



---

***ABACO***

**Fuel Savings and Emissions Reduction at  
Process Heaters and Boilers**

---

[www.inercoetech.com](http://www.inercoetech.com)  
[www.inerco.com](http://www.inerco.com)



## General overview

- ABACO provides improved controls to any existing multi-burner boiler, furnace or heater, using any type of fuel, resulting in increased combustion efficiency and minimum pollutant emissions ( $\text{NO}_x$ , CO,  $\text{CO}_2$ , particles,  $\text{SO}_x$ , etc.)
- Minimum  $\text{O}_2$  scenarios are achieved while preserving the unit from detrimental combustion conditions (tubes coking, corrosion, soot or CO formation, pipe overheating or air preheaters fouling)



## Competitive advantages

- Cost-effective solution and profitable (ROI) investment. Minimum pay-off through fuel savings
- Complement or alternative to further burners retrofit
- Very short installation periods
- Robust and proven technology. Design conceived for minimum maintenance
- Direct gas concentration measurements. No estimated or interpolated results
- Applicability and effectiveness demonstrated for every furnace design (horizontal/vertical firing, natural/forced draft) and fuels (fuel oil, fuel gas, bio-fuels, etc.)



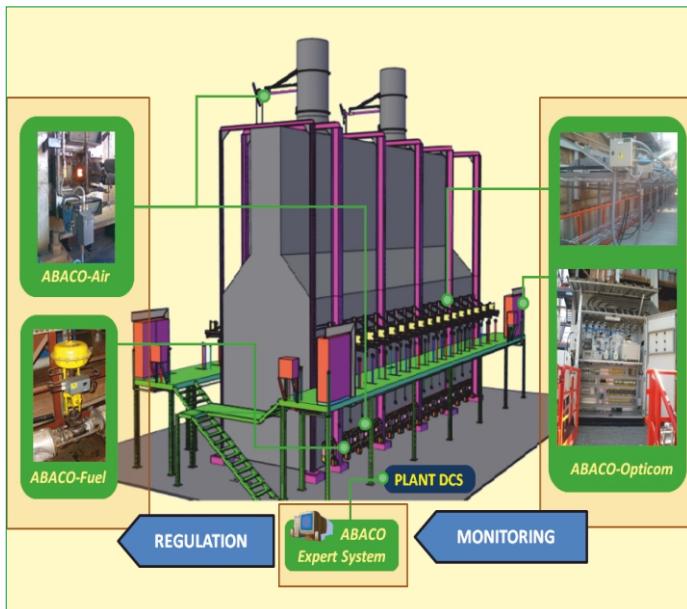
**Pay-back periods as low as 1 year**



## ABACO Components

ABACO achieves continuous and permanent optimized operating scenarios while maintaining efficient and safe combustion conditions through:

- ABACO-Opticom: data gathering on local combustion conditions (fixed non-cooled probes, for medium temperature applications, or retractable water-cooled sampling probes, for higher temperatures)
- ABACO-Air and ABACO-Fuel: advanced tools for regulating individual supplies of fuel and combustion air
- ABACO Control: Expert Software for the closed-loop management and optimization of the combustion process



## Executive summary

- Advanced closed-loop control of the firing performance of each burner based on advanced gas composition monitoring and enhanced regulation and control capabilities
- Overall combustion optimization achieved through an effective burner per burner combustion tuning
- Complementary or alternative solution to burner upgrading
- ABACO typical results:
  - Controlled combustion resulting in higher unit availability and safety
  - Fuel consumption reduction of up to 5% leading to combined fuel + CO<sub>2</sub> savings over \$1.0M USD/year for unit duties around 100 Mkcal/h
  - NO<sub>x</sub> reduction of up to 35% - 45% (by excess O<sub>2</sub> decrease and burner tuning)
  - Highly profitable investment pay-back periods: 1 - 2 years





## Our clients

### GAS AND ELECTRICITY

Abelló Linde - AGA - Air Liquide - Alstom - BP Solar - CENER - CFE - Colbún - E.ON - EDF - EDP - Elcogas - Emgesa - Enagas - Endesa - Endesa Ireland - EnergieKontor - E.ON France - E.ON Italia - EVN - Gas Natural - GDF Suez - HidroCantábrico - Iberdrola - InterGen - Linde Gas - MedGaz - Pegop - Praxair - Promigas - PKE Polska - Reganosa - Saggas - Scottish Power - Viesgo

### HYDROCARBONS

Agencia Nacional de Hidrocarburos de Colombia - Asociación Colombiana del Petróleo - Atofina - Baker Hughes - Bhp Billiton - BP - Cepsa - CLH - Conoco Philips - Ecopetrol - Exxon Mobil - Mansarovar Energy Colombia - Petro Santander Colombia - Petróleos de Venezuela - Petrolifera Petroleum - Petronor - Repsol - Sonatrach

### CHEMICAL AND PETROCHEMICAL

BASF - Biofilm - Brenntag - Brinsa - Dow Chemical - ENCE - Ercros - Erkol - Fertial - FMC Foret - Huntsman Tioxide - MAXAM - Mexichem - Oiltanking - Propilco - Rhodia - Solvay - UBE - Voridian

### MINING

Bhp Billiton - Boliden - Catalina Huanca Sociedad Minera - Cerro Matoso - CLC - Glencore - Los Quenuales - Matsa - Perubar

### CEMENT AND STEEL

Aceralia - Acerinox - Argos - Atlantic Copper - Cementos Portland - Cemex - Cimpor - EADS - Holcim - IZAR - Lafarge Asland - Malpresa - Titan America / Separation Technologies - UNESID - Xstrata Zinc - Zinsa

### ENGINEERING COMPANIES AND INFRASTRUCTURES

Abengoa - Acciona - Conavías - Duro Felguera - Elecnor - FCC - Fluor - Foster Wheeler - Gamesa - General Electric - Inabensa - Intecs-Inarsa - Isolux Corsán - Lima Ingeniería y Construcción - OHL - Opain - Sener - Soluziona - Technip - Técnicas Reunidas - Vicon

## Main Offices



## In Partnership with GP Strategies

### USA and Canada

INERCO Energy Technologies, Inc.

25 Northpointe Parkway, Suite 100, Amherst, NY 14228

Phone: +1 716 799 1063

Mobile: +1 610 442 5930

Fax: +1 716 799 1081

- Enrique Bosch - [EnriqueBosch@inercoetech.com](mailto:EnriqueBosch@inercoetech.com)
- John Sale - [JohnSale@inercoetech.com](mailto:JohnSale@inercoetech.com)
- Barton Hoffman - [BHoffman@gpstrategies.com](mailto:BHoffman@gpstrategies.com)

### Latin America

INERCO

Carrera 47<sup>a</sup> No. 91-92 La Castellana, Bogotá D.C. Colombia

Phone: +571 236 26 00 - Fax: +571 236 26 00

C/ Julio Verne 114-118, Urbanización Bartolomé Herrera, San Miguel, Lima. Perú

Phone: +511 628 40 00 - Fax: +511 628 94 17

- Francisco Hoces - [fjhocesmoral@inerco.com](mailto:fjhocesmoral@inerco.com)
- Miguel Morales - [mmorales@inerco.com](mailto:mmorales@inerco.com)

### Europe and other territories

INERCO

PT Isla de la Cartuja, C/ Tomás Alba Edison, 2, 41092 Sevilla. Spain

Phone: +34 954 468 100

Fax: +34 954 461 329

- Francisco Rodríguez - [frodriguez@inerco.com](mailto:frodriguez@inerco.com)
- Miguel Morales - [mmorales@inerco.com](mailto:mmorales@inerco.com)