



FREQUENTLY ASKED QUESTIONS

What is the payback based on, not including possible cap-and-trade legislation?

Payback on a 200Mw boiler or system would vary because of the calorific value of the coal being used. Assuming the coal has a calorific value of 10,748 Btu/lb as received and the flue gas temperature was 320 °F (160 °C), the **COMPLY 2000** unit would reclaim 126.08 MMBtu/hr at 218 °F (103 °C) hot water. If you can re-use all the reclaimed heat, a conservative estimate that each MMBtu/hr is worth \$7.50 the **COMPLY 2000** unit would achieve a savings of \$945.64 per hour. Assuming an 8,000 hour operation the payback would be \$7,565,091.96 per year less operation cost.

Operating cost to operate the **COMPLY 2000** units and the associated equipment chemicals would be approx. \$1,400,000 per year.

Note: the existing ID fan would be removed and the **COMPLY 2000** unit fans would take its place which would not affect the operating cost.

Actual payback minus the operating cost would be approx. \$6,165,091.96

Are there any materials issues with the COMPLY unit?

There is no material issue with the **COMPLY 2000** unit. The internal skin is constructed of 686 alloy which is a single phase, austenitic nickel-chromium-molybdenum-tungsten with very limited levels of iron and carbon. It offers outstanding corrosion-resistance in a wide range of severe environments. Its high contents of nickel, molybdenum, and tungsten provides resistance to reducing conditions while its chromium imparts resistance to oxidizing media. The external skin is constructed of standard steel and all internal components are dipped in a heresite, these protective coatings will help assure efficient plant operation while preventing damage and the costly downtime and maintenance associated with corrosion and fouling.

How much electricity does the COMPLY unit use?

The **COMPLY 2000** consumes a minimum amount of electricity. The system equipment for a 200Mw system would be approx. 600 to 700 Kw per hour.

Note this does not include the **COMPLY 2000** fans because the existing ID fan is replaced with the **COMPLY 2000** fans.



What is the increased cost of electricity when a COMPLY unit is added?

Assuming the cost per Kw is \$0.06 the yearly increase would be approx. \$300,000.

How much ozone is being injected?

Based on a 200Mw system, NO_x production would be approx. 900 pounds an hour, which requires 126 pounds of Ozone an hour. Yearly NO_x usage would be approx. 3,600 tons based on 8,000 hours of operation.

Is the injected ozone being monitored and if so, how?

The injected Ozone is controlled at the Ozone generator and monitored at the exit of the stack by an O₃ Sensor and a NO_x sensor which is monitored and controlled at a main control station by a computer that runs OSI software. This software trends history every minute, calculates mass balance and adjusts the ozone generator if the 200 Mw boilers modulates. As the NO_x production declines, the Ozone also declines. The **COMPLY 2000** unit and all of the associated equipment is fully automated and modulates with the boiler system.

What does the unit do with the CO₂?

The CO₂ is converted to H₂CO₃ (Carbonic acid) and is directed into the wastewater stream. The carbonic acid can be neutralized; ph increased and reused or disposed of. The carbonic acid could be separated for other use. There are many various processes that can be applied to handle the carbonic acid.

Do we add the ozone to the CO₂ as well and if so what does that accomplish?

Ozone is only added to convert NO to NO₂, all other compositions including CO₂ are not affected nor do they react to the Ozone injection.



What is the estimated load for ozone generation?

The estimated load for an Ozone generator for a 200Mw system would be approx. 126 to 130 Kw per hour. Based on 130 Kw per hour at \$0.06 per KW, it would cost \$7.80 per hour. At 8,000 hours, the additional cost per year would be \$62,400. This may vary product to product.

Where does the oxygen come from for the ozone?

The oxygen can be made by an oxygen generator or in a large application a cryogenics system where oxygen can be produced and stored is recommended.

Does the ozone change the NOx?

Yes the Ozone or O_3 converts the NO to NO_2

Can this be placed downstream of existing scrubbers?

Yes the **COMPLY 2000** unit can be placed downstream of an existing scrubber system or can replace or by-pass a scrubber system. The **COMPLY 2000** unit also can be installed downstream of other control equipment such as FDGs wet or dry.

What is the footprint of the unit?

For a 200 Mw system we would recommend 4 Units. The footprint of each unit would be 12' x 12' x 35' long. These units can be stacked to save space or installed on the roof if needed. There would be 3 stacked units and one on stand-by (redundancy).

What size boilers can the COMPLY unit handle?

The **COMPLY 2000** unit can be installed on any size boilers. Detailed engineering and multiple units handling multiple tasks makes the system easy to maintain and operate.



Can we modify the reaction to get the sulfites out separately?

The **COMPLY 2000** unit can be modified or designed to have multiple separate tasks, the unit is modular which make it very easy to add on other features such as separating the sulfites.

Additional questions

In a smelter, can this substitute for an after burner?

When the **COMPLY 2000** system is substituted for after burners, there is no need for the after burners. The system is designed to capture all the heat and apply the energy where needed in the plant process. The energy that is captured in a smelter is high enough to produce steam and drive a steam turbine which can be used to reduce the electrical consumption within the plant.

Do we attend trade shows?

Yes Eco Power solutions attends and speaks at a selected group of industry related tradeshows throughout North and South America.

2009 Tradeshows

- Edison Electric Institute National Conference – (San Francisco, California)
- WSJ ECO.nomics Conference – (Santa Barbara, California)
- West Coast Energy Management Congress – (Long Beach, California)
- CEATI – (Arlington, Virginia)
- International Conference on Renewable Energy Investment and CDM – (Santiago, Chile)
- PowerGen – (Las Vegas, Nevada)
- Carbon Capture World Summit – (Arlington, Virginia)