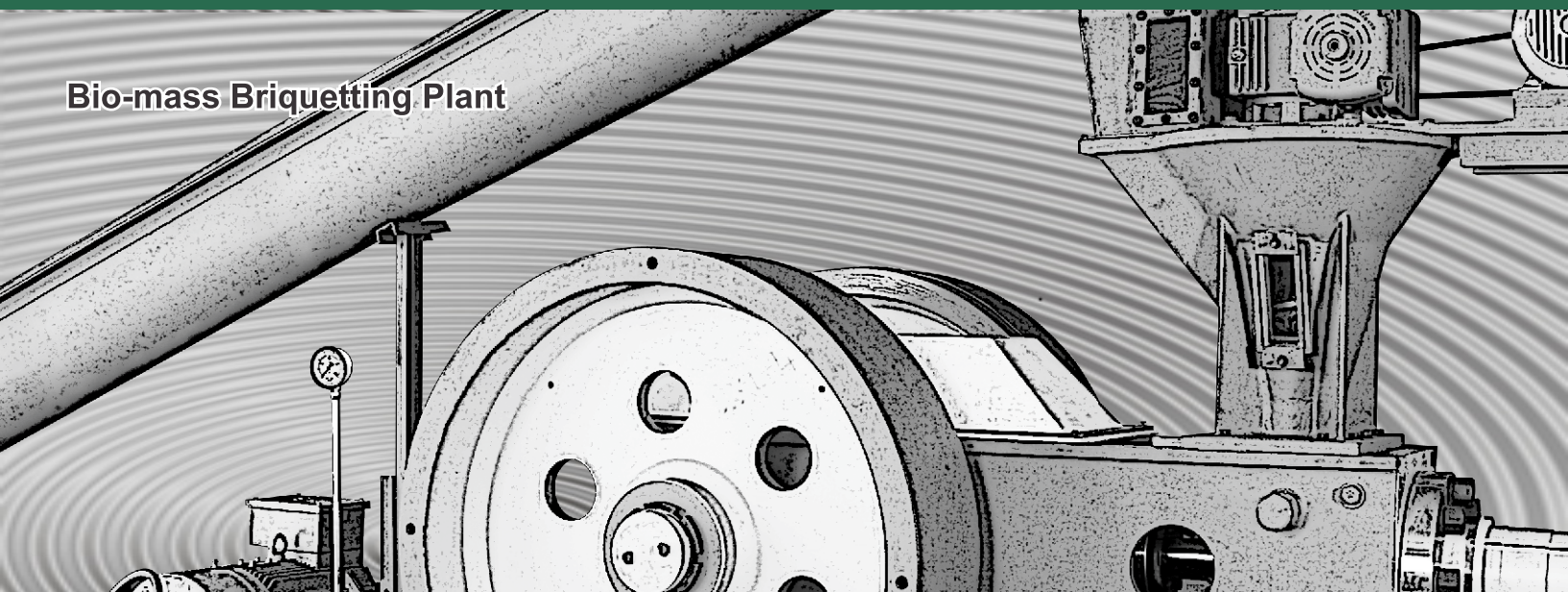


Empowering Eco-Friendly Energy

Bio-mass Briquetting Plant



Radhe
ENGINEERING CO.

Making our
customer's businesses stronger
by
empowering them
to be
more responsive
to
utilize natural energy resources
to
save environment
&
full-fill global energy need



ABOUT US

Leader as a responsible care company
in Bio-mass Energy Projects.



Radhe Engineering Co. is the core company of **Radhe Group of Energy** mainly engaged in the Research & Development, Manufacturing and Marketing of Non-conventional and Renewable Energy Equipments...

- **Bio-mass Briquetting Plant**
- **Bio-mass / Coal Gasifier System**
- **Other Energy Equipments**

The Company was spun-off as an independent organization with carrying the leadership & experience of **Dr. Shailesh Makadia** in early ninty's. Since inception, Radhe Engineering Co. has worked closely with clients to help them utilize the waste, more efficient and more agile businesses.

From its founding, Radhe Engineering Co. was built with a global mindset. With headquarters in Rajkot, Gujarat, India and a rapidly expanding delivery footprints and establish extremely close partnerships that fosters continuos operational improvements and better bottom results for clients.

Key Highlights

- **ISO-9001:2008** Certified Company.
- **CE-Mark** Machine
- **Unique blend** of passionate professionals.
- **Strong relationships** with 400+ active customers worldwide.
- **Enhanced domain** focus throug sub verticalization
- **Proactive solutions offerings** for improving operational efficiency, complying with industry regulations, and improvident customer service levels.

Recognized as a Leader

We are gratified that our passion for building stronger businesses and utilizing the agro waste by applying engineering to environment is consistently recognized by independent sources and clients.



THE PROJECT

Bio-mass Briquetting is the Best Project to Convert Bio-mass to Briquettes and contributing towards a better ecology & economy.



Energy is the key factor in economic development of every country. The demand of energy is increasing and supply sources are limited so there is building a huge gap between the demand and supply of energy.

While it is red alert for fossil fuels like Petrol, Kerosene, Furnace Oil, LDO, Natural Gas, LPG, Lignite, Coal etc. Thus Renewable and non-conventional energy is the only solution, Among the non-conventional sources of energy, the use of the energy potential in agricultural wastes shows good promise.

The project is simply process of converting Agro-forestry or Bio-mass waste into **Briquettes/Bio-coal/White Coal**. Briquetting is the process of densification of biomass to produce homogeneous, uniformly sized solid pieces of high bulk density which can be conveniently use as a fuel.

THE GOVERNMENT OF INDIA DECLARED THE INCENTIVES AS UNDER*

- 100% Income Tax benefit up to 5 years.
- 80% depreciation on first year.
- Doesn't require NOC from pollution control board.
- Prompt finance Available from nationalized bank.

(* Kindly Check the Updates.)

SOCIAL BENEFITS

- Employment generation.
- Save import duty on fossil fuel.
- Reduce green house gases.
- Control pollution.

SALIENT FEATURE OF THE PROJECT

- Easy availability of various raw materials.
- Does not require any binder or chemical.
- Excellent project viability.
- Rising demand of finished Briquettes.
- Short payback period.
- Pollution free and non-hazardous project.

RAW MATERIAL

Any type of Agro-forestry Waste
i.e. Bio-mass with define specification
can be used as a Raw Material.



Every year million tons of agricultural waste are generated. These are either non used or burnt inefficiently in their loose form causing air pollution. Handling and transportation of these materials is also very difficult due to their low density.

Radhe Engineering Co. provides the solution to convert this wastage into best form. These wastage can easily convert into high density fuel (Briquettes) with the help of Biomass Briquetting Plant.

MAJOR AGRO-WASTE AVAILABLE

- Groundnut Shell
- Sugarcane Baggasse
- Caster Seed shells / Stalk
- Saw Dust & Wood Chips
- Cotton Stalks / Chips
- Bamboo Dust
- Coffee Husk
- Tobacco Waste
- Tea Waste
- Paddy Straw
- Mustard Stalk / Shell
- Sunflower Stalk
- Jute Waste
- Palm Husk
- Soybeans Husk
- Wheat Straw
- Barks & Straws
- Forestry Waste
- Coir Pitch
- Rice Husk
- Seeds Cases
- And lots more...

SPECIFICATIONS OF THE RAW MATERIAL

- Size : Max. 20mm
- Moisture : Below 10%

PROCESS OF RAW MATERIAL (If required)

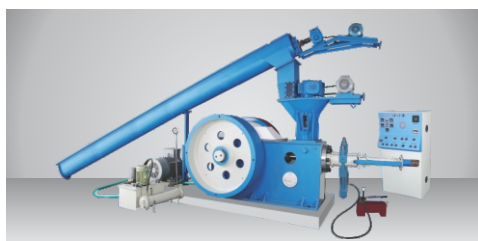
- Most of Biomass can be used directly as per specification.
- If the raw material is having more then 10% of moisture contain, then it requires Drying process.
- If the raw material is longer then 20mm size, then it requires Cutting process.

RATE OF RAW MATERIAL

- Rates of raw material are variable depending on season & location.
- Availability of raw material is very important for economical viability of biomass briquetting project.

FINISHED PRODUCT

Briquettes are Ideal & Eco friendly fuel with uniform shape, good calorific value & low ash contain.



Briquettes / Bio-coal / White coal are densification of biomass to produce homogeneous, uniformly sized solid pieces of high bulk density which can be conveniently used as a fuel.

Briquettes have high specific density (1200Kg/m³) and bulk density (800 Kg/m³) compared to 60 to 180 Kg/m³ of loose biomass.

BRIQUETTE IS AN IDEAL FUEL DUE TO

- Eco friendly & Renewable Energy fuel
 - Economical and cheaper than other solid fuels.
 - Thermal calorific value approx 4000 Kcal/Kg.
 - Pollution free & non-hazardous.
 - Lower ash contain 2% - 5%. There is no fly ash when burn.
 - Consistent high burning efficiency.
 - Contain high density & higher fix carbon value.
 - Easy for transportation, feeding & combustion.
 - Combustion is more uniform.
- due to high rise in fossil fuel prices.

APPLICATIONS OF BRIQUETTES / BIO-COAL

Briquettes are ready substitute of Lignite / Coal / Wood in thermal applications & replaces costly liquid fuels like FO, Diesel, LDO, Kerosene etc. Use of BRIQUETTES as a fuel for green energy has shown very promising results.

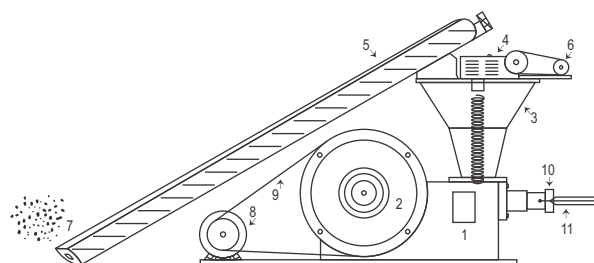
USE OF FINISHED BRIQUETTES IN VARIOUS INDUSTRIES (Thermal Applications)

- | | |
|--------------------------------|----------------------|
| • Gasifier System Applications | • Vegetable Plants |
| • Ceramic Industries | • Textile Unit |
| • Refractory Industries | • Spinning Mill |
| • Solvent Extraction Plant | • Lamination Ind. |
| • Chemical Industries | • Leather Industries |
| • Dyeing Units | • Brick Making Units |
| • Milk Plant | • Rubber Industries |
| • Food Processing Industries | • Any Industrial |



BRIQUETTING JUMBO-90

Jumbo-90 is a flagship model of Briquetting Industry with high production, Low conversion cost & easy operation.



The flagship product of Radhe Engineering Co. is JUMBO - 90 Model. It has jumbo production capacity with minimum operating cost compare to other models. Some latest modifications make it more economical and most effective model.

OUR LATEST BRIQUETTING PLANT JUMBO-90

- Input Raw Material Form : Up to 20 mm Size
- Production Capacity : 1500 Kg / Hr.*
- Finished Product size : 90 mm Diameter
- Finished Product shape : Cylindrical

**Prod. Capacity depends on the Bulk Density of RM.*

FEATURES OF JUMBO-90

- Jumbo Production Capacity.
- Heavy structure with standard design.
- Acceptability up to 20 mm size of raw material (No need of powdery form)
- Easy Operating System.
- High-density of finished product with 90 mm diameter.
- Low production cost per MT due to state of the art technology.
- Low Electric consumption due to direct feeding without Hammer Mill.
- Low maintenance cost.
- Low management cost due to high production capacity.
- No loss of production & Air pollution due to direct feeding system.

JUMBO-90 SIDE ELEVATION WITH BACK CONVEYOR....

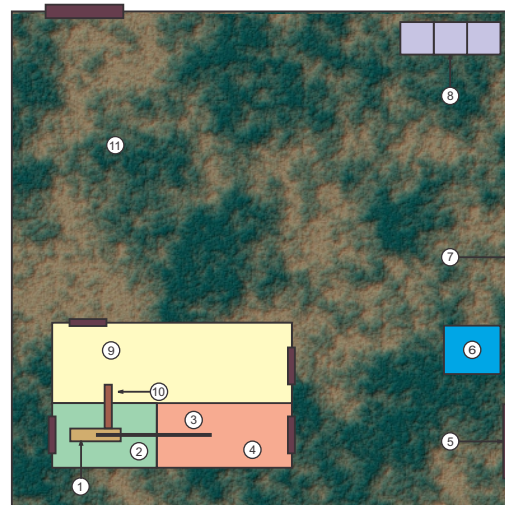
1. Briquetting Press.	7. Space for Raw Material.
2. Load Wheel.	8. Main Electric Motor.
3. Feeding Kupy.	9. Flat Belt.
4. Reduction Gear.	10. Die Holder.
5. Screw Conveyor.	11. Output by cooling lines.
6. Electric Motor.	

LAND LAYOUT

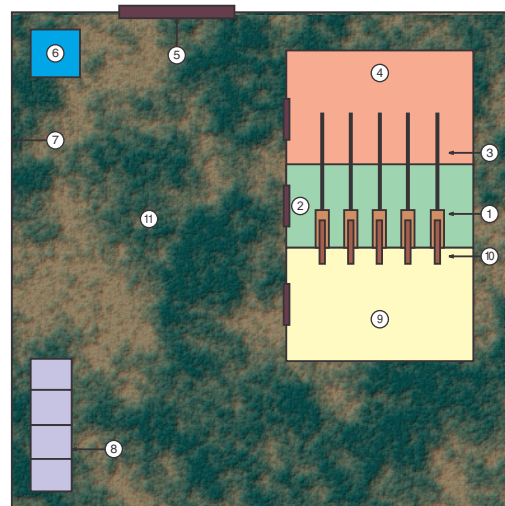
Ideal Lay-Out for better Utilization of Raw Material storage, Machine room & Finish Product area.

01. Foundation for Briquetting Press - 16'x5'x5'
02. Shed for Briquetting Press - 25'x30'x14'
03. Cooling Lines for Output Briquettes - 30'
04. Shed for Finished Briquettes - Galvanized Roof - 40'x40'x20'
05. Entry Gate - 15'
06. Office Building - 10'x10'
07. Compound Wall
08. Proposed Labor Rooms
09. Shed for Raw Material - Galvanized Roof - 60'x40'x20'
10. Conveyor for Raw Material Feeding
11. Open Space for Raw Material Storage.

LAND LAYOUT - 1
(For Single Press)

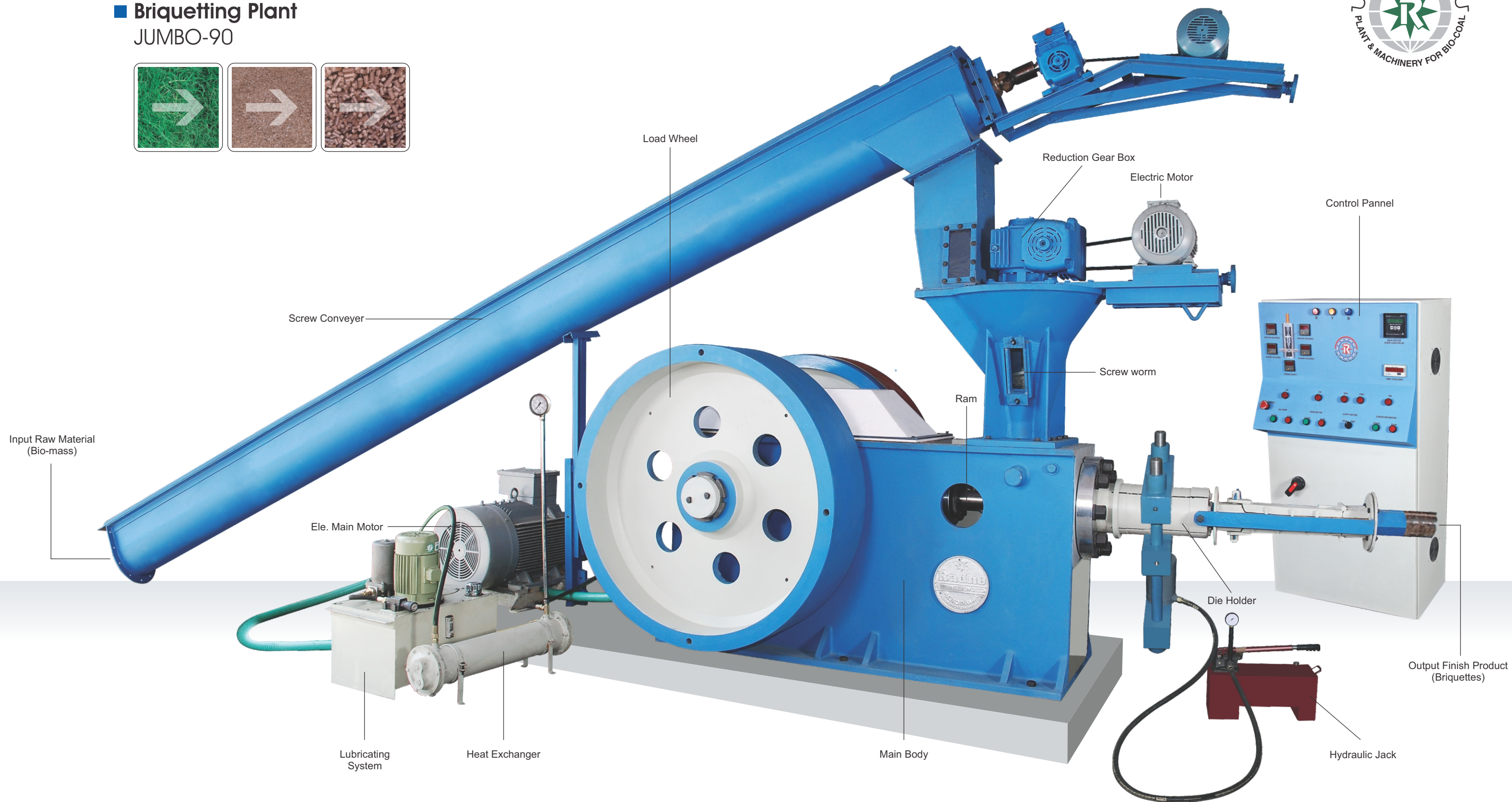
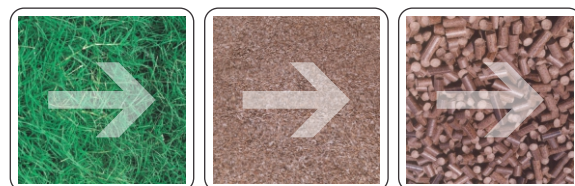


LAND LAYOUT - 2
(For Single / Multiple Press)





■ Briquetting Plant JUMBO-90





Radhe Renewable Energy Development Pvt. Ltd.

Hi-Con Technocast Pvt. Ltd.

Hi-Mac Casting Pvt. Ltd.

Hi-Can Industries Pvt. Ltd.

Vitagreen Products Pvt. Ltd.

Shantol Green Energy (I) Pvt. Ltd.

Radhe Green Agritech

Radhe Exim Pvt. Ltd.

Herbules Pharma Pvt. Ltd.





Radhe ENGINEERING CO.

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