



# **CBAM - Mercados & Líneas de Productos**

## **Aplicaciones Industriales**

**Enero 2017**

**Hector Inigo**

# Clyde Bergemann Power Group



Global Platform with

- 28 Operational Units, 14 Manufacturing/Workshop Sites
- Clyde Bergemann Associates



- Around 1,700 employees

# Clyde Bergemann Power Group



AMERICAS

- Clyde Bergemann Power Group Americas**  
Boiler Efficiency Product Division  
Atlanta / GA-USA
- Air Pollution Control Product Division**  
Hanover / MD-USA
- Materials Handling Product Division**  
Malvern / PA-USA
- Air Gas Handling Product Division**  
Auburn / ME-USA
- Clyde Bergemann Canada Ltd.**  
Cambridge, Ontario / Canada
- Clyde Bergemann do Brasil Ltda.**  
Mogi Guacu / Brazil
- Clyde Bergemann Colombia SAS**  
Bogota D.C. / Colombia



EUROPE

- Clyde Bergemann GmbH**  
Wesel / Germany
- Clyde Bergemann Materials Handling Ltd.**  
Doncaster / England
- Clyde Bergemann Ltd.**  
Glasgow / Scotland
- Clyde Bergemann Termotec GmbH**  
Wesel / Germany
- Clyde Bergemann Forest SA**  
Gosselies / Belgium
- Clyde Bergemann EP Tech S.r.l.**  
Battipaglia / Italy
- Clyde Bergemann Eesti AS**  
Tallinn / Estonia
- Clyde Bergemann Polska Sp. z o.o.**  
Tychy / Poland
- Endat Oy**  
Espoo / Finland
- Clyde Bergemann Scandinavia OY**  
Espoo / Finland
- Clyde Bergemann Enerji Servis A. S.**  
Izmir / Turkey

ASIA

- Shanghai Clyde Bergemann Machinery Company Ltd.**  
Shanghai / China
- Clyde Bergemann Beijing Energy & Environmental Technology Company Ltd.**  
Beijing / China
- Clyde Bergemann Beekay Pvt. Ltd.**  
New Delhi / India
- Clyde Bergemann India Pvt. Ltd.**  
Noida / New Delhi / India
- Clyde Bergemann Huatong Materials Handling Company Ltd.**  
Beijing / China
- Macawber Beekay Pvt. Ltd.**  
New Delhi / India
- Clyde Bergemann Controls Private Limited**  
Vadodara / India
- Clyde Bergemann Indonesia PMA**  
Jakarta / Indonesia

AUSTRALIA

- Clyde Bergemann Australia Pty. Limited**  
Wetherill Park Sydney / Australia

AFRICA

- Clyde Bergemann Africa Pty. Ltd.**  
Kya Sands / South Africa

# Complete Range of Products and Solutions



## Main business fields of Clyde Bergemann Power Group



BOILER EFFICIENCY	MATERIALS HANDLING	AIR POLLUTION CONTROL	AIR GAS HANDLING	ENERGY RECOVERY	FIRING SOLUTIONS
<ul style="list-style-type: none"> <li>Sootblowers</li> <li>SMART Clean: intelligent on-load boiler cleaning systems</li> <li>Boiler modelling and process optimization</li> </ul>	<ul style="list-style-type: none"> <li>Fly &amp; bottom ash systems</li> <li>Pneumatic &amp; mechanical conveying of fuel &amp; solids</li> <li>Injection technology</li> <li>Vacuum belt filter systems for gypsum treatment</li> </ul>	<ul style="list-style-type: none"> <li>Electrostatic Precipitators</li> <li>Fabric Filters</li> <li>Dry scrubbing systems</li> <li>Dry sorbent injection</li> </ul>	<p>Throughout the whole plant</p> <ul style="list-style-type: none"> <li>APC dampers and bypass systems</li> <li>Expansion joints</li> <li>Exhaust stacks</li> </ul>	<ul style="list-style-type: none"> <li>Economizers</li> <li>Heat Exchangers</li> <li>Air Preheater</li> </ul>	<ul style="list-style-type: none"> <li>Low NOx Burner</li> </ul>
				<b>AIR COOLED CONDENSER</b>	



# CBPG – Unidades de Negocio ...

Clyde Bergemann  
Delta Ducon  
Malvern / PA-USA

Clyde Bergemann  
DRYCON GmbH  
Wesel / Germany

Clyde Bergemann  
Africa (Pty) Ltd.  
Kya Sands / South Africa

Clyde Bergemann  
Senior Thermal Pty Ltd  
Smithfield / Australia

Clyde Bergemann POR  
Beaverton / OR-USA

Clyde Bergemann GmbH  
Wesel / Germany

Clyde Bergemann  
Brinkmann GmbH  
Wesel / Germany

Clyde Bergemann  
Canada Ltd.  
Cambridge, Ontario / Canada

Clyde Bergemann Inc.  
Atlanta / GA-USA

Clyde Bergemann  
TERMOTEC GmbH  
Wilnsdorf / Germany

Clyde Bergemann  
do Brazil Ltda.  
Mogi Guacu / Brazil

Clyde Bergemann  
Materials Handling  
Doncaster / England

Clyde Bergemann  
Service GmbH  
Grevenbroich / Germany

Clyde Bergemann  
Colombia SAS  
Bogota D.C. / Colombia

Clyde Bergemann  
EEC Corp.  
Baltimore / MD-USA

Clyde Bergemann  
Huatong Ltd.  
Beijing / China

Clyde Bergemann  
Forest SA  
Wauthier / Belgium

Clyde Bergemann India  
Pvt. Ltd.  
New Delhi / India



Endat Oy  
Espoo / Finland

Clyde Bergemann  
Beekay India  
Pvt. Ltd.  
New Delhi / India

Clyde Bergemann  
Bachmann Inc.  
Auburn / ME-USA

Shanghai  
Clyde Bergemann  
Machinery Company Ltd.  
Shanghai / China

Clyde Bergemann  
Scandinavia Oy  
Espoo / Finland

Macawber Beekay Ltd.  
New Delhi / India

Clyde Bergemann Ltd.  
Glasgow / Scotland

Clyde Bergemann  
Eesti Ltd.  
Tallinn / Estonia

Clyde Bergemann  
Indonesia PMA  
Jakarta / Indonesia

Clyde Bergemann Beijing  
Energy & Environmental  
Technology Co. Ltd.  
Beijing / China

Clyde Bergemann  
EP Tech S.r.l.  
Battipaglia / Italy

Clyde Bergemann  
Polska Sp. Z o. o  
Tychy / Poland

# Clyde Bergemann Americas



**Clyde Bergemann Inc.,**  
Atlanta / Georgia / USA  
**Equipo de Limpieza de Calderas**



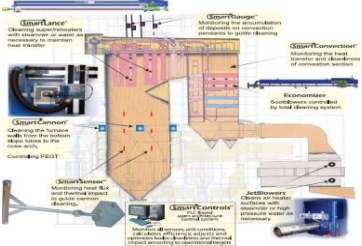
# Boiler Efficiency



## Severe-Duty Sootblowers

- Retractable, wall, rotary
- Water, steam or air
- Water Cannons

### SmartClean™ System Integration



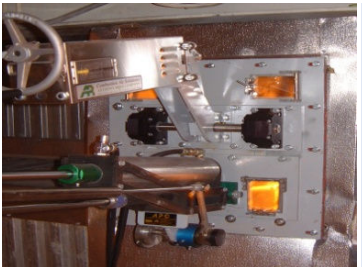
## Intelligent Sootblowing

- Comprehensive closed-loop cleanliness management



## Specialty Cleaning

- Shower Systems
- Acoustic cleaning
- Pneumatic Rappers



## Air Port Systems

- Port Cleaners
- Air Port Dampers
- Stack Air System



# Clyde Bergemann Americas



**Clyde Bergemann Inc.,**  
Atlanta / Georgia / USA  
**Equipo de Limpieza de Calderas**



**Clyde Bergemann**  
**Environmental Elements Corporation,**  
Baltimore / Maryland / USA  
**Equipo de Control de Contaminación Ambiental**





# Air Pollution Control



## Electrostatic Precipitators

- 60 years experience
- 1,000 + Dry ESP, 17 Wet ESP installations

## Fabric Filters

- Pulse Jet, Reverse Air, COHPAC, TOXECON
- 100 + installations

## Spray Dryer Absorber

- 34 installations
- Power, MSW, HWI

## Dry Sorbent Injection

- 70 + systems in operation
- Sodium Bicarb, Trona, Hydrated Lime, Carbon

# Clyde Bergemann Americas



**Clyde Bergemann Inc.,**  
Atlanta / Georgia / USA  
**Equipo de Limpieza de Calderas**



**Clyde Bergemann**  
**Environmental Elements Corporation,**  
Baltimore / Maryland / USA  
**Equipo de Control de Contaminación Ambiental**



**Clyde Bergemann DELTA DUCON**  
Malvern / Pennsylvania / USA  
**Equipo de Manejo de Cenizas/Materiales**





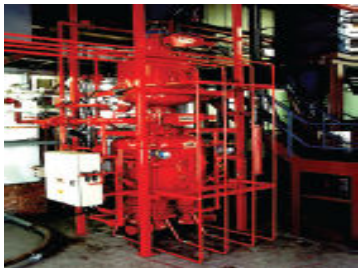
## Bottom Ash Systems

- Hydraulic
- Pneumatic
- Mechanical



## Flyash Systems

- Dense Phase
- Dilute Phase
- Lean Phase



## Bulk Injection Systems

- Limestone
- Sand
- Other abrasives



## Vacuum Belt Filtration

- Gypsum dewatering



# Clyde Bergemann Americas



Clyde Bergemann Bachmann  
Auburn / Maine / USA  
Equipo de manejo Gas-Aire







## Bypass Dampers

- SCR
- FGD
- Combined Cycle GT



## Exhaust Systems

- Combined Cycle GT
- Simple Cycle GT



## Dampers

- Stack, Louver, Guillotine, Butterfly



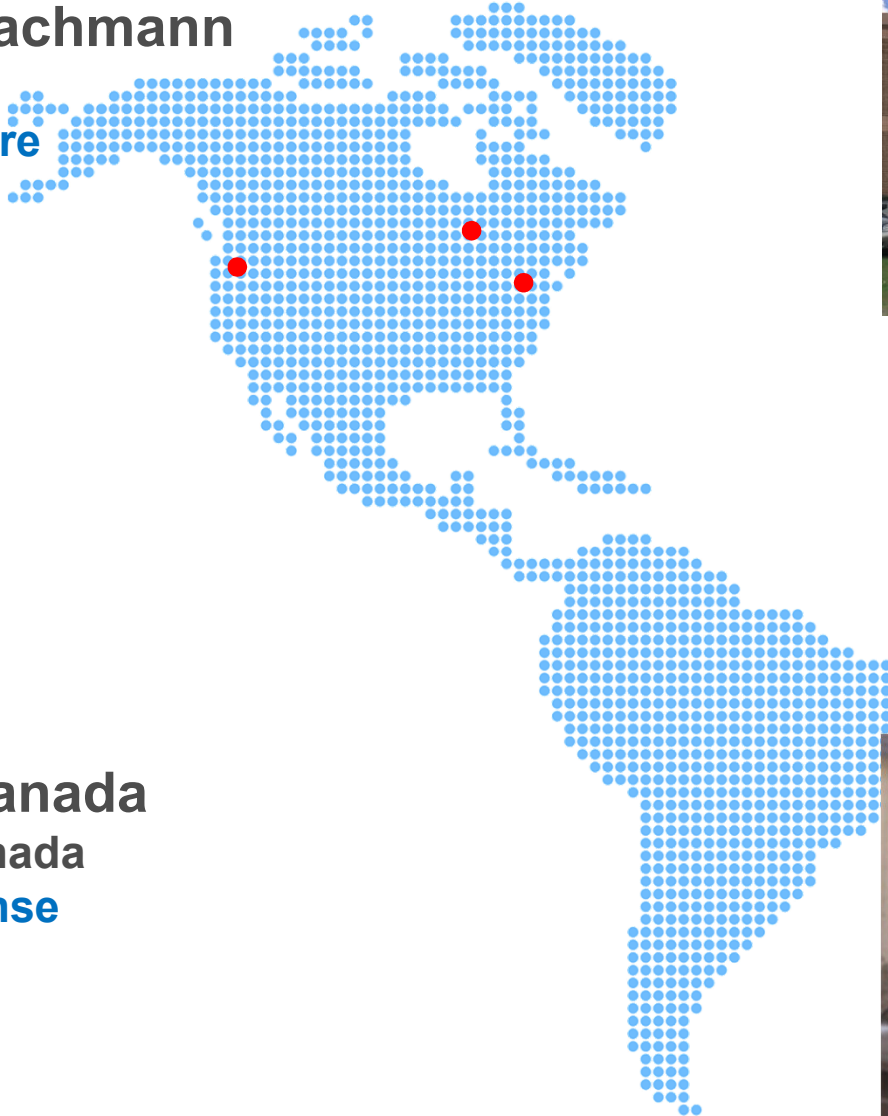
## Expansion Joints

- Fabric
- Metallic

# Clyde Bergemann Americas



**Clyde Bergemann Bachmann**  
Auburn / Maine / USA  
Equipo de manejo Gas-Aire



**Clyde Bergemann Canada**  
Cambridge / Ontario / Canada  
Ventas Mercado Canadiense



# Clyde Bergemann Americas



**Clyde Bergemann do Brasil Ltda.**

**Mogi Guacu / Brazil**

**Manufatura/Ensamble de Sopladores de Hollin**

**Mercado Brasileño**





# Clyde Bergemann Americas



## Clyde Bergemann do Brasil Ltda.

Mogi Guacu / Brazil

Manufactura/Ensamble de Sopladores de Hollin

Mercado Brasileño

## Clyde Bergemann Colombia SAS

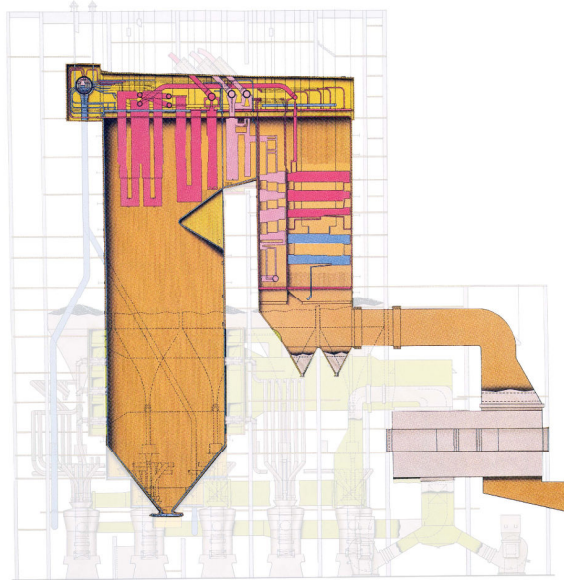
Bogota D.C. / Colombia

Ventas y Servicio Mercado Colombiano para los Productos  
De las diferentes Compañías del Grupo CB Americas



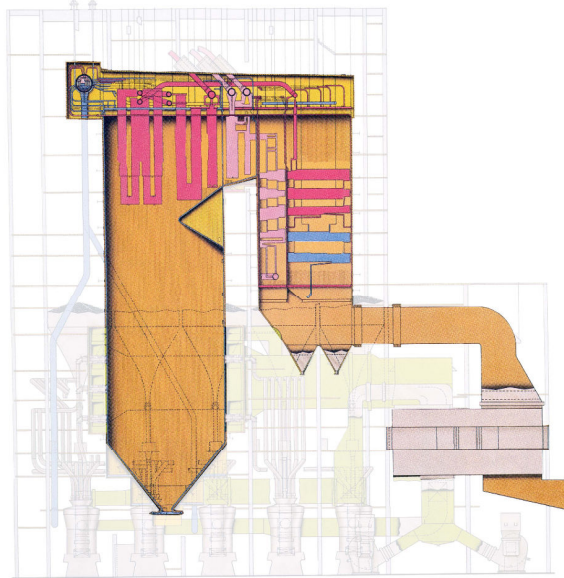


# Tipos de Calderas - Generación

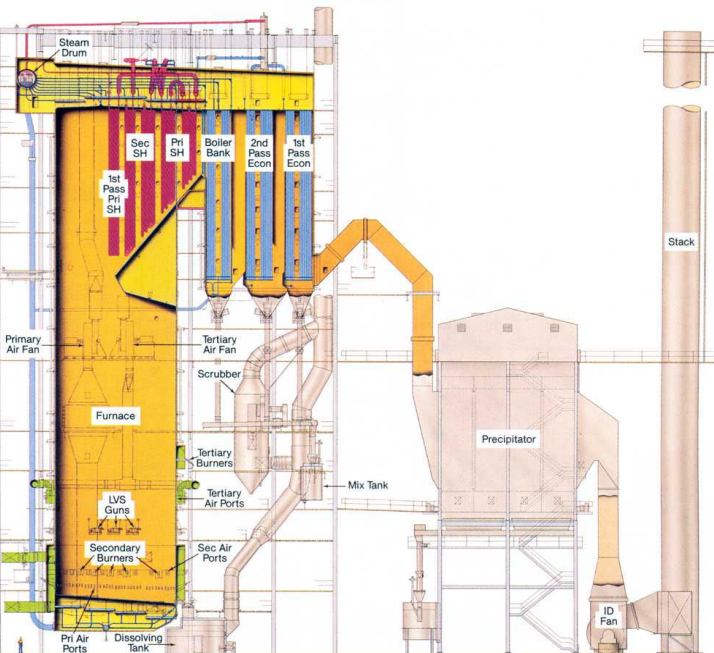


Comisión Federal de Electricidad's Petacalco Power Station in Mexico

# Tipos de Calderas - Recuperación

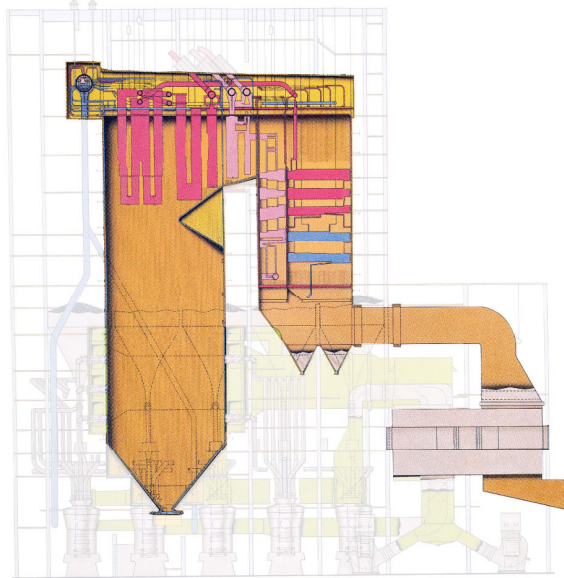


Comision Federal de Electricidad's Petacaico Power Station in Mexico





# Tipos de Calderas – Industriales / Biomasa



Comision Federal de Electricidad's Petacalco Power Station in Mexico

