

### Cost and energy saving through combustion optimization

Energy production

#### Keywords

- Combustion plant
- Profitability
- Energy saving
- Environment conservation
- Process optimization
- Boiler combustion efficiency
- CO+O<sub>2</sub> Laser Gas Analysers



#### Context

The worldwide energy mix is changing for two reasons. One is the irreparably depletion of the fossil resources. A second one, which is linked to the first, is the urgent need to slow global warming.

We have entered this transition time where renewable energy generation and fossil fuel boiler combustion must cohabit. Lowering the emissions of greenhouse gases to the atmosphere, and saving these precious resources are now part of the global concerns.

#### Challenges

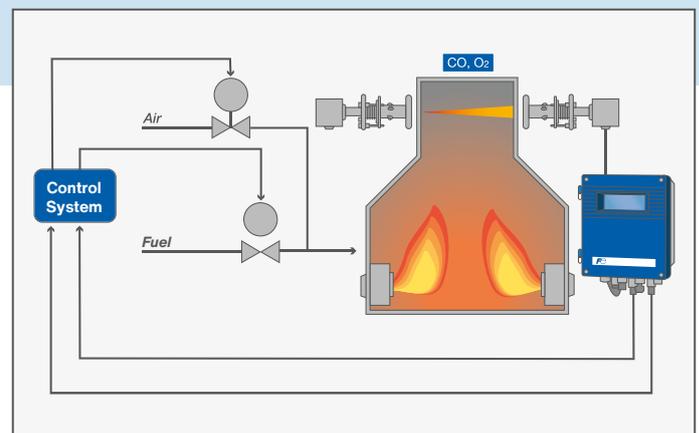
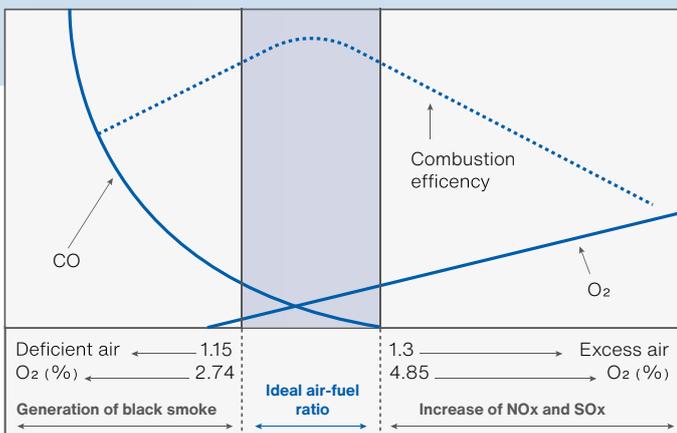
Combustion plants operators need to optimize this energy production process more than ever. Obviously, the less fuel consumed, the more profitable the combustion plant will become. But also, by optimizing the combustion reaction, more energy will be produced, and less harmful gases will be emitted into the atmosphere. And finally the operators also need to prevent the industrial facilities from explosion and corrosion, while ensuring the safety of the staff.

## The Fuji Electric solution

### Boiler Combustion Efficiency Monitoring - Ultra-low excess air combustion

Most of the combustion control systems for boilers control the air-fuel ratio by measuring O<sub>2</sub> only. But these systems cannot eliminate the possibility of heat loss due to incomplete combustion. The most efficient combustion can be achieved by lowering the air-fuel ratio to the point just before incomplete combustion occurs, which we call the ultra-low excess air combustion.

The laser gas analyzer ZSS enables the ultra-low excess air combustion by detecting CO and O<sub>2</sub> simultaneously





## Your advantages

- Cut fuel consumption
- Maximizes boiler performance and heat efficiency
- Reduce pollution
- Increase profitability

## CO+O<sub>2</sub> ZSS Laser Gas Analysers

Reduce your boiler operating cost and conserve environment at the same time

### Energy saving

Ultra-low excess air ratio combustion control

### Global environmental protection

Ensure compliance with exhaust gas regulation values

### Process optimization

Real-time detection of exhaust gas CO concentration thanks to the direct in-situ method

### Data you can trust

High precision laser technology for precise control and ideal air-fuel ratio

### Maximum flexibility and wide ranges of applications

For new and existing stack, with high temperature and high dust tolerance

### Guaranteed stability

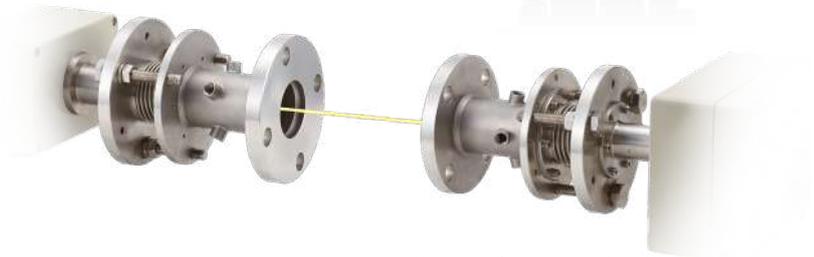
Integrated purge system to maintain the performance in harsh conditions

### Easy maintenance and long service intervals

No need for sampling devices, no moving parts, maintenance twice a year



Control Unit



Transmitter and Receiver Unit



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