-Pacific” region. This was endorsed symbolically by the United States renaming its oldest and largest strategically important military command US Pacific Command (PACOM) to Indo-Pacific Command (INDOPACOM). During the Quad Summit early this year, President Biden, Prime Minister Modi and other leaders emphasised working together closely on advancing shared values and promoting a secure, stable and prosperous Indo-Pacific. Secretary Lloyd Austin during his maiden visit to India earlier this year reinforced the commitment to a comprehensive and forward-looking defence partnership with India as a central pillar of approach to the (Indo-Pacific) region. With the potential and the new strategic dynamics in this region it is important that this critical partnership remains robust.

In the last decade, India has bought/ordered military equipment worth USD 20 billion from the U.S. These include C-130J special operations planes, C-17 transport aircrafts, P-8I submarine hunter planes, Harpoon missiles, Helicopters, M777 howitzers, Apaches and most recently the MH-60R. The U.S. – India Defense sales are facilitated both through the Foreign Military Sales (FMS) and Direct Commercial Sales (DCS) processes. These sales support thousands of jobs in both countries.

AMCHAM supports and welcomes the U.S. defense companies’ commitment and keenness to work with the government of India to bridge the gap in infrastructure, raw materials and shortage of skilled worker by developing an ecosystem worthy of it, and as responsible corporate entities, partnering in India’s inclusive growth.



**Ranjana Khanna**  
Director General CEO  
AMCHAM



# Executive Summary

**Defence ties between India and US are a key area of focus and strength from both, strategic and commercial standpoint. The relationship between India and the US has witnessed considerable improvement owing to the political will of both the countries which ensured that the India-US relationship remain on a growth track and become more profound year on year.**

## **Where we stand currently**

The shared interests of India and US encompass humanitarian assistance, counter-terrorism cooperation, fighting violent religious extremism, maritime security activities, weapons proliferation monitoring, regional stability maintenance and related aspects. With the US designating India as 'Major Defence Partner',<sup>1</sup> (a status unique to India), India is now at par with its closest allies. This has opened the doors to Indian procurement of sensitive defence technologies, thus, creating a new panorama for elevated Indo-US cooperation, like signing of Defence Technologies and Trade Initiative (DTTI).<sup>2</sup>

As a result, defence procurements from US witnessed an era of remarkable growth. A series of bilateral talks and policy adjustments from both the countries have increased the US' share in India's total defence imports to 14 per cent over 2015-2019<sup>3</sup> as compared to 1960-2005, when it was negligible. In the last decade alone, India procured more than USD 18 billion worth of defence equipment from the US.<sup>4</sup> Illustrations of major procurements<sup>5</sup> are provided below:

1. M777 155mm Light-Weight Towed Howitzers
2. Apache Attack Helicopter
3. Chinook Heavy Lift Helicopter
4. MH-60R Multi-Mission Helicopter
5. C-130J Hercules Aircraft

1. US – India Defence Relations Fact Sheet, December 8, 2016, US Embassy & Consulates in India

2. US | India Defence Technology and Trade Initiative (DTTI), Office of the Executive Director for International Cooperation

3. Import – Export Data Bank, Department of Commerce

4. India's weapons procurement from US jumps to \$3.4 billion: What is India buying?, December 09, 2020, Times Now

5. Indian Defence News, 06 July 2020

## US: India's partner in fostering Make in India (MII)

While India has been importing defence products from the US, on their part US defence companies have not only been sourcing from Indian companies, but have also invested in forging partnerships with Indian companies to manufacture state of the art defence products. Significant headway has already been made

in this direction towards building manufacturing and service hubs in India, both in civil and defence domains which have been generating employment, social and skill development, development of allied industries, enhancement of exports and technology transfers to the country.

### Financial & Technical Collaborations (illustrative):<sup>6</sup>

S. No.	Company Name	Partner/ Venture Name
1	BAE Systems	Hindustan Aeronautics Limited
2	Boeing	Engineering and technology campus Tata Boeing Aerospace Limited (TBAL)
3	Lockheed Martin	Tata Advanced Systems Limited Tata Sikorsky Aerospace Limited

### Employment:

US defence players have made significant contributions to generating employment in the country through their direct investments as well as through their network of suppliers and Indian offset partners (IOPs). The total direct employment generated by major defence players stands at over 26,000 employees.<sup>7</sup> Further, such US companies have also assisted in generating significant indirect employment.

### Exports:

India's partnership with US has aided towards actualisation of its vision for Indian defence. The manufacturing prowess of a nation can be gauged easily from its quantum of exports. US Original Equipment

Manufacturer (OEMs) have contributed to the growing Aerospace and Defence (A&D) exports from India. In FY19, India's global defence exports grew at a steady pace.<sup>8</sup>

1. Boeing's annual sourcing from India stands at USD 1 billion;
2. Lockheed Martin facilitated exports of around USD 600 million;
3. Textron sourced substantial quantities of high-value products, components and new technology from the country over the last five years.

As per export statistics published by the Government of India, US accounts for one of the largest exports of A&D products out of India in the last 5 years.<sup>9</sup>

6. Based on inputs given by AmCham members

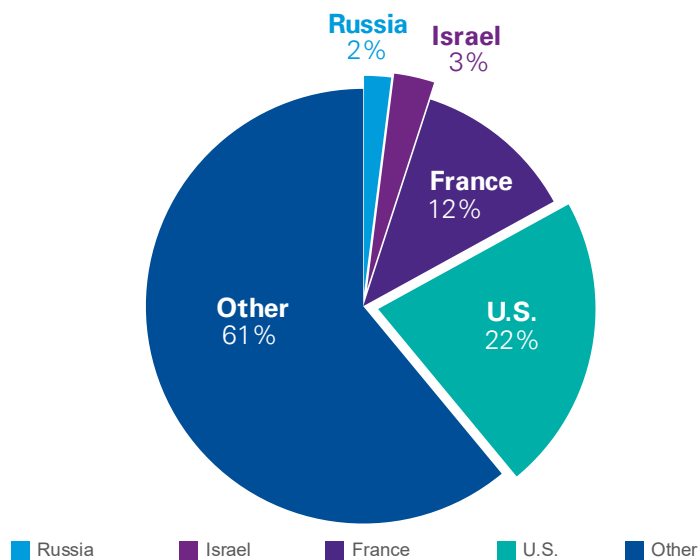
7. Based on inputs given by AmCham members

8. India's defence exports increase by 700% in two years, ranks 19th among world's defence exporters, Times Now, 9 September 2020

9. Import – Export Data Bank, Department of Commerce

A country by country comparison of Indian defence exports is provided below:

#### A&D Exports from India (2015-2019)<sup>10</sup>



10. Export-Import Data Bank, Department of Commerce



## The road ahead

India is set to undertake one of the largest equipment procurement cycles in the world with an estimated spend of about USD 130 billion<sup>11</sup> on capital acquisitions in the next five to seven years, which will create massive opportunities for the domestic industry given the Government's push for indigenisation. Besides, building local supply chains which will augment manufacturing capabilities, significant opportunity exists in engineering services, outsourcing activities, investments in Defence Industrial Corridors, supply chain sourcing and associated maintenance, repair and overhaul related activities.

The Indian Government's vision of 'Make in India' has been the driving force behind many of its recent policy measures. The Government has taken a slew of measures to ease the policy framework around defence sector to promote investment and in-country manufacturing. Some of the key policy initiatives of the Indian Ministry of Defence (MoD) are:

1. Foreign Direct Investment (FDI) limit relaxed to 74 per cent under automatic route permitting companies to set up manufacturing units with higher ownership and control. 100 per cent FDI permitted for defence manufacturing post seeking Government approval.<sup>12</sup>
2. 100 per cent FDI permitted for undertaking any activity not requiring a defence industrial license, thus, permitting companies to set-up units for engineering, design, technology, R&D and undertaking dual use manufacturing.<sup>13</sup>
3. Industrial licensing regime relaxed.
4. Approval process for import and export of defence products made simpler.
5. Tax rates reduced significantly especially for new manufacturing units. Various tax simplification measures introduced.

Besides the above, the Indian MoD has been revising the Defence Procurement Procedure (DPP) to accommodate industry request and to create a conducive policy environment based on the best industry practices. Some of these instances are:

1. Focus on indigenisation and priority to Indian categories of procurement.
2. Changes to offset regulation to catalyse technology inflow and development of defence industrial corridors.

3. Introduction of new categories of acquisition permitting subsidiaries of OEMs to implement contract in India by meeting the indigenisation requirements.
4. Concept of leasing of defence products introduced.

In line with the Indian Government's directed policy towards in-country manufacturing and technology influx, it is expected that American investments both financial and technological shall play a vital role in bidding for future defence acquisitions like Navy Multirole Carrier Borne Fighter,<sup>14</sup> Naval Multirole Helicopters,<sup>15</sup> Multi Role Combat Aircraft and Future Infantry Combat Vehicle.<sup>16</sup> As per the existing procurement procedure, it is expected that:

1. Under the acquisition category of Buy (Global-Manufacture in India), a major portion of the contract is to be executed in the country. To promote indigenous manufacturing, FDI limit of 74 per cent in defence manufacturing shall also be applicable.
2. Strategic Partnership policy is expected to ensure that Indian strategic partners co-produce defence platforms with OEMs. It shall incentivise technology transfer and help in making India a global defence manufacturing hub.
3. Even in other categories of acquisition, minimum indigenous content requirements have been enhanced. US OEMs are now considering strengthening their Indian supply chain and bidding in these categories through their Indian joint ventures.

The natural synergies at work here cannot be overlooked by the US companies entering the defence manufacturing space in India. These companies will attain exposure to the rapidly growing defence procurement budget of a strategic partner. The potential benefit to the Indian industrial base would be in the form of upgrading domestic infrastructure, capacity addition and R&D activities. The geopolitical realisations combined with sound economic rationale make collaborations between US and Indian defence industries seem imperative. Most importantly, the collaboration in the respective defence industrial establishments of the two countries will create a firm foundation for enhancing an important friendship between two historical democracies.

11. India to spend a whopping USD 130 billion to modernise forces, Economic Times, September 10, 2019

12. Press Note No. 4 (2020 series), Department for Promotion of Industry and Internal Trade

13. Press Note No. 4 (2020 series) Department for Promotion of Industry and Internal Trade

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

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

16. Army's combat vehicle project gets green signal, Economic Times, February 2018



# India-US ties - A strategically indispensable and commercially promising relationship

- The commercial relationship between the US and India has matured significantly over the years.
- Two-way trade has grown to about USD160 billion in 2019, up 10 per cent year-on-year<sup>1</sup>.
- In the prevailing geo-political backdrop, defence co-operation is a key cornerstone of Indo-US relations which is imperative both from a strategic and commercial standpoint.

**The alliance between India and the US is one of the defining relationships of the 21st century, riding on a convergence of interests over global and bilateral areas.**

**Over the years, a wide and comprehensive system of dialogue has built a long-term framework for engagement between the two democracies. Indo-US geopolitical relations have always had their own dynamics and imperatives. Historically, the trajectory of Indo-US ties has witnessed various vicissitudes over the course of the time, yet the present relationship between the two countries has gradually evolved into a more robust and matured partnership based on mutual trust embarking into an outward looking economic developmental roadmap.**

1. US India's preferred trade partner in journey to be \$5 trn economy: Envoy, Business Standard, February, 2020

## Strategic Intent

The strategic importance of the Indo-Pacific region and potential threats arising out of complex geopolitical dimensions in the greater Indian Ocean region has also made the countries recognise convergence of their mutual interests and the need for enhanced cooperation in maintaining peace and stability in the region. The Indian Ocean region is crucial as nearly half of global commercial sea-vessels and two-thirds of global oil trade passes through its sea lines. Thus, there is a need for continued collaboration by both the countries.

The two countries have over 50 bilateral dialogue mechanisms.<sup>2</sup> The 2+2 dialogue has been providing forward-looking vision for the two nations to draw synergies for further growth. Today, the cooperation is on a broader scale, covering a multitude of traditional as well as new-age sectors, including defence and security, education, science and technology, cybersecurity, high technology and civil nuclear energy.

With the US designating India as “Major Defence Partner,”<sup>3</sup> a status unique to India, India is now at par with its closest allies. It has opened the doors to Indian procurement of sensitive defence technologies, thus, creating a new panorama for elevated Indo-US cooperation. This has significantly impacted power balance in the region and neutralised shared security threats. As part of accelerated Indo-US security partnership, joint military exercises between the Indian and US military personnel have been taking place on a sustainable basis<sup>4</sup> and have underlined the need for enhancing interoperability of current and future military assets of the two nations.

## Economic Intent

In recent years, the commercial relationship between the US and India has matured significantly. Over the past decade, two-way trade has grown significantly. This is a major testimony to the symbiotic Indo-US partnership. Today, India and the US demonstrate a global strategic collaboration at the back of common ambitions, values and interests.

The trajectory of the efforts made by the two nations in recent times to align with each other's interests has been simply remarkable, not just in traditional sectors such as technology and financial services but also in emerging sectors such as aerospace and

defence, chemicals, dedicated freight corridors, energy, agriculture, infrastructure and logistics. The increasing prominence of the role of Indian American diaspora and gradual convergence of strategic interest on regional and global issues has stepped up the momentum of bilateral cooperation.

**Defence** has always been critical for a country's strategic and economic interests. One cannot deny its increasing economic importance. The combined arms-sales of the top 100 largest arms-producing companies and military services companies (excluding China) totalled USD 420 billion in 2018, according to Stockholm International Peace Research Institute (SIPRI).<sup>5</sup> If India is to achieve its aim of being a USD 5 trillion economy, it needs to focus on honing its capabilities in aerospace and defence. This sentiment is reflected in Government's vision of the sector, which is to scale up the domestic defence industry to USD 26 billion by 2025.<sup>6</sup>

A partnership with the US is therefore important for India given its defence requirements, aging technology, 'Make in India' initiatives and the democratic ideology of both countries. Through this partnership, India has proven to be a substantial market for US Defence products. In the past decade, India has been one of the top importers of defence equipment globally. Even with global economies slowing down, the size of the Indian defence market is only expected to rise as India plans to incur around USD130 billion<sup>7</sup> in the next 5-7 years on procuring a range of weapons, missiles, air defence systems, fighter jet, submarines and warships, drones, and surveillance equipment to bolster the armed forces' combat capabilities.

The Government of India's continued efforts towards further liberalising the economy are also expected to provide greater market access to American exporters. This is also reflected in the latest budget allocation for the defence sector. While the total defence budget for FY 21-22 increased marginally by 1.45 per cent to USD 66.95 Bn, there was a significant increase of almost 19 per cent in capital procurement outlay (i.e. USD 18.9 Bn), the enhanced capital outlay shall significantly impact future defence contracting and ensure streamlined acquisitions of key platforms like multi role fighter aircrafts, light combat aircrafts, unmanned aerial

2. Brief on India-US Relations, MEA, Accessed on 9 January 2020

3. US – India Defence Relations Fact Sheet, December 8, 2016, US Embassy in India

4. Joint Military Exercises, Press Information Bureau, 2018

5. Stockholm international peace research institute yearbook 2020

6. PIB Release, September 17, 2019 - India to achieve USD 26 billion defence Industry by 2025: Raksha Mantri

7. India to spend a whopping USD 130 billion to modernise forces, The Economic Times, 10 September, 2019



vehicles and future infantry combat vehicles. Coupled with that, the intent of major American corporations, many from the A&D sector, to set up production bases in India is also expected to result in large scale job creation and make local defence technology/component companies move up the global value chain.

The Indian defence industry is at an inflection point. Government reforms focused on increasing private participation and increasing foreign participation (FDI in defence manufacturing was increased from 49 per cent to 74 per cent recently) have been brought into force.<sup>8</sup> Major initiatives like establishment of Defence corridors and an ambitious export promotion policy have set the stage for transforming this sector from the grassroot level. Moving a step up from the customer buyer relationship in the past, India is now looking forward to partnering and collaborating with US in the coming years. With the tremendous untapped potential for industrial growth in India along with the emergence of Indo-Pacific as an important geopolitical construct, one can expect India to play a pivotal role in promoting regional stability and driving economic development.

## India US defence ties – A tale of symbiotic growth and synergies

It has taken time for the two countries to develop strategic ties built on cohesive ambitions of economic growth and geopolitical leadership. With defence being a key sector for both the countries from a strategic and commercial standpoint, both nations are cognisant of the fact that their relationship and defence cooperation will be a critical component in their self-interest. Particularly, in the last two decades, the ties between India and the US have witnessed considerable improvement owing to the political will of both the countries which ensured that the Indo-US ties remain on growth track and become more profound year on year.

It would not be wrong to conclude that the Indo-US ties are witnessing an upward trajectory regardless of the political leadership, and will continue to remain so, owing to mutual gains on the economic and strategic front. This relationship has been fostered and strengthened by a number of significant events and milestones. Some of these marquee events are as follows:

**Establishment of the Defence Technologies and Trade Initiative to overcome bureaucratic hurdles:**<sup>9</sup> DTTI works towards speedily strengthening India's defence industrial base, exploring new technological development areas and expanding Indo-US business ties.



8. Press Note No. 4 (2020 series), Department for Promotion of Industry and Internal Trade

9. India, US sign SOI to strengthen dialogue on defence technology cooperation, Economic Times, 29 October, 2019

10. LEMOA fully operational now, The Hindu, 09 September 2018





**Signing of the Logistics Exchange Memorandum of Understanding (LEMOA) and Communications Compatibility and Security Agreement (COMCASA) to leverage each other's military infrastructure:**<sup>10</sup> LEMOA, signed in 2016, enhanced the military cooperation between the two countries, providing them easier access to each other's facilities for supplies and services for military forces of the two countries. COMCASA, executed in 2018, aimed at facilitating a greater interoperability between the militaries of the two nations, providing India with access to an advanced communication infrastructure.

#### **Designating Strategic Trade Authorisation-1**

**(STA-1) to India by the US:** In August 2018, the US granted STA-1 status to India, making it the first South Asian country to be elevated to such a stature.<sup>11</sup> This has enabled India to receive licence-free access to a wide range of dual-use military technologies, also allowing US companies to export more efficiently, a much wider range of products to Indian high technology and military customers.

**Renaming Pacific Command to Indo-Pacific Command:**<sup>12</sup> The US military renamed its oldest and largest military command, the Pacific Command, to Indo-Pacific Command.<sup>12</sup> This is a symbolic move that sets the narrative to counter the increasing Chinese economic and military presence in the region.

**Putting India on a par with North Atlantic Treaty Organization (NATO) allies:**<sup>13</sup> A legislative provision passed in the annual National Defence Authorisation Act by the US Senate in 2019, put India on a par with NATO allies and other non-NATO countries for increased defence cooperation. The provision enhanced cooperation across humanitarian assistance, counterterrorism, counter-piracy and maritime security.

**Nuclear Suppliers Group:** Nuclear energy is another crucial area of co-operation between the two countries. The signing of the civil nuclear agreement, also known as the 123 agreement, in October 2008<sup>14</sup> was a watershed moment. It recognised India as a nuclear state, giving it the same benefits as those of other leading nuclear powers. India was also granted a waiver from the Nuclear Suppliers Group (NSG). The partnership intensified further with the US committing to establish six nuclear power plants in India.<sup>15</sup> The US supports a reformed UN Security Council that includes India as a permanent member.

#### **Signing of Basic Exchange and Cooperation Agreement:**<sup>16</sup>

Basic Exchange and Cooperation Agreement (BECA), which was signed in the recently conducted 2+2 dialogue (2020), will provide India with topographical and aeronautical data and products, which will aid geospatial intelligence, navigation and targeting (especially of long range missiles) and contribute significantly to strengthening defence ties.

11. India first south Asian nation to get STA-1 status from US, India Today, 4 August 2018

12. US Pacific Command renamed as US Indo-Pacific Command, Economic Times, 02 June 2018

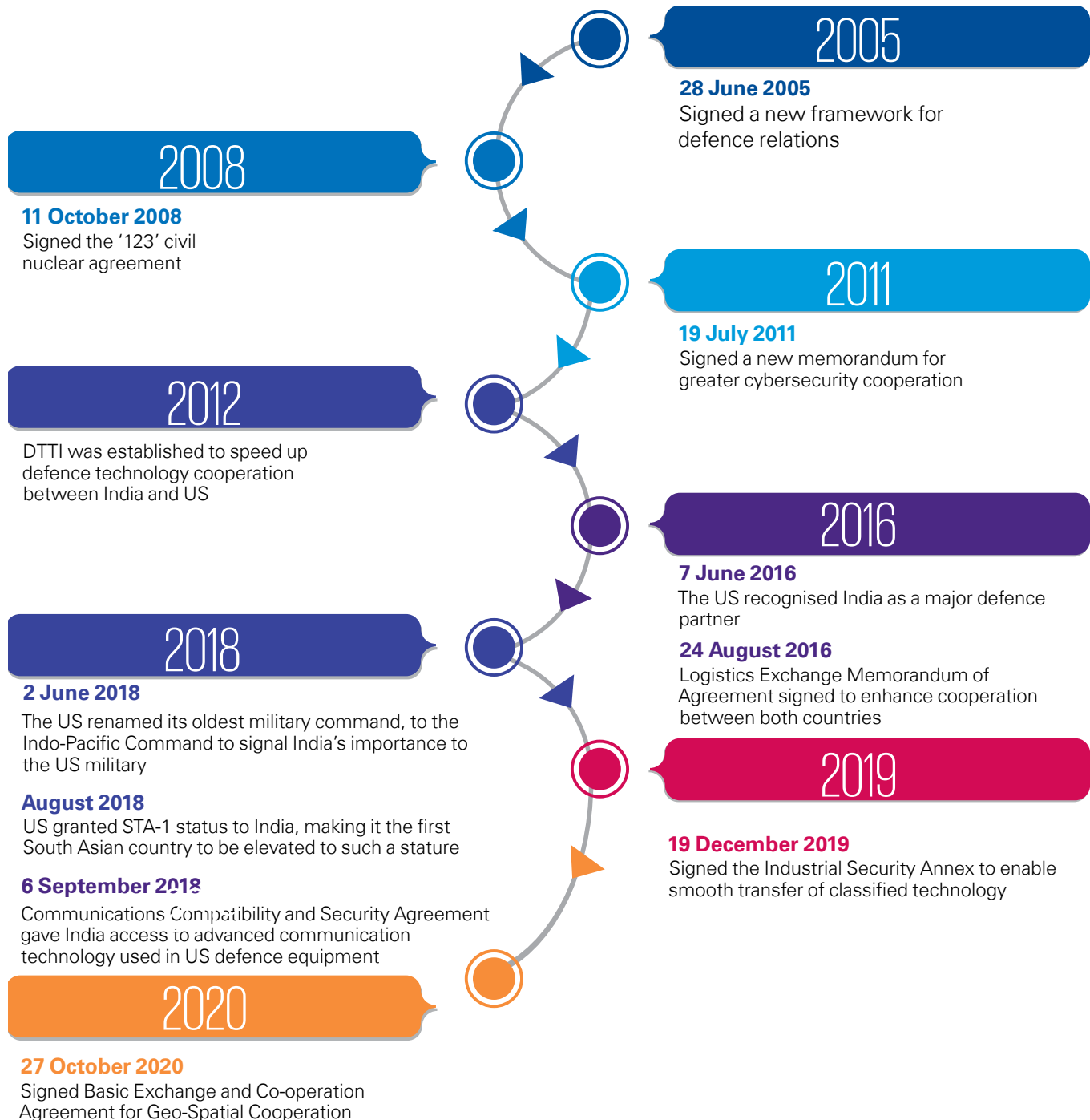
13. US Senate clears proposal to bring India on a par with its Nato allies, Mint News, 2 July 2019

14. Pranab, Rice sign 123 agreement, Hindustan Times, 11 October 2008

15. US and India commit to building six nuclear power plants, Reuters, 14 March 2019

16. India, US sign Basic Exchange and Cooperation Agreement, Deccan Herald, 27 October 2020.

## Snapshot of Indo-US ties<sup>17</sup>

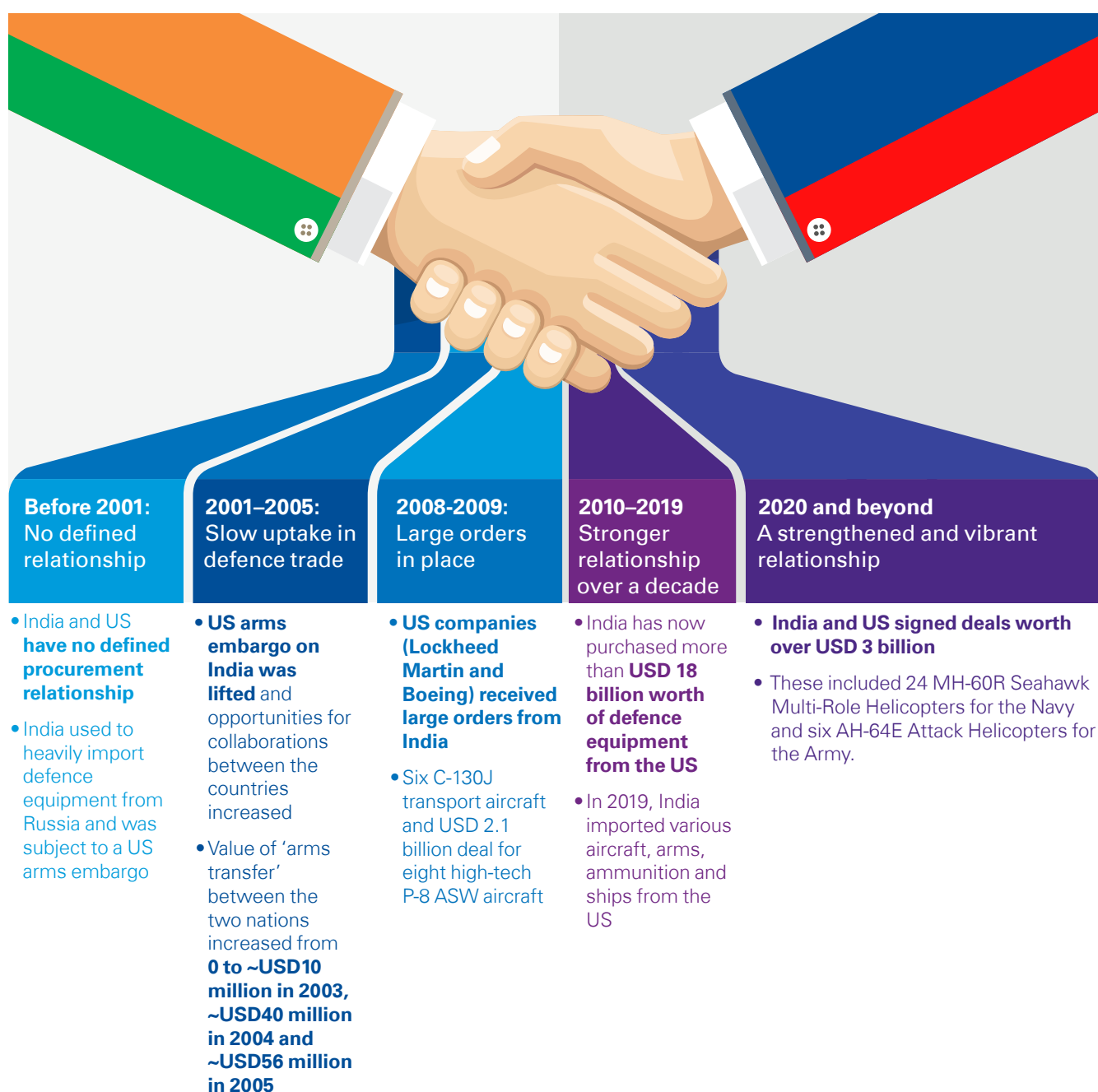


17. PrU.S.-India Relations, Council on Foreign Relations, Accessed on 13 January 2020

As the Indo-US ties continue to strengthen, a corresponding effect can be seen in the composition of Indian defence imports. Even though US' contribution to Indian defence imports was miniscule initially, US' roleplay in Indian defence sales has increased simultaneously as India-US ties strengthened over the years. Post 2001, the US' position was strengthened

specifically when the arms embargo on India was lifted. A series of bilateral talks and policy adjustments from both the countries have increased the US' share in India's total defence imports to 14 per cent over 2015-2019<sup>18</sup> vs. 1960-2005 when it was negligible. Between 2015 and 2019, India was the second-largest arms importer in the world.<sup>19</sup>

### India and US defence procurement relationship<sup>20,21,22,23,23</sup>



18. Stockholm International Peace Research Institute, March 2020

19. Stockholm International Peace Research Institute Arms Transfers Database

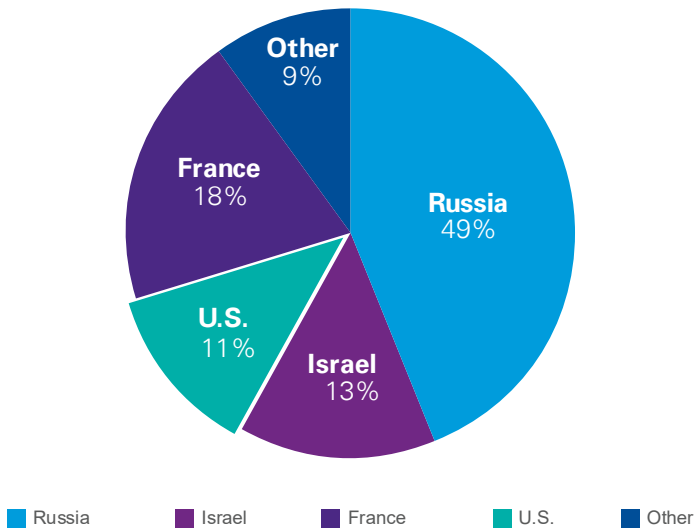
20. US arms embargo on India lifted - US lifts sanctions against India, Pakistan, EE Times, 24 Sept 2001

21. Value of arms transfer – Conventional Arms Transfer to Developing Nations, 2003-2010

22. 2008-09 - India to buy 6 Hercules military transport planes from Lockheed Martin, Economic Times, 18 February 2008

23. India, US sign defence deals worth over USD 3 billion, The Hindu, 25 February 2020

### Main suppliers' share in India's total defence imports (2015-2019)<sup>24</sup>



US' participation in the Indian defence space is not expected to dwindle or even stagnate anytime soon. India has a long term 10 year pipeline of over USD 223 billion defence capex<sup>25</sup> with an estimated spend of USD 130 billion to accrue in the medium term.

New acquisitions (short term) of USD 60 billion with various US companies are in the fray. Indian defence procurement market offers a massive potential for US and Indian companies to benefit in terms of long-term partnerships and collaborations.

In light of the past and expected future trends, the trajectory of Indo-US ties is likely to grow upward year on year.



24. Stockholm International Peace Research Institute, April 2020

25. Long Term Integrated Perspective Plan (LTIPP), Ministry of Defence, 2012-2027





## US defense players support Make in India

- Indian Government has recently taken a slew of measures to ease the policy framework around Defence sector to promote investment and in-country manufacturing.
- US OEMs have made existing investments towards building manufacturing and service hubs in India both in civil and defence domains which have been generating employment, skill development, development of allied industries, enhancement of exports and technology transfers to the country.
- Over the last 5 years, US has accounted for 14 per cent of defence imports by Indian MoD and for 22 per cent of India's aerospace & defence exports.<sup>1</sup>

**Indian Government has been keen to cultivate an established defence manufacturing base. The country aims to be 'self-reliant' for defence armaments by encouraging in-country manufacturing, promoting exports and investing in R&D.**

**American defence companies have always stood shoulder to shoulder with the Indian Government in helping it achieve its objectives of 'Make in India' and 'Atmanirbhar Bharat'.**

**Even though majority of the sales to Indian MoD by American companies have only been concluded in the recent 5-7 years, there have been significant investments made by American companies in India.**

1. Export Import Data Bank, Department of Commerce

## Make in India

Major US OEMs/Tier-1 suppliers have already entered into and are in the process of exploring avenues of increased participation through tie-ups/joint ventures (JVs). With the Indian Government implementing policy reforms focused on indigenous production and technology absorption, the US arms policy towards India needs to embrace technology transfers, including the possibility of co-development of systems in India, a globally strategic defence market.

Many US OEMs over the years have also set up facilities across India through JVs to support indigenous production and enable a robust infrastructure for research and development. These investments help India in acquiring the defence technology that the country is looking for to modernise its defence equipment.

## US Investments in India: Adding capacity and scale to the Indian Defence sector<sup>2</sup>

US OEM	Joint Ventures, Subsidiaries, R&D Centers in India
Boeing	<ul style="list-style-type: none"> <li>JV with TATA Group - Tata Boeing Aerospace Limited, employing over 500 and making Apache fuselages and other structural parts from a facility in Hyderabad</li> <li>Public Private Partnership with HAL and Mahindra Defence Systems</li> <li>The Boeing India Engineering and Technology Center (BIETC) in Bengaluru and Chennai undertakes complex advanced aerospace work and supports Boeing's global engineering growth with a greenfield 43 acre facility under construction in Bengaluru to support growth</li> </ul>
Honeywell Aerospace	<ul style="list-style-type: none"> <li>Has a JV with Hindustan Aeronautics Limited and provides support to the Indian Air Force, HAL and the Defence Research and Development Organisation (DRDO)</li> </ul>
Lockheed Martin Corporation	<ul style="list-style-type: none"> <li>Two manufacturing Joint Venture investments in India with Tata - Tata Lockheed Martin Aerostructures Limited (TLMAL) and Tata Sikorsky Aerospace Limited (TSAL)</li> <li>Has contributed around USD100 million dollars since 2008 for manufacturing equipment, tooling, and Intellectual Property</li> <li>Has invested in building a 20,000+ square metre facility for TLMAL</li> </ul>
Raytheon Technologies (includes P&W and Collins Aerospace)	<ul style="list-style-type: none"> <li>Has four factories in India, and has helped to create the whole supply chain for these facilities</li> <li>P&amp;W has invested in Air India Engineering Services Limited (AIESL) as a provider of maintenance services in support of GTFTM (Geared Turbo Fan) operators in India, for maintenance, repair and overhaul (MRO) services</li> </ul>
Textron	<ul style="list-style-type: none"> <li>Established a wholly owned subsidiary in 2004 to provide engineering and technological solutions to the group.</li> </ul>

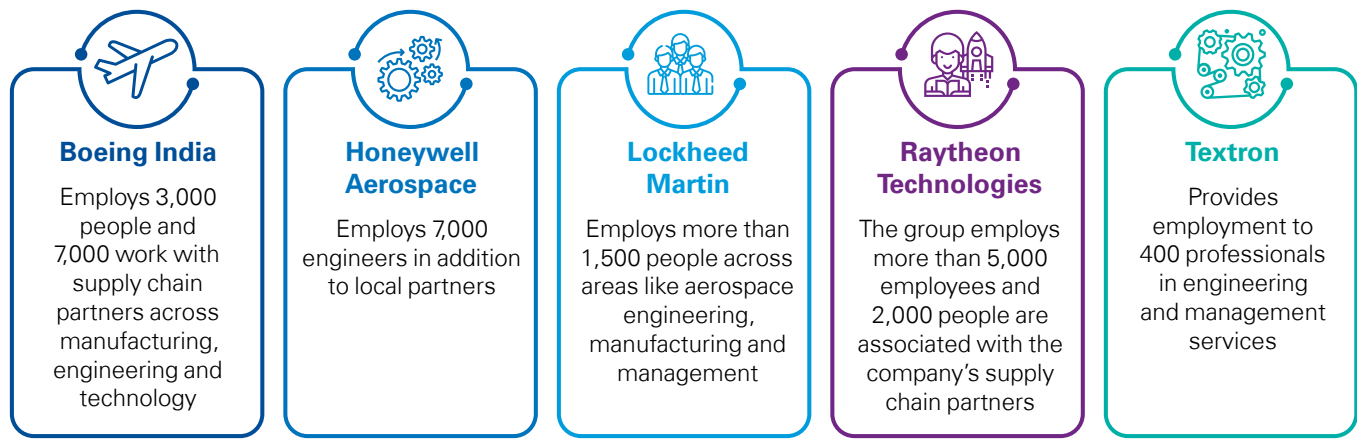
2. As per individual AmCham member inputs

## Employment and Skill Development

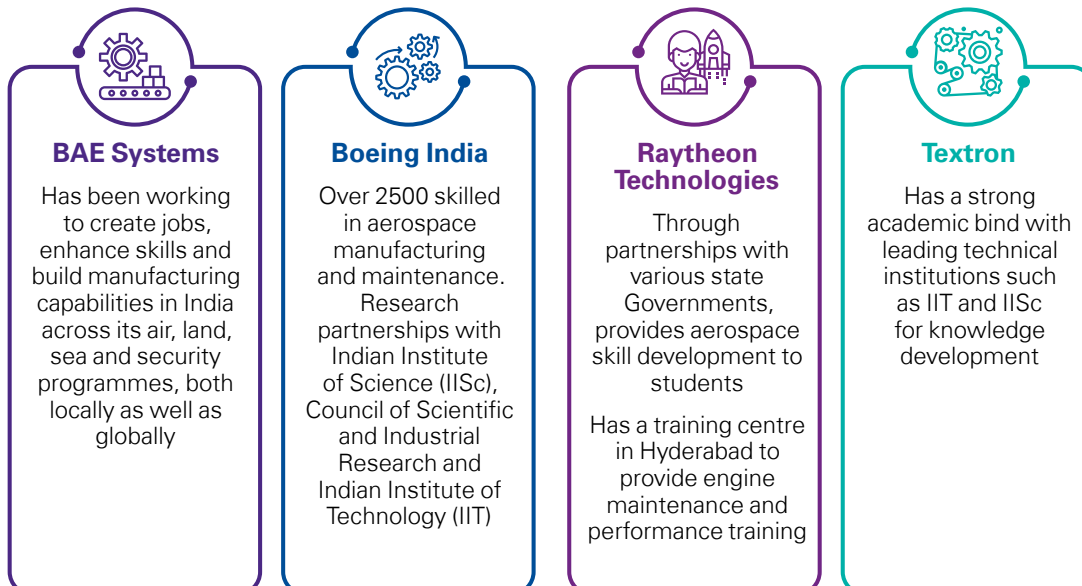
Along with the investments, US OEMs have been playing a major role in enhancing the Indian defence infrastructure, including manufacturing, skill development, employment generation, value chain creation and development of allied industries. Continued partnership between the two countries will help India build the skill sets it requires to achieve its dream of self-reliance.

### Employment generation and skill development by US OEMs<sup>3</sup>

#### Employment



#### Skill Development



Note: The list is not exhaustive

3. AmCham member inputs



## Vision of Self-Reliant India

Self-reliance in defence is based on technological autonomy as well as capacity for manufacturing defence products using these technologies. India's partnership with US has aided towards fulfilment of both of these aspects. The manufacturing prowess of a nation can be gauged easily from its quantum of exports. India's global exports are growing at a steady pace.<sup>4</sup> US OEMs have also contributed significantly to the growing aerospace & defence exports from India. A country by country comparison of Indian defence exports is provided in the table below:

### Key Numbers and statistics of Aerospace & Defence Exports from India<sup>5</sup>

Country	2015-16	2016-17	2017-18	2018-2019	2019-2020	Total (USD billion)	% of Global Exports
<b>Global from India</b>	4.17	3.59	2.47	1.95	1.67	<b>13.85</b>	-
<b>To US</b>	0.59	0.65	0.69	0.61	0.55	<b>3.10</b>	<b>22%</b>
<b>To France</b>	0.26	0.75	0.26	0.25	0.17	<b>1.69</b>	12%
<b>To Israel</b>	0.06	0.15	0.08	0.07	0.06	<b>0.43</b>	3%
<b>To Russia</b>	0.11	0.12	0.04	0.02	0.03	<b>0.34</b>	2%

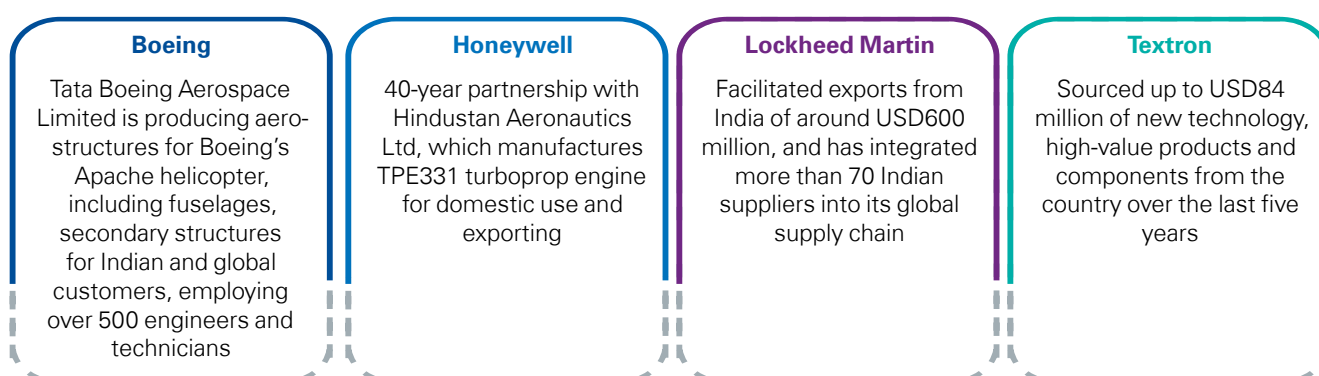
Some of the key US OEMs procuring from India are:<sup>6</sup>

1. Boeing, which accounts for USD1 billion of exports annually;
2. Lockheed Martin, that has facilitated exports from India of around USD600 million; and

US OEMs/Tier-1 suppliers have been instrumental in driving India's Make in India campaign and are building internal initiatives to support the Indian Government.

Even in the sphere of technology transfer and integration, participation of US corporations is noteworthy. A few instances where collaboration with US has resulted in technological advancement of the Indian defence sector are as follows:

### US OEMs helping drive defence exports and tech-transfer for self-reliant defence manufacturing<sup>7</sup>



4. India's defence exports increase by 700% in two years, ranks 19th among world's defence exporters, Times Now, 9 September 2020

5. <https://commerce-app.gov.in/eidb/ecntcom.asp> The export data as provided above entails only three specific commodity categories with HS code 36, 88 & 93 (i.e. Explosives, Arms & Ammunitions & Aircrafts (Civil & Defence)). The category of Aircrafts/Spacecrafts will include

civil and defence products. Export data for Ships, boats and floating structures have not been considered for the subject comparison.

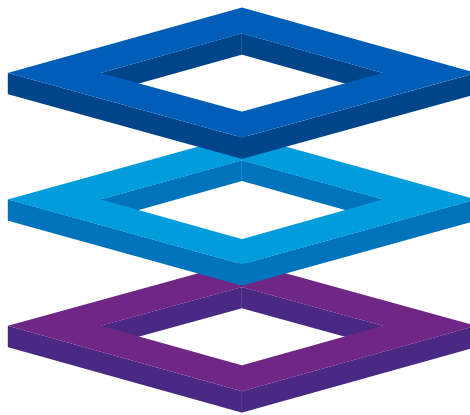
6. AmCham member inputs

7. AmCham member inputs

## US OEMs helping drive defence exports and tech-transfer for self-reliant defence manufacturing

**BAE Systems invested in capability building** through manufacturing Hawk Mk 132 AJT with HAL and P8-I Poseidon Multi-Mission Maritime Aircraft in collaboration with Kineco Group.

In 2020, Pratt & Whitney announced Air India Engineering Services Limited (AIESL) as a provider of maintenance services in support of Geared Turbofan™ operators. This is an effort to bring **advanced MRO capabilities to India**. Such services were conducted only by international MRO hubs.



Lockheed Martin **worked with Ashok Leyland** to develop the next-generation military vehicle for India and global market.

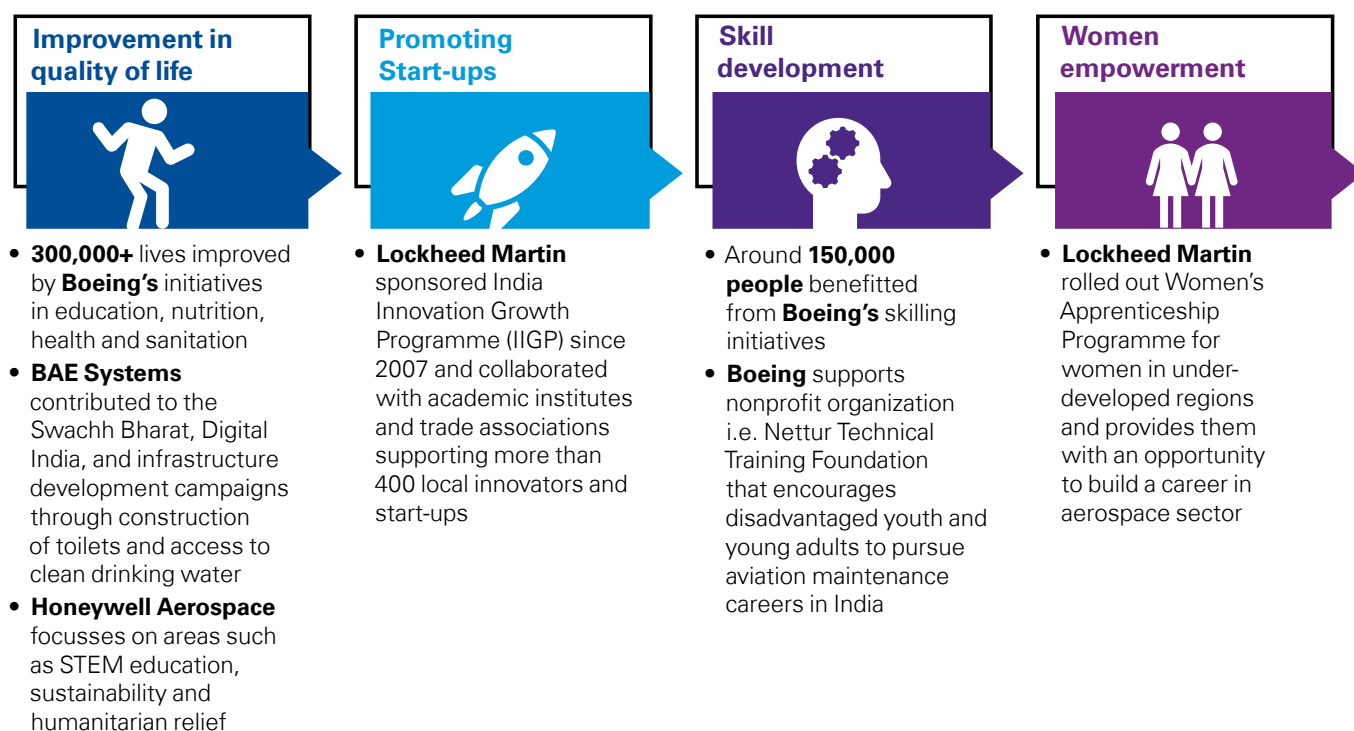


**Boeing** - local supply chain with specific focus on MSMEs

## Partnering with India

Apart from commercial and technological benefits, various US OEMs have also been supporting India through a string of social initiatives covering a number of programmes being run by the Government. These investments are being directed towards the future of the country, impacting lives positively. A few relevant examples of the same are encapsulated below:

### Significant community investments by US OEMs<sup>8,9,10,11</sup>



As we take into account the significant role played by leading defence players in developing the Indian aerospace, a number of other players also deserve a mention. These companies have been instrumental in catalysing investment in the sector and added to Indian manufacturing abilities/ supply chain.

1. **Northrop Grumman** is not new to the India defence market. Its close relationship with India goes back more than 25-years with support for a variety of defence programs across all three armed services as well as strategic industrial partnerships with four Indian technology companies.<sup>12</sup>
2. **L3Harris** - L3Harris is involved with a full range of projects in India, supporting the nation's civil and military goals. It operates in a number of domains including defence and paramilitary, public safety, aviation and space.<sup>13</sup>
3. **Belcan LLC**, a US-based engineering consulting and staffing provider announced the launch of its subsidiary in India. Senior officials of Belcan have expressed their commitment to expand their operations to India with the opening of a new design centre.<sup>14</sup> Belcan wishes to combine its extensive industry domain knowledge with India's rich engineering talent to provide value offerings.

8. In Partnering India to Make in India, BAE Systems, Accessed on 14 October 2020

9. Boeing India Backgrounder, Published on September 2020

10. Boeing India Ecosystem Development, Published on September 2020

11. AmCham member inputs

12. Northrop Grumman Expands Presence in India and Opens New Delhi Office, Defence and Aerospace.com, November 07, 2007

13. L3 Harris official website

14. India – Belcan launches new subsidiary in Hyderabad, Staffing Industry Analysis, March 2016

# Support in battling COVID-19

## Introduction

COVID-19 pandemic has adversely affected global as well as Indian economy. It has led to considerable loss of human life, widespread economic hardship through concurrent supply (input constraints), demand (spending patterns, consumer confidence) and market (financial conditions impacting wealth) shocks.

When the crisis in India deepened with the significant need for medical assistance, seeing the enormity of the challenge, many American companies also shouldered the responsibility with NGOs and Indian Government and played individual as well as collective roles in the fight against the COVID-19 pandemic.

A brief snapshot of the assistance provided by American Companies to India during the COVID-19 pandemic is captured in the ensuing section.<sup>15</sup>

### 1. Lockheed Martin

#### Support through funds and relief materials

- Lockheed Martin provided USD 250,000 to help US and India-based organizations procure more than 500 portable oxygen concentrators that will be donated to the Government of India for distribution. In addition, it donated USD 50,000 to PM CARES Fund and provided USD 150,000 in charitable donations to support the Global Task Force on Pandemic Response.
- The Company offered critical medical supplies including 1 million facial masks, 9,000 face shields and 1,200 bottles of hand sanitizer from their surplus supply, to an industry association, for distribution in India.

#### Support to Workforce

- The Company activated their employee workplace giving program to support India humanitarian relief.
- The Company encouraged the use of Employee Assistance Program for all Lockheed Martin employees and their immediate family for support.
- The Company also provided real-time COVID-19 updates and guidance to Lockheed Martin employees.

### 2. Boeing

Boeing launched a USD 10 million emergency assistance package to support India's COVID-19 response. As part of its COVID relief efforts, Boeing is working with central and state Governments in India, and with international relief organizations to set up COVID-19 care hospitals and provide medical supplies for the treatment of patients. Illustratively, organisations that received the said funding/support organisations that received the said funding/support include CARE (Cooperative for Assistance and Relief Everywhere, Inc.), SELCO Foundation, PM CARES Fund, etc.

#### COVID care hospitals

- 100 Bed Hospital has been built in Yelahanka, Bengaluru in partnership with Doctors For You, Government of Karnataka and other charitable organisations
- Manpower Support: Team of Doctors, Paramedics deployed in Bengaluru, Kanchipuram and Patna in partnership with Doctors For You.

#### Employee contributions

- Boeing is running a worldwide employee contribution initiative which allows employees to donate personally to charitable organizations supporting COVID-19 relief in the country
- As part of the Boeing Gift Match program, the company plans to match monetary donations dollar for dollar, extending the reach of assistance being provided to the affected people.

15. Based on AmCham member inputs



### 3. Honeywell

Honeywell partnered with multiple state Governments in enhancing the healthcare capacity of the states by implementing COVID care centers, donating 1,000 oxygen concentrators, 10 ventilators, 10,000 N-95 respirators, and 4,500 PPE kits to various Government and private hospitals across the country.

Honeywell has engaged with Sustainable Environment and Ecological Development Society (SEEDS), a not-for-profit organisation, to build the said COVID care centers, which are being operated and maintained by the Government. The centers have been established in Delhi, Gurugram, Nainital, Pune.

In the second phase, Honeywell set up COVID critical care centers in Bengaluru and Mumbai in partnership with the state governments of Karnataka and Maharashtra respectively. In the third phase, Honeywell has engaged with Americares for establishing eight oxygen plants across the states of Maharashtra, Karnataka, Telangana, Haryana and Uttarakhand.

### 4. Smiths Detection

- Smiths Detection partnered with charities to support India during the COVID-19 pandemic.
- The contributions from Smiths Group aided two partner NGOs, to support numerous underprivileged beneficiaries and frontline healthcare workers across the country with cooked meals and PPE kits along with drives to generate awareness about the pandemic, prevention, safety protocols and maintaining proper hygiene.
- The Company additionally created a link for voluntary employee donations that aided the two NGOs. These in turn worked on the frontiers of providing essential kits to the daily wage workers and reached 4,259 underprivileged families. They also helped to distribute 1,770 PPE kits to frontline healthcare workers.
- In addition to this, Smiths Group in India with the support of its partnering organisations, successfully commissioned an oxygen generation plant in Bengaluru.

### 5. BAE Systems

As a part of COVID-19 relief effort, BAE Systems donated GBP 50,000 (USD 69,000 approx.) to a charitable organisation:

- The donation reached more than 1.5 million people by providing poor rural communities with large-scale food, water, and sanitation requirements as well as other essentials
- To procure and provide vital medical resources such as PPE kits and oxygen cylinders
- Further supported by personal donations from BAE Systems global staff to the Disasters Emergency Committee (DEC).

### 6. Raytheon Technologies

- Raytheon Technologies and its companies in India (Pratt & Whitney and Collins Aerospace) have deployed more than USD 4 Million in immediate aid, to support India's COVID-19 relief efforts. As part of its first tranche – the companies rapidly donated 1,000 oxygen concentrators and retrofitted OxyTrucks.
- The oxygen concentrators and the OxyTrucks, which augmented hospital oxygen supply lines, were distributed in collaboration with the Indian Government including Niti Aayog and other non-profits. Local teams from Pratt & Whitney and Collins Aerospace continued to assess in-country needs of the Government, communities, its 5,500 employees and their families, while working with hospitals on vaccination program.
- Pratt & Whitney also provided oxygen concentrators and PPE kits to the Community Health Center in Marpally, and the Government Civil Hospital in Koheer, Telangana. The equipment and PPEs were distributed in partnership with the Government of Telangana and volunteering organisations.
- The company also matched employee donations to numerous nonprofits supporting COVID-19 relief efforts, and local teams intend to continue to drive relief-work in India throughout 2021.

## Evolving policy environment

- Prior to establishment of a separate Department of Defence Production (DDP) under the MoD, procurement of defence equipment in India was carried out as per the normal rules governing all Government purchases.
- Defence procurement has come a long way from direct importing to issuance of policies aiming at co-production and partnership for developing defence platforms.
- The stage is set with favourable factors to establish India as a key defence manufacturer in the global defence supply chain. Announcement of Defence Acquisition Procedure (DAP) 2020 and draft Defence Production and Export Promotion Policy (DPEPP) and establishment of defence corridors are few of the steps to achieve self-reliance and move towards this goal.<sup>1,2</sup>



**Prior to establishment of a separate DDP under the Indian MoD, procurement of defence equipment in India was carried out as per the normal rules governing all Government purchases. No separate procedure was in place for the procurement of defence equipment. One of the major reasons behind this was that most of the imports during that era were from the erstwhile Soviet bloc and were always on 'Government to Government (G2G)' basis. Technology transfer was limited, domestic capacity was often confined to integration of systems under licensing and in the hands of public sector entities, namely, Defence Public Sector Undertaking (DPSU), Ordnance Factory Board (OFB) and DRDO.**

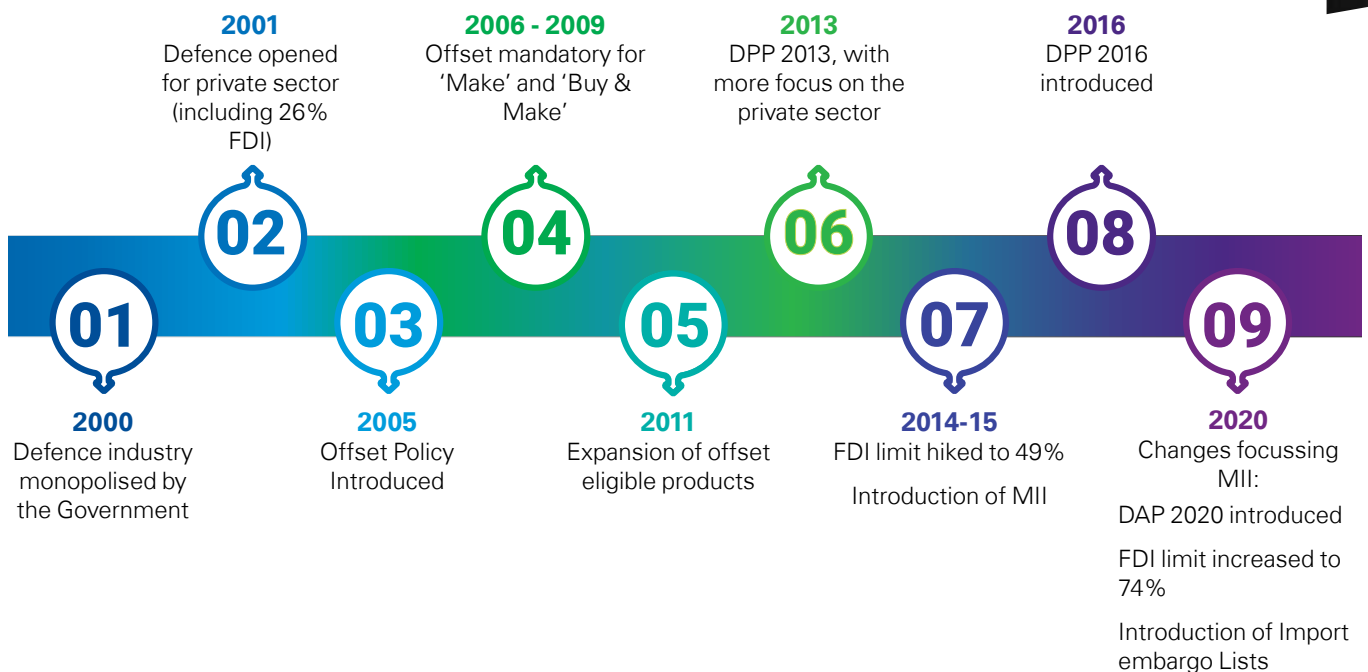
1. Raksha Mantri Shri Rajnath Singh unveils Defence Acquisition Procedure – 2020; Press Information Bureau, September 28, 2020

2. MoD releases draft Defence Production and Export Promotion Policy 2020; Press Information Bureau, August 03, 2020

The Sino-Indian War of 1962 emphasised the need for rationalising and formalising the defence acquisition procedure. A separate DDP under the Indian MoD was established, with pronounced focus on modernisation and diversification of arms for protection of national security interests.

There was a major policy revamp in 1990s aimed at catalysing foreign investment in the country through liberalisation, privatisation and globalisation. The impetus of these reforms was on the Indian

manufacturing industry. It was felt that such reforms, if implemented, shall also greatly benefit the defence sector which was hitherto highly regulated. Another trigger which catapulted defence policy to the forefront and back on the anvil was the Kargil War of 1999. Post Kargil, there was a lot of criticism and public scrutiny regarding the obsolescence of arms with the Indian forces and severe paucity of modern equipment. This compelled the Government to take necessary actions and bring in requisite reforms to promote local defence manufacturing.



Employees of **Tata Lockheed Martin Aerostructures Limited** in Hyderabad reinforce Lockheed Martin's commitment to support customers' vital missions

## Framework of policies governing the Indian Defence Sector

A

**Defence Acquisition Procedure**

B

**Defence Offset Guidelines**

C

**Industrial licensing policy**

D

**Foreign Direct Investment Policy**

E

**Defence Production and Export Promotion Policy and Industrial Corridors**

F

**Tax and Regulatory**

Over the years, a number of policies reinforcing the vision of 'Make in India' have been announced. Currently, the sector is governed by a more evolved and liberalised version of these policies. Some key facts about these policies and opportunities of growth emanating from them are as follows:

### A. Defence Acquisition Procedure

#### Evolution of the policy

In order to regularise and lay down a definite framework for defence sector, a comprehensive procurement procedure for arms procurement known as the DPP was introduced in 2002. There have been several iterations of DPP till date keeping in view the requirements of all stakeholders; with each version expanding the scope, streamlining processes and putting in safeguards, wherever required.

The latest applicable version of the policy- rechristened as Defence Acquisition Procedure 2020 strives to achieve 'Self Reliance' of the country in the defence sector and implement 'Ease of Doing Business' with emphasis on simplification, delegation, reduced timelines and making the process as industry friendly as possible. Notification of DAP 2020 has brought in wide-ranging modifications to how future procurements shall be governed and implemented.

DAP 2020 is applicable on all capital acquisitions (other than work and land) by the Indian MoD and Service Head Quarters (SHQs). However, DRDO, OFB and DPSUs will follow the specific procurement procedure stipulated for them.

Items such as overhauls, refits, upgrades and replacement of items of capital nature etc. which enhance the utility of existing assets will be procured under the procedure laid out in DAP. Any expenditure on items of routine maintenance, repairs etc., will be governed by the procedure laid out in Defence Procurement Manual .

The revised categories of acquisition and enhanced IC requirement stand as below:<sup>3</sup>

S No.	Category	Description	Indigenous content (IC) Requirement	Whether Offset clause applicable
<b>Buy Scheme</b>				
1	Buy (Indian-IDD)	Purchase from Indian vendors –in country designed, developed and manufactured	Minimum 50%	No
2	Buy (Indian)	Purchase from Indian vendors only	In case of indigenous design, Minimum 50%, otherwise - Minimum 60%	No
3	Buy (Global)	For outright purchase from foreign or Indian vendor	Foreign Vendor- Nil Minimum 30% for Indian vendor	Yes
<b>Buy &amp; Make Scheme</b>				
4	Buy & Make (Indian)	Purchase from an Indian vendor including JV with OEM followed by licensed production	Minimum 50% of Make portion	No
5	Buy (Global- Manufacture in India)	For outright purchase from foreign vendor/ Indian vendor followed by indigenous manufacture	Minimum 50%	No
<b>Make Scheme</b>				
6	Make I	Design and development of equipment, systems, major platforms or upgrades (MoD to fund up to 70% of the prototype development cost)	Buy (Indian-IDD) route with Minimum 50% IC	No
7	Make II	Prototype development of equipment/ system by private industry/ platform or upgrades primarily for import substitution/ innovative solutions	Buy (Indian-IDD) route with Minimum 50% IC	No
8	Make III	Products not IDD, but manufactured in India as import substitution for product support of weapon systems/ equipment held in services inventory	Buy (Indian) route with Minimum 60% IC	No
<b>Other Schemes</b>				
9	Lease (Indian)	Lessor is the Indian vendor	-*	-
10	Lease (Global)	Lessor is the foreign vendor	-*	-
11	Design and Development / Innovation	Creation of ecosystem to foster innovation & technology development in A&D sector	-*	-
12	Strategic Partnership	Foreign + Indian Strategic Partner	-*	-

\*- minimum IC requirement to be stipulated in Request For Proposal

3. Defence Acquisition Procedure, 2020



As far as procurement related aspects are concerned, DAP 2020 has brought in a number of welcome changes which were always advocated by the industry. There seems to be a paradigm shift from offset centered procurement to IC focused acquisition. The enhancement of IC requirement

under various categories is a move towards boosting 'MII' initiative and endorses the policy objective of 'global- manufacturing hub'. Introduction of Buy (Global- Manufacture in India) shows that the Government is now willing to provide orders to global companies subject to them committing value addition in India.

## B. Defence Offset Guidelines

### Evolution of the policy

On the recommendations of the Vijay Kelkar Committee in 2005,<sup>4</sup> defence offset policy was announced with the key objective to leverage capital acquisitions for developing Indian defence industry and building indigenous capability. In simpler terms, the offset is an obligation on the foreign vendor/Indian vendor (in limited circumstances) to either export specific products/ services or invest in local industry/manufacturing or in R&D.

During 2006-2009, offset obligation was mandated for 'Make' and 'Buy & Make' Indian categories of acquisition. During 2011-2012, list of products eligible for discharging offsets was expanded by adding internal security and civil aerospace related products, followed by the introduction of offset banking provisions and multipliers on offset discharge.

Till March 2019, the Indian MoD had signed 52 offset contracts valued at USD 11.79 billion to be discharged through Indian offset partners. Out of which, 21 defence offset contracts with cumulative value of USD 5.67 billion approximately have been signed by MoD in last three years. Currently, offsets claim amounting to USD 2 billion has been discharged until now and claims worth USD 1.5 billion are under examination by Defence Offset Management Wing.<sup>5</sup>

Under DAP 2020, major changes have been introduced to offset regime. An overview of the new offset policy is given below:

### Avenues for discharging offset obligations:

Avenues	Description	Value of offset discharge	Multiplier	Who can discharge?
<b>Direct Sourcing</b>	Direct purchase of, or executing export orders for, eligible products manufactured by, or services provided by Indian enterprises, i.e. DPSUs, OFB and private and public sector.	Equivalent to Value addition in India	Eligible products	1.0 • OEM or
			Components of Eligible products	0.5 • Tier-1 vendor
			Or Where IOP is Micro, Small and Medium Enterprises	1.5
<b>Investment in Defence Manufacturing</b>	This could be through FDI or direct investment or joint ventures or through the non-equity route for co-production, co-development and production or licensed production of defence products.	<ul style="list-style-type: none"> <li>• FDI – value of investment</li> <li>• Others – valuation as approved by MoD</li> </ul>	Investment in Defence Corridors notified by DDP	2.0 • OEM or • Tier-1 vendors or
			Other Investments	1.5 • Entities other vendor/ Tier-1 Sub-vendor on a case to case basis

4. Kelkar committee for involvement of best firms in defence industry, Outlook India, 05 April 2005

5. Offset contracts from Defence Sector, Press Information Bureau

Avenues	Description	Value of offset discharge	Multiplier	Who can discharge?
<b>Transfer of Technology ('ToT') to Indian Enterprise</b>	Investment in ToT to Indian enterprises for manufacture of eligible products.	Valuation as certified by recognised third party valuation firms and approved by MoD	ToT to Indian Enterprises 2.0	<ul style="list-style-type: none"> <li>• OEM or</li> <li>• Tier-1 vendor</li> </ul>
<b>ToT to Government Institutions</b>	ToT to Government institutions and establishments engaged in the manufacture and/or maintenance of eligible products, including DRDO and OFB/DPSUs (as distinct from Indian enterprises). This will include augmenting capacity for research, design and development, training and education but exclude civil infrastructure and related equipment.	Determined by Technical Offset Evaluation Committee ('TOEC')	ToT to Government institutions and establishments 3.0	<ul style="list-style-type: none"> <li>• OEM or</li> <li>• Tier-1 vendors or</li> <li>• Entities other vendor/ Tier-1 Sub-vendor on a case to case basis</li> </ul>
<b>ToT to DRDO</b>	Technology Acquisition by the DRDO in areas of critical technology.	Determined by DRDO	Critical technology acquisition by DRDO 4.0	<ul style="list-style-type: none"> <li>• OEM or</li> <li>• Tier-1 vendors or</li> <li>• Entities other vendor/ Tier-1 Sub-vendor on a case to case basis</li> </ul>



Lockheed Martin's initiative for empowering women with skills, knowledge and confidence to pursue careers in aerospace and manufacturing

- **Applicability of offsets on procurements**

– Under DAP 2020, the scope of applicability of offsets has been significantly reduced with abolition of offset clause for ab initio single vendor contracts including Government-to-Government agreements or inter-governmental agreements (IGA). With the abolition of offsets for G2G contracting, offsets applicability shall be limited to Buy (Global) categories of procurement where the estimated Acceptance of Necessity (AoN) cost is INR 2000 crores (USD 272 million) or more.<sup>6</sup>

- **Offset banking abolished** – Vendors were permitted under DPP 2016 to bank offset credits in anticipation of future programmes by undertaking offset eligible activities in India. However, the concept of banking offset credits has been abolished for procurements to be made as per DAP 2020.

- **Products eligible for offset discharge –**

While previous offset policies permitted offset discharge through products of civil aviation, homeland security and services, the same have been removed from the list under DAP 2020. The new list enlists only select defence products.

In the context of future offset market, if one was to gauge the quantum of future offsets basis DAP 2020, one would definitely chart a downward trajectory. This is because G2G/IGA contracts make up a significant percentage of overall procurement from OEMs. Given the current policy framework, the future tendering in Indian categories shall have an IC requirement and not offset requirement. It will be interesting to see if IC stipulations replace offset stipulations under G2G/IGA contracts.



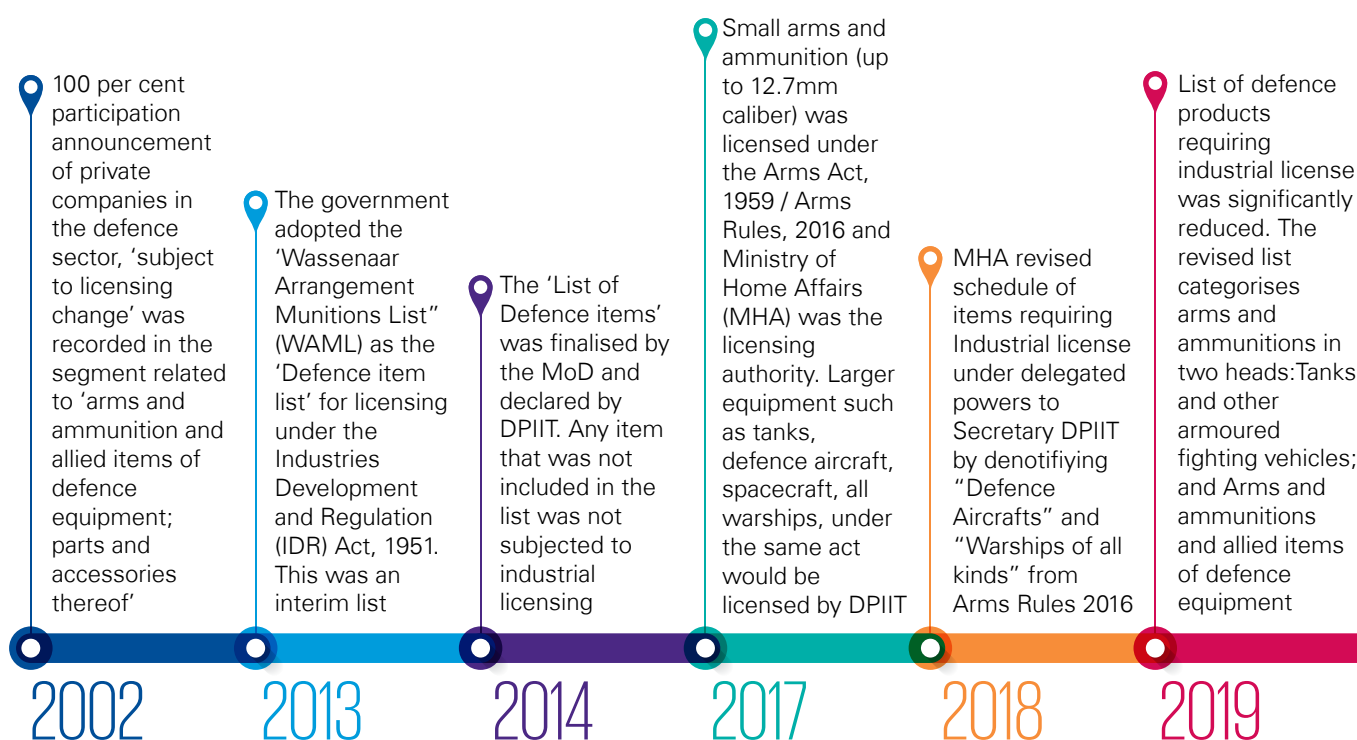
Boeing's initiative for skill development

6. DAP, 2020, Defence Offset Guidelines

## C. Industrial Licensing Policy

In view of the sensitivity and strategic importance of the defence sector, manufacturing activities therein are closely monitored by the Government. Manufacturing in defence sector is regulated through the IL regime under the Industries (Development and regulation) Act 1951 and Arms Act 1959/Arms Rules 2016.

### Evolution of the defence industrial licencing policy<sup>7</sup>



In early 2019, the Department for Promotion of Industry and Internal Trade (DPIIT) issued a revised list of defence products requiring industrial license which was significantly reduced. A number of defence components can now be manufactured without any prior license requirements. The revised list categorises arms and ammunitions under two heads as follows:

1. Tanks and other armoured fighting vehicles; and
2. Arms and ammunitions and allied items of defence equipment; other than small arms of caliber 12.7 mm and above.

DPIIT is the single licensing authority for both groups of items.

In order to give a big boost to 'Make in India', the Government has also extended the initial validity of

industrial licenses to fifteen years which is further extendable by a period of three years, keeping in mind the long gestation period of defence contracts.<sup>8</sup>

The Government has been making continuous efforts towards simplification of IL regime. The list has been revised several times, each time narrowing the items requiring IL. The process of seeking IL has also been substantially simplified.

An important aspect to note is that FDI norms are applicable only when IL is required. OEMs manufacturing non-licensable products are allowed to set-up 100 per cent subsidiaries in-country under automatic route. This implies that further liberalisation of industrial licensing policy shall incentivise foreign OEMs to shift their supply chain to India in order to comply with the enhanced IC requirements.

7. Industrial Policy, Department for Promotion of Industry and Internal Trade

8. DIPP's Press Note 10 (2015 Series) dated 22/09/2015

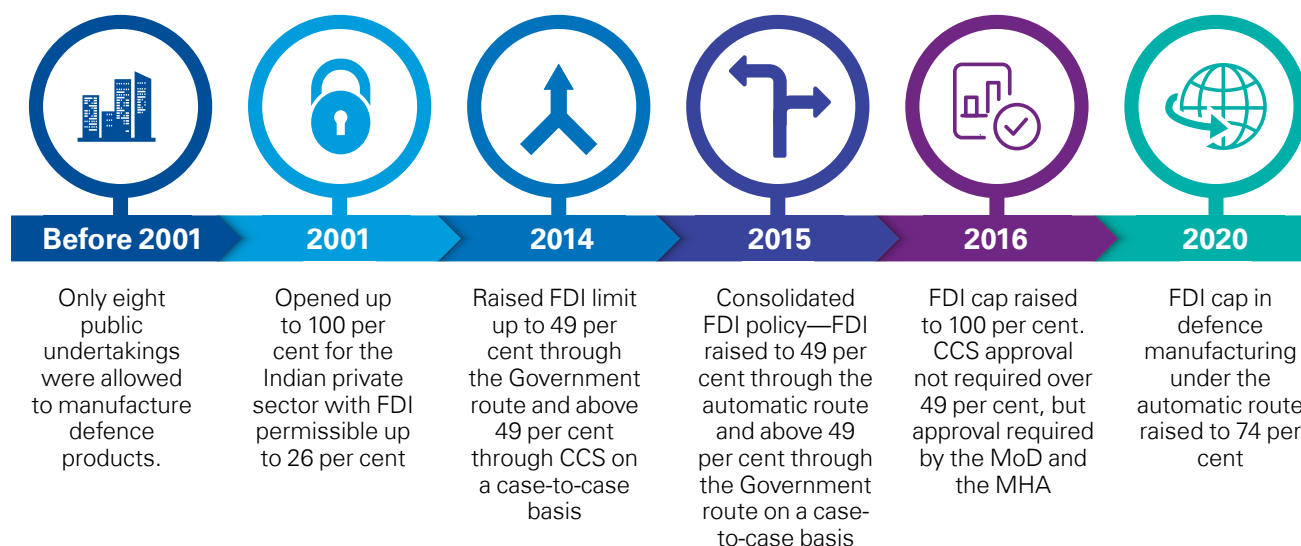
## D. Foreign Direct Investment Policy

### Evolution of the policy

In May 2001, the defence industry opened its doors to 100 per cent participation by the private sector, and permitted FDI up to 26 per cent, subject to compliance with licensing requirements and other conditions. In 2014, the FDI Policy was liberalised to allow FDI beyond 26 per cent on a case-to-case basis, when the same was likely to result in access to 'modern' and 'state-of-the-art' technology in India subject to certain conditions.

In 2016, the FDI policy was further relaxed to permit FDI up to 49 per cent under the automatic route i.e. without approval; and beyond 49 per cent under Government route on case to case basis (approved by the FIPB), where FDI was likely to result in access to modern and state-of-art technology. As per the recently revised FDI policy, FDI limit in defence manufacturing under automatic route has been raised from 49 to 74 per cent.<sup>9</sup>

### Evolution of the Foreign Direct Investment Policy<sup>10</sup>



### Current Policy:

The Government has widened the field for FDI beyond 74 per cent through the Government route, making the policy for investment in defence sector broader and more pragmatic. The current policy stands as under:

Activity	FDI permitted	Whether approval required	Conditions
<b>Not requiring IL</b>	100%	No	-
<b>Requiring IL</b>	Up to 74%	Automatic route	<ul style="list-style-type: none"> <li>Security clearance from MoD</li> <li>Investee company should be self-sufficient in the areas of product design and development</li> <li>Government reserves the right to review any foreign investment in the Defence Sector</li> </ul>
<b>Requiring IL</b>	Beyond 74% up to 100%	Government approval route	FDI beyond 74%, shall be permitted under Government route on a case-by-case basis, wherever it is likely to result in access to modern technology or for other reasons to be recorded.

9. Notification No. S.O. 4441(E.) dated December 08, 2020

10. Consolidated FDI Policy circulars, Department for Promotion of Industry and Internal Trade



### Key Opportunities / Impact on the existing players

1. Increase in FDI to 74 per cent under automatic route is a very positive measure. Foreign defence manufacturers shall now be able to exercise ownership and control in Indian ventures which was earlier a key area of concern, particularly from an Intellectual Property (IP) protection standpoint.
2. Such ventures can be used for the purpose of discharging offset obligations.
3. Foreign OEMs need to be cognizant of the FDI restrictions applicable while bidding for certain categories of procurement like 'Make' and 'Strategic Partnership', as the same still mandate Indian control and ownership, thus restricting the FDI participation to 49 per cent.
4. FDI cap and conditions are applicable only in cases requiring an Industrial License. Hence, activities such as engineering, drawing, design services, etc. can be undertaken in a 100 per cent subsidiary.
5. For existing defence companies seeking to increase investment beyond the erstwhile limit of 49 per cent, a Government approval shall still be applicable.

#### FDI threshold for all categories

S. No.	Categories	FDI threshold
1	Buy (Indian-IDDMM)	49%
2	Buy (Indian)	74%
3	Buy & Make (Indian)	74%
4	Buy (Global –Manufacture in India)	74%
5	Buy (Global)	74%
6	SP	49%
7	Make I	49%
8	Make II	49%
9	Make III	74%
10	Design cum Production Partner in D&D Acquisition	49%

Source: Defence Acquisition Policy, 2020 and Foreign Direct Investment Policy read with press note 4 (2020 series)



## E. Defence Production and Export Promotion Policy, 2020 and Defence Industrial Corridors

Indian MoD has also announced an ambitious draft DPEPP with the following objectives:

1. To achieve a turnover of INR 1,75,000 Crores (USD 25 billion) including export of INR 35,000 Crore (USD 5 billion) in A&D goods and services by 2025.
2. To develop a dynamic defence, aerospace and shipbuilding industry, reduce dependence on imports, promote export of defence products and create an environment that fosters innovation and promotes Indian IP ownership.

The policy also aims to indigenise the imported components (including alloys and special materials) and sub-assemblies for defence equipment and platform manufactured in India. If one were to quantify Government intentions, 5,000 such items are proposed to be indigenised by 2025.

### Key reforms proposed in the policy are:

- Inter-Governmental processes would be taken forward to indigenise spares and components for legacy platforms and equipment.
- A distinct budget head for domestic capital procurement shall be carved out.
- Allocation for domestic capital procurement shall be enhanced at the rate of minimum 15 per cent per annum for the next five years.
- Negative lists of weapons/platforms have been notified with year-wise timelines for placing an embargo on import of such items. These lists shall be updated periodically, without compromising on the operational requirements.
- A Project Management Unit would be set up to support the acquisition process and facilitate management of the contracts.
- Concentrated efforts will be made to reduce the complexity and duration of trial and testing procedure.

Two defence industrial corridors (UP and Tamil Nadu) with a significant initial investment are also being developed. Other efforts include identification of a number of items in which local suppliers would enjoy purchase preference and introduction of an array of initiatives to support start-ups and innovation.

The Government has also backed its ambitious vision of defence manufacturing with tangible action and has earmarked approximately 63 per cent of India's military capital budget for procuring indigenous products. This shall also incentivise major foreign players to establish a form of presence in the country and manufacture components domestically after transferring requisite technology.

It is encouraging to witness that the Government is receptive to the idea of leveraging synergies between civil aviation and aerospace market. DPEPP 2020 further envisages to offer higher multipliers through offsets. The same appears, however, to be disconnected from DAP 2020 which has excluded civil aviation products from the list of eligible products for offset purposes.



## F. Tax and Regulatory

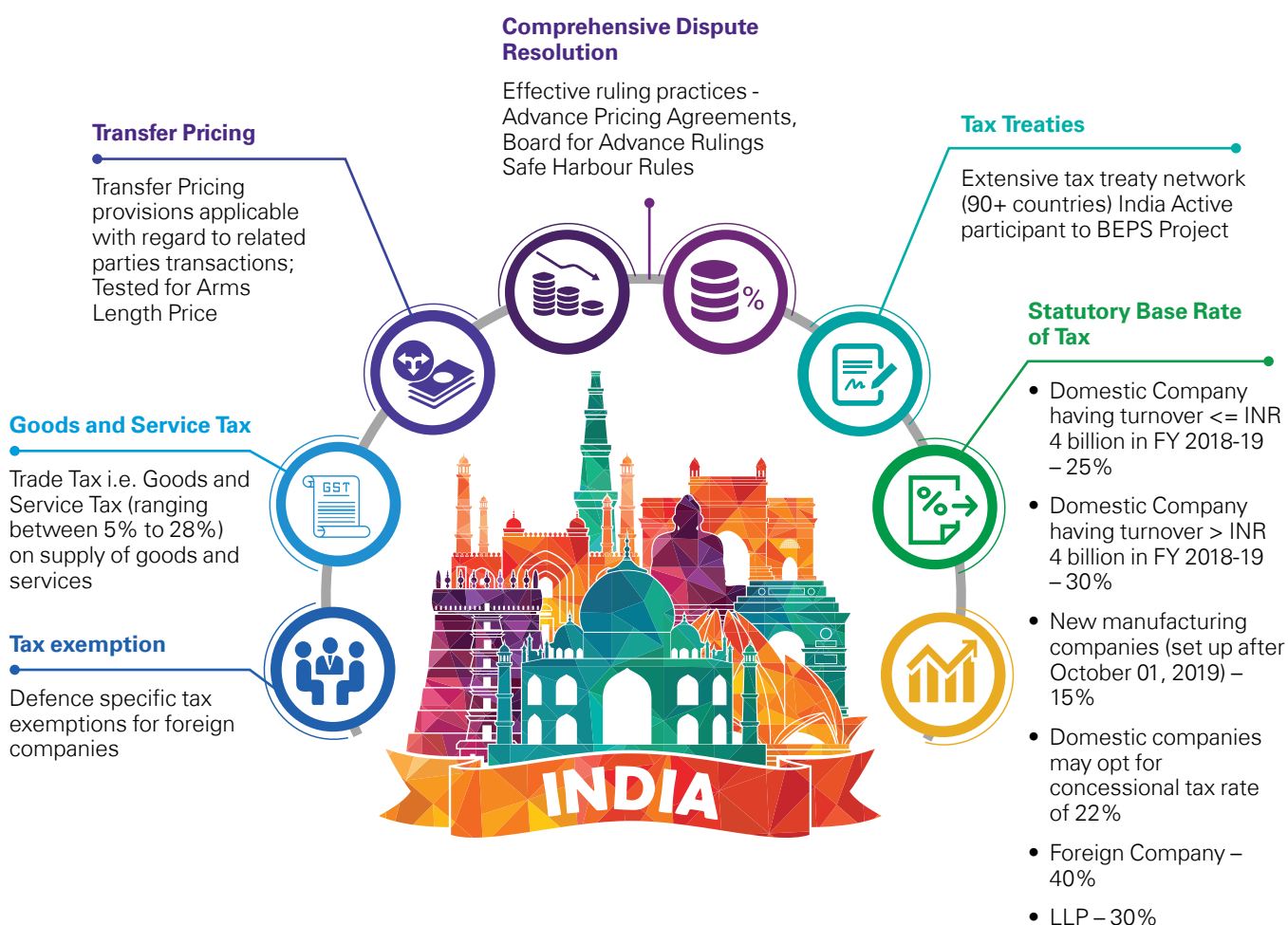
To spur investments, Government of India has announced several statutory and regulatory relief measures under Income Tax, Goods and Service Tax, Customs Act, corporate affairs, etc.

The Indian Government's recent announcement to reduce the corporate tax rate to 15 per cent /22 per cent

is a welcome step towards attracting foreign investment in India. The recent tax reforms place India at a competitive advantage against countries in the Asian region and bring the effective corporate tax rate closer to the global average tax rate.

An overview of the tax regime is provided hereunder:

### Overview on Indian corporate tax regime



Defence procurement has come a long way from direct importing to issuance of policies aiming at co-production and partnership for developing defence platforms.

The stage is set with key factors in favour of India's establishment as a key defence manufacturer in the

global defence supply chain. However, a roadblock in achieving this vision of the Government is the complex and overlapping policy framework governing the sector. Harmonisation and simplification of these policies shall prove to be efficacious in achieving the goal of self-reliance and modernisation.



## Key areas to be addressed

- **Changes in FDI policy and defence policy should be in sync with each other and FDI upto 74 per cent should be allowed in all categories of acquisition.**
- **In view of synergies between defence, civil aerospace and homeland security (HLS), sourcing of civil aviation and HLS products should be an offsetable activity.**
- **Defence contracting should be modified and aligned with global best practices.**
- **The 0.5 offset multiplier on components should be reconsidered.**



## DAP 2020

- In view of non-availability of requisite raw materials and specific infrastructure, meeting the enhanced indigenous content requirements could be a challenge.
- DAP 2020 has brought about certain changes in defence contracting framework, such as clauses on termination, taxes and duties and buyer's right to optimise life cycle costs which cause additional compliance and cost of doing business.
- Indian MoD may consider inclusion of important clauses such as Limitation of Liability which defines post-delivery risk allocation especially for aviation products and is beneficial for both parties. Language for clauses like warranty, force majeure, and liquidated damages should be aligned with international contracting best practices which shall tremendously add to ease of doing business with Indian MoD.

## Relaxing FDI limitations

- While FDI has been liberalised to 74 per cent under automatic route, yet, many acquisition categories (such as Strategic Partnership, Buy (Indian-IDD), Make I, Make II) do not permit an Indian vendor to have FDI beyond 49 per cent. All acquisition categories should homogeneously follow the FDI cap of 74 per cent.
- The Government should bring forth a clear list of conditions to be complied by foreign OEMs to set up 100 per cent subsidiaries for defence manufacturing.



## Offset policy

- Products of homeland security, civil aviation and services are no longer eligible for discharging offsets. These domains of services, civil aviation and homeland security have a lot of overlapping infrastructure and technologies which will help Indian companies to leverage economies of scale, thereby promoting 'Atmanirbhar Bharat Abhiyaan'.
- The introduction of a 0.5 multiplier on components of items on the eligible products list may be counterproductive for small businesses/start-ups which often manufacture small components/systems. Further, the term 'components' is not clearly defined and will lead to administrative difficulties during offset program implementation.
- Approval of offsets and banking claims is a cumbersome process that needs to be simplified and fast tracked.
- Indian MoD may reconsider abolishment of offset banking as it was a key driver for Tier-1 vendors/OEMs to invest and source from India and also provided a business base for Indian companies. Banking of credits yielded a perpetual order book to Indian companies resultantly meeting economies of scale. With the abolishment of offset banking, it appears Tier-1 vendors/OEM shall be disincentivised to set up large scale investment/sourcing from India only to comply with a one time and time-barred obligation.

## Delays in seeking approvals

- Approvals for defence specific tax exemptions, industrial licenses etc should be timebound.
- Processes for seeking and obtaining such approvals should be well-defined and streamlined.



# India-US defence ties on a firm footing

- Indo-US ties have grown stronger over the past decade, encouraging the two nations to cooperate and grow together, agnostic of political ideologies.
- The new FDI policy, along with India's corporate tax reduction to 15 per cent for new manufacturing companies, makes India an attractive market for US companies to increase their investments. The current US investments in India are empirical evidence to the fact, that if this co-operation grows, it shall tremendously benefit both countries.
- Major factors contributing towards this are requirement of a strategic geopolitical partnership in the Indo-Pacific region, safeguarding national interest, and a gradual change in global supply chains.

**Geopolitical changes, together with recent political disturbances, appear to have set the stage for a defining partnership in the Indo-Pacific region – between India and the US.**

**The steady growth in India's defence expenditure only adds room to boost Indo-US ties – especially for new age and high-tech defence systems – given the need for a strategic geopolitical partnership in the Indo-Pacific region, safeguarding national interest, and a gradual change in global supply chains.**



The recent increase in the FDI limit to up to 74 per cent under the automatic route in the defence sector, presents both countries with an opportunity to develop the A&D supply chain in India and unlock fresh investments by foreign OEMs with a long-term view of the sector. It also adds a layer of protection to proprietary know-how/technology of foreign OEMs, ensuring easy transfer of knowledge through JVs to Indian DPSUs. The new FDI policy, along with India's corporate tax reduction to 15 per cent for new manufacturing companies, makes India an attractive market for US companies to increase their investments.

With the Indian Government implementing policy reforms focused on the indigenous production and technology absorption, the US arms policy towards India needs to embrace technology transfers, including the possibility of co-development of systems in India - a globally strategic defence market. Furthermore, continued integration in joint training exercises between the two sides will better prepare them to handle contingencies and focus on key strategic areas.

Given the pace of growth of the Indian civil aviation market, there are natural synergies for both countries to invest in this domain. On one hand, where American expertise shall get access to newer growth market, India shall tremendously benefit from technology influx, job & infrastructure creation as well as leverage synergies for defence sector. Dual use manufacturing, MRO, engine manufacturing could be some of these domains which hold abundant opportunities for both parties. With India opening Space sector for private and foreign participation,<sup>1</sup> this domain could result in a fructifying long term partnership.

Indo-US ties have grown stronger over the past decade or so, encouraging the two nations to cooperate and grow together, agnostic of political ideologies. The relationship is bound to grow and reach newer heights in years to come despite the changing political landscape of US. The need of the hour is to outline the contours of a sustainable trade negotiation that is broad-based and encompasses the principles of economic engagement between the two nations.



1. Opening Up Indian Space Sector For Private Sector –Reforms, Department of Space, Indian Space and Research Organisation

# Annexure 1 – Company Profiles

## BAE Systems<sup>1</sup>

- Recognises India as one of the top global defence markets
- Amongst the first international aerospace and defence companies to directly invest in local manufacturing in India
- Enables technology and knowledge transfer towards empowering India's aim of self-reliance in defence manufacturing
- Creates partnerships with Indian small and medium enterprises (SMEs) by providing them access to the company's global supply chain

Associated with India since **1949**

JVs in India

- BAeHAL, a JV with HAL

### Investment areas and other contributions in India

- BAE's Indian footprint includes the creation of the Air Force Technical College in 1949 – the first institution in Asia to train aeronautical engineers for military aviation – and many of India's frontline fighter aircraft, including Jaguar.
- BAE Systems developed the first of the Indian Navy's Leander Class ships, the frigate INS Nilgiri; and it provided the first two modern aircraft carriers and vertical-lift aircraft, the iconic Sea Harrier. In subsequent years, the company provided air defence guns, howitzers and flight control on the DRDO-developed Light Combat Aircraft.
- The Company was a first-mover among its peers to make a direct investment in local industrial manufacturing and these remain at the heart of BAE Systems' "Partnering India to Make in India" programme and strategy.
- The company's key programmes in India are Hawk Advanced Jet Trainer Aircraft, M777 Ultra Lightweight Howitzer and Advanced.
- In-country manufacturing partners for the above programmes are HAL and Mahindra
- BAE Systems facilitated controlled Transfer of Technology and industrialisation of MCW Console from Kaman Aerospace Corporation, USA to Kineco Kaman Composites India Ltd in full compliance with the US ITAR requirements. These MCW consoles manufactured by Kineco Kaman Composites India Ltd are fitted in Boeing's P8 aircraft not only for India but for the entire fleet of P8 aircrafts flying across the globe, thus integrating KKCI, a MSME with the supply chain of global defence companies.
- BAE Systems continues to work with HAL towards a potential order to supply products and services for the manufacture of a third batch of Hawk advanced jet trainer aircraft which will fulfil IAF's requirement for its prestigious aerobatic team, the 'Surya Kiran' as also potentially export the Hawk aircraft to friendly nations.
- With an offset commitment of over USD200 million, the company aims to open opportunities for the Indian supply chain across its air, land, sea and security programmes (locally and globally).
- BAE Systems has more than 60 industrial partners which include Bharat Forge on Air Defence, as well as smaller companies such as Kineco Kaman Composites, Samtel Avionics and PTC Industries. These suppliers are able to gain unique access to the BAE Systems group across its Air, Land, Maritime, and Cyber divisions.
- Also contributed to the Swachh Bharat Mission, Digital India campaign, and infrastructure development through the construction of toilets and access to clean drinking water.
- One of the programme focused on providing comprehensive and quality education to more than 1,000 children achieved 58.3 per cent enrolment rate for girl children and mainstreaming of more than 430 non-school going children into formal schooling.
- Mobile hospital programme in Bengaluru reached more than 50,000 individuals, through 1,270 mobile clinics.

1. Partnering India to Make in India, BAE Systems, Accessed on 14 October 2020

## Boeing<sup>2,3,4,5</sup>

- Over 75 years of partnership with India's aerospace sector in both commercial and defence.
- Investments in India span across the development of aerospace technology, innovation, production capacity, supply chain, aerospace skilling centres, manufacturing and modernisation of airport infrastructure and airspace.
- Boeing Defence India was established in 2017 to deliver customer responsiveness, local training, indigenous execution and an Indian supplier footprint that is well integrated with Boeing's global entities.
- Contributes to the 'Make In India' initiative, focussing on delivering advanced technologies and creating sustainable value in the Indian aerospace sector.
- Operates the Boeing Engineering and Technology Center in Bengaluru and Chennai to undertake advanced aerospace work.

Associated with India since **1940**

### JVs in India

- Tata Boeing Aerospace Limited, a JV with Tata Advanced Systems Limited employing over 500 and making Apache fuselages and other structural parts for global customers.



### Investment areas and other contributions in India

- Boeing is investing USD200 million to build a 43 acre campus in Bengaluru. The campus seeks to enhance Boeing's manufacturing and technology footprint in India and increase local employment.
- Boeing sourcing from India stands at over USD 1 billion annually from 225 suppliers. Boeing is also working with Indian companies to develop capabilities in-country to perform maintenance and ensure highest availability rates of defence fleets for its customers. Examples of such sourcing include:
  - Fuselages and other structural parts for the AH-64 Apache from its Joint Venture with Tata Advanced Systems.
  - Ramp and complex aft pylons for the CH-47 Chinook from Dynamatic Technologies (over 125 delivered).
  - Electrical panels and wire harnesses (over 25,000 delivered) for the AH-64 Apache and V-22 Osprey from Rossell Techsys.
  - Electrical panels and wire harnesses for the F/A-18 Super Hornet and F-15 Strike Eagle from SASMOS HET
  - Gun-bay doors for the F/A-18 Super Hornet (over 150 delivered) and Cabinets and P-8I weapons bay doors and IFF Transponders from HAL.
  - P-8I heavy maintenance with Air Works.
- Boeing-funded curricula and initiatives launched with Indian partners, such as Tata and MSMEs such as Rossell Techsys, Jaivel and Lakshmi Machine Works are training workers in frontline aerospace manufacturing skills.
- The company employs over 3,000 direct employees and more than 7,000 people work with on Boeing products with supply chain partners.
- Boeing Engineering and Technology Center has been operating in India for more than 10 years and undertakes complex advanced aerospace work and supports Boeing's global engineering growth.

2. Boeing India Backgrounder, Published on September 2020

3. Boeing India Ecosystem Development, Published on September 2020

4. Boeing forecasts USD770 billion India market for commercial aircraft and services through 2038, 7 November 2019

5. Boeing Affirms Commitment to India Defence Modernization, 6 February 2020

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**Investment areas and other contributions in India**

- Boeing has marked 13 years of advanced research and technology partnerships in India with leading research organisations like Council of Scientific & Industrial Research, IITs and IISc, which have spurred technology entrepreneurship, patents and research papers in aerospace manufacturing and wireless networks.
- Boeing is involved in manufacturing the following products in the country:
  - AH-64 Apache fuselages, secondary structures.
  - CH-47 Chinook ramp and aft pylons, crown and tailcone.
  - P-8I cabinets, tailcones, weapons bay doors and IFF transponders
  - F/A-18 structural assemblies.
  - F/A-18 and F-15 cockpit panels.
  - AH-64, CH-47, KC-46, V-22, F/A-18 and F-15 electrical parts.
  - 787 advanced composite floor beams and 777 commercial airplane structural parts.
- It's Indian presence also renders the following services in the country:
  - P-8I maintenance and other sustainment.
  - Global Integrated Support Programme for C-17.
  - Pilot training.
  - Support for AH-64 Apache, CH-47 Chinook and C-17.
  - Research and technology.
  - Aircraft systems design and engineering.
  - Flight test and evaluation.
  - Information Technology and Data Analytics.
- Boeing's partnership with the country's defence forces and expanding supplier base makes it imperative to invest in, develop, and nurture talent. Boeing programs are designed to impart training to India's aerospace labor force on frontline techniques of aerospace manufacturing and help prepare the next generation of pilots and aircraft maintainers to enter the aviation industry. Over 2,500 frontline aerospace manufacturing workers and aircraft maintenance engineers have graduated from such programs.



## Honeywell Aerospace<sup>6,7,8,9,10</sup>

- Recognises India as an essential global location with the capability of becoming a key export hub and centre of intellectual excellence.
- Aims to contribute to the development of the Indian aerospace infrastructure with its expertise in air traffic modernisation and aviation safety.
- Collaborates with in-country business partners to support the 'Make In India' initiative.
- Honeywell's India commitment is evident in 7 manufacturing facilities; 5 global R&D centers of excellence for technology development and innovation.
- More than USD1 billion in domestic sales and exports across all Honeywell business areas.

Associated with India since **1975**

### Investment areas and other contributions in India

- Honeywell has extensively invested multibillion dollars in setting up and continuously upgrading its 5 Global R&D centres in India, of CMMI Level 5 maturity status and which employs 15,000 engineers working across cutting edge projects in Aerospace, Defence and Industrial domains.
- These centres operate multiple state of the art laboratories for mission critical aerospace technologies - ranging from high end Cockpit Simulation Labs, to Electronic Hardware Labs, Mechanical Test Lab, Artificial intelligence lab and Additive Manufacturing Labs to keep pace with the global Technology trends.
- Honeywell has driven technological collaboration and greater localisation through partnerships for the last 4 decades. These efforts go a long way back to 1983, when it set up the license manufacturing of the Honeywell TPE-331 turboprop engines at HAL for the Dornier228 aircraft of Armed Forces.
- Honeywell also provides critical avionics & navigation technologies to meet the needs of all indigenously developed aircraft & helicopter platforms. Further, it was the first OEM to establish co-production partnership for Inertial Navigation Systems with the TATA Power SED (presently TASL) and demonstrate its commitment to supporting the Armed Forces.
- In addition to local partners, employs 7,000 engineers, of which 3,000 aerospace engineers are dedicated to tackle challenges in the aviation sector.
- The company's key programmes in India are TALIN navigation system and TPE331 engine technology.
- For the above programmes, in-country business partners are Tata Power SED and HAL.
- Honeywell Foundation focusses on critical areas such as STEM education, sustainability and humanitarian relief.
- Honeywell employs close to 15,000 people across 50 locations, including Bengaluru, Chennai, Delhi, Gurgaon, Hyderabad, Madurai, Pune and Vadodara.
- Honeywell has been actively engaged with various skill development programs and research-oriented projects across premier institutes (IISc and IITs) and multiple engineering colleges to mentor, nurture and engage the institutions in building an in-country strong engineering talent pool for critical domains like Aerospace. In addition, Honeywell's teams have been closely interacting with various Government and industry fora on knowledge sharing and trainings for safety critical for the world. product development, aviation safety and certification.
- Honeywell's collaboration with IISc is to help create technologies that will solve, societal problems.
- Honeywell funds are pivoted to solve for COVID-19, including building a new class of eco-friendly specialty fluorescent dyes and rapid point of care diagnostics test for use in low resource settings.
- The Honeywell Hometown Solutions India Foundation (HHSIF) is a not-for-profit organisation that deploys efforts in five critical areas: Science and math education, Family safety and security, Housing and shelter, Sustainability and Humanitarian relief.

6. GE Honeywell has been helping Make in India for close to half a century: Faizi Mohsini, Financial Express, 17 February 2017  
 7. Honeywell in India reiterates its long standing relationship, Aviation & Defence Universe, Accessed on 15 October 2020  
 8. Honeywell sees India as a global location, SP's Aviation, Accessed on 16 October

9. Honeywell wins CSR Foundation of the year award, IndiaEducationDiary.com, 24 September 2019  
 10. Honeywell Aerospace boasts impressive mentoring program, Where Women Work, 10 September 2020

## Lockheed Martin<sup>11,12,13</sup>

- A key member of India's aerospace and defence industry, aims to contribute significantly to the country's goal of strengthening its defence system
- Collaborated in the 'Make In India' initiative with its two JVs, focussing on transport, fighter and rotary-wing aircraft across the Indian aerospace and defence ecosystem
- Has created a new environment for Indian SMEs and micro, small and medium enterprises (MSMEs) by providing them access to the company's engineering and resources, global supply chain and obtaining global certifications

Associated with India since **2008**

### JVs in India

- Tata Lockheed Martin Aerostructures Limited, a JV with Tata Advanced Systems Limited
- Tata Sikorsky Aerospace Limited, a JV with TASL



### Investment areas and other contributions in India

- Raytheon-Lockheed Martin's Javelin Joint Venture (JJV) signed a Memorandum of Understanding (MoU) with Bharat Dynamics Limited (BDL) on the production of Javelin anti-tank missile system.
- Through its two joint ventures in India; employees more than 1,500 people across areas like aerospace engineering, manufacturing and management.
- TATA Lockheed Martin Aerostructures Ltd. has invested USD 31.38 million in defence manufacturing in the country and is involved in production of the following:
  - C-130J Empennage Aero frame Structures.
  - F-16 Wings Prototype (Development Stage).
  - Bulk Fuel Tank Composite Fuel Tank (Auxiliary Fuel Tank) (Development Stage).
- With an investment in a new office location in 2016 and a long-term lease agreement commitment till 2025, the company aims to increase its presence in the country while creating job opportunities.
- Lockheed Martin has also worked with Ashok Leyland to develop the next generation military vehicle for India and global market. The vehicle has been field evaluated in various environmental conditions by the Indian customers and has been selected by some of the military users in India.
- Exported up to USD600 million products and services from India.
- Rolled out Women's Apprenticeship Programme which reaches out to women in under-developed regions of the country and provides them with an opportunity to build a career in aerospace sector.
- Sponsored India Innovation Growth Programme (IIGP) since 2007 collaborating with academic institutes and trade associations supporting more than 400 local innovators and start-ups.
- Lockheed Martin established the 'Aerospace Precision Skill Training centre' in house to provide training in accordance with International Standards to enhance the skill set of young workforce to produce complex aircraft parts and assemblies. With Collaboration and support from its US customer counterparts, Lockheed transitioned most of the detail part manufacturing to India under the 'Make in India' Initiative thereby establishing a local indigenous base and make India an export hub.

11. AmCham member inputs

12. Lockheed Martin committed to strengthening India's strategic security, industrial capabilities: William Blair, VP, Chief Executive, LM India, Financial Express, 28 July 2020

13. Raytheon-Lockheed JV and BDL to make Javelin missile system in India, ArmyTechnology, 7 February 2020

## Raytheon Technologies<sup>14,15,16,17</sup>

- Raytheon Technologies operates in India through its four businesses Pratt & Whitney (P&W), Collins Aerospace (CA), Raytheon Missiles & Defence (RMD) and Raytheon Intelligence & Space (RIS)
- Aims to expand its presence in India through innovation, research, supply chain and sustainability
- Supports India's bid to self-reliance under the 'Make In India' initiative
- Aims to turn India into an end-to-end global manufacturing, engineering and avionics supply chain by setting up a fourth manufacturing facility in the country and increasing its existing workforce by over 2,000 in the next 2-3 years
- Rolled out the Industry Capability Enhancement programme to support medium and small-scale enterprises in areas such as precision manufacturing and advanced engineering services

Associated with India since **1960**

### Investment areas and other contributions in India

- The group employs more than 5,000 employees and 2,000 people are associated with the company's supply chain partners.
- Signed an MoU with TASL for the joint manufacturing of Stinger air defence missile components.
- Raytheon-Lockheed Martin's Javelin Joint Venture signed an MoU with Bharat Dynamics Limited on the co-production of Javelin anti-tank missile system in India.
- Pratt & Whitney has demonstrated its commitment to enhancing India's MRO capabilities – announcing Air India Engineering Services Limited (AIESL) as a provider of maintenance services in support of Geared Turbo Fan TM operators in India and the surrounding region. Previously, such services were conducted only by international MRO hubs.
- Pratt & Whitney offers engine maintenance, performance training and other advanced aerospace skill development at its training centre in Hyderabad, creating an industry-ready talent pool. The center provides engine maintenance and performance training to customers from India and around the world. The center is one of two major international training centers outside of US, where trainees get to work in real-time on engines, including its world-beating GTF engine. Additionally, Pratt & Whitney's Industry Capability Enhancement program supports medium and small-scale enterprises in precision manufacturing and specialised engineering services.
- Pratt & Whitney has had Research & Development presence in-country for more than a decade – through its Center of Excellence at the Indian Institute of Science, Bengaluru. The Center is engaged in research in the areas of advanced materials, combustion, and mechanical design and also has capabilities in advanced gas turbine technologies research. The team at the center also identifies and monitors new collaborations and projects with universities in India, including IIT, Bombay and University of Hyderabad.
- Pratt & Whitney and National Aeronautics Laboratory (NAL) have been working together for more than a decade on NAL's Multirole Light Transport Aircraft – the SARAS. CSIR-NAL selected the iconic PT6A engines to power the SARAS aircraft – which will have both military and civilian applications.
- Pratt & Whitney has partnered investments in supply chain, sustainment and research and engineering – working with leading suppliers like Cyient, HCL, Accenture and Quest.
- Collins Aerospace is involved in building an end-to-end global manufacturing, engineering and avionics supply chain in India – with factories and engineering centers in Bengaluru, Hyderabad and Gurgaon.
- Pratt & Whitney has invested significantly in 'Skill India' for aerospace since 2015. Through strong partnerships with state Governments of Telangana, Tamil Nadu, Maharashtra, Gujarat and Haryana – as well as leading and private and Government universities – Pratt & Whitney provides aerospace skill development and specialised short-term training programmes to students across India.

14. AmCham member inputs

15. Raytheon Technologies Company signs MOU with Tata Advanced Systems to jointly make Stinger air defence missiles, The Economic Times, 14 July 2018

16. Raytheon-Lockheed JV and BDL to make Javelin missile system in India, ArmyTechnology, 7 February 2020

17. P&W Engines Are The Best Choice To Power India's Defence Aircraft: Ashmita Sethi, President And Country Head, Pratt & Whitney, India, Business World, 5 August 2020

- Pratt & Whitney channels its vast R&D resources to deliver next-generation engine technologies and to accelerate 'Start-up India', Raytheon Technologies is encouraging Indian start-ups to create next-gen aerospace solutions for automated engine leasing and inspections through the 'RTX Innovation Challenge', conducted in partnership with T-Hub, Hyderabad.
- The group is focused on corporate social responsibility programs where it supports partnerships that inspire the next generation, empower its employees to positively impact their communities, and emphasise innovation and technology. Some programmes include – Engineers without borders, E-learning centres, Girls who code etc.

## Smiths Detection<sup>18</sup>

- Smiths Detection has been providing security solutions to the Indian market for more than 20 years and has one of the largest service network across India.
- Smiths also delivers cost-effective training needed to respond to rapidly changing threats, constantly investing and building new technologies and products to safeguard people and infrastructure.

### Investment areas and other contributions in India

- Smiths Detection is working for various digital solution & developing in country capabilities for the future generation of detection and screening technology solutions.
- This is helping generate employment in the country. Currently, Smiths Group employs more than 700 people in Smiths Group India for various Businesses and continues to hire, make investments in the region in reflection of Smiths Group's commitment to the Indian market.
- Smiths Detection opened a service, training and customer care center in Gurugram, India in 2019. The facility is one of the first in the region and features a customer experience center as well. This allows Smiths Detection to work with customers to implement future-proof threat detection strategies and provide training to use its technology effectively.
- Smiths Detection has completed training for hundreds of screeners on hold baggage screening at various airports across the country.

## Textron<sup>19,20</sup>

- Set up a wholly owned subsidiary in India.
- Views India as a key global market and aims to promote business with the country
- Collaborates with in-country business partners to support the 'Make In India' initiative and promotes Indo-US trade

Associated with India since **2004**

### Investment areas and other contributions in India

- Employs 400+ engineers with expertise in engineering and design services
- Sourced substantial quantities of high-value products and components and new technology from the country over the last five years
- In-country contract with Dynamatic Technologies Limited, Bengaluru, for supply of cabin sub-assemblies of Bell 407 helicopters.
- Bell (one of Textron Inc's business segments) opened a liaison office in India in 1995 and has been providing customer support to customers in the region with dedicated Customer Service Engineers and one Customer Service Facility; additionally more than 130 Bell engineers work on various programs in Bengaluru.<sup>24</sup>

18. AmCham member inputs

20. Textron official website

19. AmCham member inputs

## Annexure 2 –

# Exports - Key numbers and statistics<sup>1</sup>

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20	Total (USD billion)	% of Global exports
<b>Global Aerospace &amp; Defence Exports from India</b>	4.17	3.59	2.47	1.95	1.67	<b>13.85</b>	-
<b>Aerospace &amp; Defence Exports to US</b>	<b>0.59</b>	<b>0.65</b>	<b>0.69</b>	<b>0.61</b>	<b>0.55</b>	<b>3.10</b>	<b>22%</b>
<b>Aerospace &amp; Defence Exports to France</b>	0.26	0.75	0.26	0.25	0.17	<b>1.69</b>	12%
<b>Aerospace &amp; Defence Exports to Israel</b>	0.06	0.15	0.08	0.07	0.06	<b>0.43</b>	3%
<b>Aerospace &amp; Defence Exports to Russia</b>	0.11	0.12	0.04	0.02	0.03	<b>0.34</b>	2%

### 1. Exports from India - Aerospace & Defence (Global Data)

S No.	HSN Code	Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	Total
			(USD million)					(USD billion)
1	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.	82	102	111	121	118	<b>0.53</b>
2	88	Aircraft, spacecraft, and parts thereof.	3959	3382	2265	1716	1424	<b>12.75</b>
3	93	Arms and ammunition; parts and accessories thereof.	125	103	99	111	131	<b>0.57</b>
India's Total Export (USD million)			4166	3587	2475	1948	1673	<b>13.85</b>
<b>India's Total Exports (USD billion)</b>			<b>4.17</b>	<b>3.59</b>	<b>2.47</b>	<b>1.95</b>	<b>1.67</b>	<b>13.85</b>

1. Export-Import Data Bank, Department of Commerce



## 2. Exports from India - Aerospace & Defence (Exports to US)

S No.	HSN Code	Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	Total
			(USD million)					(USD billion)
1	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.	2	2	2	15	8	0.03
2	88	Aircraft, spacecraft, and parts thereof.	563	607	635	558	503	2.87
3	93	Arms and ammunition; parts and accessories thereof.	30	42	52	39	44	0.21
India's Total Export (USD million)			595	651	689	612	555	3.10
<b>India's Total Export (USD billion)</b>			<b>0.59</b>	<b>0.65</b>	<b>0.69</b>	<b>0.61</b>	<b>0.55</b>	<b>3.10</b>

## 3. Exports from India - Aerospace & Defence (Exports to France)

S No.	HSN Code	Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	Total
			(USD million)					(USD billion)
1	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.	2	2	2	2	1	0.01
2	88	Aircraft, spacecraft, and parts thereof.	194	744	250	239	166	1.59
3	93	Arms and ammunition; parts and accessories thereof.	68	5	4	5	5	0.09
India's Total Export (USD million)			264	751	256	245	172	1.69
<b>India's Total Export (USD billion)</b>			<b>0.26</b>	<b>0.75</b>	<b>0.26</b>	<b>0.25</b>	<b>0.17</b>	<b>1.69</b>

#### 4. Exports from India - Aerospace & Defence (Exports to Israel)

S No.	HSN Code	Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	Total
			(USD million)					(USD billion)
1	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.	0.31	0.24	0.22	0.18	0.22	<b>0.00</b>
2	88	Aircraft, spacecraft, and parts thereof.	58.73	135.39	70.41	33.09	37	<b>0.34</b>
3	93	Arms and ammunition; parts and accessories thereof.	4.66	12.22	11.95	35.9	26	<b>0.09</b>
India's Total Export (USD million)			64	148	83	69	64	<b>0.43</b>
<b>India's Total Export (USD billion)</b>			<b>0.06</b>	<b>0.15</b>	<b>0.08</b>	<b>0.07</b>	<b>0.06</b>	<b>0.43</b>

#### 5. Exports from India - Aerospace & Defence (Exports to Russia)

S No.	HSN Code	Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	Total
			(USD million)					(USD billion)
1	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.	0	0	0	0	0	<b>0.00</b>
2	88	Aircraft, spacecraft, and parts thereof.	107	112	39	16	29	<b>0.30</b>
3	93	Arms and ammunition; parts and accessories thereof.	8	12	4	5	4	<b>0.03</b>
India's Total Export (USD million)			115	123	44	21	34	<b>0.34</b>
<b>India's Total Export (USD billion)</b>			<b>0.11</b>	<b>0.12</b>	<b>0.04</b>	<b>0.02</b>	<b>0.03</b>	<b>0.34</b>

#### Guidance note to readers

- The export data as provided above entails only three specific commodity categories (as referred in tables above).
- The category of Aircrafts/Spacecrafts will include civil and defence products.
- Export data for Ships, boats and floating structures have not been considered for the subject comparison.
- Details of US companies contributing to exports from India is as provided by the subject companies. The subject figures are illustrative and there would be other US companies exporting from India as well.

# Acknowledgements

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# Glossary

A&D	Aerospace and Defence
AoN	Acceptance of Necessity
BECA	Basic Exchange and Cooperation Agreement
BEPS	Base Erosion and Profit Shifting
CCS	Cabinet Committee on Security
COE	Centre of Excellence
COMCASA	Communications Compatibility and Security Agreement
DAP	Defence Acquisition Procedure
DDP	Department of Defence Production
DPEPP	Defence Production and Export Promotion Policy, 2020
DPIIT	Department for Promotion of Industry and Internal Trade
DPP	Defence Procurement Procedure
DPSU	Defence Public Sector Undertaking
DRDO	Defence Research and Development Organisation
DTTI	Defense Technology and Trade Initiative
FDI	Foreign Direct Investment
FIPB	Foreign Investment Promotion Board
G2G	Government to-government agreements
HAL	Hindustan Aeronautics Limited
HLS	Homeland Security
IC	Indigenous Content
IDDM	Indian – Indigenously Designed Developed and Manufactured
IGA	Inter-governmental agreements
IL	Industrial Licensing
IOP	Indian Offset Partner

A&D	Aerospace and Defence
AoN	Acceptance of Necessity
BECA	Basic Exchange and Cooperation Agreement
JV	Joint Ventures
LEMOA	Logistics Exchange Memorandum of Understanding
MHA	Ministry of Home Affairs
MII	Make in India
MoD	Ministry of Defence
MoU	Memorandum of Understanding
MRO	Maintenance, Repair and Overhaul
MSME	Micro, Small and Medium Enterprises
NATO	North Atlantic Treaty Organization
NSG	Nuclear Suppliers Group
OEM	Original Equipment Manufacturer
OFB	Ordnance Factory Board
PMU	Project Management Unit
R&D	Research and Development
SHQ	Service Headquarters
SIPRI	Stockholm International Peace Research Institute
SME	Small and Medium Enterprises
STA-1	Strategic Trade Authorisation-1
TASL	Tata Advanced Systems Limited
TBAL	Tata Boeing Aerospace Limited
TLMAL	Tata Lockheed Martin Aerostructures Limited
TOEC	Technical Offset Evaluation Committee
ToT	Transfer of Technology
TSAL	Tata Sikorsky Aerospace Limited

[illegible]





IN OUR ABILITY TO TRIUMPH OVER ANYTHING  
IN OUR SPIRIT OF UNDYING ENTHUSIASM  
OUR DRIVE TO ACHIEVE THE EXTRAORDINARY  
UNMOVED BY FEAR OR CONSTRAINT  
WE'RE DRIVEN BY JOSH AND IT SHOWS

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