

Introduction of Punjab Renewable Energy System Private Ltd. (PRESPL)

“Agricultural-Waste to Energy in India”



Mitsui & Co., India Pvt. Ltd.

Energy Division

Dec 2021

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2. Profile of PESPL

3. Activities by PRESPL (Supply Chain and Challenge)

4. Alliance with Mitsui

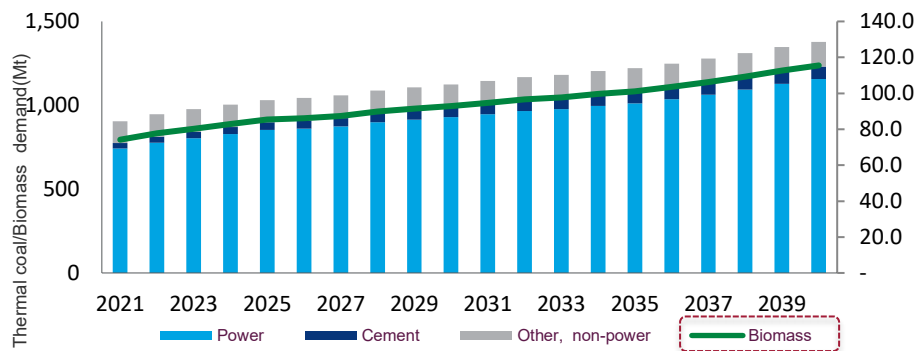
Government Initiatives for Biomass Utilization

Bio-Fuel Policy for Transportation Fuel

- ❑ The government of India released **“Bio-Fuel Policy” in 2018** to promote bio-fuel to be mixed in transportation fuel, especially Bio-Ethanol, Bio-Diesel and Drop-In-Fuel.
- ❑ Gasoline Mix, **Bio-Ethanol at 20% by 2025** and Drop-In-Fuel.
- ❑ Diesel Mix, **Bio-Diesel at 5% by 2030** and Drop-In-Fuel.

Biomass Co-firing at thermal coal plants

- ❑ CEA (Central Electricity Authority of India) has written to all states and coal power plants to **blend 10% biomass pellets** with coal for power generation in thermal power plants, around **115 mil ton in 2040** (all the coal fired plants blends biomass 10% basis).



Source: Wood Mackenzie Coal Market Service

Compressed Bio-Gas project development

- ❑ The government of India set SATAT (Sustainable Alternative Towards Affordable Transportation) program in 2018 which targets as below.
 - 250 Bio-Gas plants by 2020
 - 1,000 Bio-Gas plants by 2022
 - **5,000 biogas plants by 2025 (equals to 15 mil ton/Year)**
- ❑ Approx 2,400 LOI for off taking has been already issued. 13 Commercial plants are operational. Project development incl Financial arrangements is expected to progress on ward.
- ❑ PRESPL has already signed MOU for 5 locations for feedstock supply.

Global Norm and Target by COP-26

- ❑ COP 26, India announced;
 - ✓ **2070, Net-Zero Emission Target**
 - ✓ **2030, Renewables / Non-Fossil Target to 450 ~ 500GW** electric capacity, 50% equivalent, a reduction of emission by 1 bil ton and emission intensity of the GDP by 45%.



With government's target, solutions for biomass utilization are required

1. Business Background

Business Background - Why PRESPL...? -

Social Problems in India

- ❑ **Air pollution** caused by stubble burning (agricultural residue)
- ❑ **Low revenue of Farmers** (industrial support, employment opportunity).
- ❑ **Large trade deficit by crude oil imports** (acceleration of Bio-Fuels)
- ❑ **GHG emission reduction** (CO2 reduction in transportation sector)
- ❑ Effective use of **unused resources (circular economy)**

In order to solve above social problems, the government of India set policies which aim to accelerate **biomass/Bio-Fuels utilization** in India.

Efficient **biomass collection mechanism** and its utilization are the key successful path for the target achievement.



PRESPL's Business Footprint / Strength

- ❑ Punjab Renewable Energy Solutions Pvt. Ltd. (PRESPL) is the 'Leading Indigenous' **Indian Entrepreneur cum-Contributor** in Biomass Supply Chain Management, in India, since 2011.
- ❑ PRESPL has successfully **scaled-up their biomass aggregation business** and **the only scalable biomass aggregator / supplier** in India currently.
- ❑ Established a **competitive advantage** and accumulated **vast know-how by doing forward integration** in biomass supply chain (aggregation of agriculture residue requires **efficient rural supply chain management**).
- ❑ Supported by international investors (responsAbility, SBI Neev and Shell Ventures).
- ❑ Engaged with large industrial customers (Pepsi.co, Cipla, Sun Pharma, L'Oréal etc).

PRESPL is a leading player driving the Bio-Energy Sector since 2011.

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2. Profile of PRESPL

PRESPL Company Overview



Company Overview

Company Name: Punjab Renewable Energy System Pvt. Ltd.

Established : 2011

Representative: Lt. Col. Monish Ahuja (Managing Director)

Head Office: Maharashtra, India

Employees: 201 (2020)

<PRESPL by numbers>

1000+

• Villages participated in 7 years

500+

• VLE (Village Level Entrepreneurs) partners

500,000+

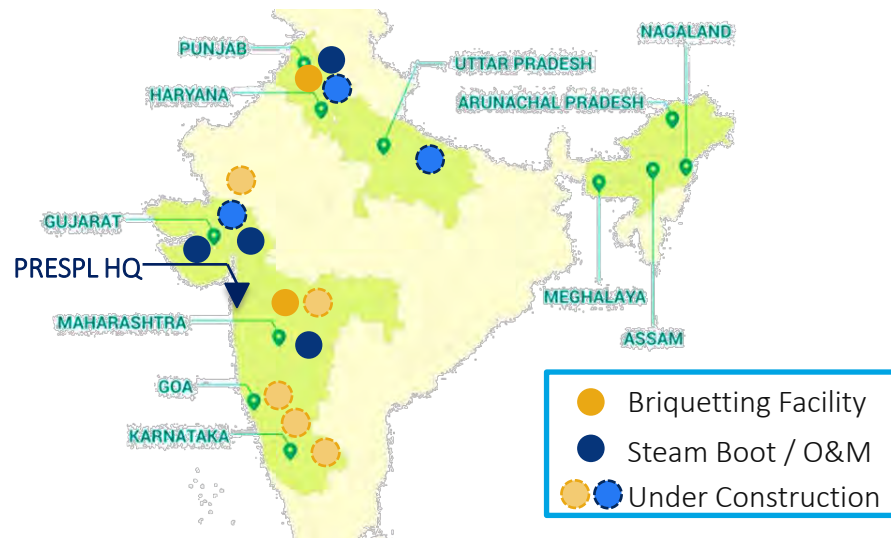
• MT biomass aggregated in 8 years

400,000+

• Units of process steam supplied in 3 years

PRESPL's business area

- ❑ Owning 39 biomass collection centers in 2 states to control the seasonal availability.
- ❑ Expanding its business area as shown below.



PRESPL's Key Management Personnel



Lt Col Monish Ahuja (Retd)

CMD



Col Rohit Dev (Retd)

COO



Col Sumeet Malhan, SM (Retd)

CTO



Mr. Chandan Goswami

CS&BO



Cdr Gurkeerat Singh Sekhon (Retd)

Sr. VP (NZ)



Lt Col Sandeep Singh (Retd)

Sr. VP (SZ)



Col Pronob Roy (Retd)

VP (EZ)



2. Profile of PRESPL

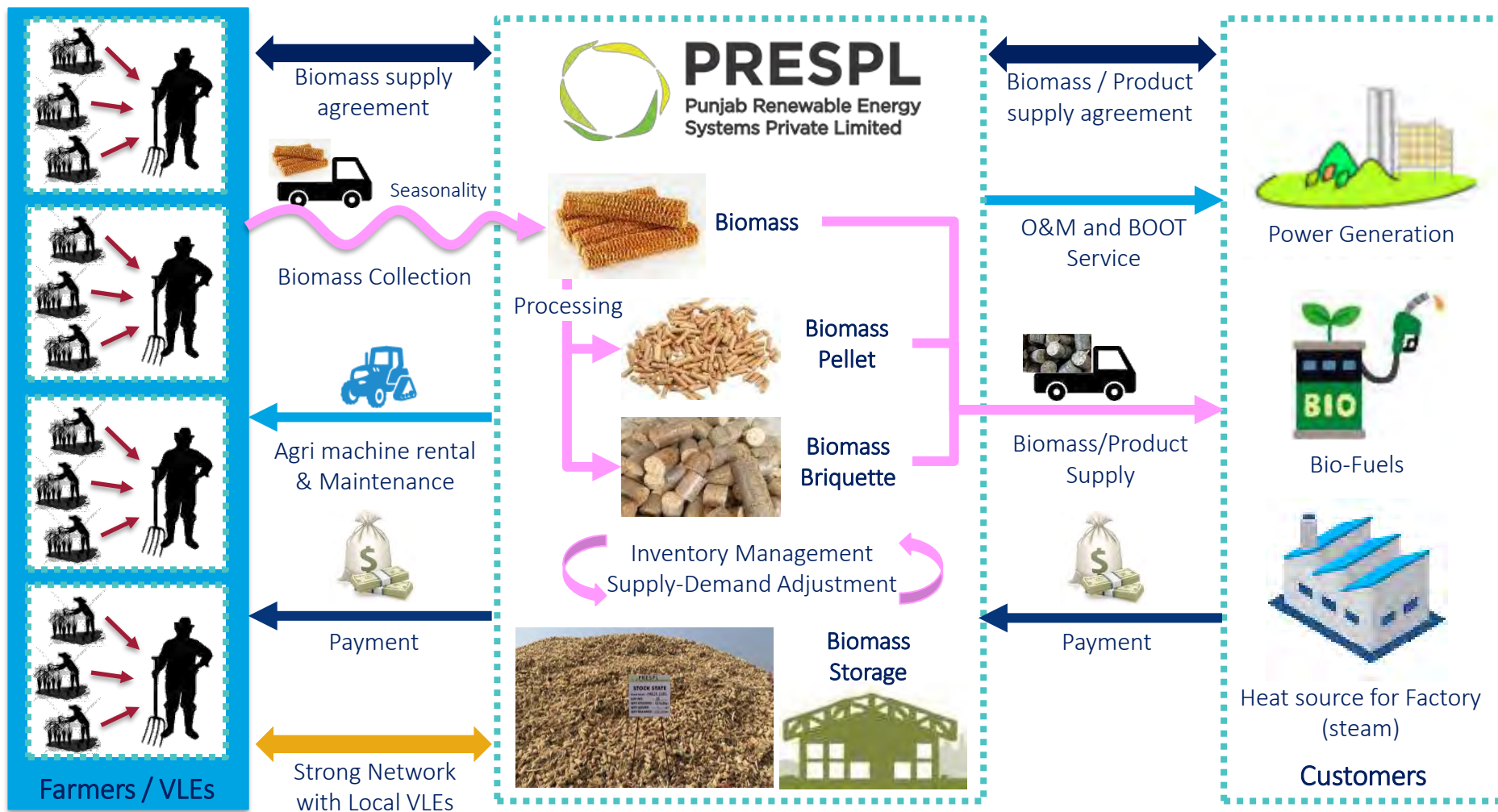
PRESPL's agricultural residue (biomass) supply chain



PRESPL manages whole agricultural residue(biomass) supply chain from farmers to end-users

2. Profile of PRESPL

PRESPL's Business Model



VLEs: Village Level Entrepreneurs

PRESPL has a strong network with local VLEs and can aggregate/manage/supply biomass for end-users.

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3. Activities by PRESPL

PRESPL's Biomass Supply Chain Management = Collection



3. Activities by PRESPL

PRESPL's Biomass Supply Chain = Storage



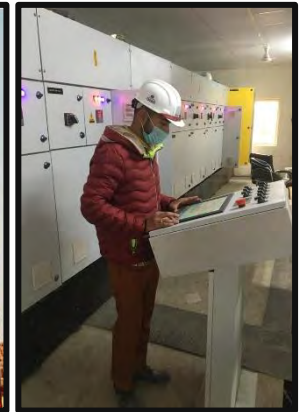
3. Activities by PRESPL

PRESPL's Biomass Supply Chain = Briquette Production



3. Activities by PRESPL

PRESPL's Biomass Supply Chain = Briquette Production (100% Paddy)



First-of-its-kind Paddy Straw Briq. Plant
Virtual Inauguration by

Inaugurated on Friday, 18th Dec, 2020



3. Activities by PRESPL

PRESPL's Biomass Supply Chain = CO2 Free Steam Supply (BOOT Model)



CAPEX Investment



Complete EPC of Boiler



Uninterrupted Biomass Supply



Comprehensive O&M Service

3. Activities by PRESPL

PRESPL's List of Major Clients



Long Term Steam Supply on BOOT Basis: -



L'ORÉAL
INDIA



10 Years

Long Term Steam Supply on O&M Basis: -



PEPSICO

Cipla



2-10 Years

OC Specialities

Biomass / Briquette Supply: -



Ambuja
Cement


Yearly Contract



PEPSICO

3. Activities by PRESPL


PRESPL's New Challenge = Cement Industry (MOU with Ultratech)




Accelerating Decarbonisation

UltraTech MoU with PRESPL is a key step in its efforts to reduce its carbon footprint while contributing to the circular economy


The MoU enables UltraTech to:



Scale-up the use of biomass and replace fossil fuels in its manufacturing operations.



Secure the sustainable supply of biomass for its large network of manufacturing units in the long term



TOTAL BIOMASS USAGE- 40,000 ton / Year

PRESPL's New Challenge = Co-Fire at Coal Thermal Power Plant



Co-firing at Thermal Power Plants

India has installed power capacity of over 390,000 MW of which over 50% is based on coal.

India consumed about 690 mil ton of coal last year for generating power.

India in the recent COP26 has committed to be carbon neutral by 2070

In biomass terms the equivalent requirement will be about 1,000 mil ton annually.

Even at 5% co-firing mandate the replacement demand of biomass will be about 50 mil ton or 1,750 mil INR.



Can Be Set Up Anywhere In Country

Environmental & Health Benefits

Empowers Farmers For Sowing, Additional Income

Promotes Entrepreneurship & Financial Inclusion

Circular Economy – 100 mil INR Income generated



3. Activities by PRESPL

PRESPL's Function to Social Development = Diversity



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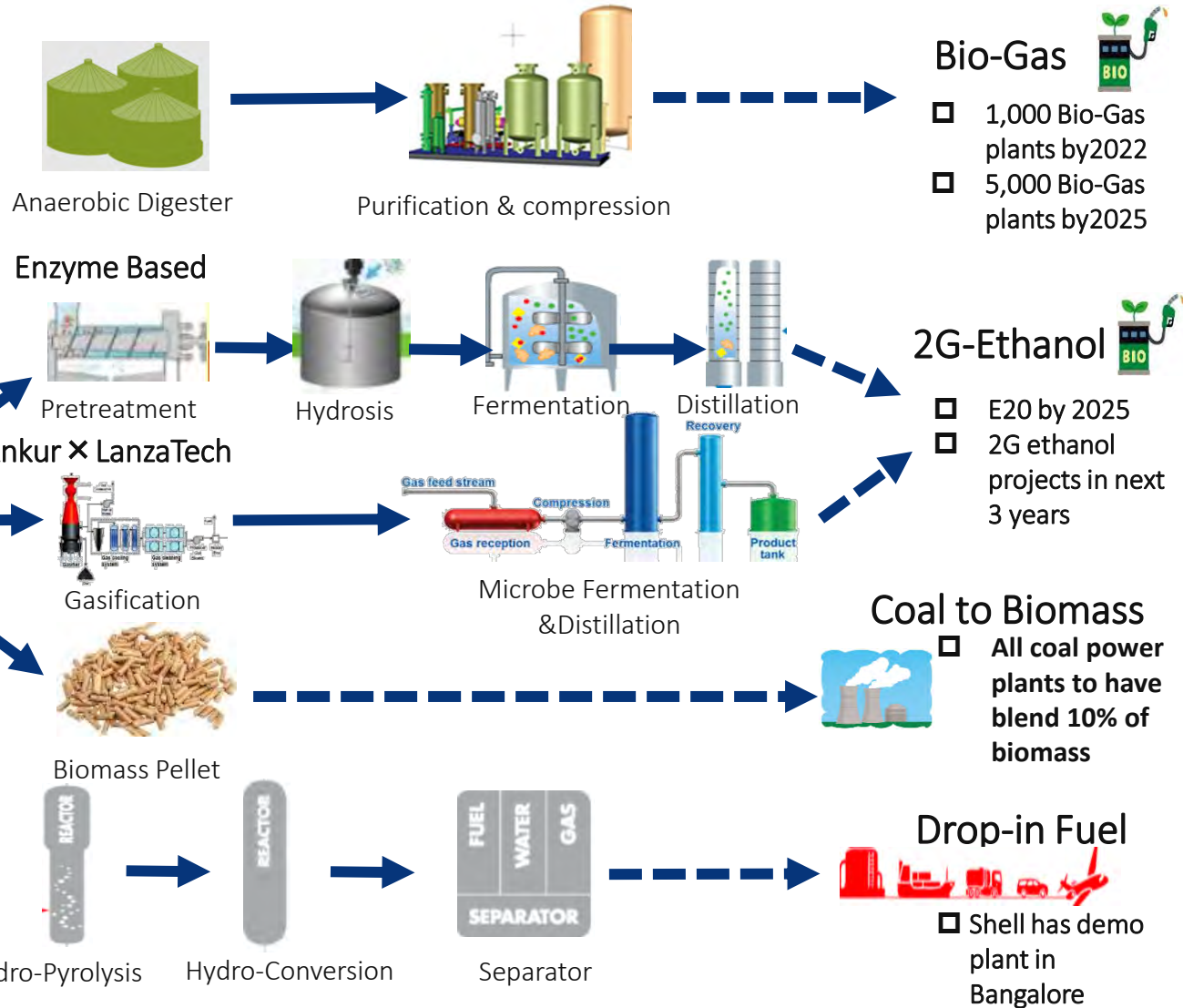
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Biomass Potential in Energy Market



Agricultural Residues have huge potential to be the feedstock of variety of energy sources

Agricultural Residues



Securing the biomass sources is essential in order to expand the energy business in India

4. Alliance with Mitsui

Mitsui's contribution under Alliance Agreement



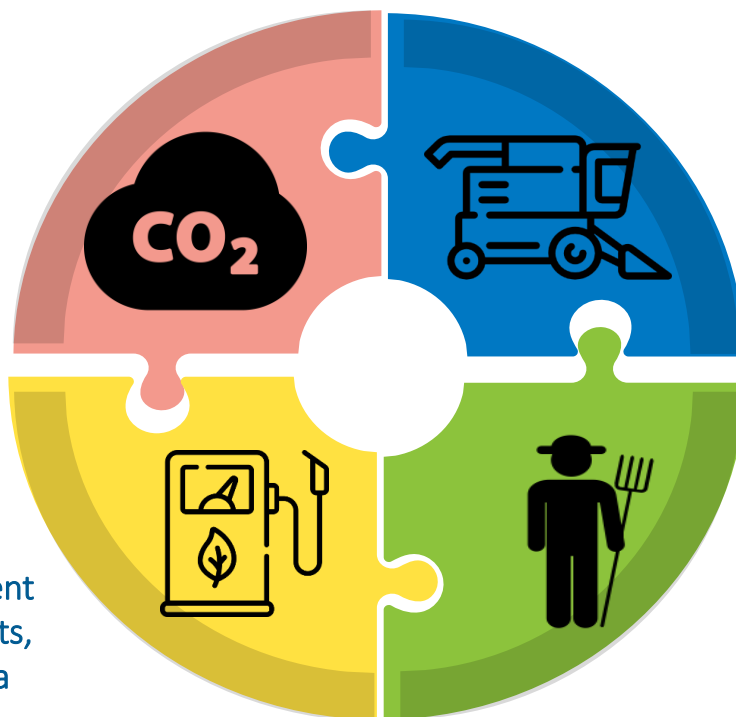
- ✓ Mitsui with PRESPL develop and promote bio-energy application.
- ✓ There will be following four sectors in which Mitsui co-work with PRESPL's growth under alliance.

CARBON SOLUTION

- Mitsui: Assisting the exploration and development of the new business relating CO₂ credits
- PRESPL: Expanding the opportunities in carbon trading, consultation, contribution to the lower carbon.

ENERGY

- Mitsui: Enhancing the development of LanzaTech's 2G ethanol projects, Bio CNG, etc by receiving the data and know-how of agricultural residues from PRESPL
- PRESPL: Being able to expand their clients by co-work with Mitsui.



MOBILITY

- Mitsui: Supporting PRESPL's and mechanization in agri sector.
- PRESPL: Diversifying the procurement mechanism (financial scheme) and source of the machinery and/or relevant equipment.

AGRICULTURE

- Mitsui: Co-Work with PRESPL to promote new products / technologies under PRESPL's agricultural network and the data.
- PRESPL: Increasing the biomass collection volume by strengthening local network and the existing client's base with Mitsui.

360° business innovation.



MITSUI & CO.