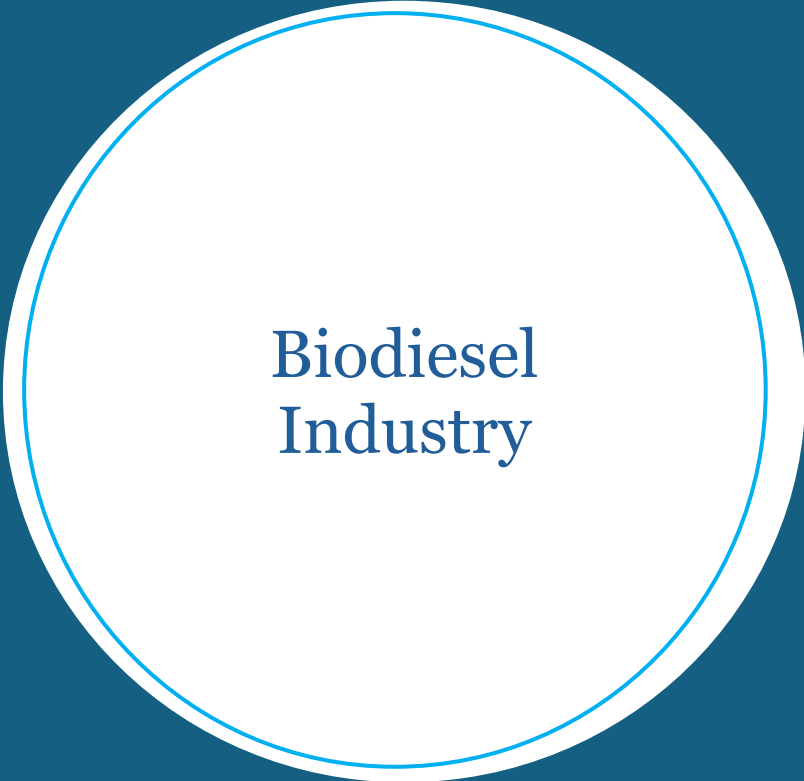


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Biodiesel
Industry

Dated: July 30,
2026

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1. Global Macroeconomic Scenario

1.1 Global GDP Growth Scenario

As per the IMF's World Economic Outlook (WEO) published in April 2026, the global economy is projected to experience a deceleration in growth, with global GDP expanding by 3.4% in CY 2025 and moderating to 3.1% in CY 2026. This slowdown is attributed to heightened geopolitical disruptions, particularly the outbreak of war in the Middle East and associated disruptions to energy production and transit through the Strait of Hormuz, alongside persistent trade-related frictions and elevated uncertainty. While global growth in CY 2025 was supported by technology-led investment, accommodative financial conditions, and reduced tariff pressures, these tailwinds are expected to be partly offset in CY 2026 by higher commodity prices, tighter financial conditions, and weakening external demand.

Global headline inflation stood at 4.1% in CY 2025 and is projected to rise to 4.4% in CY 2026, reflecting the inflationary effects of the energy shock, second-round pricing pressures, and renewed risks of inflation expectations becoming less anchored. Rising oil and natural gas prices, coupled with supply-side disruptions, are expected to place upward pressure on energy-intensive goods, transportation, and food costs. At the same time, global trade growth is expected to remain subdued amid trade fragmentation, geopolitical tensions and supply chain realignments, despite continued resilience in technology-related trade flows.

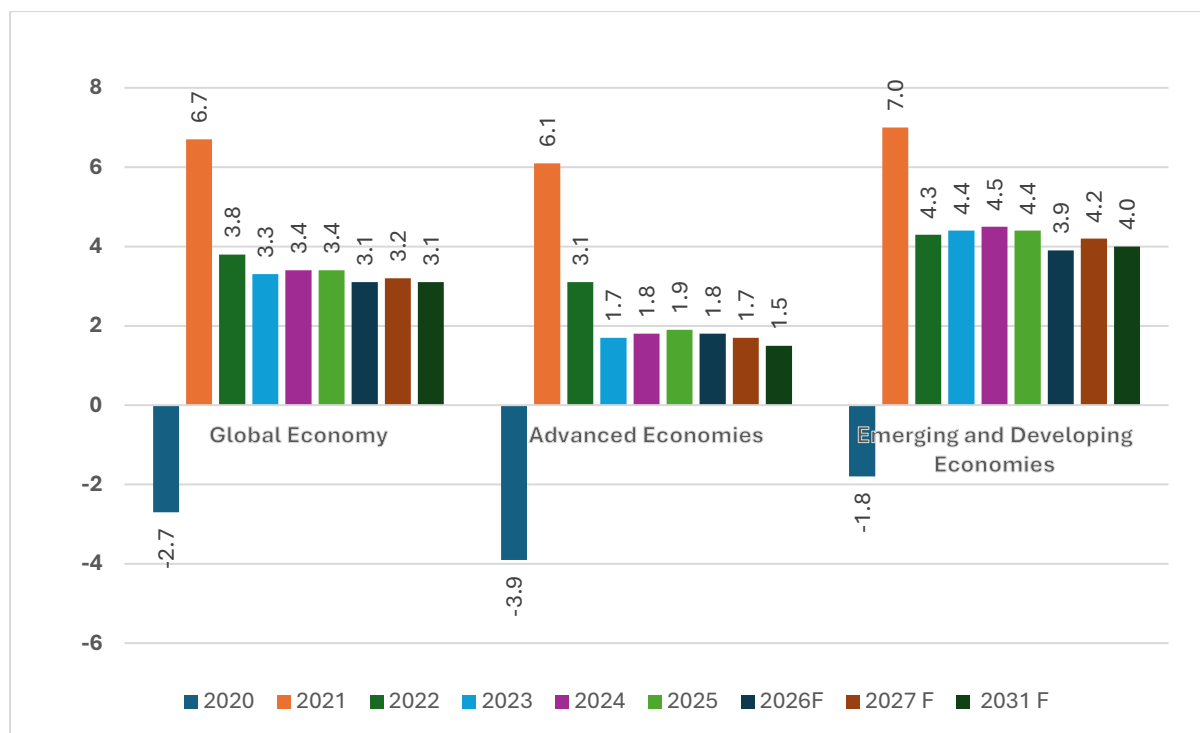
In China, economic prospects remain constrained, with GDP growth at around 5.0% in CY 2025 and projected to remain subdued in CY 2026 at 4.4%, reflecting continued weakness in the property sector, fragile domestic demand and pressures from shifting trade dynamics, although export performance and technology-linked sectors have provided some support. In Europe, growth conditions remain weak, with Germany facing stagnation amid industrial weakness, fiscal constraints, and trade disruptions while broader European growth remains vulnerable to energy-related shocks and geopolitical spillovers.

Meanwhile, India continues to demonstrate resilience, with real GDP growth at 7.6% in CY 2025 and the IMF projecting growth of 6.5% in CY 2026, supported by strong domestic demand, resilient rural consumption, sustained public infrastructure spending and continued investment momentum. Consumer price inflation is expected to remain broadly contained within the Reserve Bank of India's target range, supporting macroeconomic stability and household purchasing power.

Overall, while growth in CY 2025 remained supported by resilience across major economies, the outlook for CY 2026 has weakened amid rising geopolitical risks, energy market disruptions, and persistent global uncertainty. India's relative macroeconomic stability, strong

domestic growth drivers, and ongoing investment cycle position it favourably amid global headwinds.

1.2 Historical GDP Growth Trends



F – Forecast, Source – IMF World Economic Outlook April 2026

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. It comprises of 40 countries under the Advanced Economies including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected countries from the Euro Zone (Germany, Italy, France etc.). The group of emerging market and developing economies (156) includes all those that are not classified as Advanced Economies (India, China, Brazil, Malaysia etc.)

The global economy began recovering from its lowest levels following the easing of pandemic-related lockdowns in CY 2020 and CY 2021. The pandemic-induced disruption severely affected economic activity, resulting in a contraction of -2.7% in global GDP in CY 2020, with advanced economies contracting more sharply by -3.9%, while emerging and developing economies declined by -1.8%.

In CY 2021, global growth rebounded strongly to 6.7%, driven by reopening-led recovery, fiscal stimulus, and pent-up demand. Advanced economies grew by 6.1%, supported by policy stimulus and vaccination progress, while emerging and developing economies recorded stronger growth of 7.0%.

Global economic activity moderated in CY 2022, with growth slowing to 3.8%, as elevated inflation and monetary tightening weighed on demand. Advanced economies expanded by 3.1%, while emerging and developing economies grew by 4.3%.

Growth softened further to 3.3% in CY 2023, reflecting the lagged impact of tighter financial conditions and weaker trade momentum. Advanced economies recorded slower growth of 1.7%, while emerging and developing economies remained relatively resilient at 4.4%.

In CY 2024, global growth remained stable at 3.4%, supported by easing inflation and improved supply chain conditions. However, advanced economies slowed to 1.8%, while emerging and developing economies grew by 4.5%, highlighting continued divergence.

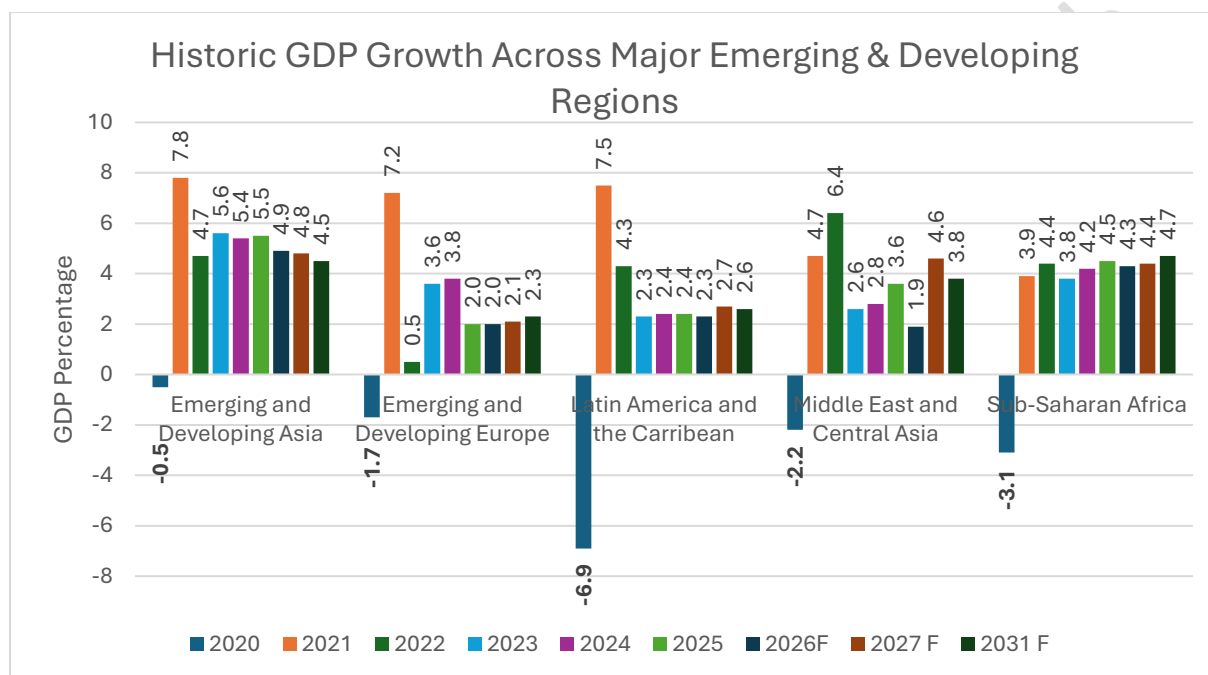
In CY 2025, global GDP growth stood at 3.4%, indicating relative stability compared to the previous year despite ongoing geopolitical tensions and structural challenges. Advanced economies expanded by 1.9%, while emerging and developing economies maintained stronger growth at 4.4%.

Global growth is projected to remain steady at 3.1% in CY 2026, supported by resilient demand and investment trends, although risks from geopolitical disruptions and commodity price volatility persist. Advanced economies are expected to grow at 1.8%, while emerging and developing economies are projected at 3.9%.

Over the medium term, global growth is expected to moderate slightly to 3.2% in CY 2027 and 3.1% by CY 2031. Advanced economies are forecast to grow at 1.7% in CY 2027 and 1.5% by CY 2031, while emerging and developing economies are projected at 4.2% and 4.0%, respectively, reflecting structural constraints alongside continued resilience in developing markets.

1.3 GDP Growth Across Major Regions

GDP growth across major global regions—including Europe, Latin America & the Caribbean, Middle East & Central Asia, and Sub-Saharan Africa—continues to display varied trajectories. While some regions are stabilizing post-pandemic, others remain challenged by structural and cyclical issues. The global outlook presents a mixed scenario, with emerging economies continuing to outperform advanced economies.



Source-IMF World Economic Outlook April 2026 update.

In Emerging and Developing Asia, growth stood at 5.5% in CY 2025 and is projected to moderate to 4.9% in CY 2026 and 4.8% in CY 2027, before easing further to 4.5% by CY 2031. The moderation reflects weaker external demand, trade-related uncertainty, and spillovers from slower growth in China, partly offset by resilience in domestic demand across major economies, with India continuing to act as a key growth driver.

Emerging and Developing Europe recorded growth of 2.0% in CY 2025 and CY 2026, improving marginally to 2.1% in CY 2027 and 2.3% by CY 2031. The region continues to face structural manufacturing weakness, geopolitical spillovers and subdued external demand, although gradual stabilization in trade and domestic demand is expected to support recovery.

For Latin America and the Caribbean, growth stood at 2.4% in CY 2025, moderating to 2.3% in CY 2026 and improving to 2.7% in CY 2027, before easing to 2.6% by CY 2031. The modest outlook reflects weak productivity trends, fiscal constraints, and subdued external demand, partially supported by improving macroeconomic stability and policy credibility.

In the Middle East and Central Asia, growth stood at 3.6% in CY 2025, declining sharply to 1.9% in CY 2026 before recovering to 4.6% in CY 2027 and moderating to 3.8% by CY 2031. This volatility reflects geopolitical disruptions, particularly conflicts affecting energy markets, alongside fluctuations in commodity prices and regional uncertainty.

Sub-Saharan Africa recorded growth at 4.5% in CY 2025 and is projected to moderate slightly to 4.3% in CY 2026 and improving to 4.4% in CY 2027, with further strengthening to 4.7% by CY 2031. Growth is supported by improving domestic demand and supply conditions, although structural constraints, high debt levels and commodity price volatility continue to pose risks.

Overall, while regional growth trajectories remain uneven, emerging and developing economies are expected to continue outperforming advanced economies, supported by relatively stronger domestic demand and favourable demographics. However, disparities persist due to structural challenges, geopolitical tensions, and commodity market volatility.

1.4 Global Economic Outlook

At the current juncture in CY 2026, the global economy continues to exhibit mixed performance, with divergence in outcomes across regions driven by differences in growth dynamics, inflation trends, geopolitical exposure, and policy responses. While the global economy had shown resilience through technology-led investment, accommodative financial conditions, and reduced tariff pressures, the broader outlook has weakened due to the outbreak of conflict in the Middle East, disruptions in energy markets, and elevated geopolitical risks. Structural headwinds, including tighter financial conditions, geoeconomic fragmentation, and subdued productivity growth, continue to keep global growth below historical averages.

The United States continues to demonstrate relative resilience among advanced economies, though growth is moderating as the economy absorbs the lagged effects of prior policy tightening and softer labour market conditions. Across advanced economies, growth is projected at 1.8% in CY 2026, constrained by weak industrial activity, lower productivity growth, and cautious business investment. In Europe, growth conditions remain subdued, with persistent manufacturing weakness, energy-related uncertainties, and weak external demand weighing on activity, although gradual monetary easing and fiscal support may provide some stabilization.

In China, growth prospects remain constrained by continued property sector stress, weak domestic demand, and changing trade dynamics, although export-oriented sectors and technology-linked investment continue to provide support. In contrast, India remains among the strongest-performing major economies, with GDP growth projected at 6.5% in CY 2026, supported by resilient domestic demand, sustained infrastructure investment, digitalisation, and structural reforms. Broader Emerging and Developing Asia continues to outperform other regions, although growth is moderating amid weaker global trade momentum.

In Latin America and the Caribbean, growth remains modest amid fiscal constraints, weak productivity trends, and subdued external demand, although improving macroeconomic management in some economies provides support. Sub-Saharan Africa is expected to see gradual strengthening supported by improving supply conditions and domestic demand recovery, while the Middle East and Central Asia face a more volatile outlook due to direct spillovers from conflict-related disruptions and uncertainty in commodity markets. The impact of energy supply risks, including disruptions related to the Strait of Hormuz, has increased downside risks for commodity-importing economies and vulnerable emerging markets.

Globally, inflation dynamics have become more challenging. Global headline inflation is projected to rise to 4.4% in CY 2026 from 4.1% in CY 2025, reflecting the inflationary effects of higher energy prices, supply-side disruptions, and second-round pressures. Central banks

are therefore expected to remain vigilant, with policy responses remaining cautious and data dependent. While monetary easing had been expected to support demand, renewed inflation risks may delay or moderate the pace of policy normalization in several economies.

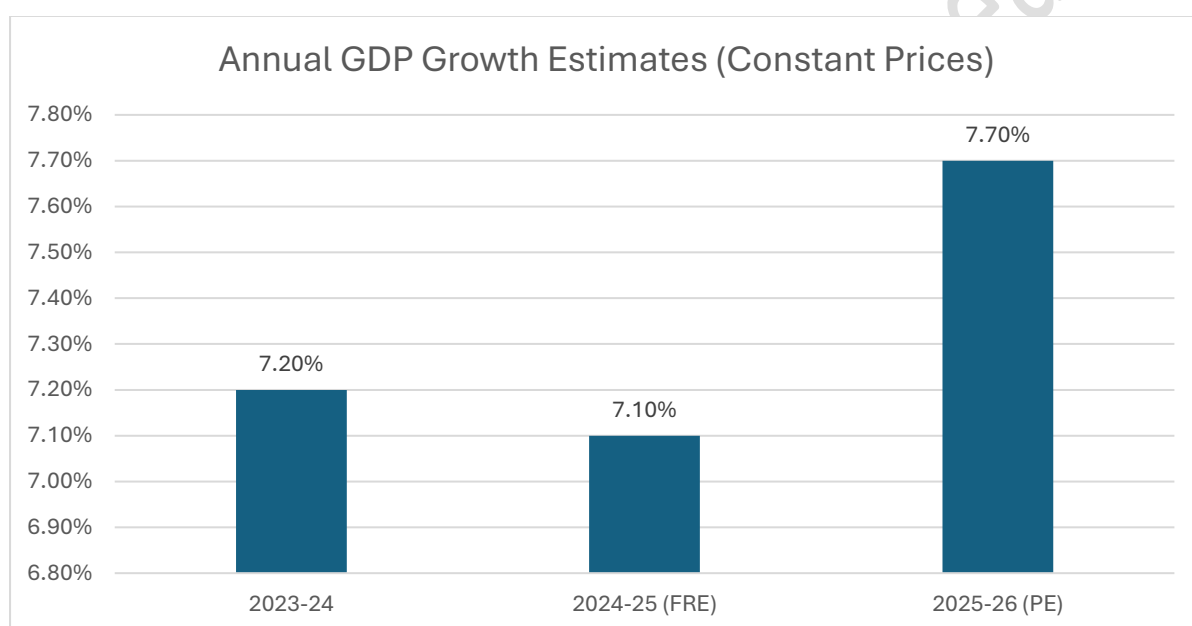
Looking ahead, the medium-term outlook remains one of slower but stable growth, with global GDP projected at 3.2% in CY 2027 and 3.1% by CY 2031, below the long-term historical average. Advanced economies are expected to remain on a structurally lower growth path, while emerging and developing economies continue to provide the primary engine of global growth. Future prospects will depend significantly on the evolution of geopolitical tensions, the normalization of energy markets, progress in restoring trade stability, and the extent to which productivity gains from technological innovation, including artificial intelligence, translate into broader economic growth. The IMF also highlights that structural reforms, multilateral coordination, and strengthened macroeconomic resilience will be critical to sustaining growth momentum over the medium term.

Overall, while the global economy remains resilient, the outlook has become more fragile amid elevated downside risks. Growth in CY 2026 and beyond is expected to remain below historical averages, shaped by geopolitical uncertainty, tighter financial conditions, and structural constraints, although emerging economies—particularly India and broader Asia—continue to provide relative support to global growth.

2. India's Macroeconomic Scenario

2.1 Gross Domestic Product (GDP)

According to the latest Provisional Estimates by MOSPI, GOI (05 June 26), Real GDP has been estimated to grow by 7.7% in FY 2025-26. Nominal GDP has witnessed a growth of 8.9%. Real GDP or GDP at Constant Prices is estimated to attain a level of INR 323.12 lakh crore in the FY 2025-26, against the First Revised Estimate (FRE) of GDP for the year 2024-25 of INR 299.89 lakh crore.



Note: FRE - First Revised Estimates; PE – Provisional Estimate

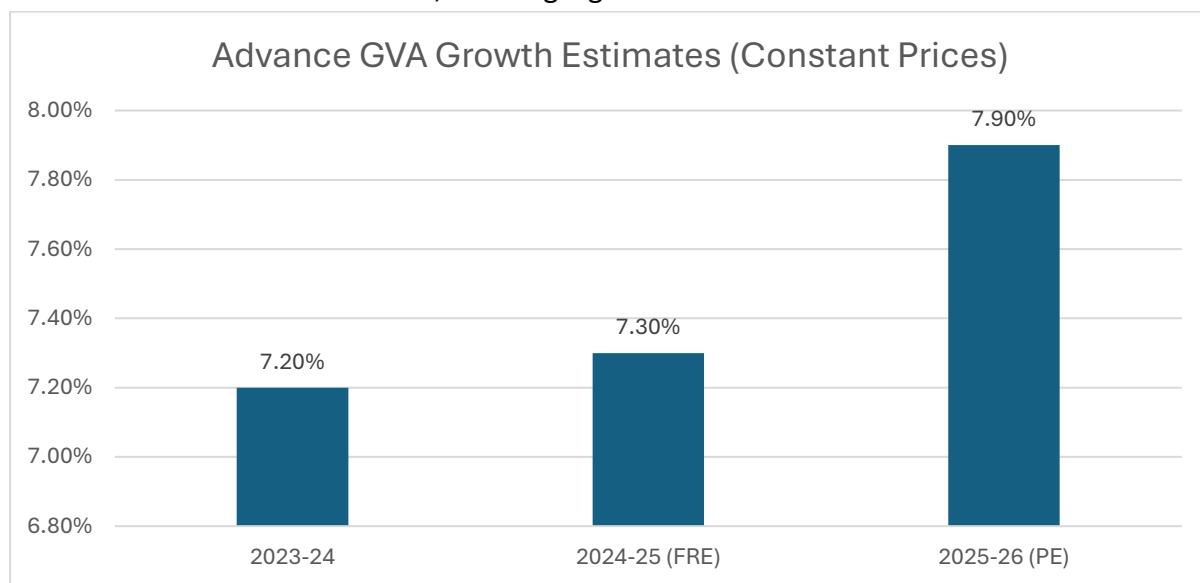
Source: New Series of Gross Domestic Product (GDP) Estimates with Base Year 2022-23 by MOSPI, PIB Press Release dated 05 June 2026).

According to the International Monetary Fund (IMF) World Economic Outlook Database (April 2026), India is estimated to be the sixth-largest economy in the world in 2026, with a Gross Domestic Product (GDP) of approximately USD 4.15 trillion at current prices. India's ranking reflects the latest national accounts data, including the revised GDP series released by the Government of India, which changed the base year from FY 2011-12 to FY 2022-23. India's position in the global ranking is influenced by the revised GDP estimates and the depreciation of the Indian Rupee against the U.S. Dollar.

The economies ranked ahead of India are the United States (USD 32.38 trillion), China (USD 20.85 trillion), Germany (USD 5.45 trillion), Japan (USD 4.38 trillion), and the United Kingdom (USD 4.26 trillion).

2.2 Gross Value Added (GVA)

According to the Provisional Estimate of GDP for 2025-26 by MOSPI, Govt. of India (GoI), Real GVA is estimated at INR 294.91 lakh crore in the year 2025-26, against INR 273.36 lakh crore in FY 2024-25, registering a growth rate of 7.9% as compared to 7.3% growth rate in 2024-25. Nominal GVA is estimated to attain a level of INR 314.87 lakh crore during FY 2025-26, against INR 288.54 lakh crore in 2024-25, showing a growth rate of 9.1%.



Note: FRE - First Revised Estimates; PE – Provisional Estimate

Source: New Series of Gross Domestic Product (GDP) Estimates with Base Year 2022-23 by MOSPI, PIB Press Release dated 05 June, 2026)

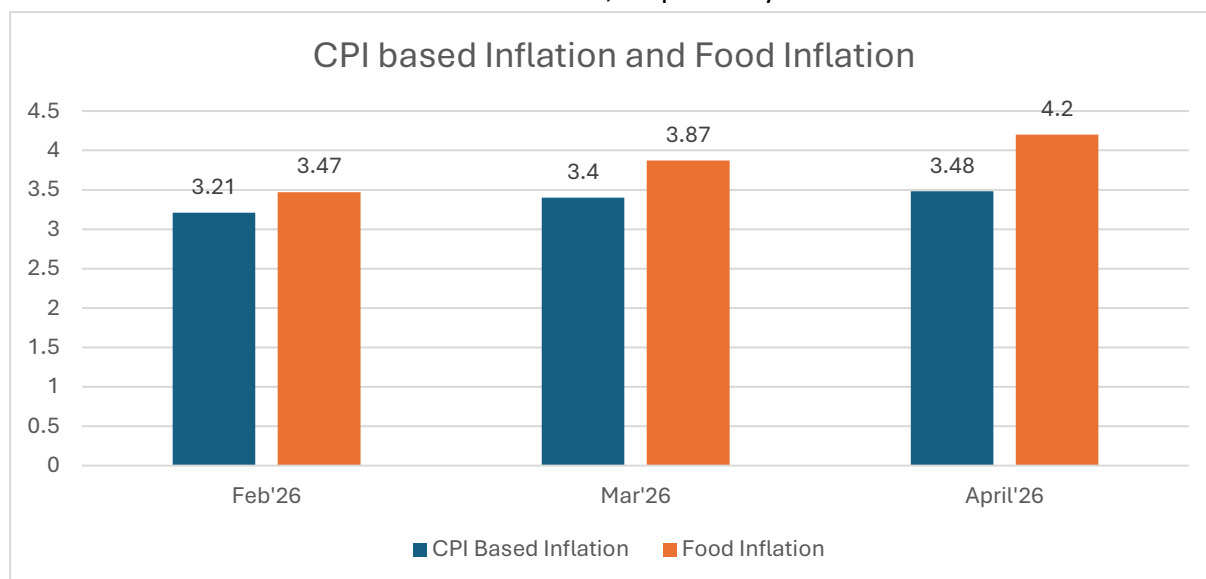
Major Highlights:

- Real GDP has been estimated to grow by 7.7% in FY 2025-26. Nominal GDP has witnessed a growth of 8.9%.
- Real and Nominal GVA has been assessed to grow by 7.9% and 9.1% respectively in FY 2025-26.
- Secondary and Tertiary sector have boosted the performance of the economy by registering growths of 8.8% and 9.3% respectively at Constant prices.
- The Primary sector has observed 3.2% growth rate mainly driven by the performance of Agriculture and Fishery sectors.
- Manufacturing, 'Trade, Repair, Hotels, Transport, Communication & Services related to Broadcasting, Storage' and 'Financial, Real Estate & Professional Services' sectors have attained double-digit growth at both Constant and Current Prices in FY 2025-26.
- On the Expenditure- side, both the Private Final Consumption Expenditure (PFCE) and Gross Fixed Capital Formation (GFCF) have exhibited more than 7.5% growth rate in FY 2025-26.
- In the Q4 of FY 2025-26, Real GDP has been estimated to grow by 7.8% in FY 2025-26. Nominal GDP has observed a growth of 9.1%.
- Real and Nominal GVA has been assessed to grow by 7.9% and 9.9% respectively in Q4 of FY 2025-26.
- Secondary and Tertiary sector have been the major driver for the Real and Nominal GVA growths of 7.9% and 9.9% respectively in Q4 of FY 2025-26.
- GFCF has recorded 10.8% growth rate and PFCE has witnessed 7.1% growth at Constant prices in the Fourth quarter of FY 2025-26.

Source: MOSPI, Press Release, 05 June 2026, Govt. of India (GoI).

2.3 Consumer Price Index (CPI)

Year-on-year inflation rate based on All India Consumer Price Index (CPI) with base year 2024 for the month of April 2026 over April 2025 is 3.48%(Provisional). Corresponding inflation rates for rural and urban are 3.74% and 3.16%, respectively.



Source: MOSPI, GOI, 12 May 2026

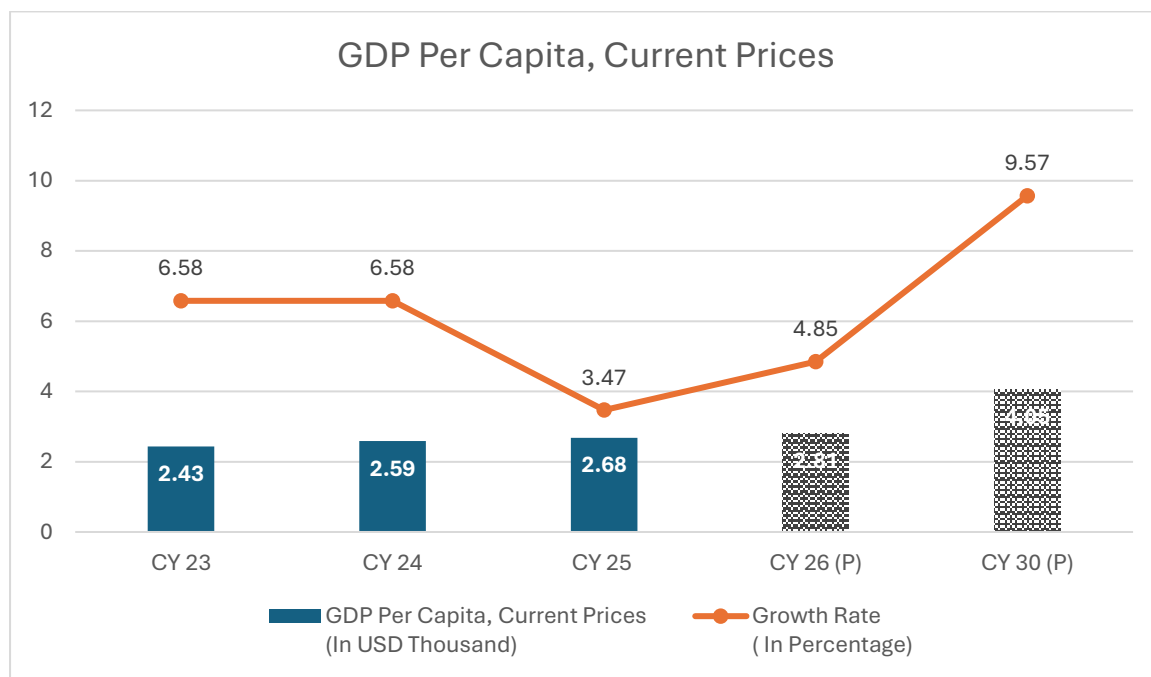
Top 5 key items with low inflation at All India combined level in May 2026 are given in table below:

S.No.	Item	Weight	Inflation (%) February, 2026	Inflation (%) January, 2026
1	Silver Jewellery	0.3127	160.84	160.12
2	Gold/Diamond/Platinum Jewellery	0.6230	48.16	46.80
3	Coconut: copra	0.0854	46.16	47.17
4	Tomato	0.4961	45.29	64.58
5	Cauliflower	0.2330	43.77	37.83

Source: "Press Release of Consumer Price Index on Base 2024=100, MOSPI, GOI.

2.4 India Per Capita GDP Forecast

Per capita GDP growth for India is estimated at 9.57 % CAGR between FY 2026-FY 2030. Increased individual incomes are expected to create additional discretionary spending, which may be beneficial for the sector.



Note: E = Estimated, P = Projected

Source: IMF Data Mapper, World Economic Outlook April 2026, India, GDP Per Capita

2.5 Private Final Consumption Expenditure (PFCE)

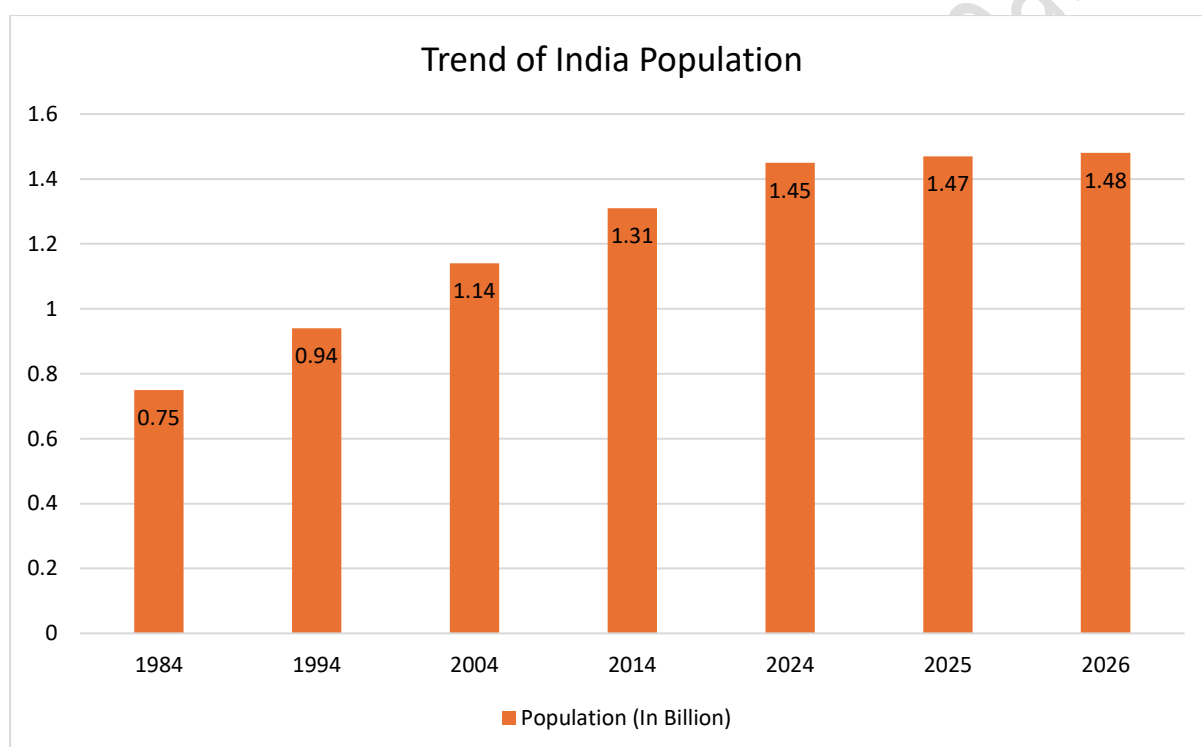
Private Final Consumption Expenditure (PFCE) represents the total spending by resident households on final consumption of goods and services, serving as a key indicator of consumer demand and overall economic well-being. It reflects the extent of household consumption and plays a crucial role in driving GDP growth. PFCE, at constant prices, accounted for 55.7% of GDP in FY2026 (same as FY2025). This marks a gradual moderation from 56.4% in FY2024 and 57.1% in FY2023, indicating a relative shift in the composition of economic growth. The decline is primarily attributable to higher changes in stocks (inventory build-up), which increased the share of investment components in GDP, even as household consumption continues to remain a key driver of the economy.

Source: - MOSPI, Press Note on New Series of GDP Estimates with Base Year 2022-23, Provisional Estimates of Annual Gross Domestic Product For 2025-26 released on June 05th, 2026.

2.6 Overview on Key Demographic Parameters

2.6.1 Population growth

India's economic trajectory and consumption dynamics are closely tied to its demographic shifts. India's population expanded from approximately 0.75 billion in 1984 to 1.47 billion in 2025 and is further reached around 1.48 billion in 2026, consolidating its position as the world's most populous nation. This sustained growth underlines the emergence of a vast labour force and consumer base, which is essential for driving long-term economic growth, supporting rising consumption demand, and strengthening the country's overall economic potential.



Source: World Bank Database. Population Data 2026 - Worldometer, IMF, Infomerics Analytics & Research.

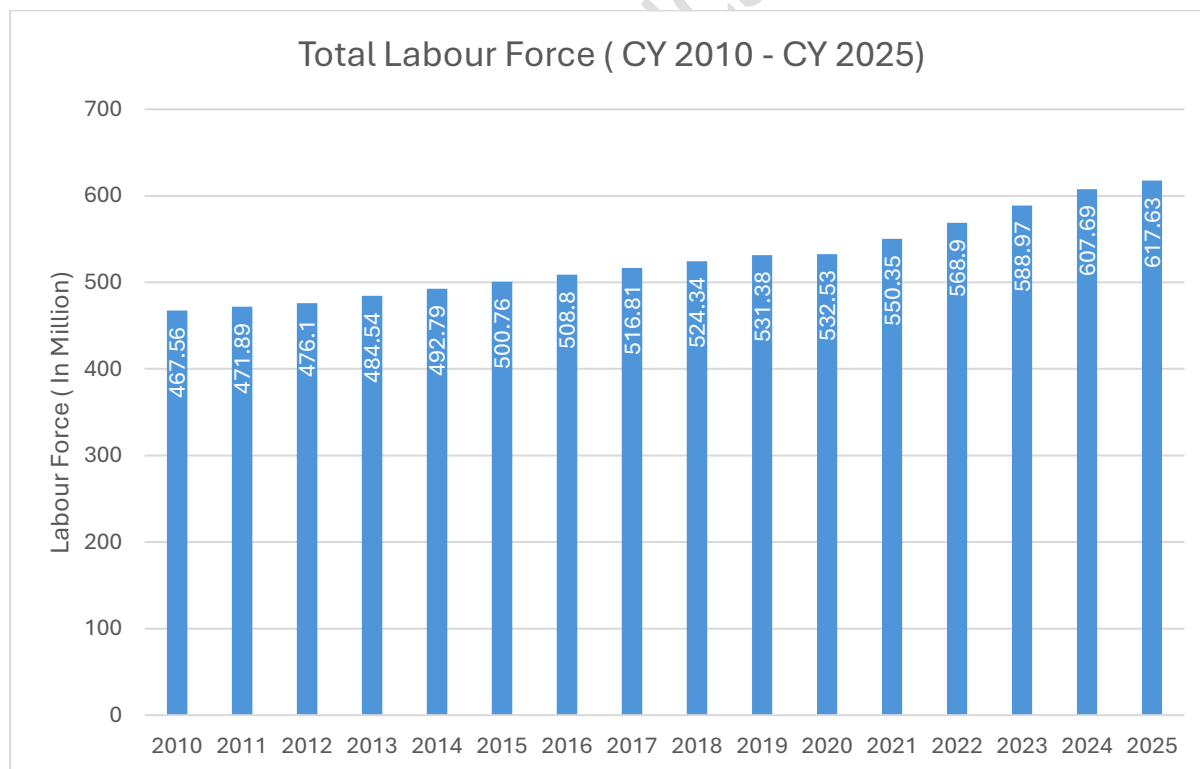
2.6.2 Labour Force in India

India's labour force has experienced steady growth over the past decade. In 2010, the total labour force was approximately 467.56 million. By 2025, this number had increased to 617.63 million.

This upward trend underscores the expanding working-age population, improving labour force participation, and gradual recovery in employment post the pandemic period. The sharp increase observed after 2020 highlights the rebound in economic activity and rising workforce engagement across sectors. However, it also emphasizes the need for sustained job creation to effectively absorb the growing labour pool.

The labour force participation rate (LFPR) has also witnessed variations over time due to changing socio-economic conditions, including urbanization, education levels, and sectoral employment shifts.

These trends highlight the importance of implementing policies that not only generate employment opportunities but also improve job quality, productivity, and inclusivity across key sectors of the economy.

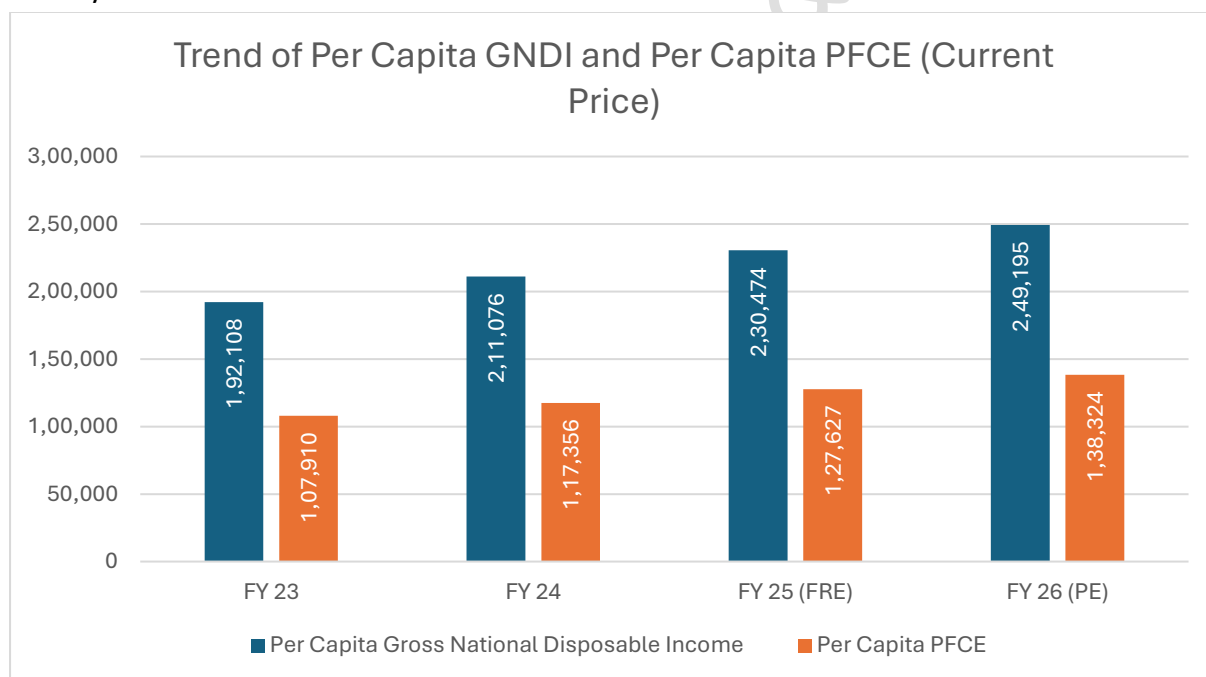


Source: World Bank Database

2.6.3 Disposable Income and Consumer Spending

Gross National Disposable Income (GNDI) represents the total income available to a nation's residents for consumption and saving after accounting for income transfers with the rest of the world. Per Capita GNDI has exhibited a steady upward trend over the recent years, increasing from approximately INR1,92,108 in FY23 to INR 2,11,076 in FY24 and further to INR 2,49,195 in FY26 (PE). It reflects the continued growth in income available to households and businesses, supporting consumption and savings activities within the economy.

The rise in disposable income has been accompanied by higher consumer spending, as reflected in the growth of Private Final Consumption Expenditure (PFCE), which measures the total value of goods and services consumed by households. Per Capita PFCE increased from approximately INR 1,07,910 in FY23 to INR 1,38,324 in FY26 (PE). The growth of approximately 8.0% in FY26 over FY25 indicates sustained consumer demand and continued expansion in household consumption expenditure, supported by rising income levels and economic activity.



Note: Data mentioned is in INR, FRE – First Revised Estimates, PE – Provisional Estimates.

Source: PIB, New Series of Gross Domestic Product (GDP) release date on 5th June 2026.
Estimates with Base Year 2022-23

2.7 Union Budget FY26-27 Highlights

The Union Budget FY 2026–27, presented by Finance Minister Nirmala Sitharaman, introduces a comprehensive set of measures aimed at stimulating economic growth, enhancing infrastructure, and fostering inclusive development. With a focus on sectors such as agriculture, MSMEs, infrastructure, innovation, and exports, the budget seeks to create a conducive environment for sustained economic expansion.

- **Capital Expenditure and Infrastructure Development**

In FY2026-27, the Union Budget has increased the public capex towards to INR 12.2 lakh crore from the previous INR 11.21 lakh crore (3.1% of GDP) which was earmarked in FY 2025–26. To strengthen the confidence of private developers regarding risks during infrastructure development and construction phase, the budget proposed to set up an Infrastructure Risk Guarantee Fund to provide prudently calibrated partial credit guarantees to lenders.

- **Support for MSMEs**

Recognizing the pivotal role of Micro, Small, and Medium Enterprises (MSMEs) in India's economic landscape, the budget introduced a three-pronged approach to support the sector. The budget introduced a dedicated INR 10,000 crore SME Growth Fund as well as proposed to top up the Self-Reliant India Fund set up in 2021, with INR 2,000 crore to continue support to micro enterprises and maintain their access to risk capital. With TReDS, more than INR 7 lakh crore has been made available to MSMEs. To leverage its full potential, the budget further proposed four measures: (i) mandate TReDS as the transaction settlement platform for all purchases from MSMEs by CPSEs, serving as a benchmark for other corporates; (ii) introduce a credit guarantee support mechanism through CGTMSE for invoice discounting on TReDS platform; (iii) link GeM with TReDS for sharing information with financiers about government purchases from MSMEs, encouraging cheaper and quicker financing; (iv) introduce TReDS receivables as asset-backed securities, helping develop a secondary market, enhancing liquidity and settlement of transactions. Moreover, Government will facilitate Professional Institutions such as ICAI, ICSI, ICMAI to design short-term, modular courses and practical tools to develop a cadre of 'Corporate Mitras', especially in Tier-II and Tier-III towns, which will help MSMEs meet compliance requirements at affordable costs.

- **Establishment of dedicated Rare Earth Corridors**

A Scheme for Rare Earth Permanent Magnets was launched in November 2025. In line with that, the budget proposed to support the mineral-rich States of Odisha, Kerala, Andhra Pradesh and Tamil Nadu to establish dedicated Rare Earth Corridors to promote mining, processing, research and manufacturing.

- **Integrated Programme for the Textile Sector**

The following Schemes have been announced:

- (a) The National Fibre Scheme for self-reliance in natural fibres such as silk, wool and jute, man-made fibres, and new-age fibres.
- (b) Textile Expansion and Employment Scheme to modernise traditional clusters with capital support for machinery, technology upgradation and common testing and certification centres.
- (c) A National Handloom and Handicraft programme to integrate and strengthen existing schemes and ensure targeted support for weavers and artisans.
- (d) Tex-Eco Initiative to promote globally competitive and sustainable textiles and apparels.
- (e) Samarth 2.0 to modernize and upgrade the textile skilling ecosystem through collaboration with industry and academic institutions.

- **Carbon Capture Utilization and Storage (CCUS)**

Aligning with the roadmap launched in December 2025, CCUS technologies at scale will achieve higher readiness levels in end-use applications across five industrial sectors, including, power, steel, cement, refineries and chemicals. An outlay of INR 20,000 crore is proposed over the next 5 years.

- **Municipal Bonds**

To encourage the issuance of municipal bonds of higher value by large cities, the budget proposed an incentive of INR 100 crore for a single bond issuance 10 of more than INR 1000 crore. The current scheme under AMRUT which incentivises issuances up to INR 200 crore, will also continue to support smaller and medium towns.

- **Ease of Doing Business**

Individual Persons Resident Outside India (PROI) will be permitted to invest in equity instruments of listed Indian companies through the Portfolio Investment Scheme. It is also proposed to increase the investment limit for an individual PROI under this scheme from 5% to 10%, with an overall investment limit for all individual PROIs to 24%, from the current 10%.

- **Hubs for Medical Value Tourism**

To promote India as a hub for medical tourism services, the budget proposed to launch a Scheme to support States in establishing five Regional Medical Hubs, in partnership with the private sector. These Hubs will serve as integrated healthcare complexes that combine medical, educational and research facilities. They will have AYUSH Centres, Medical Value Tourism Facilitation Centres and infrastructure for diagnostics, post-care and rehabilitation. These Hubs will provide diverse job opportunities for health professionals including doctors and AHPs.

- **Agriculture Related Schemes**

To diversify farm outputs, increase productivity, enhance farmers' incomes, and create new employment opportunities, the budget announced support schemes related to high value crops such as coconut, sandalwood, cocoa and cashew in coastal areas. Agar trees in Northeast and nuts such as, almonds, walnuts and pine nuts in hilly regions will also be supported. India is the world's largest producer of coconuts.

About 30 million people, including nearly 10 million farmers, depend on coconuts for their livelihood. To further enhance competitiveness in coconut production, the Budget proposed a Coconut Promotion Scheme to increase production and enhance productivity through various interventions including replacing old and non-productive trees with new saplings/plants/varieties in major coconut growing States. A dedicated programme is proposed for Indian cashew and cocoa to make India self-reliant in raw cashew and cocoa production and processing, enhance export competitiveness and transform Indian Cashew and Indian Cocoa into premium global brands by 2030.

Further, the Central Government will partner with State Governments to promote focused cultivation and post-harvest processing to restore the glory of the Indian Sandalwood ecosystem. To rejuvenate old, low-yielding orchards and expand high-density cultivation of walnuts, almonds and pine nuts, the budget announced to support a dedicated programme to enhance farmer incomes and in bringing value addition by engaging youth.

The Union Budget FY 2026–27 presents a balanced approach to economic growth by addressing immediate consumption needs and laying the foundation for long-term sustainability. Through targeted investments in infrastructure, support for MSMEs, and sector-specific initiatives, the budget aims to foster an inclusive and resilient economy. These measures are expected to create new opportunities for financial institutions, as the growing demand for investment products will provide avenues for expansion and innovation in the financial services sector.

2.8 Concluding Remarks about Macroeconomic Scenario

The major headwinds to global economic growth remain significant, including escalating geopolitical tensions, volatility in global energy and commodity markets, persistent inflationary pressures, tighter financial conditions, geoeconomic fragmentation, rising public debt, climate-related disruptions, and uncertainty surrounding the pace and impact of technological transformation. In particular, the ongoing Middle East conflict and associated risks to energy supply chains have heightened downside risks to the global outlook, while weaker trade momentum and structural productivity challenges continue to weigh on medium-term growth prospects.

Despite these challenges, India's economy remains relatively well-positioned compared to other major emerging markets. According to the IMF's April 2026 WEO, India's GDP growth is projected at 6.5% in CY 2026, maintaining its position as one of the fastest-growing major economies globally and significantly above the global growth projection of 3.1%. Key positive factors supporting India's growth include resilient domestic demand, sustained public infrastructure spending, a strengthening investment cycle, expanding digital infrastructure, and continued progress in structural reforms. Inflation, as measured by the Consumer Price Index (CPI), remained contained at 3.4% in March 2026 under the revised base year, supporting household purchasing power, although rising global oil prices and supply disruptions may pose upside risks.

India's strategic position as a manufacturing and investment destination continues to strengthen, supported by government initiatives, supply chain diversification trends, a skilled labour force, and a dynamic innovation ecosystem. Public investment is expected to remain a critical growth driver, with the Union Budget FY 2026–27 increasing capital expenditure to INR 12.21 lakh crore from INR 11.21 lakh crore in the previous year, reinforcing the government's investment-led growth strategy. In addition, the proposed Infrastructure Risk Guarantee Fund is aimed at improving private sector participation in infrastructure by mitigating project-related risks, which is expected to crowd in private investment, enhance infrastructure capacity, and support long-term productivity growth.

Private sector investment intentions are also expected to strengthen alongside public capex, while rising disposable incomes, improving rural demand, and continued policy support are likely to reinforce consumption momentum. Strengthening supply chains, expanding infrastructure capacity, and sustaining inflation stability will be critical in supporting resilience against external shocks. These factors are expected to support India's medium-term growth momentum and strengthen its ability to navigate global uncertainties.

Looking ahead, India is expected to remain favourably positioned even as the global economy transitions to a structurally lower growth path, with the IMF projecting global growth at 3.2% in CY 2027 and 3.1% by CY 2031. While risks from geopolitical instability, trade disruptions, and tighter financial conditions persist, India's relative macroeconomic stability, demographic advantage, reform momentum, and ongoing investment cycle place it in a strong position to sustain growth and reinforce its role as a key contributor to global economic expansion over the medium term.

3. Industry Overview

3.1 Introduction

Biodiesel is a type of biofuel, which refers to fuels derived from renewable biological sources as opposed to conventional fossil fuels. As part of the broader biofuels segment, biodiesel contributes to the transition towards cleaner and more sustainable energy systems by utilizing organic feedstocks and reducing dependence on petroleum-based fuels.

The global biodiesel industry is an integral part of the renewable energy landscape, supporting the transition toward cleaner and more sustainable fuel alternatives. Biodiesel is a renewable fuel derived from biological feedstocks such as vegetable oils, animal fats and waste-based sources including used cooking oil. It is produced through a chemical conversion process that transforms these feedstocks into Fatty Acid Methyl Esters (FAME), which can be used as a substitute or blended with conventional diesel.

Biodiesel is widely used as a substitute or blending component for conventional petroleum-based diesel and can be utilized in existing diesel engines with minimal or no modification. It is commonly blended in various proportions such as B5, B10, B20 and B100, depending on regulatory standards and engine compatibility. The use of biodiesel contributes to a reduction in greenhouse gas emissions, particulate matter and sulphur content making it an environmentally favourable alternative to fossil fuels.

Biodiesel is compatible with existing diesel engines and infrastructure, allowing for its use in various blending ratios without requiring significant modifications. This operational flexibility has enabled its widespread adoption particularly in the transportation sector which remains its primary consumer globally. In addition to transport applications, biodiesel is also utilized in industrial heating and power generation.

The growth of the global biodiesel industry is largely driven by regulatory support and environmental considerations. Governments across major economies have implemented biofuel blending mandates, emission reduction targets, and incentive frameworks to promote the use of renewable fuels. These measures are aimed at reducing greenhouse gas emissions, improving air quality, and enhancing energy security by lowering dependence on fossil fuels.

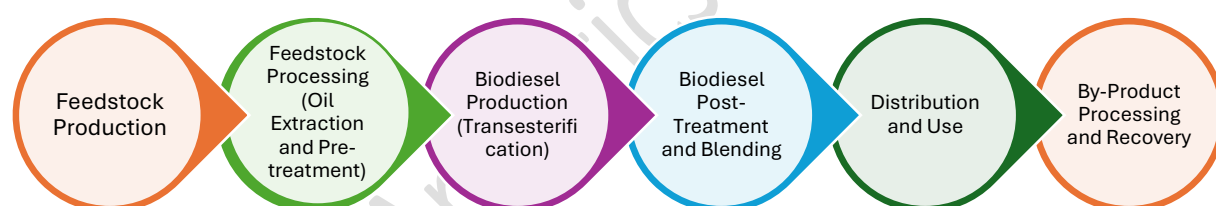
The industry has evolved from reliance on edible vegetable oils to a more diversified feedstock base. Increasing emphasis is being placed on waste-derived inputs such as used cooking oil and animal fats driven by sustainability concerns and regulatory preferences for advanced biofuels. This shift also supports circular economy objectives by converting waste streams into valuable energy resources. Its ability to integrate with existing fuel systems and utilize diverse feedstocks makes it a practical and scalable solution within the broader energy transition.

3.2 Market Segmentation

Segment Category	Sub-Segment	Description
By Feedstock or Raw Material	Vegetable Oils	It Includes soybean oil, rapeseed oil, palm oil and other edible oils which are widely used due to their established supply chains and consistent availability.
	Waste Cooking Oil (UCO)	Refers to recycled oil collected from restaurants, households and food processing units increasingly preferred for its sustainability and alignment with circular economy practices.
	Animal Fats & Tallow	Derived from meat processing industries, these feedstocks are cost-effective and commonly used in regions with strong livestock sectors.
	Others	Includes non-edible oils such as jatropha and karanja, along with emerging feedstocks like algae that offer future potential for sustainable biodiesel production.
By Production Process	Trans-esterification	Involves the chemical conversion of oils and fats into biodiesel and is the most widely used production process globally.
	Hydro-treated Vegetable Oil (HVO)	An advanced process that produces renewable diesel with improved fuel properties and better compatibility with existing engines.
	Co-processed / Co-refined Diesel	Involves processing bio-based feedstock along with crude oil in conventional refineries, enabling efficient use of existing infrastructure.
By Blend Level	B5 and below	Represents low-level biodiesel blends that can be used widely without requiring any engine modifications.
	B6 to B20	Includes medium-level blends that offer better emission performance while maintaining moderate compatibility with existing engines.

	B100	Refers to pure biodiesel, typically used in specific applications under controlled conditions due to its distinct properties.
By Application	Transportation	Used in passenger vehicles, commercial vehicles and public transportation
	Industrial	Applied in boilers, generators and heating systems as an alternative fuel
	Marine, Railways & Power Generation	Includes usage in ships, locomotives, backup power systems and other heavy-duty applications
	Others	Covers agriculture equipment, mining machinery and construction equipment

Value Chain Analysis



1. Feedstock Production - Feedstock production constitutes the upstream stage of the biodiesel value chain and involves the sourcing or generation of raw materials required for biodiesel manufacturing. These feedstocks include vegetable oils such as soybean, palm, and rapeseed oil; waste-based inputs such as used cooking oil (UCO); and animal fats including tallow. In addition, non-edible oil sources such as jatropha and karanja are also utilized in certain regions. This stage encompasses activities such as cultivation of oilseed crops, collection of waste oils from restaurants and food processing units and rendering of animal fats. The availability, quality, and pricing of feedstock play a critical role in determining the overall economics of biodiesel production, as feedstock typically represents the largest component of production cost. Variability in supply chains and dependence on agricultural outputs further influence the stability of this segment.

2. Feedstock Processing (Oil Extraction and Pre-treatment) - Feedstock processing involves preparing raw materials for conversion into biodiesel by ensuring they meet the required quality standards. This stage includes oil extraction from oilseeds or biomass, followed by pre-treatment processes such as filtration, removal of impurities, reduction of moisture content,

and treatment of free fatty acids (FFA). Waste-based feedstocks such as used cooking oil often require more extensive pre-treatment to remove contaminants and ensure consistency. Effective processing is essential to improve reaction efficiency in subsequent stages, prevent equipment corrosion, and enhance overall yield. The quality of pre-treatment directly impacts the efficiency of the biodiesel production process and the quality of the final product.

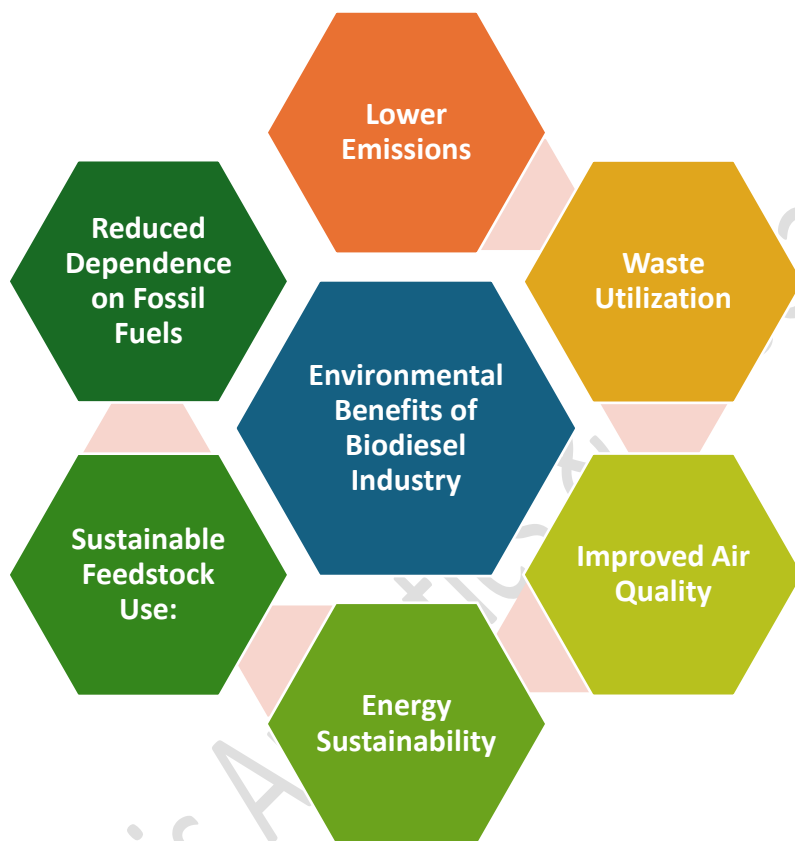
3. Biodiesel Production (Transesterification) - Biodiesel production is the core stage of the value chain, where processed feedstock is chemically converted into biodiesel through a process known as transesterification. In this process, the oil or fat reacts with an alcohol, typically methanol, in the presence of a catalyst to produce fatty acid methyl esters (FAME), which constitute biodiesel, along with crude glycerine as a by-product. This stage requires precise control over reaction conditions such as temperature, pressure, and catalyst concentration to achieve optimal conversion efficiency and product quality. The efficiency of this process determines the yield of biodiesel and the quantity of by-products generated, making it a critical determinant of operational performance and profitability.

4. Biodiesel Post-Treatment and Blending - Following production, crude biodiesel undergoes post-treatment to remove residual impurities such as unreacted methanol, catalyst residues, soaps, and water. This purification process ensures that the biodiesel meets specified quality standards and is suitable for commercial use. Once refined, biodiesel is blended with conventional diesel in varying proportions such as B5, B10, B20, or used in its pure form (B100), depending on regulatory requirements and end-use applications. Blending is a crucial step that enhances fuel compatibility with existing engines and infrastructure while enabling compliance with emission norms and fuel standards. This stage ensures that the final product is safe, efficient, and ready for distribution.

5. Distribution and Use - The distribution and use stage represents the downstream segment of the value chain, where biodiesel is transported and supplied to end users. Distribution channels typically include Oil Marketing Companies (OMCs), bulk industrial consumers, logistics operators, and commercial establishments. Biodiesel is used across a range of applications, including transportation (such as trucks, buses, and fleet vehicles), industrial heating and boilers, power generation, and agricultural machinery. The efficiency of the distribution network and accessibility to end users play a significant role in determining market penetration and revenue realization. Demand at this stage is often influenced by government blending mandates, fuel pricing, and environmental regulations.

6. By-Product Processing and Recovery - In addition to biodiesel, the production process generates valuable by-products, primarily crude glycerine, which can be further refined into glycerin for use in pharmaceuticals, cosmetics, personal care products, and chemical industries. This additional revenue stream enhances the overall economic viability of biodiesel operations. Furthermore, excess methanol used during the transesterification process is

typically recovered and recycled back into production, improving cost efficiency and reducing waste. Effective management and utilization of by-products are essential for maximizing resource efficiency and supporting sustainable production practices.

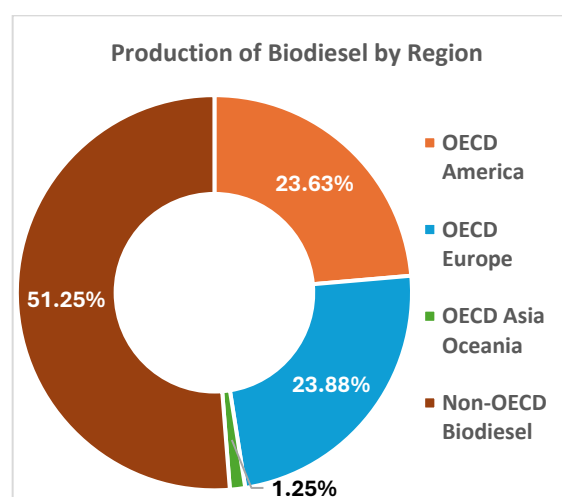
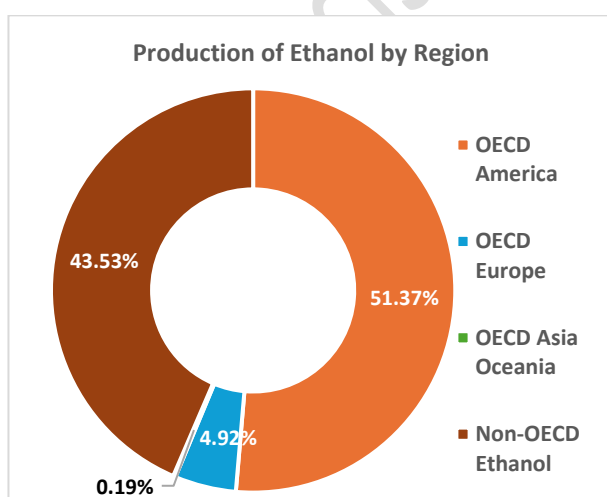
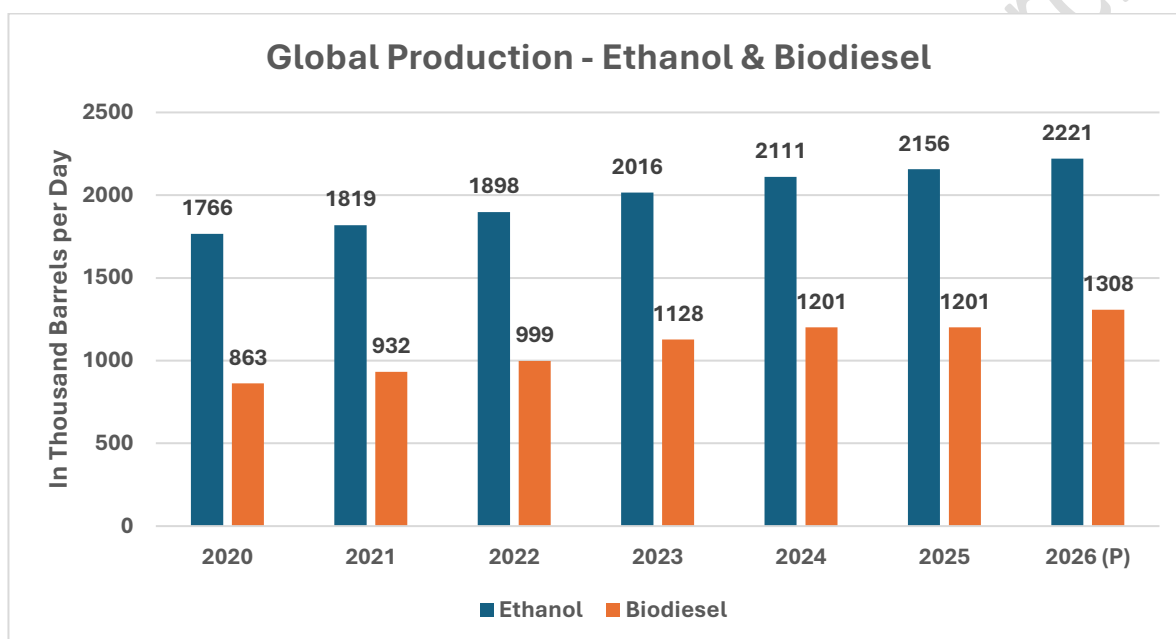


Biodiesel Feedstock Classification by Generation

First Generation (Edible Oils)	Second Generation (Non-Edible Oils)	Third Generation (Waste-Based Feedstock)	Fourth Generation (Advanced / Solar-Based)
• Soyabean • Sunflower • Palm • Rapeseed • Coconut • Corn • Mustard • Cottonseed • Rice Bran • Olive • Hazelnut • Pistachio	• Jatropha curcas • Karanja • Mahua indica • Neem • Castor • Calophyllum inophyllum • Crambe abyssinica • Babassu tree • Aleutites fordii • Cerbera odollam • Milk bush • Nagchampa	• Used Cooking Oil (UCO) • Animal tallow • Poultry fat • Chicken fat • Fish oil • Biomass pyrolysis oil	• Photobiological solar biodiesel • Electro biofuels • Synthetic cells

3.3 Global Production of Biofuels – Ethanol & Biodiesel

Global biofuel production is a key component of the transition toward cleaner energy systems and primarily includes ethanol and biodiesel. Ethanol, produced from sugar- and starch-based feedstocks such as sugarcane and corn, is commonly blended with gasoline, while biodiesel, derived from oil-based feedstocks, is blended with diesel for use in conventional engines. Together, these fuels account for a significant share of renewable energy consumption in the transportation sector, with production expanding across major regions driven by rising energy demand and the shift toward alternative fuels.



Source – IEA Oil Market Report.

Note – OECD America comprises the United States and other OECD member countries in the Americas. OECD Europe includes France, Germany, Spain, the United Kingdom, and other

European member countries. For ethanol, OECD Asia Oceania comprises Australia and other member countries in the region, while non-OECD ethanol includes Brazil, China, Argentina, and other non-OECD nations. For biodiesel, OECD Asia Oceania includes South Korea and other member countries, whereas non-OECD biodiesel comprises Brazil, Argentina, and other non-OECD countries.

Global biofuels production has exhibited a steady upward trajectory over the period, with ethanol increasing from 1,766 thousand barrels per day in CY2020 to 2,016 thousand barrels per day in CY2023 and further rising to 2,111 in CY2024 and 2,221 thousand barrels per day by CY2026 (P). Similarly, biodiesel production grew from 863 thousand barrels per day in CY2020 to 1,128 in CY2023, reaching 1,201 in CY2024 and projected to increase to 1,308 thousand barrels per day by CY2026 (P). This consistent growth trend highlights sustained expansion across both segments, with biodiesel witnessing a relatively stronger incremental rise in the forecast period, supported by increasing adoption and policy-driven blending initiatives globally.

From a regional perspective, ethanol production is heavily concentrated in OECD America, which accounts for 51.37% of global output, underscoring the dominance of the United States in ethanol capacity supported by strong blending mandates and established corn-based feedstock supply chains. Non-OECD countries contribute 43.53%, primarily driven by Brazil, China, and Argentina, indicating that emerging economies are also significant producers in the global ethanol market, albeit slightly behind OECD America. OECD Europe (4.92%) and OECD Asia Oceania (0.19%) remain relatively marginal contributors.

In the case of biodiesel, production is comparatively more distributed. Non-OECD countries hold the largest share at 51.25%, reflecting the growing role of emerging economies in biodiesel production supported by feedstock availability such as used cooking oil and vegetable oils. OECD Europe contributes 23.88%, driven by established mandates and mature blending infrastructure, while OECD America accounts for 23.63%, indicating a stable but comparatively smaller share. OECD Asia Oceania remains limited at 1.25%, suggesting nascent development in biodiesel capacity within the region.

Market Trends

1. Accelerating Growth Driven by Decarbonization Targets - The global biodiesel industry is experiencing sustained growth, primarily driven by increasing emphasis on decarbonization and climate commitments. Governments worldwide are tightening emission norms and promoting low-carbon fuels as part of their energy transition strategies. Biodiesel, being a cleaner alternative to fossil fuels, is gaining traction due to its ability to reduce greenhouse gas emissions and improve air quality. This policy push, combined with growing environmental awareness, is expected to support long-term expansion of the biodiesel market.

2. Expansion of Biofuel Blending Mandates Across Regions - One of the most significant drivers of biodiesel demand is the expansion of mandatory blending targets across major economies. Countries in Europe, North America, and Asia are increasing biodiesel blending levels in transportation fuels, supported by regulatory frameworks such as renewable fuel standards and energy directives. These mandates ensure a stable and predictable demand base for biodiesel producers, encouraging investments in production capacity and infrastructure.

3. Rising Shift Toward Waste-Based and Advanced Feedstocks - The industry is witnessing a structural shift from edible oils to more sustainable feedstocks such as used cooking oil (UCO), animal fats, and other waste-derived inputs. This transition is driven by concerns around food security, land use, and environmental sustainability. Additionally, advancements in feedstock diversification, including algae and non-food biomass, are improving the resilience of the supply chain and reducing dependence on traditional agricultural inputs.

4. Increasing Competition for Feedstock Supply - As demand for biodiesel and other biofuels rises, competition for key feedstocks—particularly waste oils—is intensifying globally. The growing use of the same feedstocks for multiple applications, including sustainable aviation fuel (SAF), has created supply constraints. This has led to price volatility and increased investment in feedstock collection, aggregation, and processing infrastructure to ensure a stable supply chain.

5. Integration with Sustainable Aviation Fuel (SAF) Ecosystem - A notable emerging trend is the convergence of biodiesel feedstocks with sustainable aviation fuel production. Feedstocks such as UCO, which are traditionally used in biodiesel, are now also being utilized for SAF as the aviation sector seeks to decarbonize. This integration is expanding the scope of the biodiesel value chain but also intensifying competition for raw materials, thereby influencing pricing dynamics and supply availability.

6. Growing Role of Corporate and ESG-Driven Demand - In addition to government mandates, private sector demand is becoming a significant driver of biodiesel consumption. Corporates across logistics, shipping, and industrial sectors are increasingly adopting biodiesel as part of

their Environmental, Social, and Governance (ESG) commitments. This shift reflects a broader trend where sustainability goals are influencing procurement decisions, creating new demand channels independent of regulatory requirements.

7. Impact of Crude Oil Price Volatility and Energy Security Concerns - Fluctuations in global crude oil prices and geopolitical disruptions are reinforcing the importance of biodiesel as an alternative energy source. Recent global events have led to supply uncertainties in fossil fuel markets, prompting countries to accelerate biofuel adoption to enhance energy security and reduce dependence on imports. This trend is particularly evident in emerging economies seeking to stabilize fuel costs and diversify energy sources.

8. Increasing Investments in Biofuel Infrastructure and Capacity Expansion - Governments and private players are investing in biodiesel and renewable diesel production facilities to meet growing demand. New projects are being developed to convert waste oils and fats into biofuels at scale, reflecting a broader push toward domestic energy production and sustainability. These investments are expected to enhance production capacity and support long-term industry growth.

9. Technological Advancements and Emergence of Advanced Biofuels - Technological innovation is playing a key role in improving biodiesel production efficiency and expanding its applications. Advancements in catalysts, processing techniques, and feedstock conversion are reducing production costs and increasing yields. Additionally, the development of advanced biofuels such as hydro-treated vegetable oil (HVO) and next-generation biodiesel is improving fuel quality and compatibility with modern engines.

10. Ongoing Cost Pressures and Market Challenges - Despite positive growth prospects, the biodiesel industry continues to face challenges related to feedstock costs, supply chain constraints, and policy uncertainties. Feedstock accounts for a significant portion of production costs, making profitability sensitive to price fluctuations. Additionally, differences in regulatory frameworks across regions and competition from other renewable energy sources pose challenges to uniform market expansion.

4. Indian Biodiesel Industry

4.1 Overview of the Biodiesel Industry

The biodiesel industry in India is an emerging segment within the broader bioenergy sector, focused on reducing dependence on fossil fuel imports, improving energy security, and supporting environmental sustainability. Biodiesel is primarily produced using non-edible and waste-based feedstocks such as used cooking oil, animal fats and other residual oil is used as a blending component with conventional diesel across transportation and industrial applications. The industry has developed a notable production capacity; however, actual output remains relatively low due to challenges in feedstock availability, fragmented supply chains and limited collection and aggregation infrastructure. Demand is largely driven by bulk procurement and industrial usage, while the sector continues to evolve with increasing participation from small and mid-sized players. Although ethanol currently dominates India's biofuel mix, the biodiesel segment is gradually gaining traction, supported by growing awareness of sustainable fuels and the need for diversification within the energy landscape.

4.2 India Biodiesel Production, Consumption and Stock Trends

Particulars (Million Liters)	2020	2021	2022	2023	2024	2025 E
<i>Beginning Stocks</i>	23	16	26	22	32	30
<i>Production</i>	200	180	185	201	448	718
<i>Imports</i>	1	1	1	1	0	0
Total Supply	224	197	212	224	480	748
<i>Exports</i>	68	6	4	2	0	86
<i>Consumption</i>	140	165	186	190	450	614
Total Demand	208	171	190	192	450	700
<i>Ending Stocks</i>	16	26	22	32	30	48

USDA Biofuels Annual Report (FAS New Delhi Research and historical data series) and official government trade data as compiled by Trade Data Monitor, LLC, for data up to FY2024; Infomerics Analytics & Research for FY2025 (E). Note: E – Estimated.

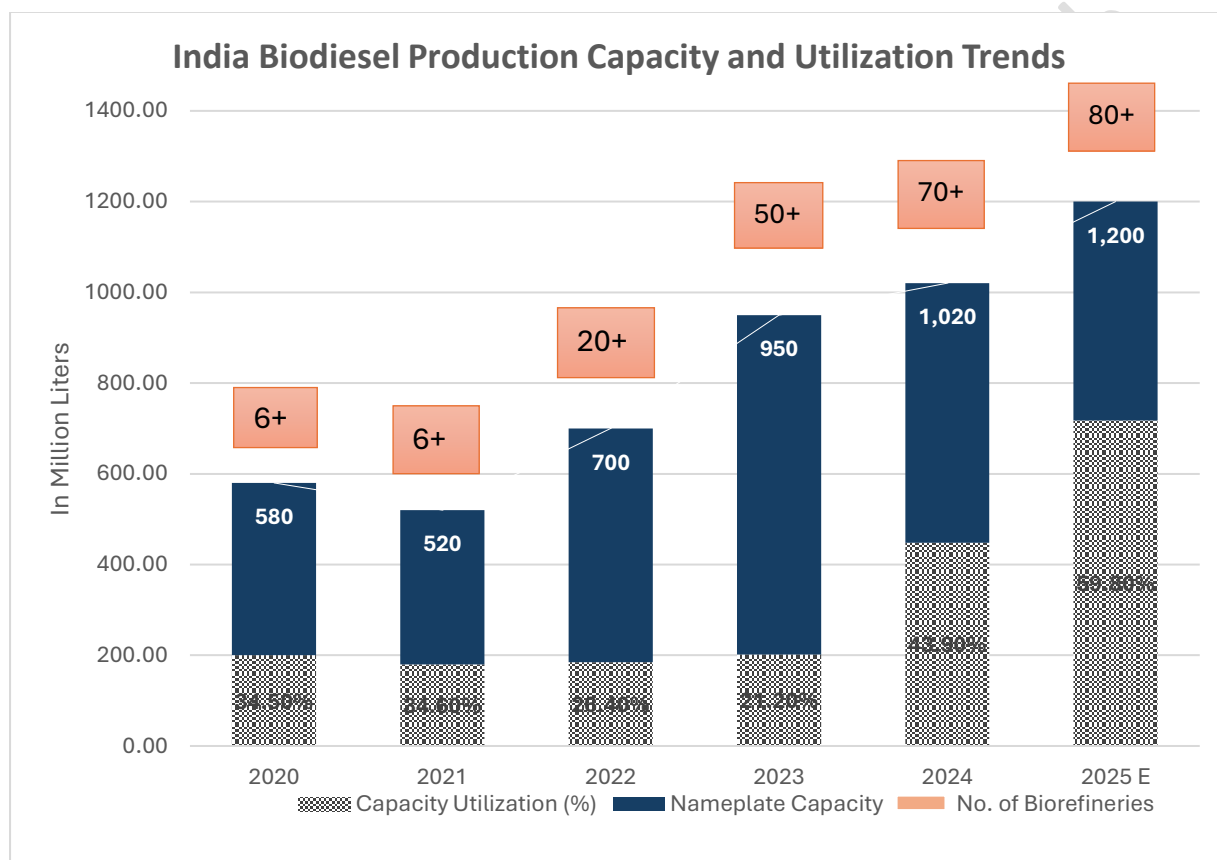
India's biodiesel supply and demand balance over 2020–2025E indicates a strong upward trajectory in total supply, comprising beginning stocks, production, and imports, increasing from 224 million liters in 2020 to a projected 748 million liters in 2025E. This growth is primarily driven by a significant expansion in domestic production, which rose from 200 million liters in 2020 to 718 million liters in 2025E, reflecting capacity additions and increasing focus on biodiesel production. Imports remain negligible throughout the period, indicating a high degree of domestic self-reliance. Beginning stocks show moderate fluctuations, moving from 23 million liters in 2020 to 30 million liters in 2025E.

On the demand side, total demand, comprising consumption and exports, also shows strong growth, rising from 208 million liters in 2020 to 700 million liters in 2025E. This increase is largely driven by domestic consumption, which grew from 140 million liters to 614 million liters over the same period, reflecting increasing adoption of biodiesel in the transport and energy sectors. Exports declined significantly from 68 million liters in 2020 to near zero levels by 2024, before recovering to 86 million liters in 2025E, indicating improving export potential.

Overall, supply remains marginally higher than demand across most years, resulting in stable ending stocks, which increase from 16 million liters in 2020 to 48 million liters in 2025E. The overall trend highlights a rapidly expanding biodiesel ecosystem in India, supported by strong production growth, rising domestic consumption, and improving export outlook.

India Biodiesel Production Capacity and Utilization Trends

India's biodiesel production capacity, utilization and the number of operational biorefineries over 2020–2025E highlight a strong phase of industry expansion and capacity build-up. Nameplate capacity refers to the maximum installed production capacity of biodiesel plants under standard operating conditions. The industry's evolution reflects increasing investments, expanding infrastructure and growing participation across the value chain.



Source: USDA Biofuels Annual Report (FAS New Delhi Research and historical data series) and official government trade data as compiled by Trade Data Monitor, LLC, for data up to FY2024; Infomerics Analytics & Research for FY2025 (E). Note: E – Estimated.

The data highlights a strong structural expansion in India's biodiesel industry over 2020–2025E, supported by rising investments, policy push, and increasing participation across the value chain. Nameplate capacity has increased from 580 million liters in 2020 to 1,200 million liters in 2025E, reflecting significant addition of installed production potential. In parallel, production has also scaled up from 520 million liters in 2021 to 1,200 million liters in 2025E, indicating gradual alignment of output with expanding capacity.

This growth is closely linked to the increasing number of biorefineries, which has expanded from 6+ in 2021 to 80+ in 2025E, showing widening industry participation and decentralization of production facilities. However, capacity utilization has shown a dynamic trend, declining

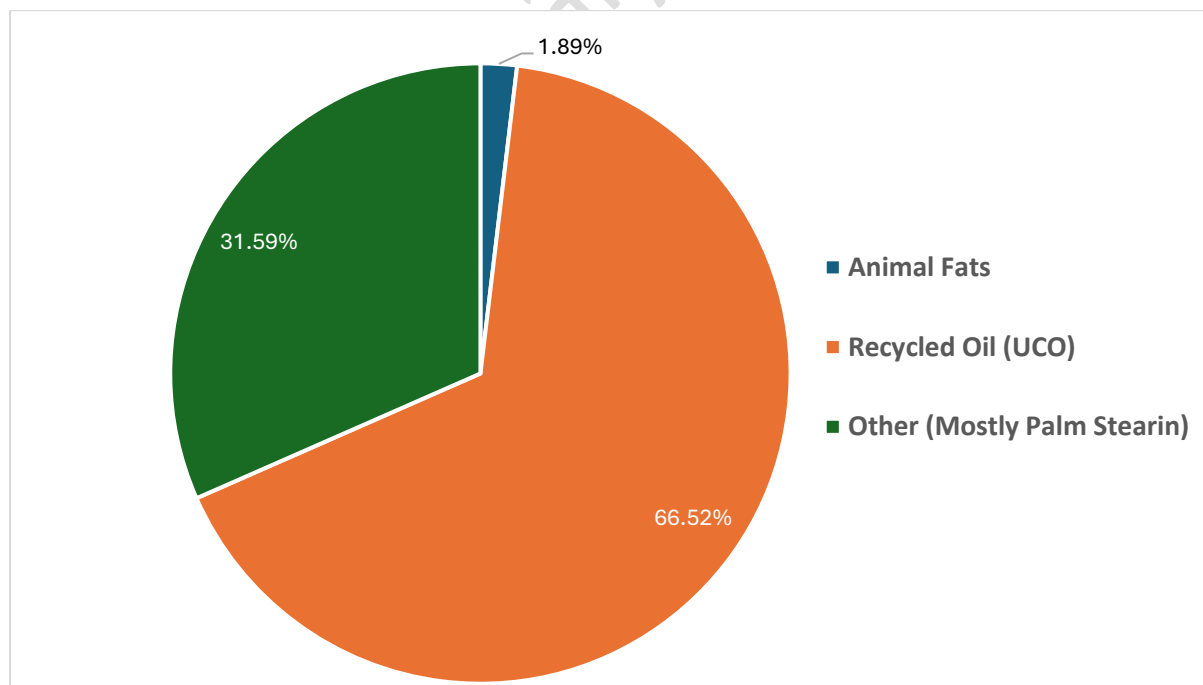
from 84.5% in 2020 to 21.2% in 2023 as capacity additions initially outpaced demand absorption. This created temporary underutilization in the system. Subsequently, utilization improved to 46.9% in 2024 and further to 59.8% in 2025E, reflecting better demand linkage, improved operational efficiency, and maturing market conditions.

Overall, the relationship between expanding capacity, rising number of plants, and improving utilization in later years indicates a transition phase in the industry—from rapid capacity build-up to gradual stabilization, where demand growth and operational scaling are increasingly aligning with installed infrastructure.

India Biodiesel Feedstock Share (%)

Feedstock selection plays an important role in determining both the sustainability and scalability of biodiesel production in India. In the Indian context, the growing emphasis on non-edible and waste-based feedstocks is particularly relevant, as it helps reduce competition with food resources and improves energy security by utilising domestically available waste streams.

The use of recycled oils such as used cooking oil (UCO) is beneficial as it provides a stable, low-cost raw material base while also addressing waste management challenges in urban centres. This creates a dual advantage of supporting cleaner fuel production and improving environmental hygiene by diverting waste oils from improper disposal channels.



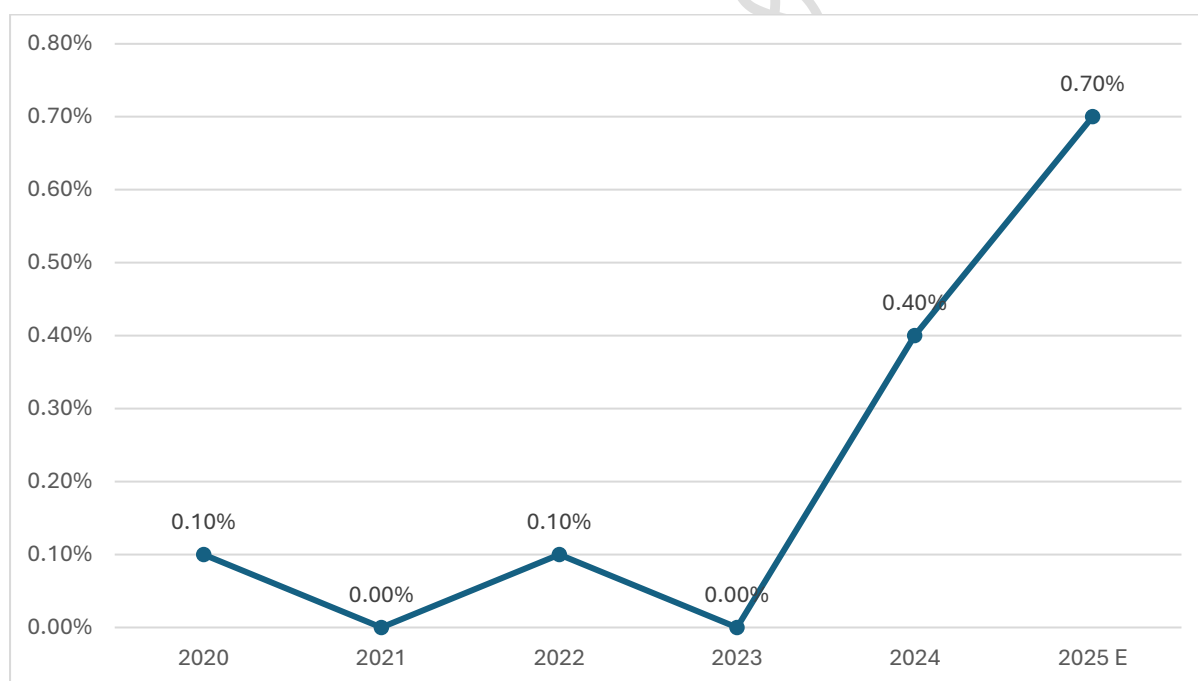
Source - FAS New Delhi Research and historical data series, and official government trade data as compiled and reported by Trade Data Monitor, LLC, Infomerics Analytics & Research.

The feedstock mix for biodiesel in 2025 (F) is heavily skewed towards recycled oil, which dominates with a 66.52% share, making it the primary raw material source for biodiesel production. This highlights the increasing reliance on waste-based and circular economy inputs such as used cooking oil (UCO), driven by sustainability considerations and collection ecosystem development.

Other feedstocks, largely comprising palm stearin and similar inputs, account for 31.59%, indicating a significant but secondary role of vegetable oil-based derivatives in the overall feedstock basket. Meanwhile, animal fats contribute a marginal 1.89%, reflecting their limited availability and relatively smaller role in industrial-scale biodiesel production.

Overall, the structure clearly indicates a strong shift towards recycled and waste-based feedstocks, with UCO emerging as the dominant and most critical input in India's biodiesel value chain.

India Biodiesel Blend Rate Trends (%)



Source - FAS New Delhi Research and historical data series, and official government trade data as compiled and reported by Trade Data Monitor, LLC, Infomerics Analytics & Research. Note: E – Estimated.

The biodiesel blend rate in India has shown a steady upward trend over 2020–2025E, reflecting gradual integration of biofuels into the transport fuel mix. The blending level remained minimal between 0.00% and 0.10% during 2020–2023, indicating limited penetration of biodiesel in the diesel pool in the initial phase.

However, a notable improvement is observed thereafter, with the blend rate increasing to 0.40% in 2024 and further to 0.70% in 2025E. This rise is supported by expanding domestic production capacity, improved feedstock availability and a growing network of biorefineries, which together have strengthened supply-side readiness and enabled higher blending adoption.

India has set a long-term blending target of 5% biodiesel in diesel consumption, providing a clear direction for future scaling of the industry. While current levels remain at an early-stage relative to this target, the recent upward momentum reflects gradual progress toward higher penetration.

Overall, the trend indicates an early but strengthening phase of biodiesel adoption in India's energy mix, supported by rising production capabilities, improving feedstock ecosystem, and expanding industry infrastructure.

5. Market Dynamics

5.1 Key Growth Drivers

The biodiesel industry—both globally and in India—is witnessing steady expansion driven by increasing decarbonization efforts, supportive policy frameworks and rising demand for cleaner fuels. Governments across major economies are promoting biodiesel through blending mandates and incentives while industries are increasingly adopting biofuels to meet sustainability and ESG goals.

Market Drivers with Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Driver	Impact		
	1–2 Years	3–4 Years	5–7 Years
1. Rising demand for low-carbon fuels and decarbonization initiatives	High	High	High
2. Expansion of biodiesel blending mandates and renewable fuel policies	High	High	High
3. Government incentives, subsidies and regulatory support	High	High	High
4. Increasing availability and adoption of waste-based feedstocks (UCO, animal fats)	Medium	High	High
5. Technological advancements in biodiesel and renewable diesel production	Medium	High	High
6. Expansion of biorefinery capacity and infrastructure development	Medium	High	High
7. Growth in sustainable aviation fuel (SAF) and competing feedstock demand	Medium	High	High
8. Increasing corporate ESG commitments and adoption by industrial users	Medium	High	High

Source – Infomerics Analytics & Research

Detailed Overview

- 1. Rising demand for low-carbon fuels and decarbonization initiatives** - Growing global emphasis on reducing greenhouse gas emissions is accelerating the adoption of low-carbon fuels such as biodiesel. Industries, particularly in transportation and heavy-duty segments, are increasingly transitioning toward cleaner fuel alternatives to meet regulatory requirements and sustainability goals. This structural shift toward

decarbonization is expected to maintain strong demand momentum for biodiesel over the medium to long term.

2. **Expansion of biodiesel blending mandates and renewable fuel policies** - The expansion of biodiesel blending mandates across major economies continues to be a primary driver of industry growth. Governments are increasingly setting higher blending targets to reduce dependence on fossil fuels and lower emissions, creating a stable and policy-driven demand environment. In India and other emerging markets, such mandates ensure consistent offtake by Oil Marketing Companies and support long-term capacity planning, making this a sustained high-impact driver across all time horizons.
3. **Government incentives, subsidies and regulatory support** - Government support through subsidies, tax incentives and regulatory frameworks plays a crucial role in the development of the biodiesel industry. Policies encouraging biofuel production, feedstock utilization, and blending targets create a favourable operating environment for producers. Continued regulatory backing is expected to sustain industry growth by improving project viability and attracting investments across the value chain.
4. **Increasing availability and adoption of waste-based feedstocks (UCO, animal fats)** - The biodiesel industry is witnessing a gradual transition toward waste-based feedstocks such as used cooking oil (UCO) and animal fats, driven by sustainability considerations and regulatory preference for non-food feedstocks. While availability remains moderate in the short term due to collection and aggregation challenges, ongoing improvements in supply chains and policy support are expected to significantly enhance feedstock availability over time, thereby supporting higher production levels.
5. **Technological advancements in biodiesel and renewable diesel production** - Advancements in processing technologies, including improved conversion efficiency and the development of renewable diesel (HVO), are enhancing the scalability and economic viability of biofuel production. These innovations enable the use of a wider range of feedstocks and improve fuel quality, making biodiesel more competitive with conventional fuels. The impact of technology is expected to strengthen over time as adoption increases.
6. **Expansion of biorefinery capacity and infrastructure development** - The expansion of biodiesel production capacity, supported by the establishment of new biorefineries and upgrading of existing facilities, is a key growth enabler. In parallel, investments in storage, logistics, and feedstock collection infrastructure are improving supply chain efficiency. While capacity expansion is gradual in the short term, it is expected to accelerate over the medium to long term, supporting higher production volumes.
7. **Growth in sustainable aviation fuel (SAF) and competing feedstock demand** - The emergence of sustainable aviation fuel (SAF) as a key decarbonization solution for the aviation sector is increasing demand for similar feedstocks used in biodiesel production. While this creates competition for limited feedstock resources in the short term, it is also expected to drive investments in feedstock supply chains and advanced biofuel technologies, thereby supporting overall industry growth in the medium to long term.

- 8. Increasing corporate ESG commitments and adoption by industrial users** - Rising focus on Environmental, Social, and Governance (ESG) goals among corporates is driving the adoption of biodiesel as a cleaner fuel alternative. Industrial users and logistics companies are increasingly integrating biofuels into their operations to reduce carbon footprints and meet sustainability targets. This trend is expected to gain momentum over the medium to long term, supporting steady demand growth beyond policy-driven consumption.

5.2 Threats & Challenges

The biodiesel industry is facing multiple structural and external challenges, influenced by feedstock constraints, global market volatility and evolving energy dynamics. Recent data indicates that while the industry is growing, it remains highly sensitive to input costs, policy shifts and geopolitical developments, which continue to impact profitability and supply stability.

Threats & Challenges with Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Threats & Challenge	Impact		
	1–2 Years	3–4 Years	5–7 Years
1. Fragmented and unorganized feedstock supply ecosystem.	High	High	Medium
2. Competing demand from renewable diesel (HVO) and SAF.	High	High	High
3. Pricing misalignment with fossil diesel.	High	Medium	Medium
4. Limited scalability of advanced (2G & 3G) feedstocks.	Medium	High	High
5. Geopolitical tensions impacting feedstock supply and energy markets.	High	High	Medium
6. Traceability and sustainability certification requirements.	Medium	High	High
7. Dependence on OMC procurement and risk of order cancellations.	High	Medium	Medium

Source – Infomerics Analytics & Research

Detailed Overview

- 1. Fragmented and unorganized feedstock supply ecosystem** - Feedstock sourcing, particularly for UCO, remains largely unorganized and dependent on small-scale collectors. This leads to inefficiencies, inconsistent quality, and supply disruptions, limiting the ability to scale operations efficiently.
- 2. Competing demand from renewable diesel (HVO) and SAF** - The rapid expansion of renewable diesel and sustainable aviation fuel is intensifying competition for common feedstocks such as UCO and vegetable oils. These fuels often offer better margins and policy incentives, leading to feedstock diversion away from biodiesel.
- 3. Pricing misalignment with fossil diesel** - Biodiesel pricing is often influenced by fossil diesel prices and procurement mechanisms. During periods of lower crude oil prices, biodiesel becomes less competitive affecting demand from industrial and commercial users.

4. **Limited scalability of advanced feedstocks** - While advanced feedstocks such as non-edible oils and algae offer long-term potential, their commercial scalability is constrained by technological limitations and high costs, restricting rapid industry expansion.
5. **Geopolitical tensions and shifting global trade dynamics** - Ongoing geopolitical tensions involving the United States, Israel and Iran have disrupted global energy markets and trade routes. These developments increase volatility in feedstock prices, raise transportation costs and create uncertainty in supply chains. Additionally, shifting trade policies and regional energy security strategies are altering global biodiesel trade flows, impacting market stability in the near to medium term.
6. **Traceability and sustainability certification requirements** - Increasing regulatory focus on sustainability has made traceability and certification essential, particularly for exports. Producers must ensure compliance with environmental and sourcing standards, which increases operational complexity and costs, especially for smaller players.
7. **Dependence on OMC procurement and risk of order cancellations** - The biodiesel industry is highly dependent on procurement by Oil Marketing Companies (OMCs), making revenue visibility and capacity utilization reliant on tender-based demand. Instances of order cancellations or delays by OMCs can adversely impact production planning, working capital cycles, and overall business stability, particularly in the near term.

6. Government Initiatives and Policy Support

The Government of India has implemented a structured policy framework to promote biodiesel production, strengthen feedstock availability and accelerate blending with diesel. These initiatives are aimed at reducing fossil fuel dependence, improving energy security and supporting circular economy objectives through waste-to-fuel conversion.

- 1. National Policy on Biofuels (2018, amended 2022)** - The National Policy on Biofuels provides the overarching framework for biodiesel development. The policy sets an indicative target of 5% biodiesel blending in diesel by 2030 and allows production from a wide range of feedstocks including used cooking oil (UCO), animal tallow, non-edible oilseeds, and industrial waste. It also enables direct sale of biodiesel and supports domestic production to reduce import dependence.
- 2. Ethanol Blending Programme (EBP)** - The Government of India launched the Ethanol Blending Programme (EBP) with the objective of reducing import dependence on crude oil, saving foreign exchange, and promoting clean fuel alternatives. Under the National Policy on Biofuels, the ethanol blending target has been advanced to achieve 20% ethanol blending (E20) in petrol by 2025–26, ahead of the earlier 2030 target. Oil Marketing Companies (OMCs) are mandated to blend ethanol procured from multiple feedstocks such as sugarcane juice, damaged grains, and maize. The initiative directly impacts refineries by necessitating upgrades in blending, storage, and quality-control infrastructure. Public Sector OMCs have achieved an average blending of 19.05% as on 31.07.2025, with 19.93% blending achieved in July 2025. (Source – PIB)
- 3. GST Reduction on Biodiesel** - The Government has reduced GST on biodiesel supplied for blending from 12% to 5%, improving cost competitiveness and encouraging procurement by Oil Marketing Companies (OMCs).
- 4. RUCO Initiative – Waste to Biodiesel** - The Repurpose Used Cooking Oil (RUCO) initiative, led by the Food Safety and Standards Authority of India, facilitates the organized collection and conversion of used cooking oil into biodiesel. As of July 2025, over 55 lakh litres of used cooking oil have been collected, with around 39 lakh litres converted into biodiesel. The initiative helps improve feedstock availability, prevents reuse of cooking oil in food preparation, and supports the development of a circular waste-to-biofuel ecosystem in India.

- 5. Expansion of Advanced Biofuel Support (JI-VAN Yojana)** - The Government has expanded financial support under advanced biofuel schemes to promote commercial-scale and demonstration projects. The revised framework encourages the use of multiple feedstocks, supports technology development, and enables both greenfield and brownfield projects, thereby improving the viability of biodiesel and other advanced biofuels.
- 6. Sustainable Aviation Fuel (SAF) and Alternative Fuels Promotion** - To meet global aviation emission reduction goals and the International Civil Aviation Organization (ICAO) targets, the government is encouraging the development and commercialization of Sustainable Aviation Fuel (SAF). The Ministry of Petroleum and Natural Gas (MoPNG) and public sector refiners such as Indian Oil, Bharat Petroleum, and Hindustan Petroleum are collaborating with research institutions and private players to establish SAF production units using used cooking oil (UCO), agricultural residues, and other bio-feedstocks. This initiative promotes refinery diversification into green fuels and advanced bio-refining technologies. Policy support includes pilot mandates for SAF blending in aviation turbine fuel (ATF), viability gap funding, and expedited clearances for SAF projects. By fostering SAF adoption, the initiative aligns India's refining sector with global energy transition trends and strengthens the country's leadership in low-carbon fuel innovation.
- 7. Bioenergy Push under India Energy Week 2026** - At India Energy Week 2026, the Government of India highlighted bioenergy, including biodiesel, as a key pillar of the country's energy transition strategy. The Ministry of Petroleum and Natural Gas emphasized that the bioenergy sector is expected to grow at a faster pace than overall energy demand, supported by strong policy backing, increased state-level participation, and rising private sector investments. This policy direction reinforces the strategic importance of biodiesel in enhancing energy security, supporting emission reduction targets, and contributing to rural development through feedstock generation and value chain expansion.

7. PESTEL Analysis of the Industry

Factor	Key Insights & Implications
Political	- The Ministry of Petroleum and Natural Gas promotes biodiesel under the National Policy on Biofuels with a target of 5% blending by 2030, supporting domestic production and reducing import dependence. - Initiatives like the Repurpose Used Cooking Oil (RUCO) improve feedstock availability through waste-to-fuel conversion. - India's climate commitments and net-zero goals are accelerating adoption of cleaner fuels. - Geopolitical tensions involving the U.S., Israel, and Iran are disrupting global oil markets and trade routes, increasing focus on domestic biofuel production for energy security.
Economic	- India has over 85% crude oil import dependence making biodiesel strategically important. - Procurement by Oil Marketing Companies ensures stable demand for biodiesel. - Crude oil price volatility—driven by global conflicts—impacts biodiesel competitiveness and feedstock costs. - Investments in bio-refineries and waste-to-energy infrastructure are increasing. - Biodiesel supports rural income through feedstock cultivation and collection.
Social	- Rising environmental awareness is increasing acceptance of cleaner fuels like biodiesel. - Urbanization and growing transport demand support fuel consumption and blending programs. - Government initiatives promote safe disposal of used cooking oil and circular economy practices. - The industry contributes to rural employment and livelihood generation. - ESG expectations are encouraging industries to adopt biofuels.
Technological	- Advancements in biodiesel and renewable diesel technologies are improving efficiency and fuel quality. - Government-backed R&D and advanced biofuel programs support innovation. - Improved feedstock collection systems (UCO aggregation) enhance supply chain efficiency. - Digitalization and automation are improving plant operations. - Emerging technologies such as SAF and HVO are shaping the broader biofuel ecosystem.

Environmental	• Biodiesel helps reduce greenhouse gas emissions compared to fossil fuels. • Government policies promote waste-based feedstocks, reducing environmental hazards. • Circular economy initiatives like RUCO support waste-to-energy conversion. • Increasing focus on sustainability certification and lifecycle emissions. • Climate risks may impact feedstock availability and supply stability.
Legal	• Governed by frameworks such as the Environment Protection Act and biofuel-related regulations. • Guidelines for biodiesel blending and direct sale (B100) regulate market operations. • Compliance with environmental and waste management norms is mandatory. • Government procurement and pricing frameworks influence demand. • Global trade regulations and geopolitical tensions (U.S.–Israel–Iran) affect supply chains, pricing, and trade flows.

8. Technology and Digital Transformation

The biodiesel industry is undergoing rapid technological and digital transformation, driven by the need to improve efficiency, ensure consistent fuel quality, optimize feedstock utilization, and meet sustainability goals. These advancements are reshaping the entire value chain—from feedstock collection to production and distribution.

- 1. Advanced Catalyst Technologies** - The industry is increasingly adopting advanced catalysts, including heterogeneous and enzyme-based catalysts, to improve conversion efficiency, reduce reaction time, and enable processing of low-quality feedstocks such as used cooking oil and animal fats. These technologies also support better product quality and lower environmental impact.
- 2. Supercritical Fluid Technology** - This technology operates at high temperature and pressure without the need for catalysts, allowing faster reaction rates and flexibility in feedstock usage. While capital-intensive, it is gaining relevance for next-generation biodiesel plants focusing on efficiency and feedstock diversity.
- 3. Continuous Flow and Microreactor Systems** - Modern biodiesel facilities are transitioning from batch processing to continuous flow systems, including microchannel reactors. These systems improve heat and mass transfer, enhance productivity, and enable consistent large-scale production.
- 4. Feedstock Pre-treatment Technologies** - Processes such as esterification, degumming, and filtration are widely used to treat low-quality or high free fatty acid feedstocks. These technologies are particularly important in markets like India, where waste-based feedstocks form a significant portion of raw material supply.
- 5. Thermochemical Conversion (Pyrolysis)** - Pyrolysis is used to convert biomass and low-quality feedstocks into bio-oil, which can be further refined into biodiesel or other fuels. This technology supports waste-to-energy applications and expands the usable feedstock base.
- 6. Microalgae-Based Technology (Emerging)** - Algae-based biodiesel represents a next-generation technology with high yield potential and lower land requirements. While still at a developmental stage, it offers long-term scalability and sustainability advantages.
- 7. Digital and Automation Technologies** - The integration of digital tools such as process automation, IoT-enabled monitoring systems, and data analytics is improving operational efficiency, quality control, and predictive maintenance. These technologies support optimized plant performance and cost efficiency.

Overall, the industry is gradually shifting from conventional processes to more advanced, efficient, and digitally enabled technologies, supporting improved scalability, cost optimization, and environmental performance.

9. Competitive Landscape

The competitive landscape of India's biodiesel industry is evolving into a more organized and competitive market, supported by policy momentum and increasing industry participation. The sector is gradually shifting toward greater integration and scale with competition intensifying as players strengthen their presence and capabilities.

Key Factors Shaping Competition	Competitive Strategies
• Feedstock Availability and Cost - Feedstock is the largest cost component in biodiesel production, accounting for 70–80% of total costs. Competition is driven by access to reliable, low-cost raw materials. • Regulatory and Policy Support - Government mandates and incentives strongly influence demand and market positioning, including blending targets, renewable fuel obligations, subsidies, and carbon reduction policies. • Scale of Operations and Production Efficiency - Scale impacts competitiveness through economies of scale, lower per-unit costs, and improved operational efficiency. Larger integrated players are better positioned to compete on cost. • Feedstock Diversification Capability - Ability to use multiple feedstocks improves resilience against price volatility and supply disruptions. • Technology and Process Innovation - Technology determines conversion efficiency, production cost, and product quality, influencing overall competitiveness.	• Feedstock Security Strategy - Companies focus on strengthening raw material security through backward integration and building stable procurement ecosystems to reduce cost volatility. • Regulatory Strategy - Companies align operations with government blending mandates, incentives, and renewable fuel policies. Players operating in regions with favourable policy support tend to have stronger growth prospects. • Cost Leadership through Operational Efficiency - Companies compete on cost by improving production efficiency through economies of scale, process optimization, energy-efficient operations, lean manufacturing and automation, and logistics optimization to reduce overall production and transport costs. • Feedstock Flexibility Strategy - Companies adopt multi-feedstock processing capabilities to Reduce dependence on any single raw material. This strategy enhances competitiveness during volatile input cycles. • Technology Advancement Strategy - Producers compete through technological differentiation by investing in advanced technologies, automation, and process improvements to enhance yield efficiency and reduce operational costs.

Barriers to Entry

High Capital Investment Requirement

- Requires large upfront investment for setting up biodiesel production facilities
- Includes cost of processing plants, storage systems, and blending infrastructure
- Needs investment in utilities, waste treatment, and quality testing facilities.
- Creates a strong financial barrier, limiting entry mainly to large or well-funded players

Feedstock Procurement Constraints

- Limited and competitive access to key raw materials like UCO, vegetable oils, and animal fats.
- High price volatility in agricultural commodities affects cost stability.
- Sustainable feedstock availability remains constrained in many regions.
- Established supplier networks make it difficult for new entrants to secure supply.

Regulatory & Compliance Requirement

- Requires multiple licenses and environmental clearances before operations
- Strict fuel quality standards and certification norms must be met.
- Mandatory compliance with blending targets and sustainability rules.
- Complex tax structures and subsidy mechanisms increase compliance burden.
- Leads to higher time and cost of market entry.

Technology & Operational Know-how.

- Requires expertise in feedstock conversion and chemical processing
- Yield optimization is essential for cost competitiveness
- Handling variable-quality raw materials adds operational complexity
- Strong quality control systems are necessary to meet fuel standards
- Proper management of waste and by-products is critical for efficiency

Key Industry Players

The Indian biodiesel industry comprises specialized biofuel producers and emerging integrated players focusing on waste-based feedstocks, supply chain development, and regulatory compliance. The sector is supported by oil marketing companies for procurement, while private players contribute through production capabilities and feedstock aggregation.

1. Rajputana Biodiesel Limited

Incorporated in 2016 and headquartered in Jaipur, Rajasthan, is engaged in the manufacturing of biodiesel and its by-products within the renewable energy segment. The company operates a manufacturing facility at RIICO Industrial Area, Phulera (Rajasthan), with an installed capacity of approximately 30 KLPD. It produces biodiesel using multiple feedstocks, including used cooking oil (UCO), animal fats, and vegetable oils, following a transesterification process. Its product portfolio includes biodiesel (B100), glycerine, and fatty acids, catering to industrial users and fuel supply chains. The company focuses on feedstock sourcing, process efficiency, and adherence to applicable fuel quality and environmental standards.



2. Kotyark Industries Limited

Kotyark Industries Limited, incorporated in 2016 and headquartered in Vadodara, Gujarat, is engaged in the manufacturing of biodiesel and its by-products within the renewable energy segment. The company operates manufacturing facilities at Swaroopganj (Rajasthan) and Anand (Gujarat) with a combined annual production capacity of approximately 480,000 kilolitres of biodiesel, utilizing a multi-feedstock approach, utilizing a multi-feedstock approach comprising non-edible vegetable oils and other renewable resources. Its product portfolio includes biodiesel (B100) and crude glycerine, catering to applications across transportation, industrial operations, and power generation. The company follows environmentally compliant practices, including zero-effluent discharge systems, and supplies its products to oil marketing companies, bulk industrial consumers, and commercial users.



Company Positioning

Namberdar Biofuels Limited operates in the biofuel and renewable energy segment, engaged in the manufacturing and supply of biodiesel (B100) and its by-products like crude glycerine and fatty acid from renewable feedstocks including used cooking oil, animal fats and tallow. The company's operations are aligned with the objectives of reducing dependence on fossil fuels and supporting the use of alternative energy sources in India. Its business model incorporates the use of waste-derived inputs, contributing to resource utilization and emission reduction. The company demonstrates a production efficiency with a yield of approximately 99.6%, reflecting a high level of process optimization and effective feedstock utilization. It also plans to establish a solvent extraction plant using advanced technology currently prevalent in the United States, which is expected to further enhance feedstock processing capabilities and overall operational efficiency.

The company's positioning is strongly aligned with India's National Policy on Biofuels and global sustainability goals, targeting the reduction of greenhouse gas emissions and improvement of air quality. Its biodiesel is designed to significantly lower emissions (with claims of up to ~78% reduction in CO₂), contributing to environmental sustainability and public health improvements. Additionally, the company emphasizes its role in reducing India's reliance on imported crude oil while supporting rural and waste-based supply chains.

From a market standpoint, the company has positioned itself as a preferred partner to biofuel refiners, oil marketing companies (OMCs) and commodity players, leveraging industry linkages to strengthen its presence in the domestic biodiesel value chain. It aims to build long-term relationships with key stakeholders such as IOCL, HPCL and BPCL, thereby enhancing its market credibility and offtake visibility.

The company maintains a strong focus on quality assurance, with each batch of biodiesel undergoing testing in accordance with BIS 15607:2022 standards. Supporting documentation is maintained to ensure compliance, traceability, and consistency in product quality.

In addition to biodiesel, the company generates co-products such as crude glycerine and fatty acids during the manufacturing process. The company supplies crude glycerine to end-use industries such as pharmaceuticals. It also supplies fatty acids in bulk to industries such as soap and detergent manufacturing, cosmetics and personal care with scope for internal reuse within the production cycle.

Overall, Namberdar Biofuels Limited is positioned as a biodiesel manufacturer participating in the renewable energy value chain, with operations linked to waste-based feedstocks, supply arrangements with industry participants, and alignment with regulatory and environmental frameworks in India.

Financial Performance Analysis

The financial performance analysis of Namberdar Biofuels Limited presents an overview of its operational and profitability trends over FY 2024 to FY 2026. The assessment highlights key indicators such as revenue from operations, total income, EBITDA, and profitability margins, reflecting the company's operational efficiency and financial stability.

Figures in INR Lakhs (Except for ratios and percentages)

Key Indicators (in INR Lakhs)	Namberdar Biofuels Limited		
	FY 2026	FY 2025	FY 2024
Revenue from operations	5,038.75	2,513.92	730.84
Growth in Revenue from Operations (%)	100.43%	243.98%	-
Total Income	5,119.42	2,520.97	738.61
EBITDA	762.98	248.47	76.44
EBITDA Margin (%)	14.90%	9.86%	10.35%
PAT	454.72	88.06	(7.02)
PAT Margin (%)	9.02%	3.50%	(0.96) %
Debt Equity Ratio (in times)	2.34	3.92	7.35
ROCE (%)	23.63%	20.15%	2.24%
Return on Net Worth (%)	55.14%	44.93%	(6.50) %

Source - The financial information presented in the table has been extracted from the certificate issued by the statutory auditors of Namberdar Biofuels Limited. The figures have been adopted as reported and have not been independently calculated or verified.

Formula Used:

- Revenue from operations represents the revenue from sales of service & product & other operating revenue of our Company as recognized in the Restated financial information.
- Total income includes revenue from operations and other income.
- EBITDA means Earnings before interest, taxes, depreciation and amortization expense, which has been arrived at by obtaining the profit before tax/ (loss) for the year / period and adding back interest cost, depreciation, and amortization expense.
- EBITDA margin is calculated as EBITDA as a percentage of total income.
- Net Profit for the year/period represents the restated profits of the Company after deducting all expenses.

- PAT Margin (%) is calculated as Profit for the year/period as a percentage of Revenue from Operations.
- Return on net worth is calculated as Net profit after tax, as restated, attributable to the owners of the Company for the year/ period divided by Net worth at the end of respective period/year. Net worth means aggregate value of the paid-up equity share capital and reserves & surplus.
- Return on capital employed calculated as Earnings before interest and taxes divided by capital employed as at the end of respective period/year. (Capital employed calculated as the aggregate value of total equity, total debt and deferred tax liabilities)
- Debt- equity ratio is calculated by dividing total debt by total equity. Total debt represents long-term and short-term borrowings. Total equity is the sum of share capital and reserves & surplus.

Namberdar Biofuels Limited has demonstrated a strong growth trajectory over FY 2024–FY 2026, marked by substantial expansion in revenue and profitability. Revenue from operations increased significantly from INR 730.84 lakhs in FY 2024 to INR 2,513.92 lakhs in FY 2025 and further doubled to INR 5,038.75 lakhs in FY 2026, reflecting robust business expansion and increasing market penetration. Total Income also grew consistently from INR 738.61 lakhs in FY 2024 to INR 5,119.42 lakhs in FY 2026, indicating that the Company's growth has been primarily driven by its core operating activities.

Profitability improved significantly during the period, with EBITDA increasing nearly tenfold from INR 76.44 lakhs in FY 2024 to INR 762.98 lakhs in FY 2026. EBITDA margins improved from 10.35% in FY 2024 to 14.90% in FY 2026, demonstrating improved operational efficiency, better cost absorption, and benefits arising from scale. Similarly, the Company reported a strong turnaround at the net profit level, with PAT improving from a loss of INR 7.02 lakhs in FY 2024 to a profit of INR 88.06 lakhs in FY 2025, which further increased to INR 454.72 lakhs in FY 2026. Consequently, PAT margins improved from (0.96) % in FY 2024 to 9.02% in FY 2026, reflecting sustained improvement in bottom-line performance.

On the balance sheet side, the Debt-Equity Ratio improved significantly from 7.35 times in FY 2024 to 3.92 times in FY 2025 and further to 2.34 times in FY 2026, indicating gradual deleveraging supported by higher profitability and strengthening net worth. Although the Company continues to maintain a relatively leveraged capital structure, the consistent reduction in leverage reflects improving financial stability.

In terms of returns, ROCE improved substantially from 2.24% in FY 2024 to 20.15% in FY 2025 and further to 23.63% in FY 2026, reflecting more efficient utilization of capital employed. Return on Net Worth (RONW) also witnessed a significant turnaround, improving from

(6.50) % in FY 2024 to 44.93% in FY 2025 and further to 55.14% in FY 2026, driven by strong earnings growth and improved shareholder value creation.

Overall, the Company has exhibited a strong financial turnaround over the review period, supported by rapid revenue growth, significant margin expansion, improving profitability, enhanced capital efficiency, and a steadily declining leverage profile. The Company's ability to sustain its operational momentum while continuing to strengthen its balance sheet and optimize its capital structure will remain key to maintaining its long-term growth trajectory.

SWOT Analysis

Strengths	Weaknesses
✓ The company operates in the biodiesel segment using renewable feedstocks such as used cooking oil and animal fats, supporting waste-to-energy conversion and emission reduction. ✓ Engagement with oil marketing companies and other industry participants supports market access and offtake visibility. ✓ Defined production processes and quality control mechanisms, including testing as per BIS 15607:2022 standards, support product consistency and compliance. ✓ Generation of co-products such as crude glycerine and fatty acids during biodiesel manufacturing provides additional revenue streams and resource utilization efficiency. ✓ The company supplies crude glycerine to multiple end-use industries such as pharmaceuticals. ✓ The company supplies fatty acids in bulk to industries such as soap and detergent manufacturing, cosmetics and personal care with additional scope for internal reuse to improve process efficiency. ✓ Strategic location advantage supports efficient feedstock sourcing, reduced logistics costs, and proximity to key demand centres.	✗ The company is recently incorporated (2022), indicating a limited operating track record. ✗ Relatively small scale of operations compared to established industry participants may limit economies of scale. ✗ Dependence on procurement of waste-based feedstocks such as used cooking oil may impact production stability. ✗ Vulnerability to unfavourable diesel price fluctuations.

Opportunities	Threats
🌱 Increasing biodiesel blending targets and policy support for alternative fuels are expected to drive sectoral demand. 🌱 Opportunity to expand supply of co-products such as crude glycerine and fatty acids across diversified industrial end-users. 🌱 With India heavily dependent on crude imports, substitution through biodiesel creates a large structural opportunity. 🌱 Increasing investments and capacity expansion. Growing investments from both public and private sectors are expected to enhance production capacity and strengthen the overall biofuel ecosystem.	⚠️ Feedstock price volatility and availability risk. Dependence on UCO, animal fats, and other waste oils exposes the company to supply chain fluctuations. ⚠️ Regulatory and policy uncertainty. Biofuel pricing, blending mandates, and subsidy structures are subject to government changes. ⚠️ Intense competition from established biodiesel players. Larger, well-capitalized players may have advantages in scale, procurement, and distribution. ⚠️ Geopolitical tensions between the United States, Israel and Iran have disrupted global crude oil and LPG supply routes, particularly through the Strait of Hormuz, leading to volatility in feedstock availability and prices. ⚠️ Dependence on OMC procurement policies. Revenue visibility is partly linked to government-controlled oil marketing companies and tender-based procurement.

10. Future Outlook

The global biodiesel industry is expected to experience strong growth over the coming decade, supported by increasing demand for cleaner fuels across transportation, power generation, and industrial sectors, particularly in emerging economies. Governments worldwide are promoting biodiesel as a key component of their decarbonization strategies, supported by blending mandates, emission reduction targets and incentives for renewable energy adoption. Industry participants are increasingly focusing on feedstock diversification, technological advancements and process optimization to enhance production efficiency and improve cost competitiveness. At the same time, growing environmental concerns and regulatory pressures are accelerating the shift toward waste-based and non-edible feedstocks enabling the industry to align with sustainability and circular economy principles.

Geopolitical developments are also expected to influence the outlook of the biodiesel industry. Volatility in crude oil prices arising from global conflicts and supply chain disruptions continues to impact the relative competitiveness of biodiesel vis-à-vis fossil fuels. Elevated crude oil prices generally improve biodiesel's economic viability, while periods of low oil prices may compress margins for producers. Additionally, ongoing geopolitical tensions highlight the importance of domestic fuel alternatives, as countries seek to reduce dependence on imported fossil fuels and strengthen energy security through localized biodiesel production and feedstock sourcing.

From a global perspective, these dynamics underscore the increasing strategic importance of biodiesel in enhancing energy resilience and reducing carbon emissions. Countries across North America, Europe and Asia-Pacific are expanding blending mandates and investing in advanced biofuels such as renewable diesel (HVO), which offers superior performance and compatibility with existing infrastructure. Furthermore, integration of biodiesel production with traditional refining operations is emerging as a key trend, enabling oil companies to diversify their energy portfolios and transition toward lower-carbon business models.

From an Indian perspective, the outlook for the biodiesel industry remains highly promising driven by rising energy demand, strong policy support and the need to reduce dependence on crude oil imports. India has implemented biofuel blending programs and policies promoting the use of used cooking oil (UCO), animal fats and other waste-based feedstocks for biodiesel production. These initiatives are expected to support the development of a structured supply chain while providing additional income opportunities for rural and informal sectors involved in feedstock collection and aggregation.

The Indian biodiesel industry is expected to witness steady growth over the coming decade, supported by increasing adoption across transportation, logistics and industrial applications.

Government initiatives such as the National Policy on Biofuels and programs encouraging waste-to-energy conversion are expected to drive investments in capacity expansion and technological upgrades. Industry players are focusing on improving feedstock availability, enhancing production efficiency, and expanding distribution networks to cater to growing demand. In addition, collaboration with oil marketing companies and integration with existing fuel infrastructure are expected to facilitate wider adoption of biodiesel blends in the domestic market.

From a policy standpoint, continued emphasis on biofuel blending targets, waste oil utilization, and carbon emission reduction is expected to shape the future growth trajectory of the industry. The government's focus on energy diversification, sustainability, and circular economy practices is likely to encourage investments in advanced biofuels and innovative production technologies. Overall, the Indian biodiesel industry is transitioning toward a more sustainable and resilient model balancing energy security objectives with environmental considerations. Future competitiveness will depend on feedstock security, cost optimization, technological innovation, and regulatory support, positioning the industry as a key contributor to India's long-term energy transition and climate goals.

Yours Faithfully,



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