INDUSTRIAL ACCESSORIES COMPANY

BIOMASS PELLET PLANTS

TURNING AGRICULTURAL AND WOOD RESIDUES INTO DENSIFIED FUELS FOR HEAT AND POWER

www.iac-intl.com
Agricultural Biomass Pellet Plants

IAC designs and builds state-of-the-art plants to create a dense fuel pellet from biomass residues which is easily stored, transported and combusted in residential heating appliances, industrial boilers or can be co-fired in electric utility boilers.

IAC pellet plants can process a variety of raw materials ranging from whole trees, forest and urban wood wastes, and agricultural wastes such as stovers, straws, seed hulls, and orchard wastes. Municipal waste streams including RDF and biosolids can also be formed into pellets.

The plants generate thermal energy from the process stream for drying the raw materials prior to densifying. Power for the plant can also be created through steam turbo-generation by combusting or gasifying incoming raw material streams.

The plants incorporate best available technology for the control of air borne emissions and included the latest in computerized control systems.

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Hay Storage and Grinding

• Switchgrass and Stover Bale Warehousing and Grinding

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Biomass Fuel Drying and Preparation

- Agricultural, Forest and RDF Biomass drying
- Biomass fuel source for Dryer heat
- Low VOC Dryer design
- Multi-cyclone Product/Air separation
- Dryer gas recirculation to control NOx

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Biomass Drying

- Fuel silos are variable speed controlled for 2:1 turn-down
- Dryers are designed for high efficiency and low heat loss
- Design considerations for upset conditions and to abort
- Integrated water deluge, spark detect and extinguishment

IAC integrates Biomass Drying to prepare Raw Materials for Densification

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Dryer Stack and Emissions Monitoring

- Single emission point
- Continuous Emission Monitoring (CEMS) center to meet Federal and State requirements
- Testing ready platforms
Raw Material Storage and Transfer

- Low cost fabric covered storage
- Allows multiple raw material formulations

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Opportunity Raw Material Blending

- Variable speed driven slat floor hoppers
- Loss in weight scaling controlled
- Magnets for removal of tramp metal
Raw Material Grinding and Conveying

- Hammer mill preparation of raw material
- Dust is collected and recycled in process
Pellet Meal Storage and Metering

- Large volume reinforced storage
- Live bottom screws with variable pitch flights for mass flow of raw material
- High, Mid and Low Level indication
- Dry type Fire extinguishing system to bin
Pellet Milling

- 400-500 HP Pellet Mills produce pellets

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Pellet Milling and Cooling

- Stainless steel components to resist corrosion
- Bulk Lubrication of pellet mills to prevent downtime
- Automatic water or steam added to pellet mill conditioner as required

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Material Separation and Particulate Control

- Cyclone Collectors for strand and chip separation
- Baghouse Collectors for particulates
- Explosion Panels to meet NFPA guidelines
- Vent Filters for Conveyors, Elevators and Spout aspiration

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Fire Protection and Instrumentation

- Dry Fire Sprinklers in Day Bins
- Duct Spark Detection and Extinguishment
- Fire Alarms and Hose Stations at critical areas
- Moisture monitoring at key points
- Regenerative Dryer to assure dry compressed air

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Motor and System Control Center

- 2000 plus connected horsepower motor control in pressurized and air conditioned environment

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Bulk Pellet Silo Storage

- Commercial quality silos
- Elevator belt alignment and bearing temperature monitors
- Conveyor chain and shaft monitoring

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Bulk Pellet Load Out

- 50 TPH bulk load out rate into trucks
- Telescoping spout with APC integrated
- Remote start/stop from load out area
- Primary customer is a Utility co-firing pellets with coal for carbon credits
Pellet delivery to Bagging Line

- Side draw from silos to bagging line
- Fines are removed and recycled

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Scale, Warehouse and Truck Dock

- 12000 square foot warehouse with three dock doors for rapid loading of trucks

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Pellet Bagging and Warehouse

- Form, fill and seal bagging with semi-automatic palletizer and shrink wrapper

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Pellet Plant Construction

- Civil
- Mechanical
- Electrical
IAC provides Complete Project Execution

- Plant General Equipment and Facility Arrangement
- Plant Process and Equipment Requirements Determination
- Emission Compliance Requirements Determination
- Project Scheduling, Procurement and Delivery Management
- Engineering and Design
- Fuel and Ash Handling Equipment Supply
- Air Pollution Control and Combustion Equipment Supply
- Construction Activities, Rentals and On-site Management
- Mechanical Millwrights
- Pipe Fitters
- ASME Welders
- Crane Operators
- OSHA and MSHA Trained Field Staff
- Engineering and Start-up Assistance
IAC Products and Services

- OEM Baghouse and Pneumatic Conveyor Supplier
- Technology for SOx, HCl and Hg Removal
- Fly-ash & Dry Bulk Pneumatic Conveying Systems
- Dry Bulk and Liquid Storage Tanks
- Biomass Raw Material Storage and Distribution Facilities
- Coal and Biomass Steam Generation for Heat and Power
- Process Controls and Instrumentation
- Field Construction and Project Management
- Engineering and Design Services
- Assistance for Air Quality Permitting
- On-site Sorbent Injection and Compliance Services
- Annual or Semi-annual Inspection Services

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THANK YOU

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