



# CURRENT AFFAIRS



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## “DRDO STUDY ON DEVELOPMENT OF INDIGENOUS SUBMARINE”

THIS ARTICLE COVERS “DAILY CURRENT AFFAIRS” AND THE TOPIC DETAILS OF “DRDO STUDY ON DEVELOPMENT OF INDIGENOUS SUBMARINE” THIS TOPIC IS RELEVANT TO THE “SECURITY” SECTION OF THE UPSC—CSE EXAM.

### WHY IN THE NEWS?

As the procurement process for new submarines under P-75I progresses, the Defence Research and Development Organisation (DRDO) has initiated a preliminary study on designing and developing a homegrown conventional submarine through Project-76.

### MORE ABOUT THE NEWS:

- Increased localisation efforts will extend the legacy of the advanced technology vessel (ATV) project to encompass the construction of conventional submarines.
- This initiative parallels the ongoing development of the **Arihant series** of nuclear ballistic missile submarines and another project focused on nuclear-powered submarines, according to sources.
- **Under Project-76 (P-76)**, significant indigenous components such as weapons, missiles, combat management systems, sonars, communications equipment, electronic warfare suites, masts, and periscopes will be incorporated.
- The Navy has outlined a 30-year submarine building program, with plans to proceed with the indigenous design and construction of conventional submarines following P-75I.

### PROPULSION MODULE:

- The DRDO has developed an air-independent propulsion (AIP) module, which is currently awaiting installation on Scorpene-class submarines. The first submarine of this class, Kalvari, is scheduled for retrofitting in 2025, initiating a process expected to last two to three years.
- An AIP module significantly enhances conventional submarines' operational capability by enabling extended submerged endurance and reducing the risk of detection. The DRDO's AIP module **uses phosphoric acid as a base**, leveraging its widespread availability.
- Each fuel cell stack within the DRDO AIP generates hydrogen, with a current power output of 13.5 kW per fuel cell. This is initially extendable up to 15.5 kW and is planned to scale up to 20 kW

eventually. These advancements will meet future submarine requirements, including those under **Project-76**.

### **THE GOVERNMENT'S EFFORTS REGARDING THE INDIGENISATION:**

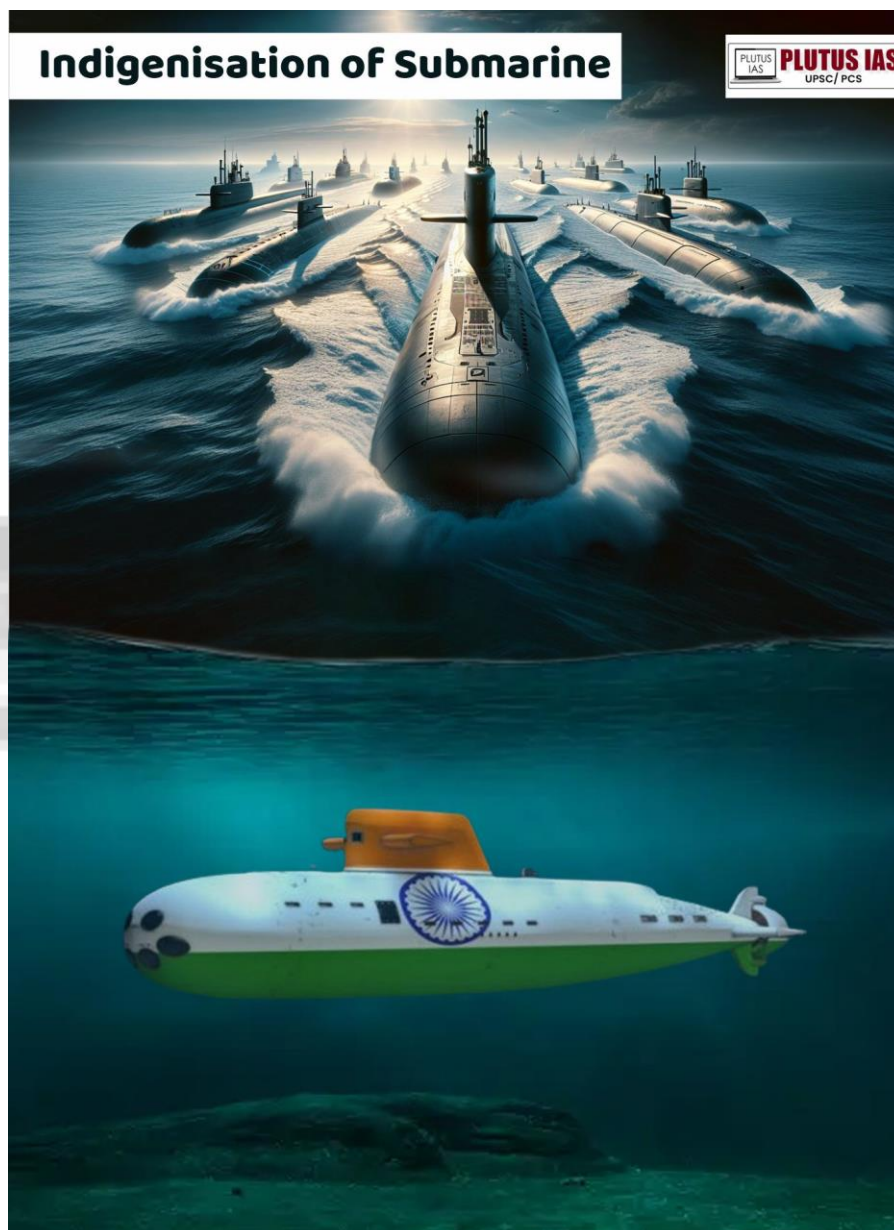
- **Indigenisation** in the defence sector refers to the capability to develop and manufacture defence equipment domestically, aiming to achieve self-reliance and reduce dependency on imports. It is a key objective of the Department of Defence Production, focusing on enhancing India's defence manufacturing capabilities.
  - **Key stakeholders** such as the Defence Research and Development Organisation (DRDO), Defence Public Sector Undertakings (DPSUs), and private organisations play pivotal roles in advancing the indigenisation of defence industries in India.
  - India, despite being one of the world's largest arms importers, aims to reduce this dependency, with the armed forces projected to spend approximately USD 130 billion on defence procurement over the next five years.
- **Initiatives include:**
    1. To encourage technology transfer and investments, the foreign direct investment (FDI) limit in defence should be increased from 49% to 74%.
    2. The corporatisation of the Ordnance Factory Boards to enhance efficiency and competitiveness.
    3. Launching the **Defence India Startup Challenge** to foster innovation and entrepreneurial spirit in defence technologies.
    4. **Introducing the SRIJAN Portal**, which facilitates vendor participation in indigenisation efforts by offering opportunities to manufacture items domestically.

### **NAVY INITIATIVE:**

- **Indian Navy Indigenisation Plan (INIP) 2015-2030:** Introduced in 2014, this plan aims to foster indigenous development of equipment and systems. To date, approximately 3,400 items, including machinery, electrical spares, aviation spares, and weapon spares, have been indigenised under INIP.
- **Naval Aviation Indigenisation Roadmap (NAIR):** The existing NAIR 2019-22 is undergoing revision to include all fast-moving aircraft mandatory spares and high-cost indigenous repairs in the revised NAIR 2022-27. A particular focus is on enhancing indigenous capabilities in the fight component (weapons and sensors).
- **Indigenisation Committees:** Four in-house committees have been established to oversee the indigenisation of spares related to naval aircraft.
- **Naval Liaison Cells (NLCs):** Designated as 'indigenisation cells', these cells are located in various places to facilitate indigenisation efforts.

- **Shipbuilding and Contracts:** Currently, 41 ships and submarines are under construction, with 39 being built in Indian shipyards. Since 2014, a significant percentage of Acceptance of Necessity (AoN) contracts have been awarded to Indian vendors, emphasising local procurement and manufacturing.
- **Collaboration with DRDO:** The Navy collaborates closely with the Defence Research and Development Organisation (DRDO) and industry to streamline developmental timelines and enhance Indigenous capabilities. Focus areas include anti-submarine weapons and sensors, Satcom and electronic warfare equipment, missiles, combat management systems, and more.
- **Naval Innovation and Indigenisation Organisation (NIIO):** Established in August 2020, NIIO serves as an interface for academia and industry to engage with the Indian Navy in capability development. It has facilitated the filing of 36 Intellectual Property Rights (IPR) applications and transferred technology to 12 MSMEs in the defence sector.

**PRELIMS BASED QUESTION:**



**Q. What is the FDI limit in the defence sector?**

1. 49%
2. 51%
3. 74%
4. 100%

**ANSWER: C**

**MAINS BASED QUESTION:**

**Q. Discuss the role of the DRDO in making India self-reliant in the defence sector.**

**Vishal Yadav**



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