WESP SYSTEM TREATING EXHAUST GAS FROM ZIRCONIUM OXIDE FURNACE CAPACITY UP TO 50,000 acfm @ 130 Deg F

TWO PASS UP FLOW AUTOMATIC SELF– CLEANING UNT

WESP is OFF

WESP is ON

AUTOMATIC VOLTAGE CONTROLS (AVC) ONE FOR EACH PASS OF THE WESP AND PROCESS CONTROL PANEL OF EES PROPRIETARY DESIGN OPERATING AT BIO-FUEL ENERGY RECOVERY FACILITY IN MICHIGAN USA

HOT CYCLONES AND VENTURI SCRUBBER UPSTREAM OF THE WESP AT METALLURGICAL PLANT IN THE STATE OF OREGON, USA

EnviroEnergy Solutions, Inc.

1880 South Ocean Drive
Suite 801 W
Hallandale Beach, FL 33009

Phone: 917-640-4453
Fax: 347-312-7606
E-mail: iray1940@aol.com
www.enviroenergytek.com

EnviroEnergy Solutions, Inc.

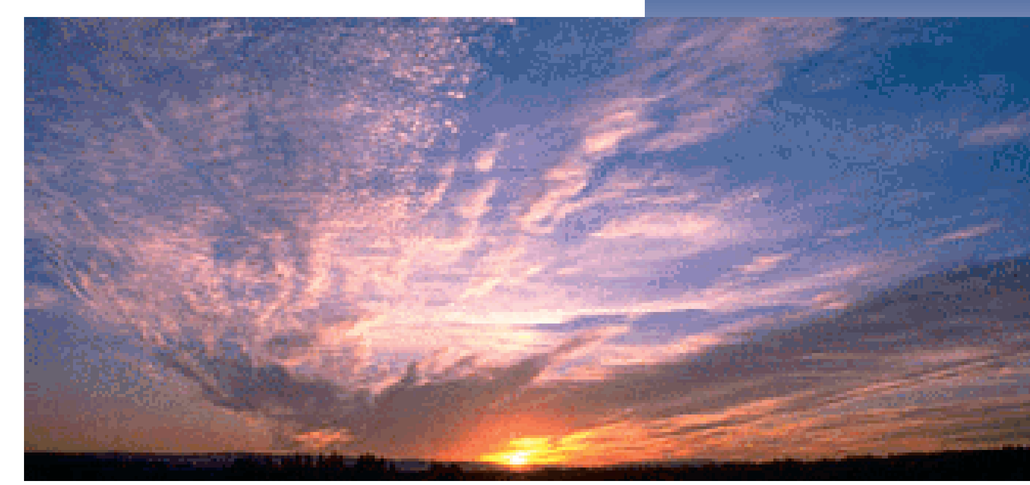
CLEAN STACK FOR LESS SINCE 1983

For over 30 years EES has provided Solutions to the customer's problems regardless of the industrial source and complexity of the process that is emitting pollutants. Our Scientists and Engineers have more then 150 years of combined experience in the field of Air Pollution Control, Publications and Patents more then large International Fortune 500 companies in this business.

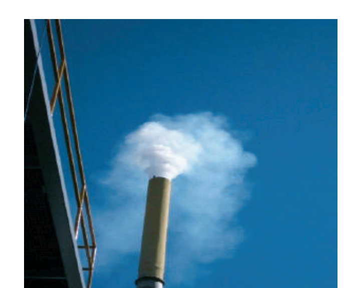
Our Engineers will analyze your requirements and will provide for you complete proposal explaining in details our unique approach that will save you not only capital cost for the equipment but most importantly the operating cost for electrical energy and maintenance of the equipment.

List of our more then 100 installations around world includes the land mark projects for implemented our WESP Systems first time in the USA in the Power boiler applications, Metallurgical, Chemical, Incineration, Pulp and Paper, Textile, Carpet and many other industries.

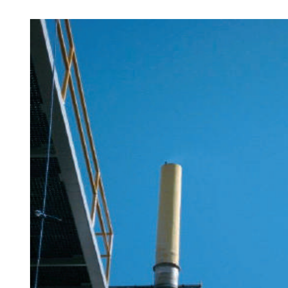
In addition to our state of the Art Patented WESP system we are providing Cyclonic Separators for low and High Temperature gas, High Energy Venturi Scrubbers, Low energy Particulate scrubbers of non-clogging type, Pack Towers for Gas Scrubbing, Carbon Bed Absorber with regeneration and many other Complex System for complete Air Pollution elimination.



SEE THE EES DIFFERENCE



SYSTEM IS **OFF**



SYSTEM IS **ON**

WHY THE WESP BY ENVIROENERGY SOLUTIONS ?

1. It will meet not only current but all future Government Regulations
2. Compact size to fit existing space for retrofit applications
3. High efficiency for all Regulated pollutants
4. Zero visible emissions from the exhaust stack
5. Low pressure and horse power requirements for the exhaust blower
6. Highest density of electrical field insuring super high efficiency
7. Solid alloy steel construction insuring minimum 25 years of service
8. Proprietary and Patented key components for the WESP such as:

- Rigid Ionizing Electrode with self –sharpening needle points and precision alignment capability to locate it in the center of collecting tube.
- Rigid and compact design of the collecting surface requiring only 50 % of material for the same collection efficiency comparing to other designs of leading large companies in Europe and Japan.
- Self-protecting from the contamination Insulator compartment system that using already available High voltage connected to the WESP.
- High Voltage Power supply with the highest in the industry Conduction utilizing maximum available Power to insure the highest removal efficiency.
- Continuous Self– Cleaning system for the removal of particles from the collecting surface without stopping the process and impeding the efficiency of particulate removal.
- Low energy non-clogging type of scrubbing section built in in the bottom of the WESP to provide cooling, gas scrubbing and flow distribution.

Wet precipitator system operating at u.S. Government facility in the state of Maryland, USA.

System comprising quencher, build-in low energy scrubber in the bottom treating up to 320,000 acfm of combustion exhaust equvalent to 120 mw of power

WESP DESIGN

EES is the original designer of the WESP system and unlike other vendors currently is capable to provide several different design of the Tubular type WESP to insure the optimum cost effective solution to the client for his particulate case.

Tubes shapes that are available:

- Square tubes up to 300 mm. inside space
- Round tubes up to 300 mm. inside diameter
- Hexagonal tubes up to 300mm. Inscribed diameter

Directions of the gas flow that are available:

- Up flow with or without scrubber in the bottom
- Down flow with scrubber upstream

Number of fields (passes) with independent transformer:

- Single pass down flow
- Double pass up flow
- Multiple passes down flow type after the FGD Scrubber

Methods of cleaning the collector:

- Continuous for down flow type
- Intermittent for each pass of up flow type
- Continuous for the Proprietary Condensing TypeWESP

Wesp system comprising hot cyclonic separator for dry ash removal, low energy quencher/scrubber and two pass wet electrostatic precipitators treating up to 20,000 acfm @ 130 deg.F

Delivering Zero Opacity

Exhaust gas is coming from the agricultural waste gasification and electrical power production plant.

Cyclonic separator operating at 1000 Deg. F for dry ash removal upstream from the wesp unit equipped with our dump valves.

PCS PHOSPHATE PLANT, POTASH CORP.

Aurora, North Carolina, USA

The current wet ESP design is constructed in modules, 12 feet square in plan view, and 40 feet high. This allows them to be fabricated in the fabrication shop and trucked to the site for installation. The flow rating on each module is a nominal 72,000 acfm for the saturated flue gas, and there are six modules at PCS Phosphate for a total Plant flow capability of 432,000 ACFM. The superficial flue gas flow velocity works out to be 8.63 ft/second. This is, if extrapolated to non-saturated flue gas, sufficient capacity for all modules to treat flue gas for approximately 125Mw of coal fired generation. Filterable particulate removal rates at PCS were tested in the 92-95% range for this single field. The addition of a second field on top in series, (not implemented at PCS) with an interstage drain, will increase the total efficiency to 99.9%.

This plant utilizes coal for the heat source to the fluidized bed phosphate calciner that has a marble bed particulate control/scrubber system installed prior to a vertical Wet ESP. Flue gas is introduced to the marble bed from underneath. The bed is comprised of 1” diameter glass marbles that have a lower diameter size limit of about 0.75”, resting on a horizontal perforated plate. The marble layer is approximately 4 inches thick, and they are covered with water.