

## HRSG & Coal Combustor System **Item PK-9140**

System designed to generate high pressure steam through a Heat Recovery Steam Generator (HRSG) process. Includes dry storage for coal and limestone, an EPI coal combustor, Rentech HRSG, economizer, FD and ID fans and stainless steel stack, fly ash handling systems including filter baghouses and silo. Combustor delivers heat with incoming flue gas of 273,700 #/hr at 1700F. And the HRSG delivers 130,000 #/hr superheated steam at 650 psig. Steam can be used for process - in this case, it produced super heated steam for a 4 MW turbine Gen Set (sold separately - see asset PK-9109). The entire system is available, however, we can sell each piece individually. All Prices are As Is Where Is.

### Components shown here

CLICK on any link for more photos and links to specs



#### Deaerator **SOLD**

Deaerator for steam service. Designed for capacity flow of 157,714 #/hr outlet, 16,346 #/hr steam inlet. ASME NB# 457, MAWP 70 psi at 400F. Heater section on top is 6 ft dia x 5 ft tall and the storage section size is 6'-6" dia x 16' s/s x 19'-10" OAL. Capacity storage of 4000 gallons. Material shell cs - SA-516-70, trays ss430. On support saddles. Built 2007 - used less than a year in 2008/2009 then idled. **SOLD**

[Item DA-31300](#)

#### HRSG Boiler (from Combustor) **PRICE:**

Rentech boiler from combustor hot air. Boiler rated at 130,000 #/hr steam at 650 psig. Crossflow watertube boiler for incoming flue gas of 273,700 #.hr at 1700F. The system also has a 2-stage superheater and 2 evaporative sections - and a separate economizer (See asset EC-9141). Steam drum on top, dims 72" ID x 16 ft long, MAWP 800 psig at 525F. Weight takeoff from prints: Boiler weight 50,964# , transitions & structure 177,462 pounds = 228,426 pounds. Used as HRSG - Heat Recovery Steam Generator at CoGen. Boiler dimensions approximately 39'-6" long (4 sections) x 10 ft wide x 40 ft tall on 28 ft legs (68-8 OAH).

[Item BO-9141](#)



#### Hoop House Storage **PRICE:**

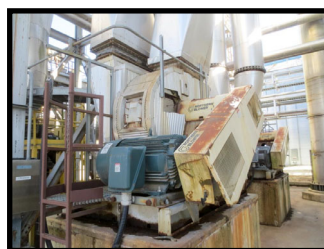
Hoop house with metal ribs and covering. Approx size 130' wide 175' long x 55 ft tall. Approx area = 22,750 sf. Last used for coal storage to combustor. The land on which this hoop house sits is also available as extra.

[Item HO-2122](#)

#### Stack monitor CEMS **PRICE:**

CEM's instrument stack monitor - EKTO Building. Model 8812SP, 768 ft<sup>3</sup>. Teledyne (CEMS) Unit used for stack gas emission analyzing and transmitting with Nox O2 SO2 CO CO2 Sensors in cabinet. EKTO Climate controlled building, Model 866sp. 288 cu ft. Includes Allen Bradley plc and touch screen.

[Item CEM-9101](#)



#### ID Fan 600HP **PRICE:**

Robinson ID Fan designed for 96,555 cfm at 19" sp. 600 HP Motor 1200 rpm 4160v. Used as ID Fan at ash baghouse & bin; CoGen.

[Item BF-9142](#)

## Components continued

### Dust Filter Baghouse (6) PRICE:

Dust filter baghouse. McGill Beta/Mark fabric filter system. System designed to handle 96,555 cfm. These are 6 identical modules with bags and cages. Each one is 12 ft x 12 ft x about 35 ft OAH. No fans with this system since it was forced FD air from combustor. Pulse design. Last used in ash dust collection at CoGen.

[Item FA-8780](#)



### Stack 100 ft ss PRICE:

Stack, Stainless steel approx 6 ft dia x 100 ft. Designed for 97,290 cfm

[Item ST-9101](#)



### Boiler Feedwater Pump (2) PRICE Each

Ingersoll horizontal multi stage centrifugal pump for boiler feedwater. Ingersoll Dresser Size 3x10DA-5 5 stage designed for 450 gpm @ 1770 ft TDH. EQ #41331 (31301). Driven by 300 HP motor at 3575 rpm 460/3/60. Used as Boiler feedwater pump to Rentech and to Nebraska boiler. Qty. 2

[Item PC-9139A, PC-9139B](#)

### Item CS-9130 - Screw Conveyor 16 ft PRICE:

Screw Conveyor 9" x 16 ft long. 5HP motor. Used as ash dropout conveyor at ash baghouse CoGen.

### Item CS-9131 - Screw Conveyor 14 ft PRICE:

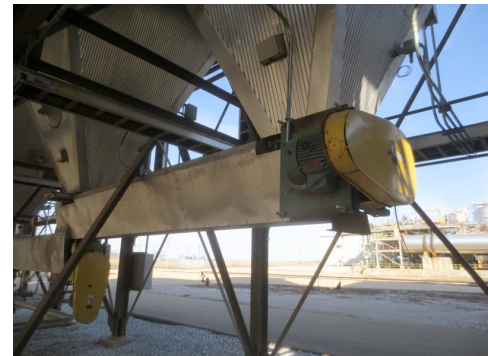
Screw Conveyor 12 inch diameter x 14 ft. 5HP Motor. Used as ash drop out conveyor on ash baghouse CoGen.

### Item CS-9132 - Screw Conveyor 16 ft PRICE:

Conveyor 9 inch diameter x 16 feet. 5 HP motor. Under ash baghouse CoGen.

### Item CS-9133 - Screw Conveyor 14 ft PRICE:

Screw Conveyor 12 inch diameter x 14 ft. 5 HP Motor. Conveyor under ash baghouse at CoGen.



### Economizer PRICE:

Economizer for Rentech Combustor boiler. Designed for 25.28 MBTU. Weight takeoff 70,000 pounds. Sprayed on internal refractory.

[Item EC-9141](#)

### Cyclone Multiclone PRICE:

Cyclone in CoGen - Rentech MultiClone designed for 141,790 cfm - has been on fire. Weight approx 10,450 pounds plus structure & duct 15,000 pounds.

[Item CY-9142](#)



### Spout Loadout PRICE:

Truck loadout funnel - Extendable, electric pendant control. Designed for loading grain at 319 t/hr max. Used at ash bin CoGen.

[Item SL-9144](#)

## Components continued



### Gas Trains **sold**

Overbed, Main burner and Underbed gas trains. Qty. (3)

### Elevator Leg 48 ft **PRICE:**

Elevator leg 48 ft discharge, 50' OAH. Width 3'-10" Mfg by Quail Ridge. Has 80 single buckets 8"x5" style AA. Designed for approx 260 fpm, 534 cfm refractory sand at 90 pcf. Driven by 5HP motor 460/3/60. Built 2005. Used as sand and lime elevator to CoGen combustor.

Item CE-9141



### Blower Fan 30HP **PRICE:**

Economizer for New York Blower, size A13913-100. Wheel 2410 steel. 2,000 cfm at sp 50" wc. BHP 23.5, rpm q550, VCW rotation. Driven by 30 HP motor.

Item BF-9103

### FD Fan 1000 HP **PRICE:**

Robinson FD Fan; Type RB1216, size 65x11 1/2. Designed for 77,800 cfm at 50" sp. Direct Driven by 1000 HP motor, 1800 RPM 4160v, Used as FD fan at CoGen boiler.

Item BF-9141



### Coal Combustor **PRICE:**

EPI coal combustor - now Outotec Energy Products. Physical size approx 20 ft x 32 ft. x 84 ft tall Steel weight takeoff from drawing = 578,144 pounds. Natural gas train for starting, designed to burn coal slurry (dried coal "powder" ) from coal wash pits. Rate of coal slurry 23,585 lb/hr.

Item FH-9141

### Blower Package 60HP **PRICE:**

Tuthill Ash Blower 60 HP blower. Model 4612-46L2. Complete skid Used to blow ash from baghouse hopper discharge - CoGen.

Item BF-9130



### Vibrating Conveyor 30 ft **SOLD**

Vibra Pro Sand Conveyor 34 inches x 30 feet. VibraPro coil spring vibrating pan conveyor. Model HTHSR-241200FS-1/4 (MS) Sn 2287. Has 2 beds - bottom screener for fines traveling back to elevator leg, top bed for heavies to oversize bin at end. Driven by 7.5HP motor 460/3/60. Last used for refractory sand conveyance. Built 2007.

Item CD-9110

### Metering Bin Feeder **PRICE:**

Metering bin feeder originally for coal and lime but can be used for other biomass material. Includes screw conveyor with 5 HP motor VFD 1200 rpm. Includes diverter and chutes at infeed. There are 2 of these - Priced for both. Weight of both 32,000 pounds.

Item TS-9141



## Components continued

### Bullet Tank 9200 gallons SOLD

Ammonia Tank Bullet by Trinity Industries - Capacity 9200 gallons. Horizontal tank, shell thickness 0.517 inches. Approx 7 ft dia x 425" long. Weight estimated at 30,000 pounds. Tank sn 114781, ASME Nat'l Bd # 7303, MAWP 250 psi @ 125F. Built 1983.

Item TS-8540



### Belt Conveyor Trough 450 ft PRICE:

Trough belt conveying system and structure. Inclined Martin model S Class air supported belt. Size 24" wide x 450 ft long. Inclined conveyor has equivalent of 73 ft vertical lift - 150 fpm speed. Designed for 50 tons/hr of coal at 35 lb/cf and of lime at 87.5 lb/cf density. Has four blowers; each driven by 40 HP motor. Includes structural steel. Used to transport coal and lime from hoop house to combustor.

Item CB-9101

### Dry Scrubber PRICE:

Dry Scrubber used in CoGen area. Size 20' dia x 80'-8" tall for capacity approx 190,000 gallons. Has 60° bottom discharge hopper, vibrators, and heaters. Too big to move. Weight approx 60,288 pounds carbon steel.

Item DS-9142



### Silo & Slurry Tank PRICE:

Integrated powder silo and liquid slurry tank underneath in same structure. Powder Silo size 12 feet dia. x 29 ft. straight side. Powder capacity 3400 cu ft. Max density 40 pcf. Has "live" cone bottom with vibrator feeding into volumetric feeder. Slurry tank below is 5,000 gallon capacity (12 ft dia x 8 ft tall) with top entering agitator and 2 slurry pumps below. Lime Slurry Pump (Qty 2) Includes baghouse on top. OAH for silo + slurry tank system is 65 ft. - baghouse extends above that approx 10 ft. Last used as lime silo + slurry tank at CoGen.



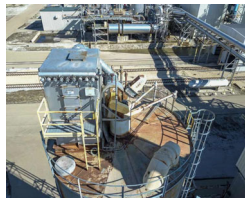
### Vertical Tank ss Boiler feedwater PRICE:

Vertical stainless steel 304 tank, flat bottom, flat top. Size 14 ft dia x 27 ft tall for capacity of 30,000 gallons, 183° F. Insulated 2" fiberglass. Atmospheric tank. Includes vertical ladder and railing. Used as Boiler Water Make-up Tank in CoGen.

Item TK-31000

### Silo Fly Ash PRICE:

Vertical carbon steel silo and truck loading station - for ash at CoGen. Has 30° hopper discharge and bag house. Size 21'-6" dia x 70 ft tall. Silo inside has 25' straight wall with 30° cone. Carbon steel weight approx 58,148 pounds. Used as ash storage bin at CoGen. Includes baghouse on top plus loading spout. Item TS-9143



### Baghouse Dust Filter PRICE:

IAC Dust filter baghouse, Model 120TB-BVI-81:S6. Has 81 filter bags bottom load type 6" x 123" OAL. Sits on top of Ash Bin TS-9143, Fan is Cincinnati fan RBE-15 designed for 5100 cfm at 5" sp. - driven by 20 HP motor. Last used as dust filter on top of Ash storage silo.

Item BF-9147

**Terms:** All equipment is sold As Is Where Is, Subject to prior sale and availability. All quotes are in US Dollars unless specifically noted otherwise. Description of the equipment - especially those relating to capacity, size, or condition - are stated as clearly as possible for information to the buyer or observer. The descriptions and representations cannot be taken as accurate. The buyer has the sole responsibility to determine size, capacity, capability, suitability, condition, or any other attribute pertaining to the piece of equipment represented or purchased. The assets are sold "As Is", "Where Is" and "with all faults" and except as explicitly stated in the Contract for Purchase. All warranties, including, without limitation, the warranties of merchantability, quality, and fitness for a particular purpose are hereby expressly excluded. Seller makes no representations or warranties as to design, condition, capacity, performance, or any other aspect of the asset.