



Penicillin G and PLI Scheme

For Prelims: [Production Linked Incentive \(PLI\) scheme](#), [Active Pharmaceutical Ingredient \(API\)](#), [Self-reliance](#), [Covid-19](#),

For Mains: Penicillin G and PLI Scheme, PLI Scheme -Significance and Issues.

[Source: IE](#)

Why in News?

India will start manufacturing the common antibiotic **Penicillin G** in 2024, three decades after India's last plant shut down. This is **one of the successes of the government's [Production Linked Incentive \(PLI\) scheme](#)** launched during [Covid-19](#) to promote **domestic manufacturing**.

- Penicillin G is the [Active Pharmaceutical Ingredient \(API\)](#) used in manufacturing several common antibiotics.
- APIs, also called bulk drugs, are significant ingredients in the manufacture of drugs. The Hubei province of China is the hub of the API manufacturing industry.

WHAT IS PENICILLIN G

PENICILLIN G is the active pharmaceutical ingredient (API) used in several common antibiotics. An API is the main ingredient of a drug responsible for bringing about its desired effects. Like many other APIs, Penicillin G was phased out of production in India after cheaper Chinese products flooded the market. The last plant to stop production of the antibiotic was Torrent Pharma in Ahmedabad.

ACCORDING TO the United States government's National Library of Medicine, Penicillin G is a narrow spectrum antibiotic used for the treatment of several serious bacterial infections such as pneumonia, meningitis, gonorrhea, syphilis, etc. Due to poor oral absorption, Penicillin G is generally administered intravenously or intramuscularly. Penicillin G may have some side effects in some patients.

Why did Penicillin Manufacturing Stop in India?

- **Closure of Manufacturing:**
 - Penicillin G, along with numerous other **active pharmaceutical ingredients (APIs)**

manufactured in India, faced discontinuation due to the **influx of competitively priced Chinese alternatives** flooding the market.

- During the 1990s, at least five companies were engaged in the production of Penicillin G within the country. However, the significantly lower prices of Chinese counterparts **rendered Indian manufacturers economically nonviable**, leading to the closure of their operations.
 - Many sizable manufacturing plants had to **be liquidated for scrap**.
- Additionally, the **Drug Prices Control Order**, which enforced price caps on essential medicines, further **incentivized the adoption of cheaper imported products**.
 - For Example, India initially sold **Paracetamol at approximately Rs 800 per kilogram**, but the entry of Chinese competitors slashed prices to nearly Rs 400 per kilogram, rendering domestic production economically unviable..

▪ **Delay in Revival:**

- Previously, there was **little urgency to revive Penicillin manufacturing domestically**, as cheaper alternatives were readily available in the global market.
- The disruption in the supply chain during the pandemic **served as a wake-up call, highlighting the necessity for self-reliance**.
 - Consequently, the government initiated the PLI scheme to bolster domestic manufacturing.
- The substantial initial costs pose a significant barrier, particularly fermented ones like Penicillin G, requiring considerable capital investment, with profitability **often taking years to achieve**.
- Moreover, China has already emerged as a dominant supplier, having significantly expanded **its manufacturing capabilities over** the past three decades.
- To compete with their prices would **necessitate substantial investments in larger facilities**.

▪ **Impact of PLI Schemes:**

- There has been a significant **decrease in API imports** following the implementation of the PLI scheme.
 - For example, paracetamol, the imports have halved compared to pre-pandemic levels.
- However, despite this decline, a substantial portion of APIs, particularly for antibiotics, is still imported, highlighting the **need for further development in domestic API manufacturing**.
- The PLI scheme offers incentives, including a 20% support for the first four years, 15% for the fifth year, **and 5% for the sixth year** for fermentation-based bulk drugs like antibiotics, enzymes, and hormones such as insulin.
 - These drugs, which involve fermentation in their production process, are considered more challenging to manufacture.
 - Additionally, chemically synthesised drugs are eligible for a **10% incentive over six years on eligible sales**.

What is the Production Linked Incentive Scheme (PLI)?

▪ **About:**

- The PLI scheme was conceived to scale up domestic manufacturing capability, accompanied by higher import substitution and employment generation.
- Launched in March 2020, the scheme initially targeted three industries:
 - Mobile and allied Component Manufacturing
 - Electrical Component Manufacturing and
 - Medical Devices.
- Later, it was extended to 14 sectors.
- In the PLI scheme, Domestic and Foreign companies receive financial rewards for manufacturing in India, based on a percentage of their revenue over up to five years.

▪ **Targeted Sectors:**

- The 14 sectors are mobile manufacturing, manufacturing of medical devices, automobiles **and auto components**, pharmaceuticals, drugs, specialty steel, telecom & networking products, electronic products, white goods (ACs and LEDs), food products, textile products, solar PV modules, advanced chemistry cell (ACC) battery, **and drones and drone**

[components.](#)

▪ **Incentives Under the Scheme:**

- The incentives given, are calculated on the basis of incremental sales.
 - In some sectors such as advanced chemistry cell batteries, textile products and the drone industry, the incentive to be given will be calculated on the basis of sales, performance and local value addition done over the period of five years.
- The emphasis on R&D investment will also help the industry keep up with global trends and remain competitive in the international market.

▪ **Success in Smartphone Manufacturing:**

- In FY 2017-18, mobile phone imports were USD 3.6 billion, while exports were a mere USD 334 million, resulting in a -USD 3.3 billion trade deficit.
- By FY 2022-23, imports reduced to USD 1.6 billion, while exports surged to nearly USD 11 billion, yielding a positive net exports of USD 9.8 billion.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. Consider, the following statements: (2023)

Statement-I: India accounts for 3.2% of global export of goods.

Statement-II: Many local companies and some foreign companies operating in India have taken advantage of India's 'Production-linked Incentive' scheme.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect but Statement-II is correct

Ans: (d)

Exp:

- According to the recent WTO'S Global Trade Outlook and Statistics report, India accounts for 1.8 % of global exports of goods. **Hence, statement 1 is not correct.**
- The 'Production Linked Initiative' (PLI) scheme offers companies incentives on incremental sales from products manufactured in India. It aims to attract foreign companies to set up units in India while encouraging local companies to expand their manufacturing units, generate more employment, and reduce the country's reliance on imports. **Hence, Statement 2 is correct.**