

# BDMAI BULLETIN



## From the Desk of President

Dear Friends,

It gives me immense pleasure to share this edition of the BDMAI News Bulletin, which captures the important developments, policy initiatives and activities concerning the Indian Bulk Drug and API industry during the recent period.

BDMAI continues to actively engage with Central and State Governments and regulatory authorities on issues affecting our members. During this period, the Association has taken up matters relating to delays in statutory approvals and licences, customs and logistics facilitation for pharmaceutical imports and exports, proposed amendments to the NDPS Act, industrial land-related issues and other matters concerning the ease of doing business. Our representations are aimed not merely at highlighting difficulties faced by industry, but at offering practical solutions that can facilitate growth while maintaining the highest standards of compliance and public safety.

BDMAI is also actively exploring suitable industrial land opportunities to facilitate our members in their future expansion plans. In this regard, a BDMAI team recently visited Kurnool, where the Government of Andhra Pradesh is offering land for the development of bulk drug manufacturing facilities. We are also receiving proposals and information from the Governments of Uttar Pradesh, Maharashtra and Andhra Pradesh regarding Bulk Drug Parks and other industrial infrastructure being developed by these States.

BDMAI is closely evaluating these opportunities and regularly keeping our members informed so that interested companies can assess and take advantage of suitable locations for their future expansion and investment plans

Our participation in major industry platforms, exhibitions, seminars and knowledge-sharing programmes also provides opportunities to showcase the capabilities of Indian API manufacturers and strengthen domestic and international business linkages. I encourage all our members, particularly MSMEs, to make full use of these platforms and of the various initiatives undertaken by BDMAI.

As we move forward, our focus will remain on strengthening Indian API manufacturing, improving ease of doing business, promoting sustainable and technologically advanced production, supporting MSMEs and enhancing India's position as a trusted global pharmaceutical manufacturing hub.

I look forward to your continued cooperation and active participation in all BDMAI initiatives.

With warm Regards

Ch A P Rameswara Rao  
National President

In this Bulletin  
you can expect

**Global Pharma  
Market  
Intelligence**

**Analysis of Bulk  
Drugs Exports &  
Imports**

**Important  
Notifications**

**Technical Article**

**GLOBAL MARKET INTELLIGENCE REPORT**

**JULY – AUGUST 2026**

## Overview

The global pharmaceutical industry continued its strong deal-making momentum, driven by patent expiry pressures, increasing demand for innovative therapies, and the need to strengthen late-stage development pipelines. Oncology, metabolic diseases, immunology and rare diseases remained the most active therapeutic areas. Cross-border licensing transactions involving Chinese biotechnology companies also continued to reshape the global innovation landscape. Industry analyses indicate that 2026 is on track to become one of the strongest years for pharmaceutical M&A since the pandemic, with aggregate deal values already approaching full-year 2025 levels by mid-year.

## Mergers and Acquisitions

### AstraZeneca Acquires Global Rights to Dizal's Lung Cancer Drug

On 14 July 2026, AstraZeneca announced an agreement to acquire global rights to Zegfrovy, an investigational lung cancer therapy developed by China's Dizal. The transaction is valued at approximately US\$1.5 billion, including upfront and milestone payments. AstraZeneca was already one of Dizal's largest shareholders before the transaction.

Strategic Significance of this deal is that it reinforces AstraZeneca's leadership in oncology, demonstrates continued confidence in Chinese drug innovation and reflects the increasing trend of multinational companies licensing late-stage Chinese assets instead of developing molecules internally.

### Opportunities for API Manufacturers

Commercialization of new oncology therapies is expected to increase demand for high-potency APIs (HPAPIs), advanced intermediates and specialized contract manufacturing. Indian API manufacturers with oncology capabilities may benefit from future supply-chain opportunities.

## Argenx Acquires Forte Biosciences

Argenx announced the acquisition of Forte Biosciences for approximately **US\$2.2 billion**, strengthening its dermatology and immunology portfolio with a Phase II vitiligo candidate.

This announcement highlights sustained investor interest in immunology, pharmaceutical companies' preference for acquiring clinical-stage assets rather than building programmes from scratch and continues the trend of targeted acquisitions focused on specialty therapeutics.

### How it is advantageous for APIs manufacturers?

Growth in immunology pipelines is expected to support demand for specialized APIs and advanced intermediates, particularly for companies capable of supplying high-quality materials for regulated markets.

## Novartis Expands Antibody–Drug Conjugate (ADC) Portfolio

Novartis strengthened its oncology pipeline through a US\$1.5 billion agreement involving antibody–drug conjugate (ADC) technology, underscoring continued investment in precision oncology.

This deal signifies that ADCs remain one of the fastest-growing oncology segments, combining monoclonal antibodies with highly potent cytotoxic payloads. Pharmaceutical companies continue to invest aggressively in this technology to improve targeted cancer treatment.

APIs manufacturers may consider this as a market potential as ADC manufacturing requires highly specialized payloads, linkers and HPAPIs. This represents an emerging opportunity for Indian manufacturers investing in high-containment manufacturing facilities.

## Global M&A Momentum Remains Strong

Industry analysts report that biopharmaceutical M&A activity accelerated significantly during the first half of 2026. Aggregate deal values reached approximately US\$130 billion by mid-year, nearly matching the full-year total for 2025. Among the year's largest completed transactions are Sun Pharma's acquisition of Organon, GSK's acquisition of Nuvalent, AbbVie's acquisition of Apogee and several multi-billion-dollar oncology-focused deals.

# GLOBAL MARKET INTELLIGENCE REPORT

## Global Investments

| Company           | Investment                                   | Details                                                                                                                                                                                                | Relevance to API Industry                                                                     |
|-------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Eli Lilly         | US\$750 million                              | Joint investment with Resilience to expand pharmaceutical manufacturing in the United States. The project is intended to increase domestic production capacity and strengthen supply-chain resilience. | Higher demand for outsourced APIs, intermediates and manufacturing support.                   |
| Eli Lilly         | US\$27 billion (multi-year programme)        | Lilly continues implementing its previously announced U.S. manufacturing expansion programme covering API production, injectable products and obesity medicines.                                       | Significant opportunity for peptide manufacturers and specialized API suppliers.              |
| Pfizer            | US\$70 billion (long-term U.S. investment)   | Pfizer has committed major investments in U.S. manufacturing and R&D infrastructure to strengthen domestic production and reduce supply-chain risks.                                                   | Increased procurement of advanced intermediates and regulated APIs.                           |
| AbbVie            | US\$100 billion over 10 years                | Long-term investment programme focused on research, manufacturing and expansion of U.S. operations.                                                                                                    | Continued growth in innovative products requiring complex APIs.                               |
| Roche             | US\$50 billion                               | Multi-year investment in manufacturing and research facilities across several U.S. locations, including biologics capacity.                                                                            | Increased outsourcing opportunities for biologic raw materials and specialized intermediates. |
| AstraZeneca       | US\$50 billion by 2030                       | Large investment programme including construction of a major manufacturing facility in Virginia and expansion of oncology manufacturing.                                                               | Strong demand expected for oncology APIs and high-potency intermediates.                      |
| Johnson & Johnson | Multi-billion-dollar manufacturing expansion | Continued investment in manufacturing and R&D facilities in the United States.                                                                                                                         | Supports long-term outsourcing opportunities for regulated API suppliers.                     |
| Novartis          | Manufacturing expansion                      | Investment in advanced manufacturing and biologics infrastructure to support pipeline growth.                                                                                                          | Opportunity for specialty intermediates and biologics supply chain.                           |
| Merck & Co.       | Manufacturing expansion                      | Ongoing investments in U.S. manufacturing and vaccine production infrastructure.                                                                                                                       | Demand for fermentation products, sterile APIs and specialty chemicals.                       |
| Novo Nordisk      | Expansion of obesity drug manufacturing      | Continued investment in peptide manufacturing capacity to meet growing demand for GLP-1 products.                                                                                                      | Major opportunity for peptide API manufacturers.                                              |

# GLOBAL MARKET INTELLIGENCE REPORT

## Investments by Indian Companies

| Company Name                       | Investment details                                                          | Status                                | Strategic Purpose                                                                                              |
|------------------------------------|-----------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Cipla Ltd.                         | Rs 300 crores. Capital Investment for expansion of manufacturing facilities | Announced                             | Increase manufacturing capacity and support future domestic and export demand                                  |
| Sun Pharmaceutical Industries Ltd. | Acquisition (Update)                                                        | Regulatory approvals/process underway | Strengthen global specialty medicines portfolio, women's health business and biosimilars                       |
| Sun Pharmaceutical Industries Ltd. | Overseas Acquisition (Progress Update)                                      | Ongoing                               | One of the largest overseas acquisitions by an Indian pharmaceutical company; enhances global presence         |
| Indian Pharmaceutical Industry     | US\$ 13.2 Billion Mergers & Acquisitions Trend                              | Report Published                      | M&A activity driven by CDMO expansion, specialty pharmaceuticals, portfolio diversification and PE investments |

## Key Investment Trends (July–August 2026)

| Investment Area          | Trend        | Relevance to Indian API Industry      |
|--------------------------|--------------|---------------------------------------|
| Oncology                 | Very High    | Significant opportunity for HPAPIs    |
| ADC Manufacturing        | Rapid Growth | Emerging long-term opportunity        |
| Peptide APIs             | Very High    | Strong growth potential               |
| GLP-1 Drugs              | Exceptional  | New business opportunities            |
| Biologics                | High         | Expanding outsourcing market          |
| Continuous Manufacturing | Increasing   | Productivity and quality improvements |
| Green Chemistry          | High         | Essential for future competitiveness  |
| CDMO Expansion           | Very High    | Increased outsourcing opportunities   |

# GLOBAL MARKET INTELLIGENCE REPORT

## Major New Drug Approvals by Global Regulatory Agencies

| Approval Date | Company            | Drug                                     | Indication                  | Agency | Country/Region |
|---------------|--------------------|------------------------------------------|-----------------------------|--------|----------------|
| 15-Jul-2026   | Merck & Co.        | Lipfendra (enlicitide)                   | Hypercholesterolemia        | FDA    | USA            |
| 22-Jul-2026   | Nuvation Bio       | Jideytro (zidesamtinib)                  | ROS1-positive NSCLC         | FDA    | USA            |
| Jul-2026      | Celcuity           | Revtorpyk (gedatolisib)                  | HR+/HER2- breast cancer     | FDA    | USA            |
| Jul-2026      | Vera Therapeutics  | Trutakna (atacicept)                     | IgA nephropathy             | FDA    | USA            |
| Jul-2026      | UroGen Pharma      | Zusduri                                  | NMIBC                       | FDA    | USA            |
| 06-Aug-2026   | Replimune          | Tudriqev                                 | Advanced melanoma           | FDA    | USA            |
| Jul-2026      | AstraZeneca        | Label expansion/marketing authorization* | Oncology                    | EMA/EC | European Union |
| Jul-2026      | Roche              | New indication*                          | Oncology                    | EMA/EC | European Union |
| Jul-2026      | Novartis           | Marketing authorization*                 | Rare disease                | EMA/EC | European Union |
| Jul-2026      | Daiichi Sankyo     | New approval*                            | Oncology                    | PMDA   | Japan          |
| Jul-2026      | Takeda             | New indication*                          | Gastroenterology            | PMDA   | Japan          |
| Jul-2026      | Jiangsu Hengrui    | Innovative drug approval*                | Oncology                    | NMPA   | China          |
| Jul-2026      | Innovent Biologics | Biologic approval*                       | Oncology                    | NMPA   | China          |
| Jul-2026      | GSK                | Marketing authorization*                 | Respiratory                 | MHRA   | United Kingdom |
| July 2026     | Natco Pharma       | Tentative ANDA Approval                  | Olarib Tablets<br>Onocology | US FDA | USA            |

# GLOBAL MARKET INTELLIGENCE REPORT

## USFDA Regulatory Successes by Indian Companies

| Company          | Achievement                                         | Business Impact                          |
|------------------|-----------------------------------------------------|------------------------------------------|
| Dr. Reddy's      | Continued ANDA approvals and product launches       | Strengthens U.S. market presence         |
| Sun Pharma       | Product approvals and specialty portfolio expansion | Higher-value revenue stream              |
| Lupin            | Complex generic approvals                           | Expands differentiated product portfolio |
| Aurobindo Pharma | New approvals across multiple therapeutic areas     | Supports export growth                   |
| Zydus            | New product approvals                               | Reinforces regulated market presence     |



**ANALYSIS OF  
EXPORTS & IMPORTS OF BULK DRUGS  
APRIL – JUNE 2026**

## ANALYSIS OF EXPORTS & IMPORTS OF BULK DRUGS – JUNE 2026

### Summary:

| Indicator              | Apr–Jun 2025 | Apr–Jun 2026 (P) | Change       |
|------------------------|--------------|------------------|--------------|
| Bulk Drug exports      | ₹10,251.6 Cr | ₹12,938.9 Cr     | +26.2%       |
| Bulk Drug imports      | ₹9,284.8 Cr  | ₹10,577.5 Cr     | +13.9%       |
| Trade surplus          | ₹966.8 Cr    | ₹2,361.4 Cr      | +₹1,394.6 Cr |
| Export/Import coverage | 110.4%       | 122.3%           | Improved     |
| June exports           | ₹3,631.3 Cr  | ₹4,601.3 Cr      | +26.7%       |
| June imports           | ₹2,810.7 Cr  | ₹3,470.4 Cr      | +23.5%       |

India's bulk-drug trade position improved substantially in Q1 FY2026-27. Exports grew almost twice as fast as imports (+26.2% versus +13.9%), resulting in the trade surplus increasing from ₹967 crore to ₹2,361 crore. However, there is a concern - China accounted for 71.1% of India's bulk-drug imports in Q1 FY2026-27, while India's exports are much more geographically diversified.

### EXPORT PERFORMANCE

India exported ₹12,938.9 crore of Bulk Drugs & Drug Intermediates during April–June 2026, compared with ₹10,251.6 crore in the corresponding period of 2025 with a growth rate of 26.21%. In the month of June alone, exports increased from ₹3,631.3 crore → ₹4,601.3 crore with a growth rate of 26.7%, indicating that Q1 growth is not driven by one exceptional month.

### IMPORT PERFORMANCE

Imports increased from during April-June 2026 have increased from ₹9,284.8 crore compared to ₹10,577.5 crore in April – June 2025 with growth rate of 13.92%. Thus, imports continued to grow, but at approximately half the rate of exports. In the month of June 2026, imports increased from ₹2,810.7 crore to ₹3,470.4 crore compared to June 2025 with a growth rate of 23.5%. This suggests that import pressure remains significant even though the overall trade balance is improving.

### TRADE BALANCE – MAJOR IMPROVEMENT

|               | Apr–Jun 2025 | Apr–Jun 2026 |
|---------------|--------------|--------------|
| Exports       | ₹10,251.6 Cr | ₹12,938.9 Cr |
| Imports       | ₹9,284.8 Cr  | ₹10,577.5 Cr |
| Trade surplus | ₹966.8 Cr    | ₹2,361.4 Cr  |

The surplus increased by approximately by ₹1,394.6 crore or about 144%.The export/import coverage ratio improved from 110.4% to 122.3%.

## ANALYSIS OF EXPORTS & IMPORTS OF BULK DRUGS – JUNE 2026

### Top 10 Export destinations:

| Rank | Country     | Exports ₹ Cr | Share  |
|------|-------------|--------------|--------|
| 1    | USA         | 1,504.8      | 11.63% |
| 2    | Brazil      | 835.5        | 6.46%  |
| 4    | Netherlands | 584.6        | 4.52%  |
| 5    | Bangladesh  | 442.0        | 3.42%  |
| 6    | China       | 399.3        | 3.09%  |
| 7    | Germany     | 390.9        | 3.02%  |
| 8    | Turkey      | 387.8        | 3.00%  |
| 9    | Indonesia   | 372.5        | 2.88%  |
| 10   | Egypt       | 372.3        | 2.88%  |
| 10   | Others      | 817.2        | 6.32%  |

- USA remains the Largest export market - Exports to the USA increased to ₹1,178.6 crore → ₹1,504.8 crore compared to June 2025 with a growth rate of 27.7%. The USA alone accounted for 11.63% of India's bulk-drug exports during Q1. This reinforces the importance of the US market for Indian API manufacturers.
- BRAZIL – a very strong growth market- Exports to Brazil have increased from ₹410.3 crore → ₹835.5 crore (June 2025) with a growth rate of 103.6% and its share reached to 6.46% making it India's second largest destination.

### OTHER STRONG EXPORT MARKETS

Several significant markets recorded very strong growth:

| Country     | Q1 2025-26 | Q1 2026-27 | Growth  |
|-------------|------------|------------|---------|
| Brazil      | ₹410.3 Cr  | ₹835.5 Cr  | +103.6% |
| Singapore   | ₹77.9 Cr   | ₹190.2 Cr  | +144.0% |
| Netherlands | ₹347.2 Cr  | ₹584.6 Cr  | +68.4%  |
| Indonesia   | ₹223.9 Cr  | ₹372.5 Cr  | +66.3%  |
| Turkey      | ₹268.8 Cr  | ₹387.8 Cr  | +44.3%  |
| Bangladesh  | ₹337.7 Cr  | ₹442.0 Cr  | +30.9%  |
| Germany     | ₹296.5 Cr  | ₹390.9 Cr  | +31.8%  |
| Egypt       | ₹278.1 Cr  | ₹372.3 Cr  | +33.9%  |

## ANALYSIS OF EXPORTS & IMPORTS OF BULK DRUGS – JUNE 2026

### EXPORT MARKETS SHOWING DECLINE

| Country | Q1 2025-26 | Q1 2026-27 | Change |
|---------|------------|------------|--------|
| Canada  | ₹205.2 Cr  | ₹119.5 Cr  | -41.8% |
| Ireland | ₹188.2 Cr  | ₹136.2 Cr  | -27.6% |
| UAE     | ₹190.8 Cr  | ₹159.7 Cr  | -16.3% |
| Iraq    | ₹43.6 Cr   | ₹21.7 Cr   | -50.1% |
| Croatia | ₹100.0 Cr  | ₹80.4 Cr   | -19.5% |
| Italy   | ₹229.4 Cr  | ₹211.5 Cr  | -7.8%  |
| Japan   | ₹288.2 Cr  | ₹274.6 Cr  | -4.8%  |

### Imports Performance:

During Q1 FY2026-27 India imported ₹7,519.9 crore from China out of total bulk-drug imports of ₹10,577.5 crore. Thus China contributes to 71.09% of India's bulk-drug imports. This is a very high concentration. By comparison, the USA accounts for only 1.76% of imports.

Chinese imports increased from ₹6,761.9 crore to ₹7,519.9 crore compared to Q1 of previous financial year with a growth rate of 11.2%. Therefore, even though total imports grew by only 13.9%, China continued to dominate the supply chain. This means that India's improved trade surplus does not mean that import dependence has been fundamentally resolved.

### TOP IMPORT SOURCES

| Rank | Country     | Imports ₹ Cr | Share  |
|------|-------------|--------------|--------|
| 1    | China       | 7,519.9      | 71.09% |
| 2    | Italy       | 391.7        | 3.70%  |
| 3    | Spain       | 244.8        | 2.31%  |
| 4    | Singapore   | 233.3        | 2.21%  |
| 5    | Germany     | 200.7        | 1.90%  |
| 6    | Japan       | 199.5        | 1.89%  |
| 7    | USA         | 185.8        | 1.76%  |
| 8    | Denmark     | 154.4        | 1.46%  |
| 9    | Switzerland | 148.7        | 1.41%  |
| 10   | Netherlands | 122.2        | 1.16%  |

## ANALYSIS OF EXPORTS & IMPORTS OF BULK DRUGS – JUNE 2026

### OTHER IMPORTANT IMPORT TRENDS

Several countries recorded substantial growth in supplies to India.

| Country     | Q1 2025-26  | Q1 2026-27  | Growth  |
|-------------|-------------|-------------|---------|
| Denmark     | ₹76.1 Cr    | ₹154.4 Cr   | +102.9% |
| Italy       | ₹207.4 Cr   | ₹391.7 Cr   | +88.9%  |
| Switzerland | ₹94.2 Cr    | ₹148.7 Cr   | +57.8%  |
| Japan       | ₹130.0 Cr   | ₹199.5 Cr   | +53.5%  |
| Spain       | ₹193.1 Cr   | ₹244.8 Cr   | +26.8%  |
| Singapore   | ₹192.9 Cr   | ₹233.3 Cr   | +20.9%  |
| China       | ₹6,761.9 Cr | ₹7,519.9 Cr | +11.2%  |

### COUNTRIES WITH DECLINING IMPORTS

| Country  | Q1 2025-26 | Q1 2026-27 | Growth |
|----------|------------|------------|--------|
| UK       | ₹113.4 Cr  | ₹77.9 Cr   | -31.3% |
| Malaysia | ₹102.1 Cr  | ₹69.4 Cr   | -32.1% |
| Israel   | ₹44.5 Cr   | ₹13.2 Cr   | -70.4% |
| Mexico   | ₹99.1 Cr   | ₹68.0 Cr   | -31.4% |
| Germany  | ₹230.3 Cr  | ₹200.7 Cr  | -12.8% |
| Slovenia | ₹125.7 Cr  | ₹103.9 Cr  | -17.4% |
| Belgium  | ₹93.3 Cr   | ₹72.3 Cr   | -22.5% |

## HS code / Product wise analysis:

### Export performance:

Export growth was broad-based among several important products. The largest increase in export value came from *other diloxanide furoate/cimetidine/famotidine products* (+₹383.4 crore), *other antibiotics* (+₹307.7 crore), and *other heterocyclic compounds* (+₹249.0 crore). Significant growth was also recorded in caffeine and its salts (+61.7%), paracetamol (+36.9%), niacinamide/niacin (+33.9%), and oestrogens and progestogens (+339.3%). Exports of amoxicillin and its salts increased 8.3%.

## ANALYSIS OF EXPORTS & IMPORTS OF BULK DRUGS – JUNE 2026

### Import trends:

Import growth was concentrated in a smaller number of products. Other heterocyclic compounds recorded the largest increase, rising by ₹586.0 crore (+39.6%), followed by methionine (+₹196.9 crore; +53.5%) and steroidal hormones (+₹130.7 crore; +56.7%). Imports of other tetracyclines, lysine, hydroquinone and certain controlled/narcotic-related intermediates also increased. However, substantial reductions were seen in 6-APA (-₹401.4 crore; -49.1%), rifampicin (-₹176.1 crore; -90.7%), insulin (-47.9%), and penicillins (-40.1%).

### Areas of import dependence:

Despite the improvement in the overall trade balance, India continues to have significant import dependence in certain critical APIs/intermediates. In FY27, the largest product-level import gaps were methionine (₹562.4 crore net deficit), 6-APA (₹415.6 crore), other antibiotics (₹403.3 crore), lysine (₹316.2 crore), erythromycin and derivatives (₹215.9 crore), and rifampicin (₹126.9 crore). These products could therefore merit attention under domestic manufacturing, PLI or other strategic API-support measures.

### Areas of export strength:

India has strong net export positions in cimetidine/famotidine/diloxanide-related products (₹2,103.7 crore surplus), other products of vegetable origin (₹375.9 crore), amoxicillin (₹296.3 crore), paracetamol (₹237.6 crore), niacinamide/niacin (₹228.2 crore), ibuprofen (₹165.7 crore), glucose liquid (₹148.6 crore), and caffeine (₹139.2 crore).

## Conclusion summary:

- India's export competitiveness is improving- 26.2% export growth is encouraging.
- The strongest growth in Brazil, Singapore, Netherlands, Indonesia and several emerging markets suggests Indian API manufacturers are expanding beyond traditional markets.
- Import dependence remains the key vulnerability - The 71.1% China share cannot be overlooked. India's domestic API capacity may be increasing, but the upstream supply chain remains heavily dependent on China.

**Important Notifications**  
**July – August 2026**

## Important notifications for the bulk-drug industry — July – August 2026

| Date        | Authority       | Notification / Circular                                                                                                                              | Key provision                                                                                                                                                                                                                   | Relevance to Bulk Drug / API Industry                                                                                                       |
|-------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 01-Jul-2026 | DGFT / Commerce | <a href="#">Trade Notice No. 08/2026-27 – Amendment to Market Access Support under EPM – Niryat Disha</a>                                            | Amendments to the Market Access Support intervention under the Export Promotion Mission.                                                                                                                                        | Useful for Indian API manufacturers seeking new overseas markets, market studies, promotion and market-access activities.                   |
| 01-Jul-2026 | DGFT / Commerce | <a href="#">Trade Notice No. 09/2026-27 – Amendments to TRACE under EPM – Niryat Disha</a>                                                           | Revised support for international testing, inspection, certification and regulatory compliance; eligible certification list expanded to <b>462 entries</b> . Reimbursement mechanism revised into two instalments. <sup>2</sup> | Particularly relevant to API exporters requiring <b>USFDA/EMA/UK MHRA/other overseas testing, certification and regulatory compliance</b> . |
| 02-Jul-2026 | CDSCO           | <a href="#">G.S.R. 561(E) – Navi Mumbai International Airport designated as authorised airport for drug import under Rule 43A, Drugs Rules, 1945</a> | Adds <b>Navi Mumbai International Airport (NMIA)</b> as an authorised airport for import of drugs.                                                                                                                              | Useful for companies importing APIs, bulk drugs, formulations and other regulated drug consignments through Mumbai/Navi Mumbai.             |
| 03-Jul-2026 | CBIC / Customs  | <a href="#">Notification No. 62/2026-Customs (N.T.) – India–UK CETA Rules of Origin</a>                                                              | Notifies Customs Tariff Rules for determination of origin under the India–UK CETA.                                                                                                                                              | Origin determination will be important for pharma/API products seeking preferential treatment.                                              |
| 04-Jul-2026 | CBIC / Customs  | <a href="#">Circular No. 31/2026-Customs – Deficiency Memo under Section 74</a>                                                                      | Standardises deficiency memo procedure for drawback/refund claims under Section 74.                                                                                                                                             | <b>Relevant</b> for exporters/importers using re-export/duty drawback mechanisms.                                                           |
| 10-Jul-2026 | CBIC / Customs  | <a href="#">Notification No. 17/2026-Customs (ADD) – extension of ADD on Arylides from China</a>                                                     | Anti-dumping duty on <b>Aceto Acetyl Derivatives of Aromatic/Heterocyclic Compounds (Arylides)</b> from China extended up to <b>13-Jan-2027</b> .                                                                               | <b>Potentially relevant</b> to chemical/API supply chains where these derivatives are used as intermediates or specialty chemicals.         |
| 11-Jul-2026 | CBIC / Customs  | <a href="#">Circular No. 32/2026-Customs – discontinuation of manual</a>                                                                             | Shipping lines no longer required to submit specified manual documents/statements for containers under                                                                                                                          | Improves paperless handling of imported/export containers.                                                                                  |



## Important notifications for the bulk-drug industry — July – August 2026

|             |                 |                                                                                                                            |                                                                                                                                                                                                          |                                                                                                                             |
|-------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|             |                 | <a href="#">container documents</a>                                                                                        | Notification 104/94-Customs.                                                                                                                                                                             |                                                                                                                             |
| 13-Jul-2026 | DGFT / Commerce | <a href="#">Public Notice No. 21/2026-27 – insertion of Para 2.50A in HBP 2023 on forced-labour imports</a>                | Establishes a formal DGFT investigation procedure for determining whether imported goods have been produced wholly/partly using forced labour; findings can support recommendations to prohibit imports. | <b>Relevant for –</b> API/KSM/intermediate supply chains increasingly face ESG and supply-chain due-diligence requirements. |
| 13-Jul-2026 | CBIC / Customs  | <a href="#">Circular No. 33/2026-Customs – self-certification of origin under India–UK CETA</a>                            | Provides operational framework for self-certified origin declarations under CETA.                                                                                                                        | <b>Relevant –</b> simplifies preferential-origin documentation for eligible Indian exports to UK.                           |
| 13-Jul-2026 | DGFT / Commerce | <a href="#">Trade Notice No. 11/2026-27 – electronic filing/issuance of preferential CoO under India–UK CETA</a>           | Electronic filing and issuance of preferential Certificate of Origin effective <b>15 July 2026</b> .                                                                                                     | <b>Relevant</b> for Indian API/bulk-drug exporters to the UK.                                                               |
| 14-Jul-2026 | CBIC / Customs  | <a href="#">Notification No. 29/2026-Customs – first tranche of India–UK CETA tariff concessions</a>                       | Provides preferential customs treatment for specified UK-origin goods imported into India; effective <b>15 July 2026</b> .                                                                               | <b>Relevant where UK-origin pharma/API inputs are imported;</b> exact HS coverage should be checked product-by-product.     |
| 14-Jul-2026 | DGFT / Commerce | <a href="#">Trade Notice No. 13/2026-27 – Interest Subvention under EPM – Niryat Protsahan</a>                             | Clarifies eligibility, UIN generation, claim filing and bank linkage for pre-/post-shipment export credit. For FY 2026-27, UIN generation within <b>15 days of disbursement</b> is treated as valid.     | <b>Relevant for MSME API exporters</b> because it can reduce export-finance cost.                                           |
| 14-Jul-2026 | DGFT / Commerce | <a href="#">Trade Notice No. 12/2026-27 – Niryat Disha: Global Outreach for Branding, Labelling &amp; Export Packaging</a> | Launches global outreach support for branding, labelling and export packaging.                                                                                                                           | <b>Relevant</b> for Indian pharma/API companies developing overseas markets and private-label/CDMO opportunities.           |

# CARBON CAPTURE, UTILIZATION, STORAGE GUIDE

## [www.wudbox.in](http://www.wudbox.in)

### Introduction

Carbon Capture, Utilisation, and Storage (CCUS) has officially transitioned from an idealistic climate policy discussion to an indispensable operational and commercial imperative. For heavy industrial sectors—including cement, steel, chemical production, and refining—CCUS represents the only technologically mature pathway to achieve deep decarbonization while preserving trillions of dollars in existing capital assets.

As global regulatory frameworks tighten, companies that delay mitigation face escalating financial, compliance, and market-access risks. However, deploying CCUS is not a standard procurement exercise; it is a capital-intensive, infrastructure-dependent strategic transformation. Commercial success requires aligning concentrated, low-cost  $\text{CO}_2$  sources with accessible transport networks, permanent geological storage infrastructure, and supportive regulatory frameworks.

### Decoding the Industrial CCUS Value Chain

To successfully execute a CCUS strategy, corporate leaders must view the technology as a multi-stage industrial value chain. Disruptions or inefficiencies at any stage can undermine the economic viability of the entire project.

[CO<sub>2</sub> Emissions] → [Carbon Capture] → [Carbon Transport] → [Utilisation / Storage]

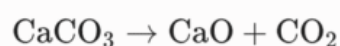
- **Carbon Capture:** The process of separating  $\text{CO}_2$  from industrial flue gases or process streams using chemical absorption, physical separation, membrane permeation, or cryogenic cooling. This phase is the most capital- and energy-intensive segment, typically accounting for 60% to 80% of total life-cycle project costs.
- **Carbon Transport:** Captured  $\text{CO}_2$  is compressed into a dense, supercritical state (typically above 74 bar and 31.1°C) to optimize volume and flow characteristics. It is then moved via high-pressure pipelines for onshore networks or refrigerated shipping carriers for cross-border and offshore destinations.
- **Carbon Utilisation:** The conversion of captured  $\text{CO}_2$  into commercially valuable products. These pathways include cyclical applications like synthetic aviation fuels (SAF) or permanent binding applications such as concrete mineralization.
- **Carbon Storage:** The permanent isolation of  $\text{CO}_2$  from the atmosphere via injection into deep, secure subterranean geological formations, serving as the primary mechanism for gigaton-scale emissions reductions.

### The Strategic Business Case for Hard-to-Abate Sectors

For institutional investors and executive leadership, CCUS is fundamentally an asset-preservation and risk-mitigation tool.

- Abating Inherent Process Emissions

In sectors like cement and integrated steel, up to 60% of emissions are “process emissions” inherent to the chemical transformation of raw materials. A prime example is the calcination of limestone:



Because these emissions are entirely decoupled from fossil fuel combustion, switching to renewable electricity cannot eliminate them. CCUS stands as the only technologically viable solution to capture these process-driven molecules.

- **Mitigating Carbon Asset Stranding**

Industrial facilities such as blast furnaces, steam crackers, and fluid catalytic cracking units (FCCUs) involve massive capital expenditure and possess lifespans spanning 30 to 50 years. Retrofitting these setups with CCUS prevents the premature write-down of capital assets, allowing facilities to fulfill their useful economic life while meeting net-zero mandates.

- **Regulatory Protection and Market Access**

In regions governed by compliance markets like the European Union Emissions Trading System (EU ETS), carbon pricing imposes long-term operational penalties on unmitigated emissions. Furthermore, modern protectionist mechanisms like the Carbon Border Adjustment Mechanism (CBAM) penalize high-carbon imports, turning CCUS into a baseline requirement for maintaining access to premium international export markets.

### Techno-Economic Matrix: Matching Industry to Technology

The economic viability of a CCUS project depends directly on the concentration of  $\text{CO}_2$  in the flue gas or process stream, as lower concentrations require significantly more energy and capital to separate.

#### Industrial Suitability Matrix

Choosing the specific capture mechanism is heavily dictated by these metrics:

- **Post-Combustion Capture (Amine):** Highly preferred for retrofits because it treats flue gas after combustion using liquid solvents (e.g., MEA or MDEA) and requires minimal modifications to core process equipment, though it carries a high thermal energy penalty (2.5 to 3.5 GJ/tCO<sub>2</sub>).
- **Pre-Combustion Capture:** Applied in gasification setups where fuel is shifted to syngas via the Water-Gas Shift reaction ( $\text{CO} + \text{H}_2\text{O} \rightarrow \text{CO}_2 + \text{H}_2$ ), separating CO<sub>2</sub> using physical solvents before combustion occurs.
- **Oxy-Fuel Combustion:** Replaces ambient air with pure oxygen, producing a flue gas composed almost entirely of easily condensable water vapor and high-purity CO<sub>2</sub>, though it demands high upfront capital for Air Separation Units (ASUs).

### Commercial Realities of Utilisation and Geological Storage

Operations teams must distinguish between small-scale, cyclical carbon utilization and permanent, gigaton-scale geological storage.

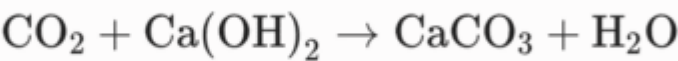
#### Utilisation Pathways

While Enhanced Oil Recovery (EOR) remains the most commercially mature utilization avenue, its

long-term net-decarbonization value faces strict stakeholder scrutiny. Synthetic e-fuels offer a massive addressable market but remain highly energy-intensive, requiring enormous amounts of green electricity to produce the necessary hydrogen feedstocks.

| Industry Sector     | Main Emission Source            | CO2 Concentration (Vol%) | Typical Capture Cost (USD/tCO2) | Strategic Value                                                             |
|---------------------|---------------------------------|--------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Fertilisers Ammonia | Shift converter process gas     | 95% – 99%                | \$15 – \$25                     | Purest industrial stream; lowest barrier to entry for immediate abatement.  |
| Hydrogen (SMR)      | Process off-gas / Syngas        | 30% – 90%                | \$20 – \$35                     | Enables low-carbon “Blue” $\text{H}_2$ for refining and chemical synthesis. |
| Cement              | Limestone calcination & kilns   | 15% – 30%                | \$60 – \$100                    | Critical technology; no other scalable alternative for process emissions.   |
| Steel (BF-BOF)      | Blast furnace / Coke oven gas   | 20% – 30%                | \$60 – \$90                     | Decarbonizes existing integrated steel mills during blast furnace life.     |
| Refineries & Chems  | FCCU, steam crackers, reformers | 5% – 25%                 | \$50 – \$90                     | Abates complex, distributed, multi-point emission hubs.                     |
| Power Generation    | Natural gas combustion          | 4% – 14%                 | \$60 – \$110                    | Provides low-carbon, dispatchable baseload power to back up renewables.     |

The most scalable, circular option within building materials is concrete mineralization. Injecting  $\text{CO}_2$  into fresh concrete permanently locks the gas into a solid mineral matrix:



This reaction traps carbon permanently, improves the concrete’s compressive strength, and reduces baseline cement requirements.

Geological Storage Options

For true climate-scale abatement, permanent geological storage is the primary solution. **Deep Saline Aquifers** (permeable rock formations filled with saltwater 1 to 3 kilometers underground) offer the largest global storage capacity through structural and dissolution trapping. **Depleted oil and gas reservoirs** provide geologically proven containment structures with existing well infrastructure and seismic data, minimizing early exploratory risks.

To manage liability, operators must run robust Monitoring, Reporting, and Verification (MRV) frameworks. This includes continuous 4D time-lapse seismic surveys to track subterranean plumes, Distributed Acoustic Sensing (DAS) along wellbores, and deep water sampling to monitor containment integrity

## Global Policy Catalysts and Real-World Precedents

National policies play a primary role in bridging the “green premium” associated with CCUS deployment.

- **United States (45Q Tax Credit):** Offers a performance-based tax credit of up to \$85 per metric tonne for permanent geological storage and up to \$60 per tonne for utilization/EOR, featuring direct-pay mechanisms that successfully attract private capital.
- **European Union:** Implements a strict cap-and-trade system via the EU ETS alongside CBAM border adjustments to ensure domestic investments remain competitive against unmitigated imports.
- **United Kingdom:** Utilizes a cluster-based model and “Dispatchable Power Agreements” to fund regional infrastructure hubs, minimizing individual infrastructure risks.
- **Canada:** Provides refundable investment tax credits covering up to 50% of carbon capture equipment costs and 37.5% for midstream infrastructure.
- **India:** Developing its domestic Carbon Credit Trading Scheme (CCTS) paired with sector-specific roadmaps for steel and cement to preserve global export advantages.

## Landmark Projects to Study

1. **Jilin Oil Field (PetroChina, China):** Captures 1.0 Mtpa from chemical/gas processing plants for EOR, demonstrating that matching high-purity sources with nearby reservoirs eliminates long-distance transport costs.
2. **Brevik CCS (Heidelberg Materials, Norway):** Captures 400,000 tonnes per annum via advanced amine post-combustion technology. The captured gas is liquefied and shipped via the “Longship” network to deep saline aquifers, proving that shared open-access storage enables premium, certified net-zero commodity sales.
3. **Boundary Dam Unit 3 (SaskPower, Canada):** A 1.0 Mtpa design capacity coal-fired power retrofit using amine absorption. It highlights that first-of-a-kind, standalone industrial projects face higher initial capital hurdles and require robust solvent optimization to control operational maintenance costs

## The Executive Playbook: Strategic Suitability and Risk Mitigation

Before launching a full-scale Front-End Engineering Design (FEED) study, corporate leaders must screen their portfolios using clear operational frameworks.

### When is CCUS Justified?

A facility is highly suited for deployment if it checks multiple strategic boxes: high-purity process streams ( $>30\% \text{ CO}_2$ ), a long remaining asset lifespan ( $>15$  years), high exposure to aggressive regional carbon penalties, and immediate geographic access (within 50 km) to an open-access shared transport pipeline or deepwater shipping hub.

### When Should You Halt or Pivot?

Executives should halt CCUS development if the emission sources are highly dilute and physically scattered across an older site, which drastically drives up engineering complexity and pushes

abatement costs past \$120–\$150 per tonne. Similarly, if a facility is geographically isolated from geological storage sinks, faces severe on-site space and utility constraints, or has cheaper, direct decarbonization alternatives (like low-temperature electrification), capital should be directed away from CCUS.

### Emerging Industrial Cluster Models: The India Case Study

To bypass individual storage bottlenecks, emerging economies are actively shifting toward shared industrial hubs. In India, for instance, NITI Aayog's evolving roadmap highlights distinct regional cluster alignments:

- **The Gujarat-Western Coast Cluster:** Combines high point-source density from refining and petrochemical hubs with immediate access to the Cambay basin's depleted reservoirs and deepwater ports.
- **The East India Mineral Belt Cluster:** Focuses on heavy steel and coal baseload power plants, requiring shared rail and pipeline transport networks to move captured carbon to offshore storage formations in the Bay of Bengal

### Regulatory Action Plan

To navigate this transition successfully, corporate leaders should align their planning with NITI Aayog's evolving CCUS roadmap:

By focusing on these practical, immediate steps, Indian manufacturers can mitigate long-term compliance risks, lower their all-in cost of capture, and position themselves as highly competitive players in a global, decarbonized marketplace.

### Conclusion

CCUS is no longer an optional sustainability initiative; it is a critical infrastructure requirement for heavy industry operating in a decarbonizing economy. While the capital requirements are substantial, the financial risks of inaction—including carbon penalties, stranded assets, and lost export markets—are significantly higher.

### Ready to Deepen Your CCUS Strategy?

While this blog post outlines the high-level roadmap, executing a multi-million dollar CCUS strategy requires granular engineering, economic, and policy frameworks.

Download the Complete CCUS Guide Now: <https://wudbox.in/carbon-capture-utilization-and-storage-ccus-a-complete-guide-for-industrial-decarbonization/>

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