Govt 'in talks with 4 countries' for advanced jet-engine programme

Plan to co-develop advanced machines is likely to be in place by the end of the year

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India is in talks with four countries to start an advanced jet-engine programme at home by the end of the year, according to a government official with knowledge of the matter.

India has defence collaborations with the United States, France, Russia and the United Kingdom.

"India is talking to all four," the official told *Business Standard* on the condition of anonymity.

The official said the "big decision" will need to be taken at the "appropriate level" of the Indian government, because it involves India spending an estimated "₹40,000 crore –₹50,000 crore" over the next decade or more on making "a new thrust-to-weight class engine" for fighter jets.

The project will likely be launched by the end of the year, the official said. "It will take 10-15 years to develop."

Engines with a high thrust-to-weight ratio have shown to perform well in combat. At this time, fighters, especially stealth, use turbofan engines that reduce infrared signature while maintaining high thrust and low radar cross-section.

India still buys a large chunk of defence goods from Russia, its traditional exporter, but the US and France have gained significant shares of the Indian defence market in recent years. The UK, which like the US, has an agreement on critical and emerging technologies with India, is also seeking to increase its share.

"The government has to decide which way India should go," the official said, adding that New Delhi would "look at the geopolitics" and the extent to which a country would be willing to transfer the relevant technology for coproduction.

The official indicated a plan might be ready within six months.

The US, Russia, France and the UK are the main countries with expertise to independently build fighter engines. China has started manufacturing but little is known of its programme. India's state-owned Defence Research and Development Organisation (DRDO) has revived an old project under which engines for fourth-generation fighters are now being made.

The engines, currently produced outside India for sixth-generation fighters, for instance, would require integration into the Indian defence systems if bought.

Building advanced engines in India would also mean assembling the components.

"You need to develop a host of new technologies (in India) in order to develop this new thrust-to-weight class engine," the official said.

The jet engine is one of the most complex machines in the world. Besides speed, it has to function perfectly at high and low altitudes, temperatures and pressure. India relies on importing engines because it doesn't have a base to make them, other than the DRDO project.

India's largest defence manufacturer Hindustan Aeronautics Ltd (HAL) has delayed its production of non-stealth fighters for the Indian Air Force (IAF), citing supply-chain delays in engine deliveries as a reason. The US company General Electric sells engines to HAL. The pending order, at $716 million, was signed in 2021 and is for 99 GE F404 (IN20) engines and support services for HAL's Tejas Mk1A jets. Some such jets are expected early next year.

GE supplies its F119 engines to the US Air Force (USAF) for the F-22 (Raptor) fighters. Another US company, Pratt & Whitney, makes the F135 engines for the USAF's F-35 (Lightning II) stealth jets. The UK company Rolls-Royce provides its F402 Pegasus engines to the British Harrier (II) jets. The French company Safran produces the M88 engines for France's Rafale fighters. Of the many Russian companies, which make engines for combat aircraft, one coproduces engines with HAL for the MiG-29 jets that the IAF uses.

India has begun a programme to make stealth fighters, with mass production planned for 2035-36.

FORTIFYING THE FUTURE

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