



DATE: 29th November, 2023
REF. : PIL/DVN/L-124/2023-24

Security Code No.: 522205	Company Code- PRAJIND
BSE LIMITED PHIROZE JEEJEEBHOY TOWERS, 25TH FLOOR, DALAL STREET, MUMBAI - 400 001 Fax: 022- 2723121/3719/2037/2039/2041/2061	NATIONAL STOCK EXCHANGE OF INDIA LTD. EXCHANGE PLAZA, 5TH FLOOR, PLOT NO. C/1, G BLOCK, BANDRA-KURLA COMPLEX, BANDRA (EAST), MUMBAI - 400 051 Fax: 022 – 66418124/25/26, 2659 8237 / 38.

Dear Sir / Madam,

Kindly put the enclosed "Investor Meet Presentation" on your bulletin board for sharing with Investors.

Thanking you,

Yours faithfully,

For PRAJ INDUSTRIES LIMITED

DATTATRAYA
VISHWANATH
NIMBOLKAR

Digitally signed by DATTATRAYA VISHWANATH NIMBOLKAR
DN: c=IN, o=Personal, postalCode=411038, st=Pune,
sn=Maharashtra, street=FTAT WDA-101, SERIALNUMBER=CO-CP
HOUSING SOC KOTHURUD, Pune, Maharashtra India-411038
E#IND PRTTH HOTEL, 886-9976,
2.5.4.20-ca7098bc328109c9f609a18221866a3a8372a1e54
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serialNumber=253a79886c347e46acc7897804502744369
68b190a614629423e0d6c3308,
email=dattatrayanimbolkar@praj.net, cn=DATTATRAYA
VISHWANATH NIMBOLKAR
Date: 2023.11.29 17:05:40 +05'30'

**DATTATRAYA NIMBOLKAR
CHIEF INTERNAL AUDITOR
& COMPANY SECRETARY
(M. No. 4660)**

BUILDING A SUSTAINABLE FUTURE

29th Nov 2023





Celebrating
completion of 40
Years

SUSTAINABLE



YEARS AND BEYOND

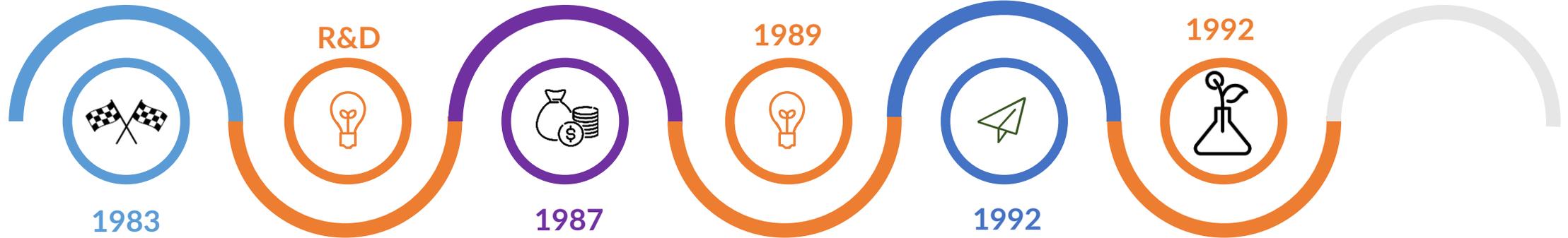
Our journey- Decade #1



Focus on R&D since inception

Launched continuous fermentation technology

Deployed Innovative Starch based ethanol technology.



1983

R&D

1989

1992

Founded as an Agri Processing venture

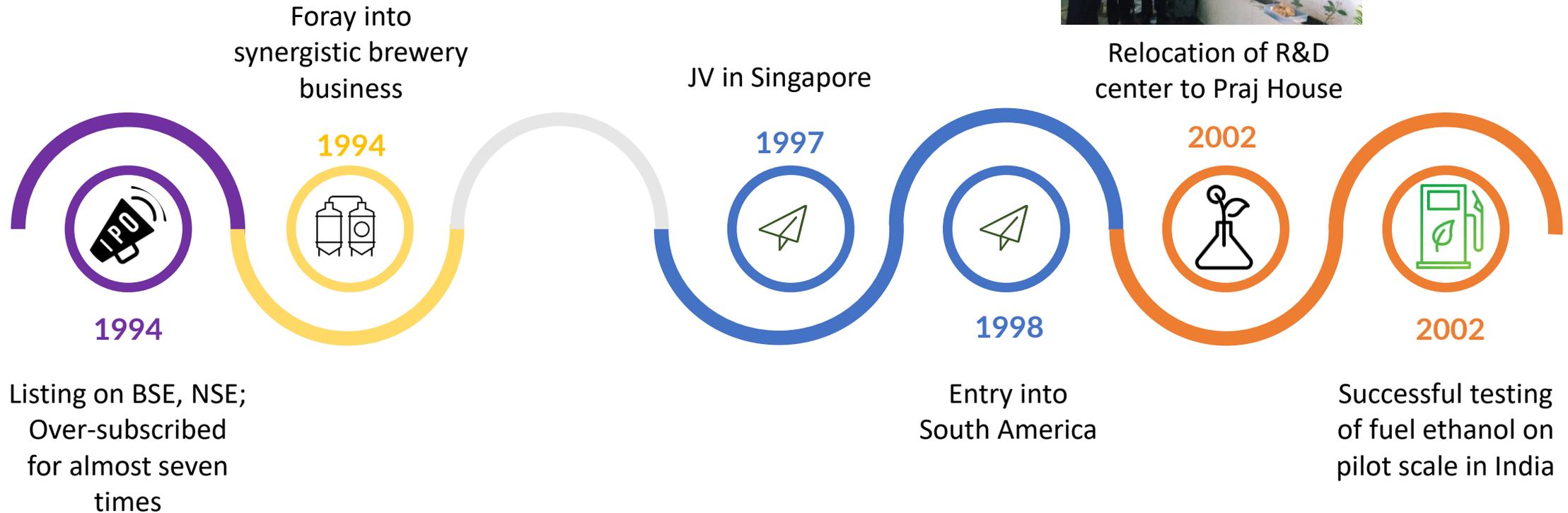
Among the firsts to receive ICICI venture funding

Entry into South East Asia





Relocation of R&D center to Praj House



Our journey- Decade #3



Ratan Tata, Vinod Khosla invest in Praj

Forayed into Critical process equipment, wastewater treatment solutions



Rakesh Jhunjunwala invests in Praj

First project win in USA

Praj Matrix, State of the Art R&D center set up

Entered **high purity** water segment through acquisition



Technology	Finance	Business Expansion	Market Expansion

Our journey- Decade #4



Launch of RCM portfolio of technology

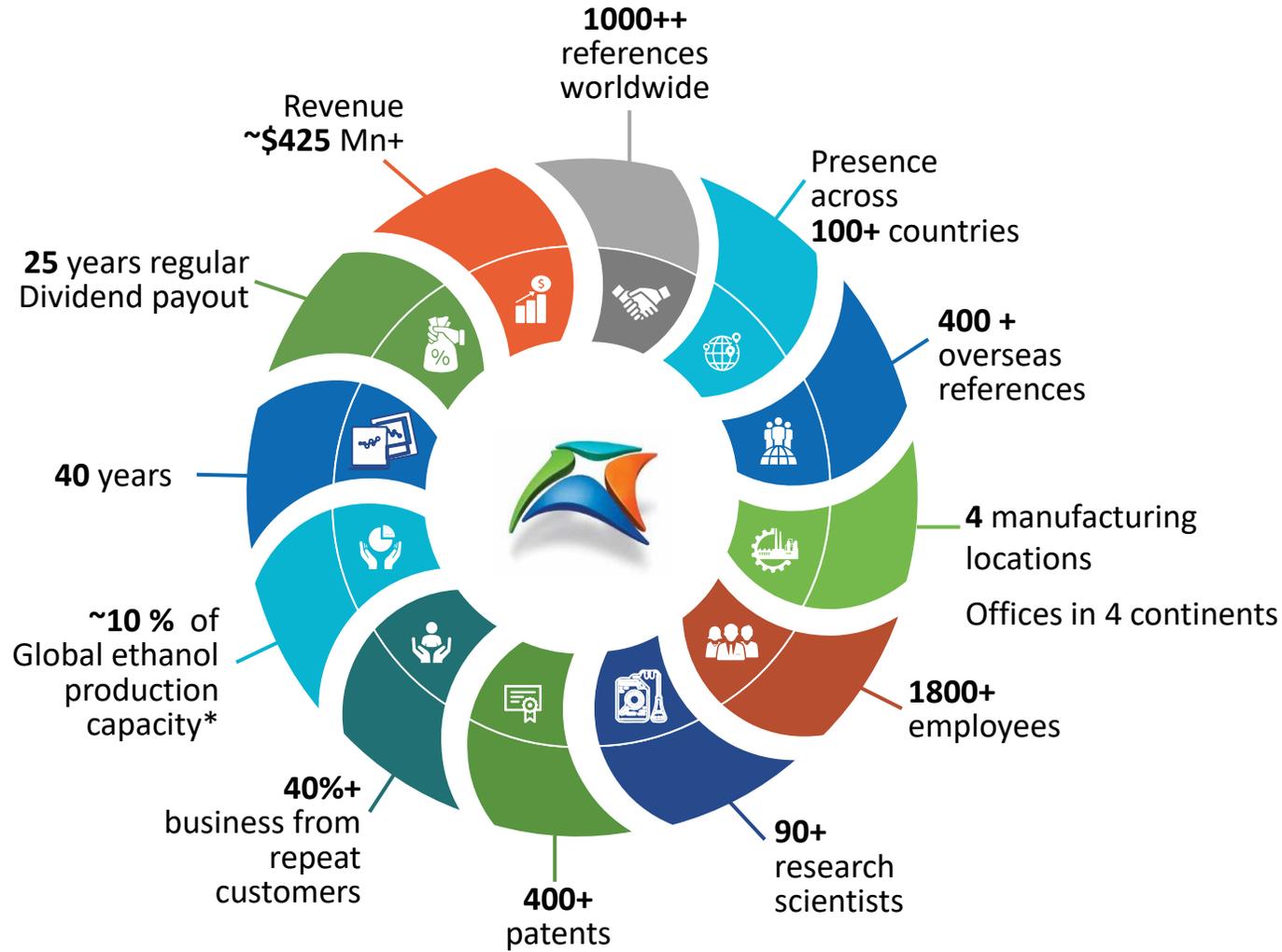
Inauguration of 2G plant at hands of Hon. Prime Minister

SAF- Successful testing of commercial passenger flight



Technology	Finance	Business Expansion	Market Expansion





*excluding China



As of Nov 2023

Awards and Accolades





George Washington Carver Award 2020



William C Holmberg Award 2022

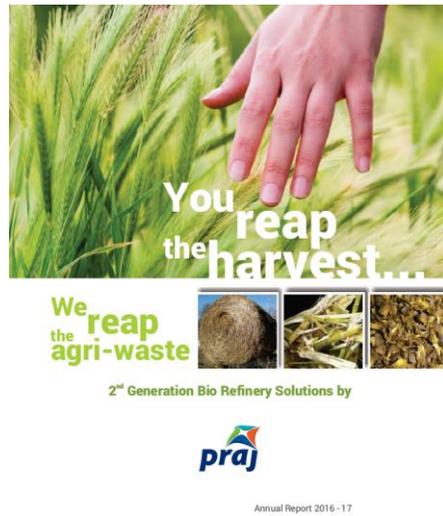


Leadership in Bioeconomy

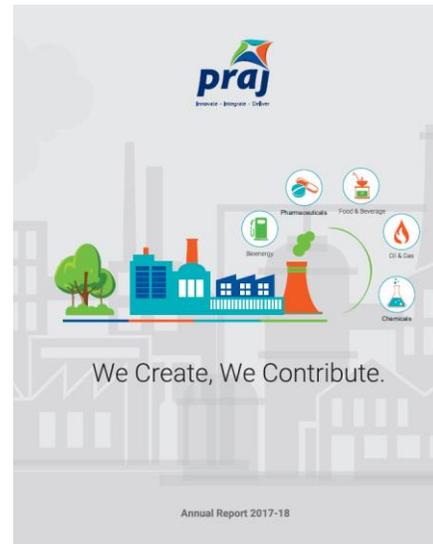




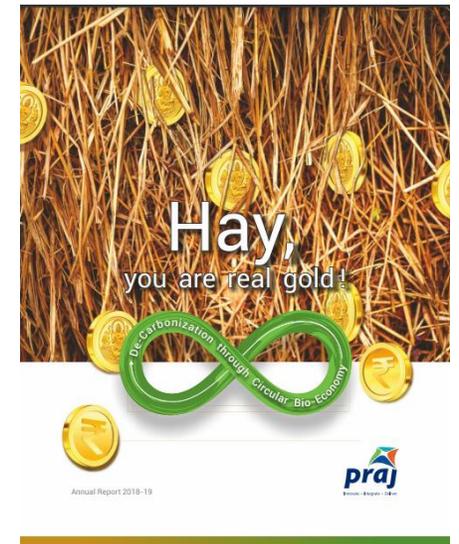
FY 16



FY 17



FY 18



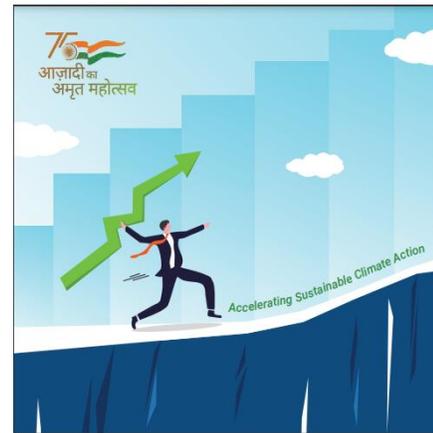
FY 19



FY 20



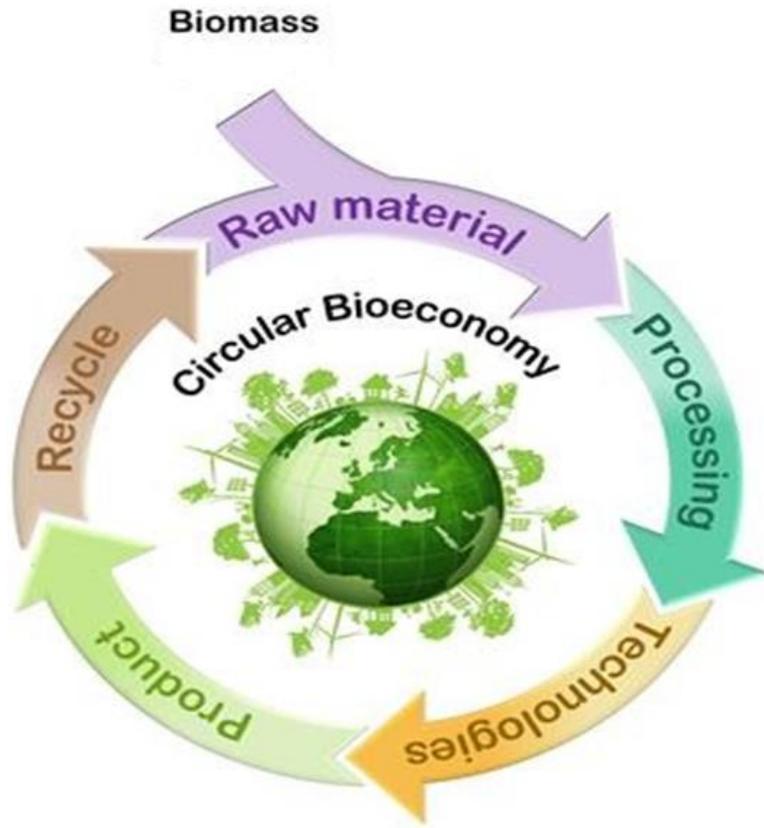
FY 21



FY 22

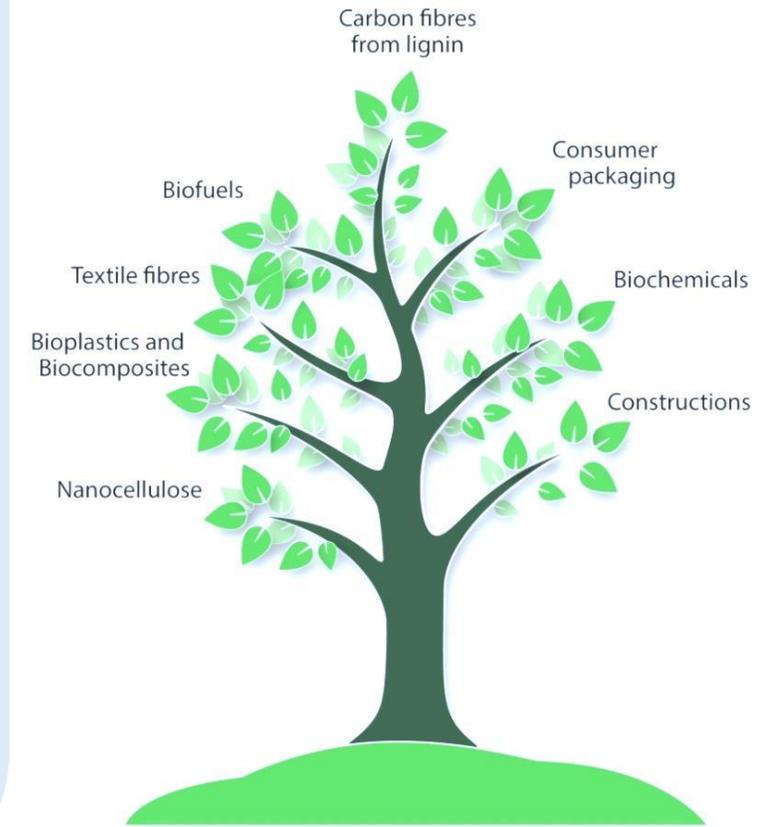


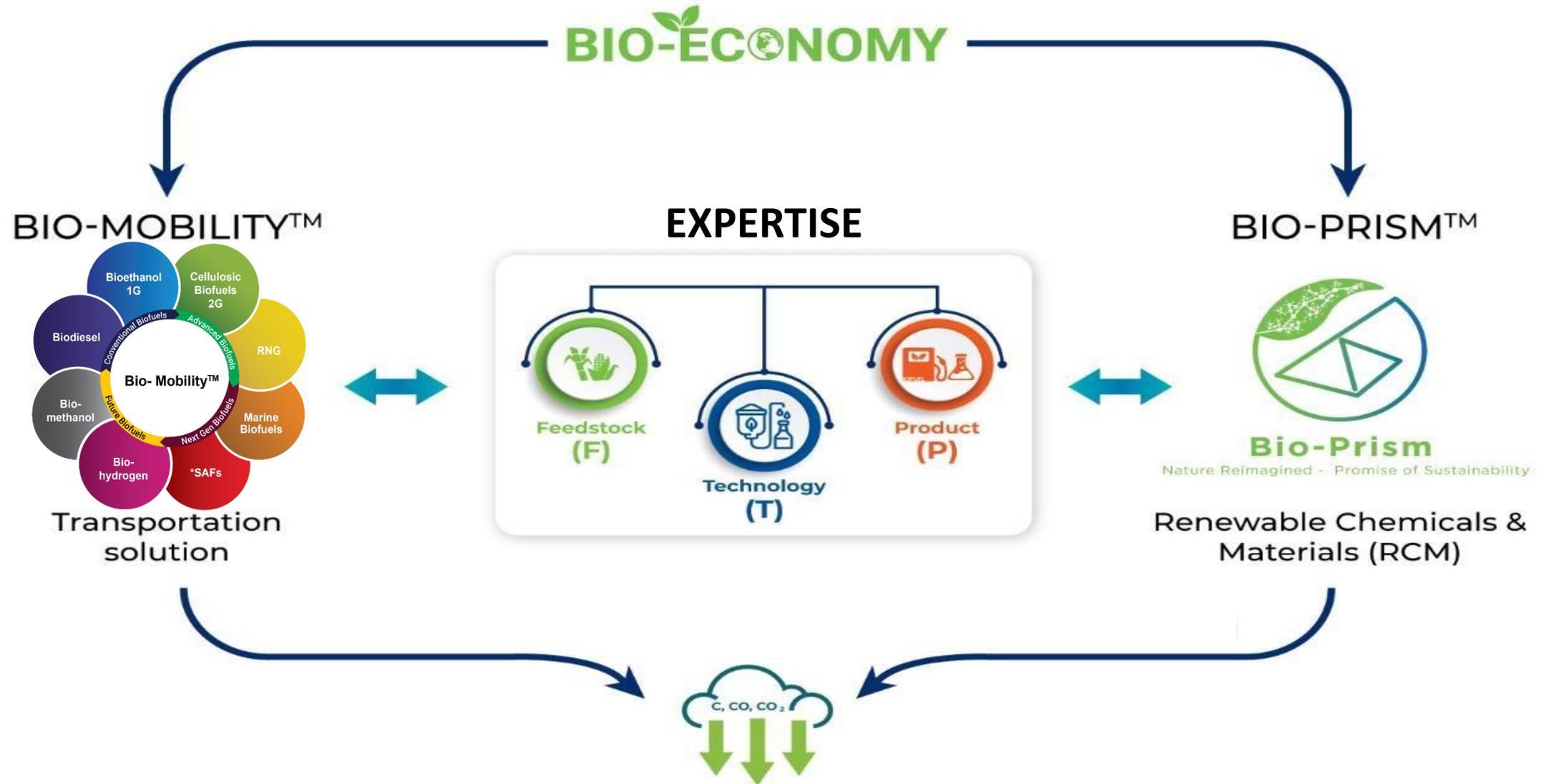
FY 23



Bioeconomy is knowledge-based production and use of biological resources to provide products, processes services & energy in all economic sectors within the frame of a sustainable economic system.

1. Renewable source
2. Sustainable decarbonisation
3. Less Toxic
4. Environment friendly





Driving Sustainable Climate Action through Bioeconomy

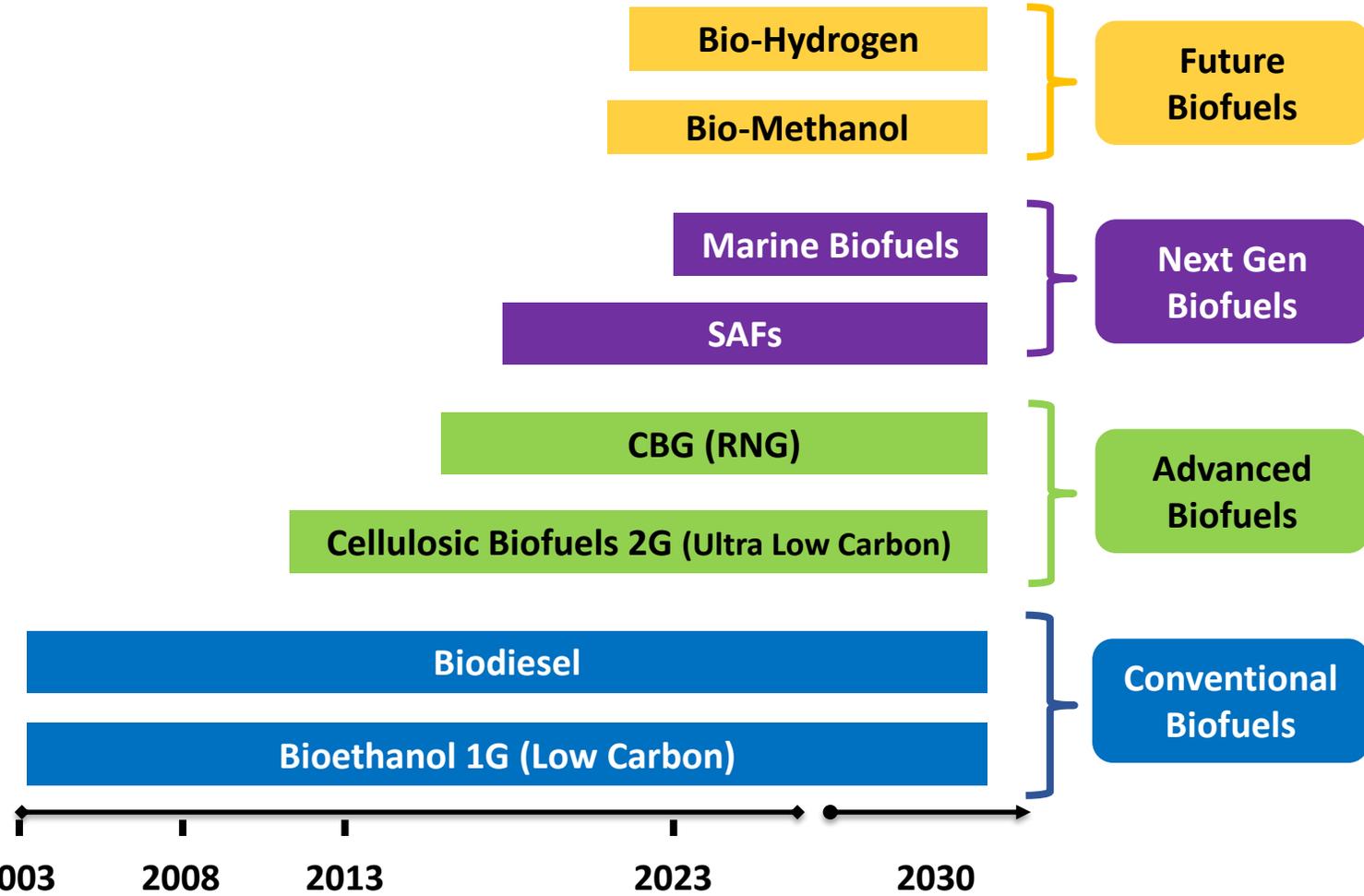
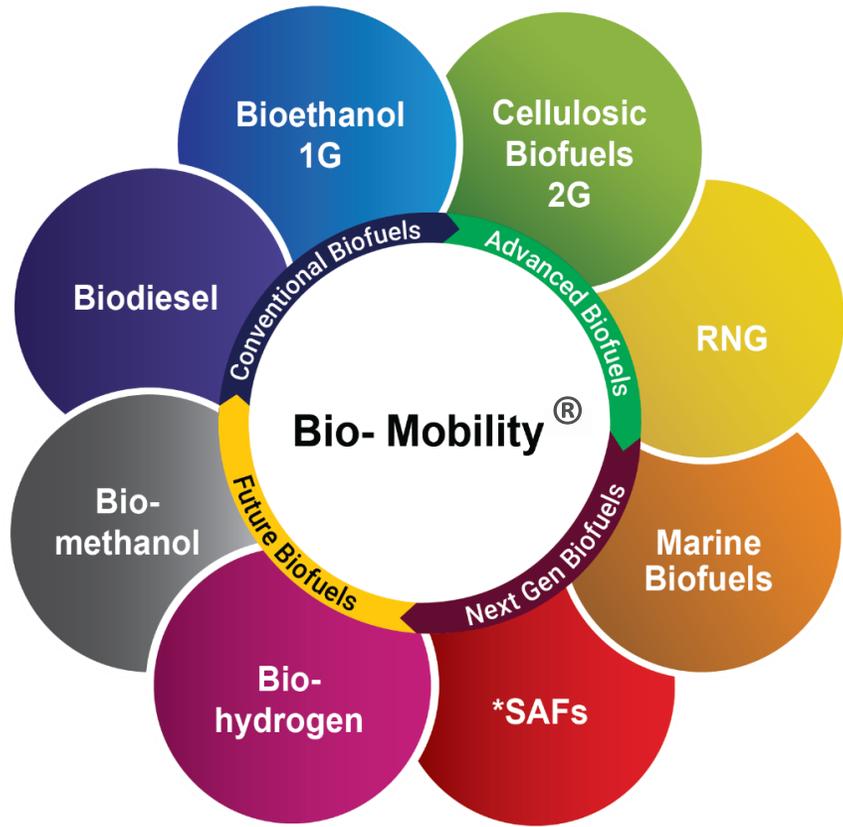
Feedstock (F)	Technology (T)	Product (P)
<p>Sugary</p> <p>C-molasses, B-heavy molasses, Sugarcane syrup/Biosyrup</p> <p>Starchy</p> <p>Damaged/Surplus Grain like Rice, Wheat, maize (corn),Tuber, etc.</p>	1 st Generation (1G)	Conventional Bioethanol, RCM*
<p>Lignocellulosic</p> <p>Agri bio-mass like bagasse, paddy straw, wheat straw, etc.</p>	2 nd Generation (2G)	Advanced & NextGen Biofuels, RCM*
<p>Industrial & Other Waste</p> <p>Industrial waste such Press mud, spent wash, Municipal waste</p>	Anaerobic Digestion	Advanced Biofuels - CBG

Feedstock Expertise



*RCM: Renewable Chemicals & Materials

Bio-Mobility® : Decarbonizing the transportation Industry



*SAFs- Sustainable Aviation Fuels





Cilion Inc. USA



Triveni Engineering, India



Manuelita, South America



Kakira Sugars, Africa



Biowanze, Europe



Progreen, South-East Asia



- Watershed moment for the biofuels industry
- Anchored by India, the United States, and Brazil.
- 19 Countries & 12 International organizations have already agreed to be part of it, many more to follow
- Committed to facilitate access to technology, fostering an ecosystem and initiating policy interventions & alterations
- India has a huge role to play in technology transfer, policy support, expertise in project life cycle management



Carbon footprint
reduction



Water footprint
reduction



Energy footprint
reduction



Lowering the carbon intensity for existing corn ethanol through –

- Energy integration
- Process integration &
- Process optimization solutions

Colocation to Refinery



Capacity

100 klpd EtOH



IOCL

Cellulosic(2G) enfinity® Technology

IOCL – Panipat, Haryana

Colocation to Low CI EtOH plant



Capacity

100 klpd EtOH



BPCL

BPCL - Bargarh, Odisha

enfinity™



HPCL



Capacity

100 klpd EtOH

Greenfield



HPCL – Bhatinda, Punjab



- No. of farmers to be benefited: ~100,000
- Rural Job Creation: ~1,500
- No. of cars to be displaced annually: ~63,000
- CO₂ Emission reduction/year: ~320,000 MT



- **First ethanol is out of the plant**
- **Plant under recommissioning now**
- **Will be operational @60% capacity by March 2024**

Agricultural Residues as feedstock



enfinity®



Forest Residues as feedstock

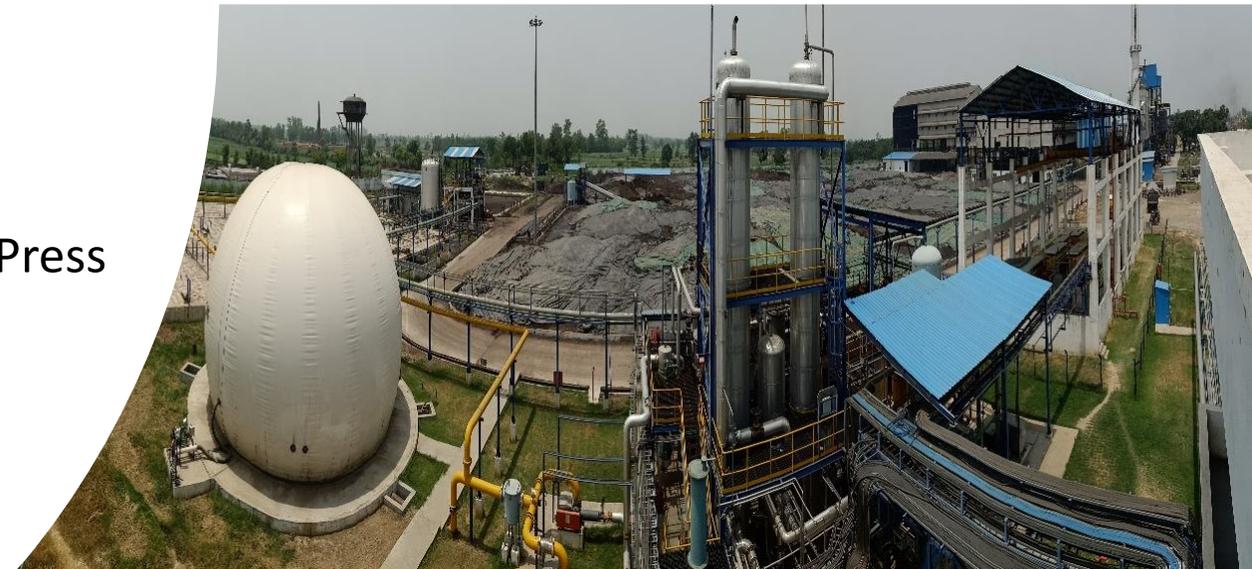


Celluniti™



- Enfinity: Praj's proprietary technology
- Praj & Sekab, Sweden have jointly developed Celluniti™
- Europe, as per RED III mandate to move to 2nd Generation ethanol

- Industry ecosystem gradually building up
- Bold plans announced by both Public sector companies as well as large business conglomerates
- International Opportunity: RNG
- Unique solutions- rich understanding of biotechnology
- Strong references of commercial scale plants based on Press Mud, Rice Straw and Industry effluent



- Plant Audit & Integration engineering
- Remote Bridge: Leveraging Digitalization for plant performance monitoring
- Operations and Maintenances of Plants
- Performance Enhancers for ethanol plants





**India's First Commercial Passenger Flight,
Powered By Indigenously Produced Sustainable Aviation Fuel (SAF)
From Sugarcane Molasses Using ATJ Pathway.**



19.05.2023 T3, Indira Gandhi International Airport, New Delhi
Flight Details: AirAsia India I5 767 (Pune To New Delhi)

- CORSIA Agreement for use of SAF
- India has set target of blending SAF:
 - ❑ 1% by 2027
 - ❑ 2% by 2028
- Countries globally setting SAF mandates:
 - (USA - ~10% by 2030 & EU 6% by 2030)
- Global leaders as technology partners GEVO and Axens

- Energy giants investing in Blue and Green Hydrogen
Green Ammonia, Waste-To-Energy projects
- Increasing demand for Modularization

- \$300+ Bn investment in clean energy by 2030
- Traditional O&G market: Investment of \$250 Bn per year for the next 7 to 10 years
- \$ 150+ Bn in LNG infrastructure to be around

- Strong capabilities in modularization
- New manufacturing facility at Mangalore





- Comprehensive range of solutions for industrial effluent treatment, recycling and ZLD systems
- Strong references in metals, industrial waste, refinery sector

- Growing awareness of Water Management

- Specialized microbes for difficult to treat industrial effluent
- Solar based evaporation
- Modularization approach

- Strong leadership in domestic market
 - Working with all three major global beer makers
 - Market bouncing back after subdued performance in last three years
-
- Hygienic manufacturing and process expertise to expand its offerings for other beverages



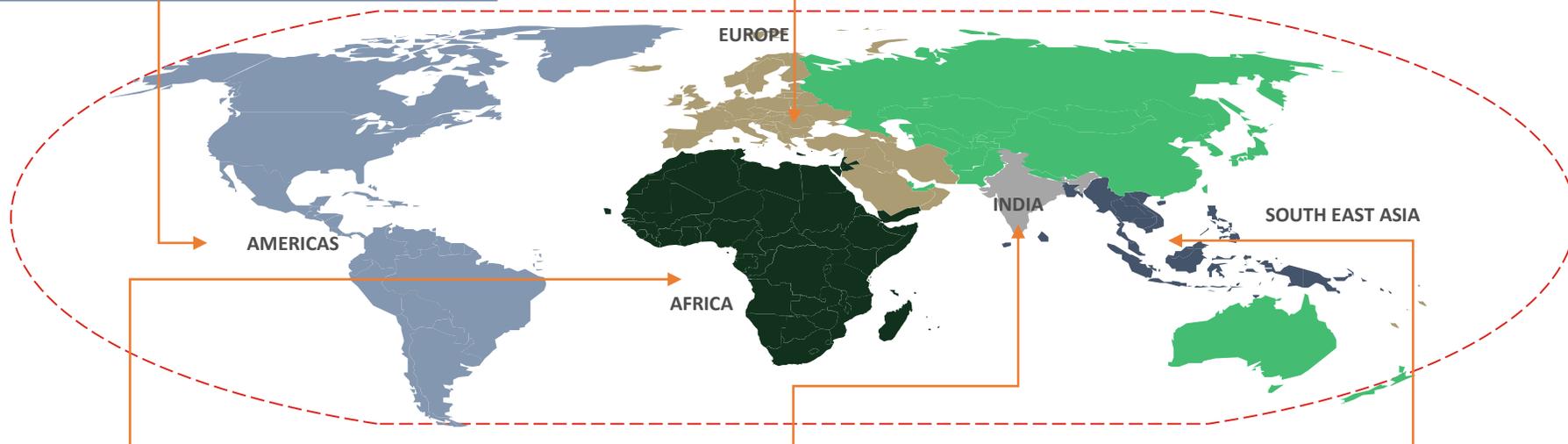
- Offerings across Pharma- Hi Purity Water, Modular Process solutions (MPS) and VAS
- Semiconductor capacity creation to drive demand for high-purity water solutions

- Growing demand for High-Capacity fermenters for biopharma
- Leverage the fermentation capability of parent

- Focused Internationalization
- Innovation across the product value chain



Customers References



1000 ++ references in 100+ countries across all 5 continents. And still counting...



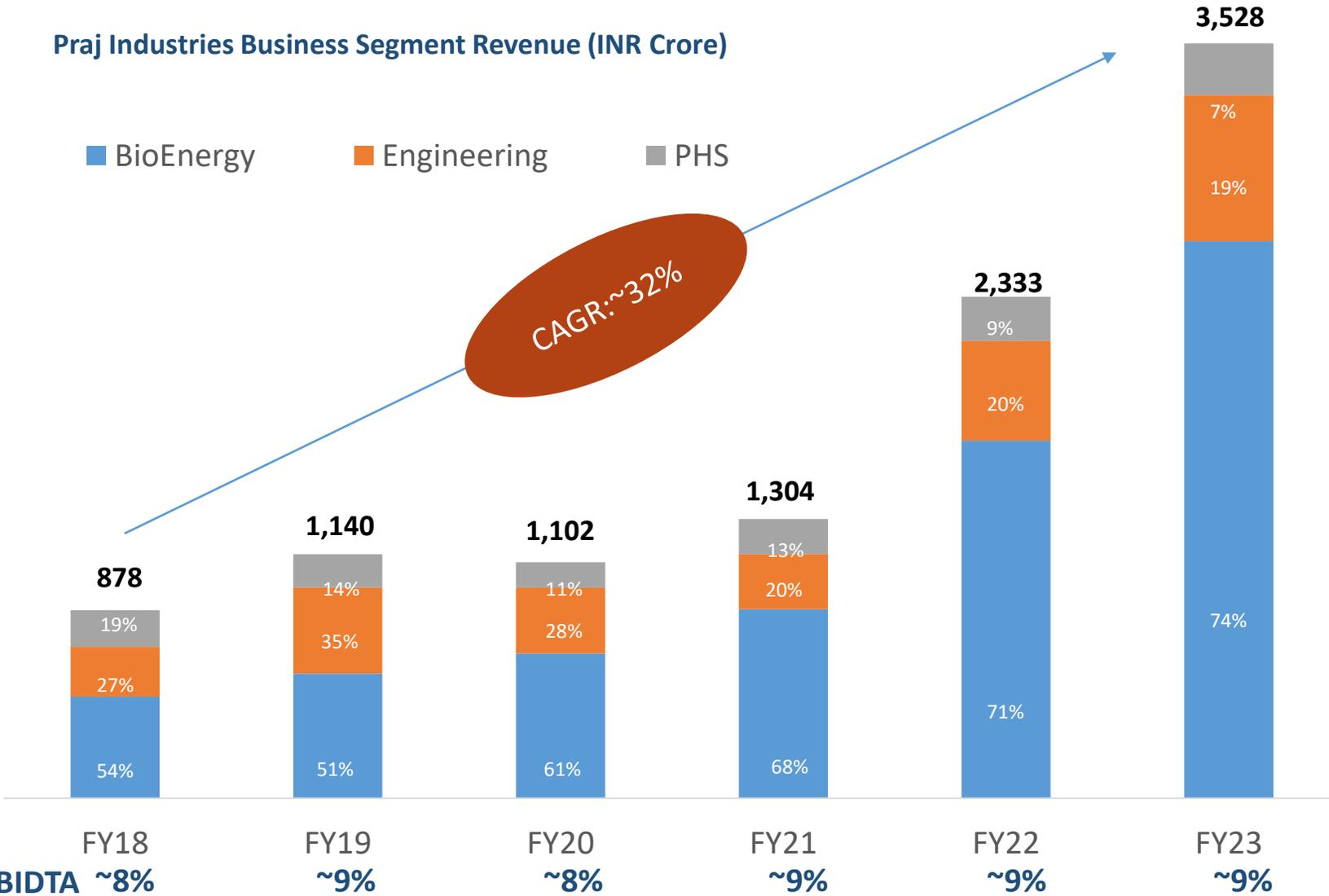
Financial Performance



Praj Industries Business Segment Revenue (INR Crore)

■ BioEnergy ■ Engineering ■ PHS

CAGR: ~32%



1. Bioenergy demonstrated healthy growth (~40% CAGR) with increasing market share in India and overseas
2. ETCA focused CPES has showcased promising growth (~40% CAGR)
3. Export revenue growing at 15% CAGR
4. ROCE has grown from 8% to 30%

EBIDTA ~8%

FY19 ~9%

FY20 ~8%

FY21 ~9%

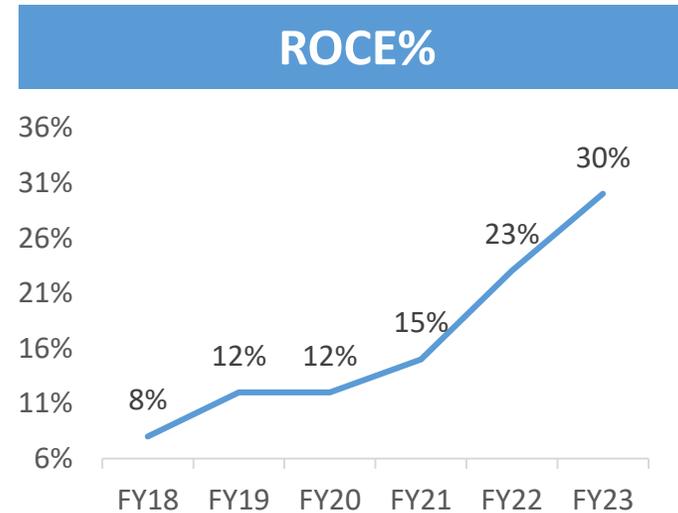
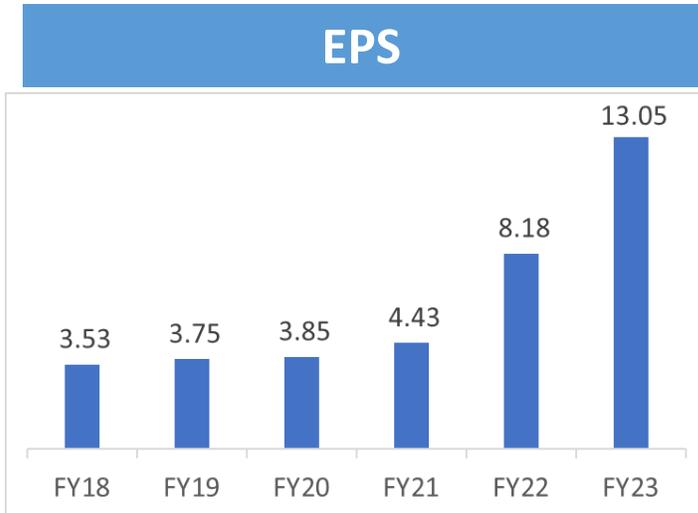
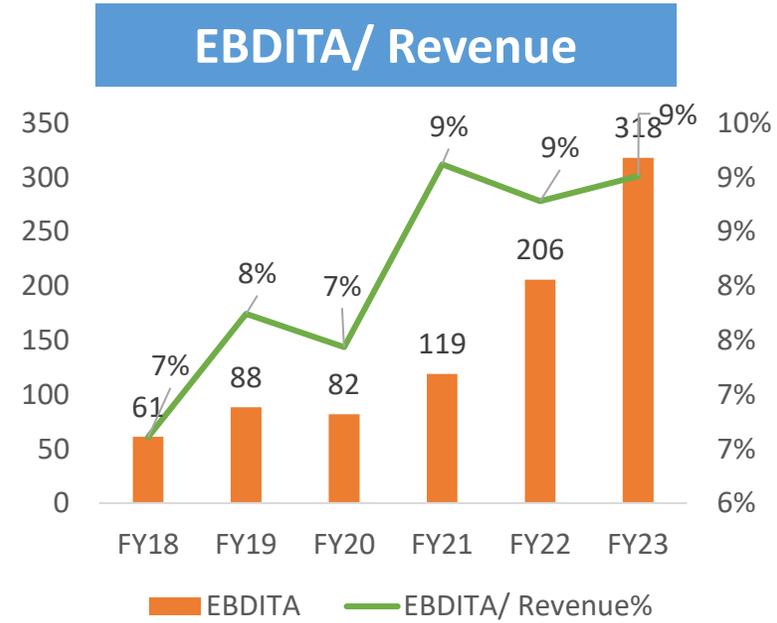
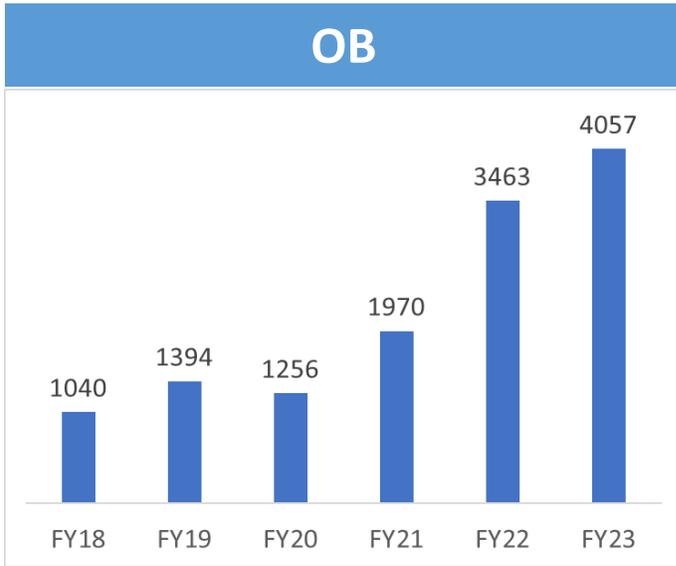
FY22 ~9%

FY23 ~9%

Financial Highlights

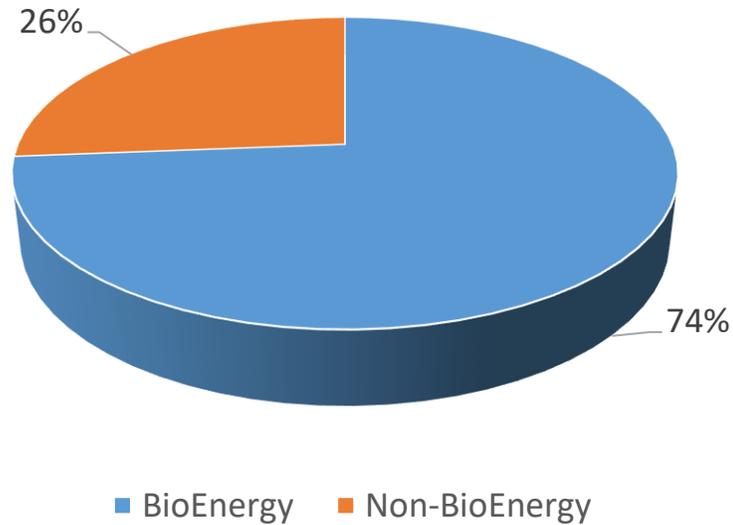


In INR crore

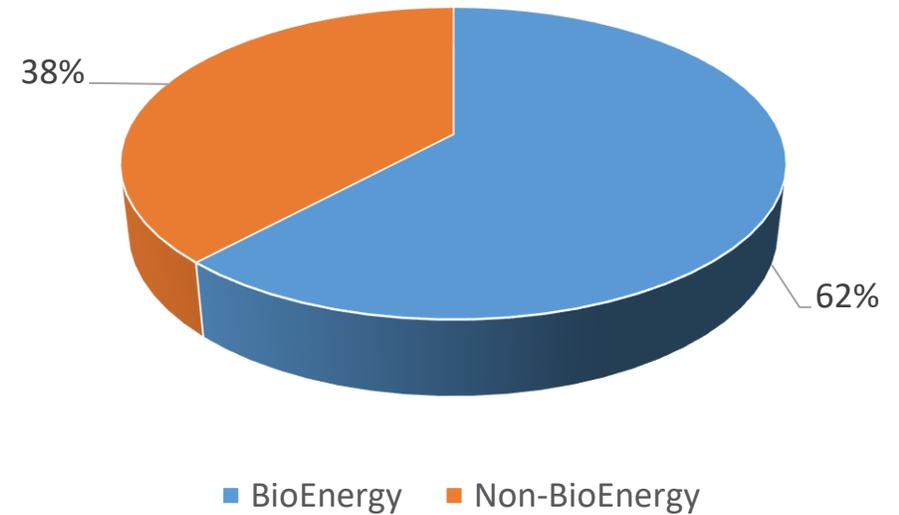


Growing share of Non-Bioenergy business segment

Revenue Mix FY23

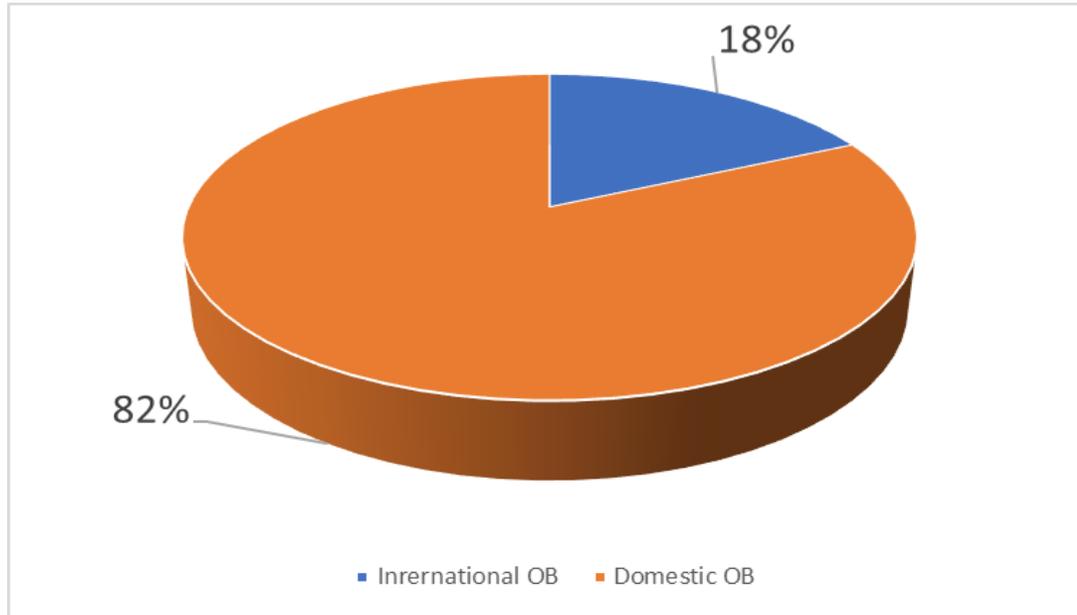


Targeted Revenue Mix

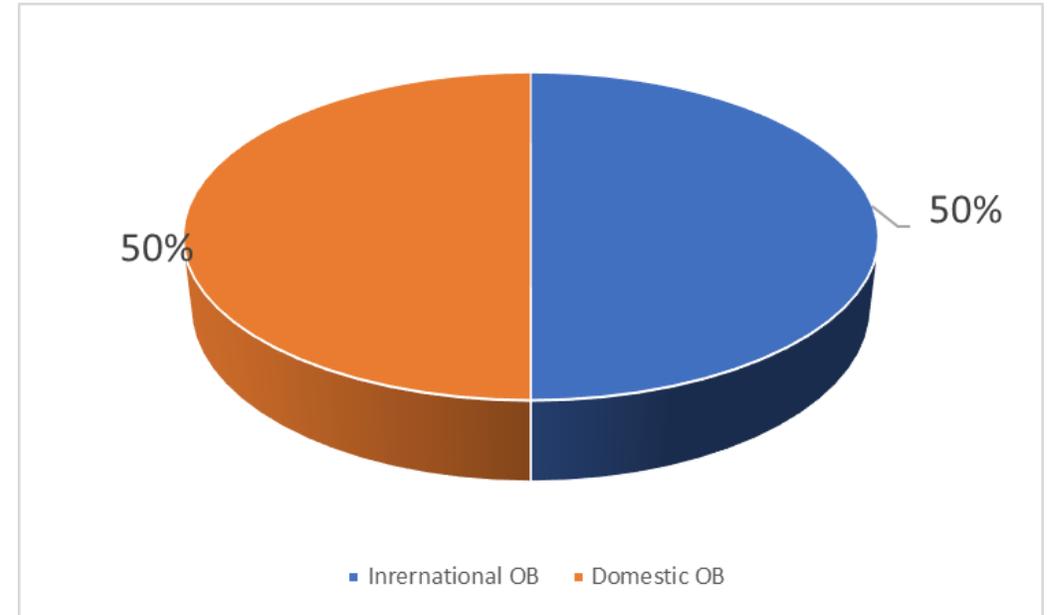


Growing share of International Business

Dom vs Inter. FY23



Targeted International Business





Corporate Social Responsibility



Social

- Diversity and Inclusion initiatives
- Health & Safety, Manpower skilling
- Betterment of Society through Social initiatives in the field of Youth skilling, Health & Environment



Environment

- GHG Emission reduction, Waste reduction, Zero Liquid Discharge
- Green Procurement Initiative to enhance Sustainability among supply chain
- Technology innovation in Bio-economy to accelerate Climate Action

Governance

- Good governance through detailed out Corporate policies
- Compliance to applicable statutory requirements
- Stakeholder engagement & transparency
- Risk management

**Bioeconomy-
Sustainability Assured!**

Environment



Sustainable water resources development

Health



Preventive Healthcare for rural women

Education



Hands on life skills education through Rural schools

Key Initiatives

- Widening and deepening of Streams in 37 drought prone Villages
- 18.99 lakh cu metres of Silt removed from streams

- Preventive healthcare program implemented in 33 Villages in Pune
- Promoting “Food as Medicine” concept through nutrition garden

- Infrastructure upgraded in 16 schools from 8 districts of Maharashtra
- Rural entrepreneurship programs

Positive Impact

- 1253 open wells and 660 bore wells Recharged
- 12,360 acres hectares Agricultural land brought under irrigation

- Enhanced health status of 7000 beneficiaries
- Improved Hb level and reduction in nutritional deficiencies

- Life skills education covering 6500 students and more than 50 instructors
- 22 entrepreneurs are being mentored



Initiatives in 6 thematic areas



Water



Energy



Waste



Agriculture



Nature



Social



Investing for Future



New Manufacturing Facility for Energy Transition & Climate Action (ETCA)



Pilot Plant for Bioplastics



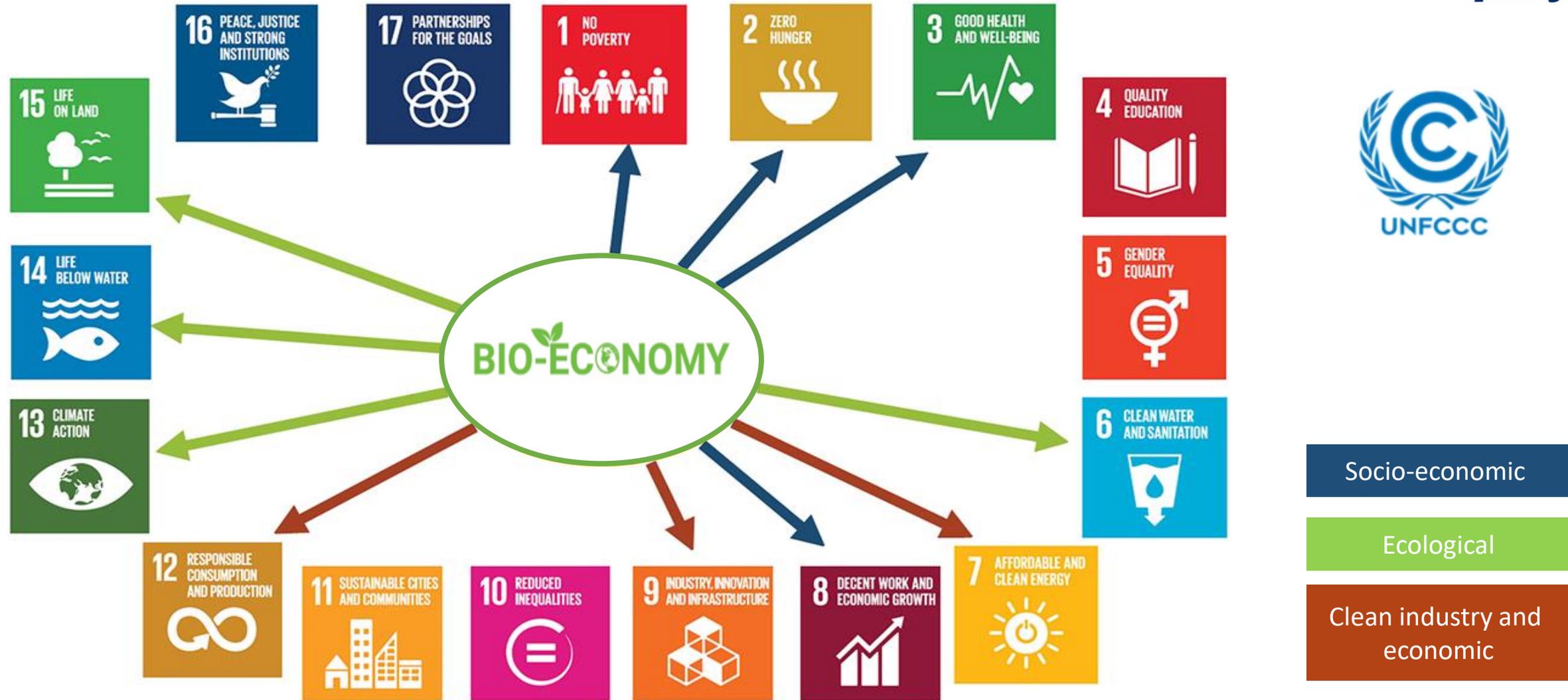
Catalysis lab

	Total Area (Acres)	Covered Area (Sq ft)	Open Area (Acres)
Plot-A	72	711,000	30
Plot-B	51	674,000	11
Total	123	1,385,000	41

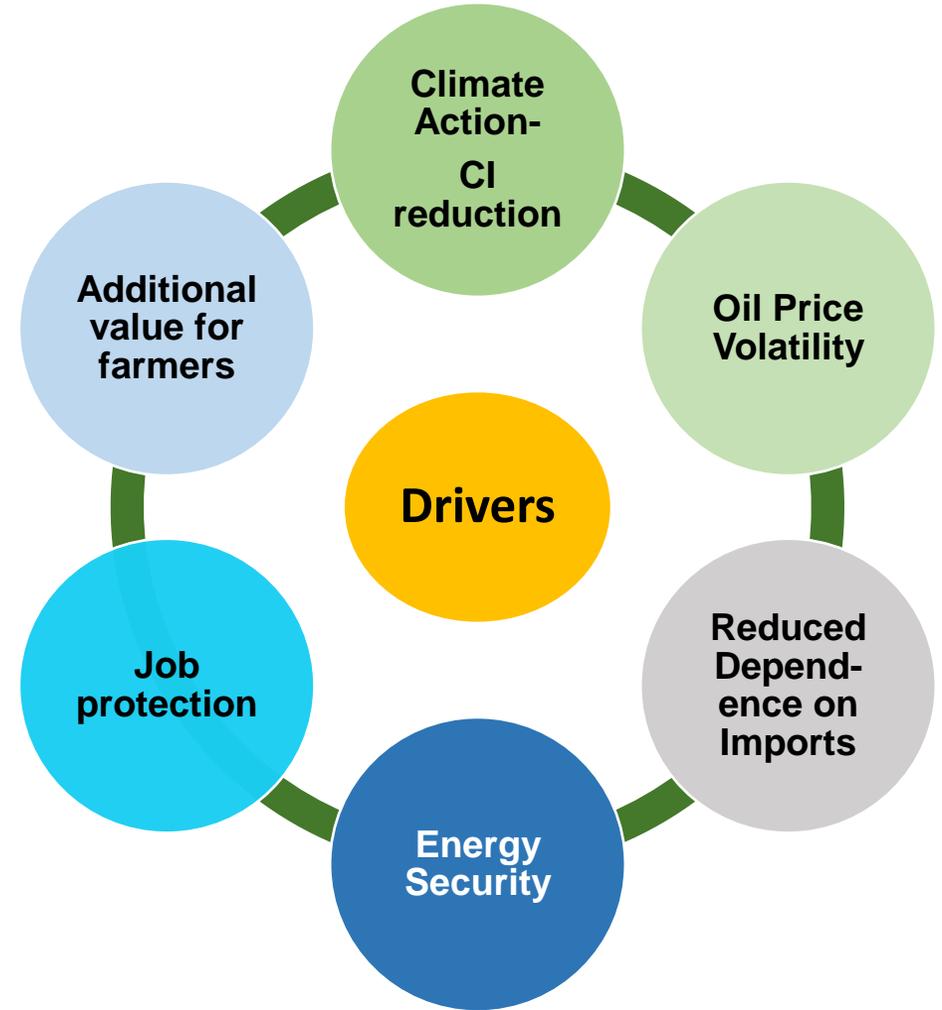
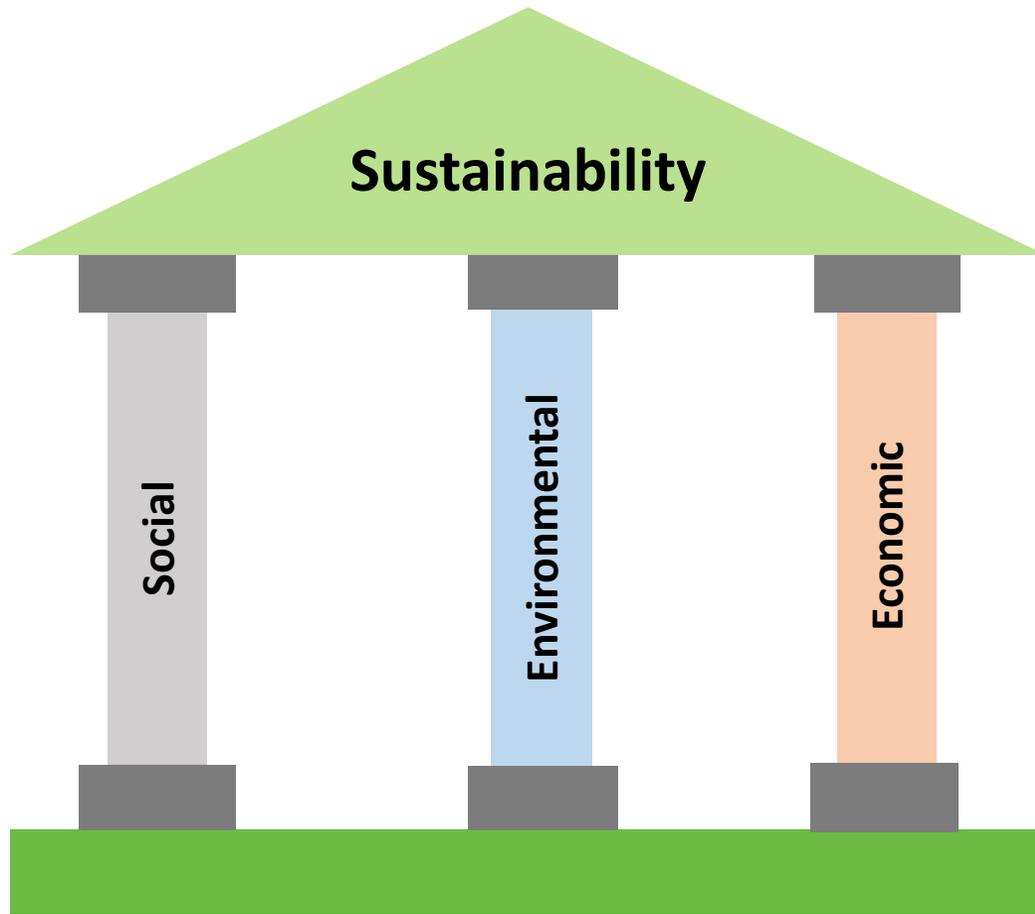


Arise 2030 : Future Horizons

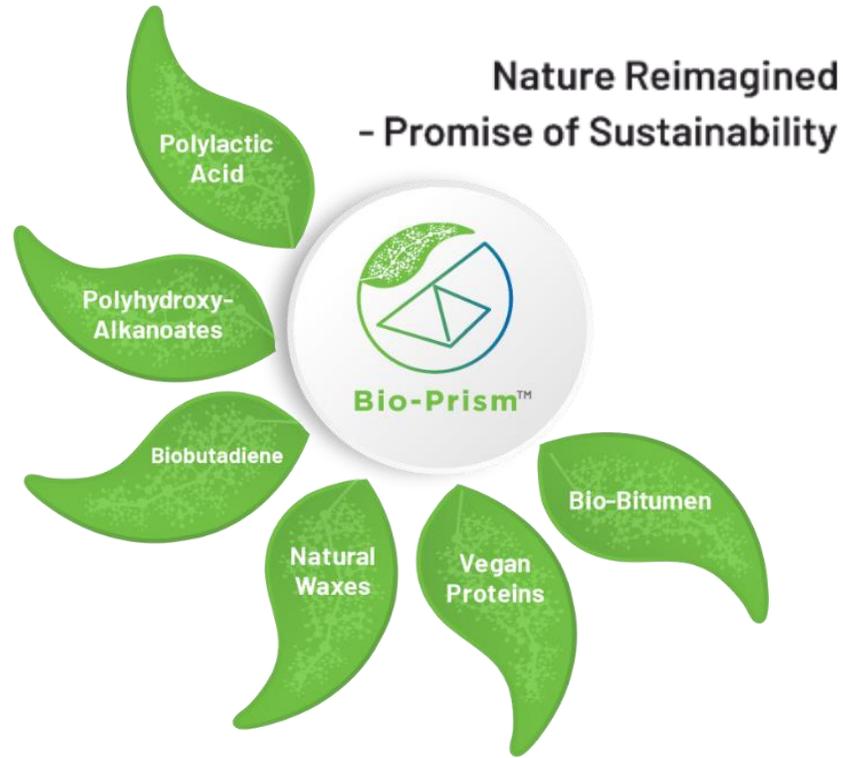




Bioeconomy positively impacts 11 of the 17 Sustainable Development Goals



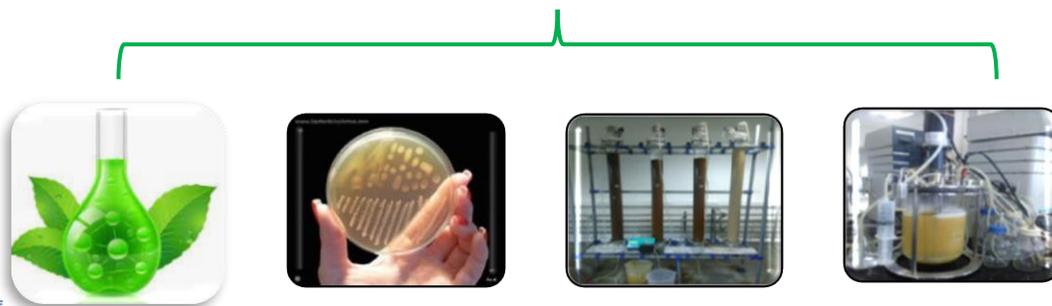
Bioeconomy facilitates holistic development of mankind



Bio-Prism® portfolio comprises of technologies for production of Renewable Chemicals and Materials (RCM).

RCM produced from bio-based feed stocks are sustainable alternatives to products made from fossil resources.

PROCESS



APPLICATION





- First-of-kind pilot cum demo plant for Polylactic Acid (PLA) being set up in the outskirts of Pune
- Capex of around Rs. 60 crores
- Multipurpose facility to be used for PLA, PHA and other products

Phases

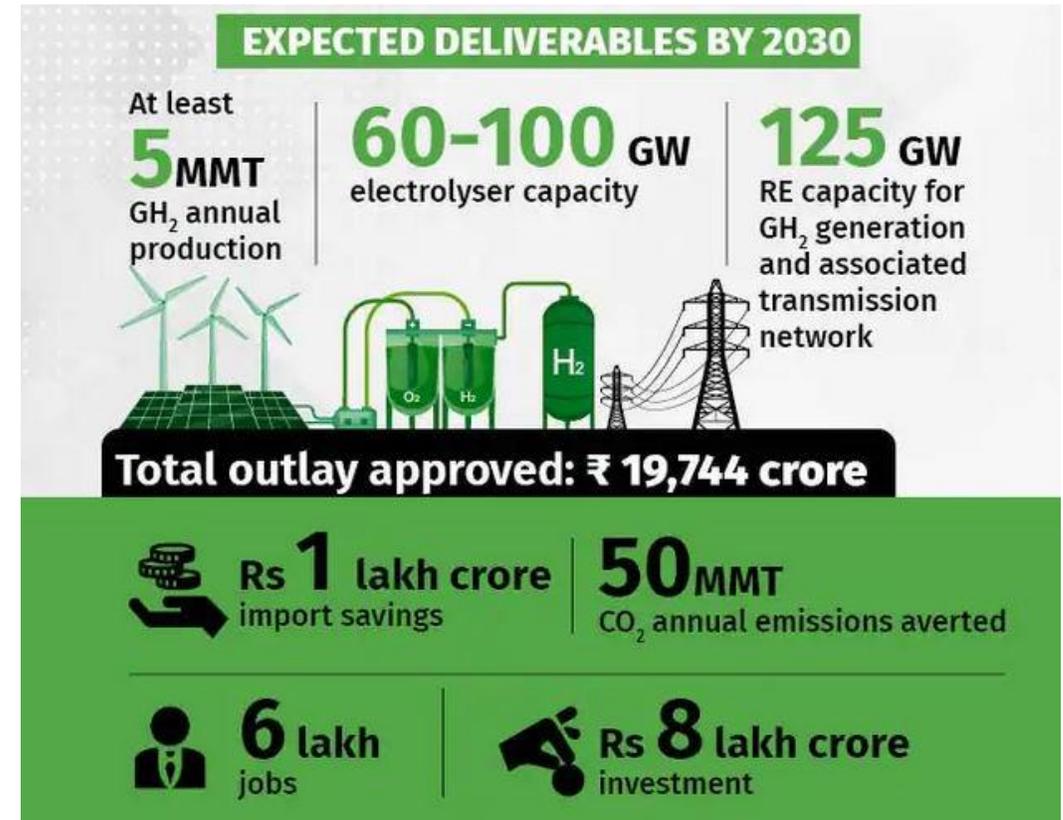
Phase 1: Lactic acid

Phase 2: Lactide & Protein

Phase 3: PHB , Biobutadiene



- Green hydrogen from agri feedstock for maximum CI reduction
- Hydrogen as future source for energy security
- India's vision as hub for green hydrogen



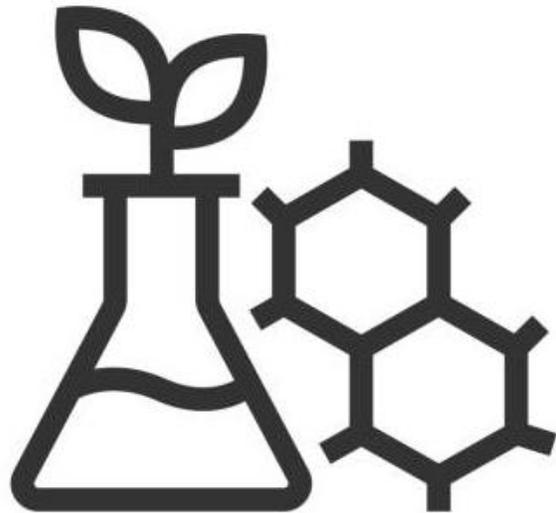
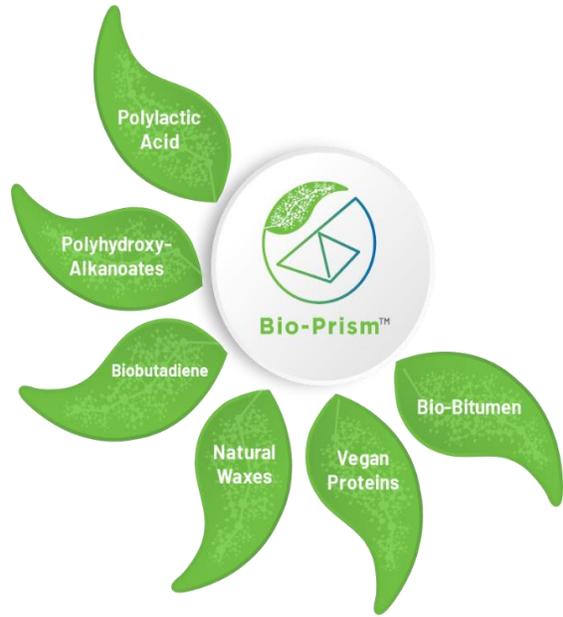


- Decarbonization of hard to abate aviation sector
- CORSIA guidelines coming into effect from 2027
- India; potential hub for production of SAF

- Mainstreaming of bioeconomy- participation from global energy majors
- Joint venture approach for leveraging synergies
- Industry landscape evolving
- Partnerships and collaborations; order of the day
- Asset light business models
- Life cycle management



Praj signed a term sheet with IndianOil to advance plans to strengthen biofuels production capacities in India.



- Reduction in dependence on petrochemicals in multiple sectors
- Bio 3E Policy - (biotechnology for environment, economy and employment)
- INR 10,000 Crore investment envisaged
- Facilitate sustainable development
- Job creation for farming community
- Biopolymers and Biomaterials

Integrated Renewable Syngas Technology Platform

Feedstock

- Agri Residue
- Forest residue
- Distillery Spent wash
- Press Mud
- Food waste



Biological



**Bio-methanation &
Gas Purification
Technology**



**Biomethane
(CH₄)**

**Intermediate
Low Carbon
Molecule**



Thermo-chemical



**Reformation
Technology***

**Renewable
Syngas
(CO & H₂)**



Fuels

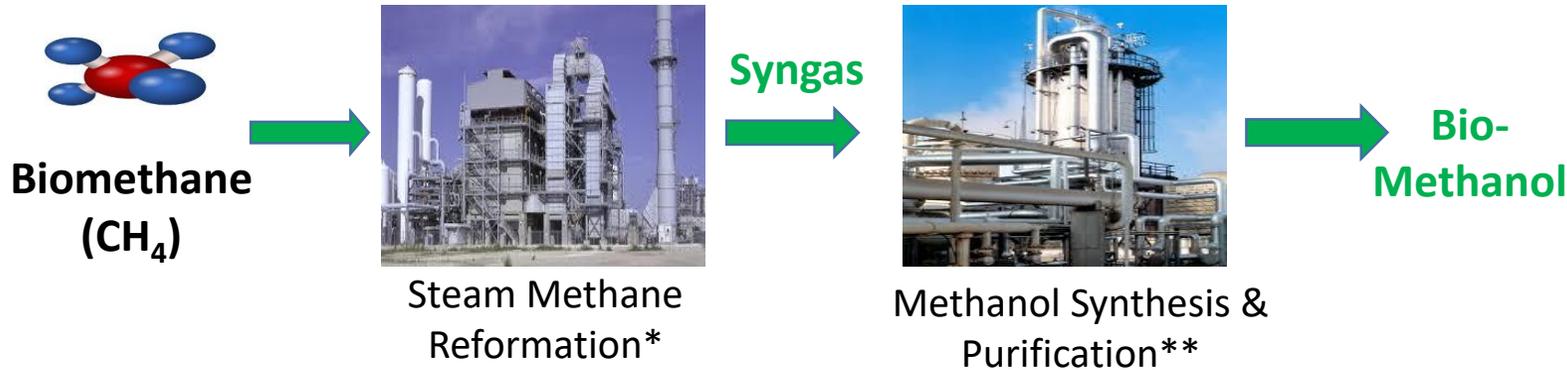
Green Hydrogen

Bio-methanol

**Di-methyl Ether
(DME)**

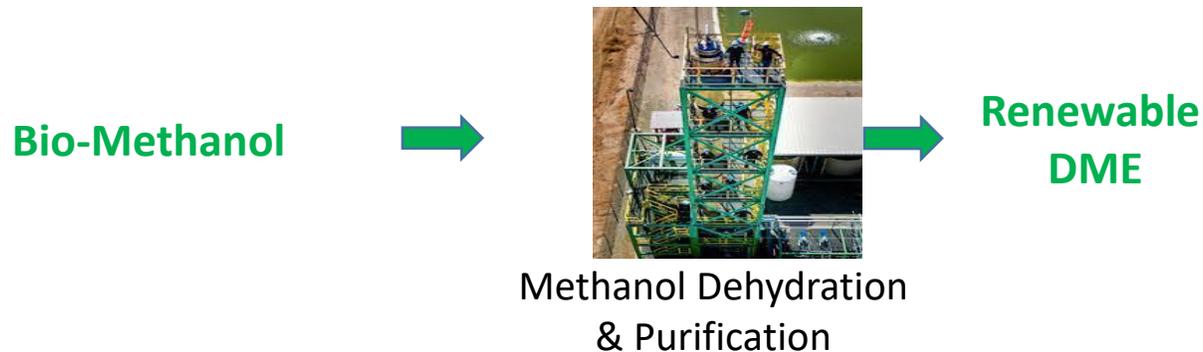
Renewable Syngas Production using Biocatalytic & Thermo-catalytic Processes

Bio-Methanol

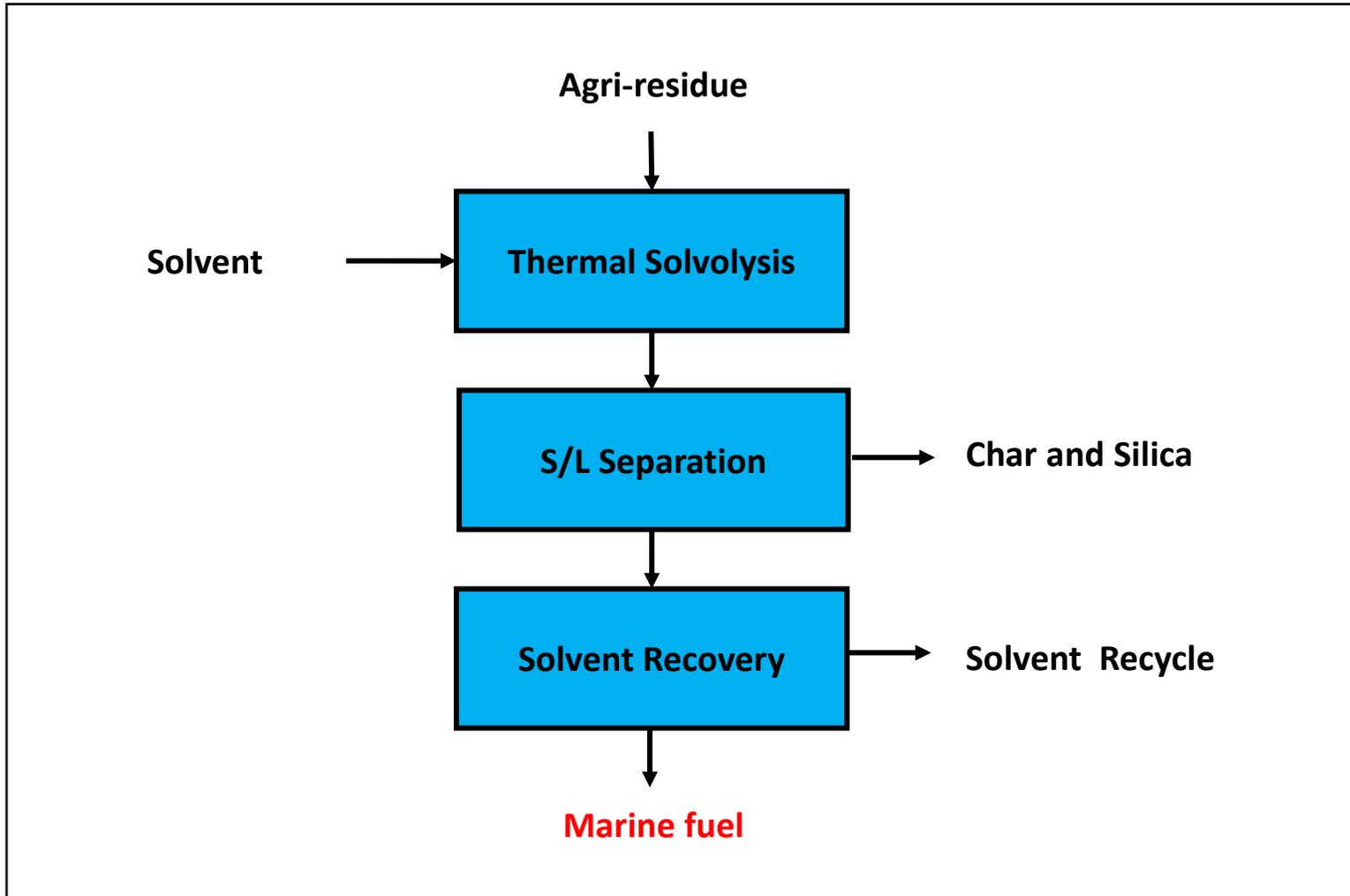


- Up to 70% CI reduction for Marine application
- Cost of production comparable to fossil based Methanol (< INR 40/kg)#

Renewable Di-methyl Ether (DME)



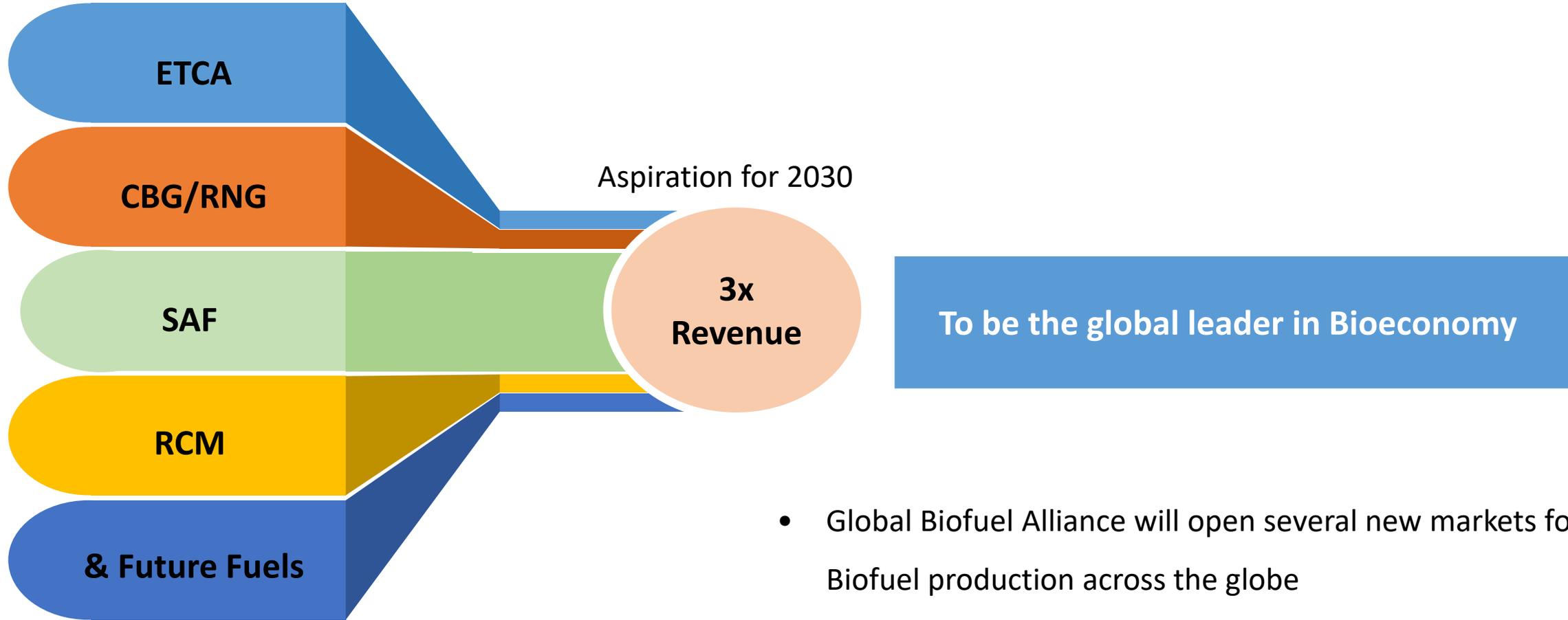
- High Cetane number (>55) and used as blend fuel with Diesel
- Can be blended upto 25% with LPG



Marine Biofuel Lab Sample



Building Sustainable Future; Together



- Global Biofuel Alliance will open several new markets for Biofuel production across the globe
- Ever expanding canvas of bio economy is unfolding



Q&A
