

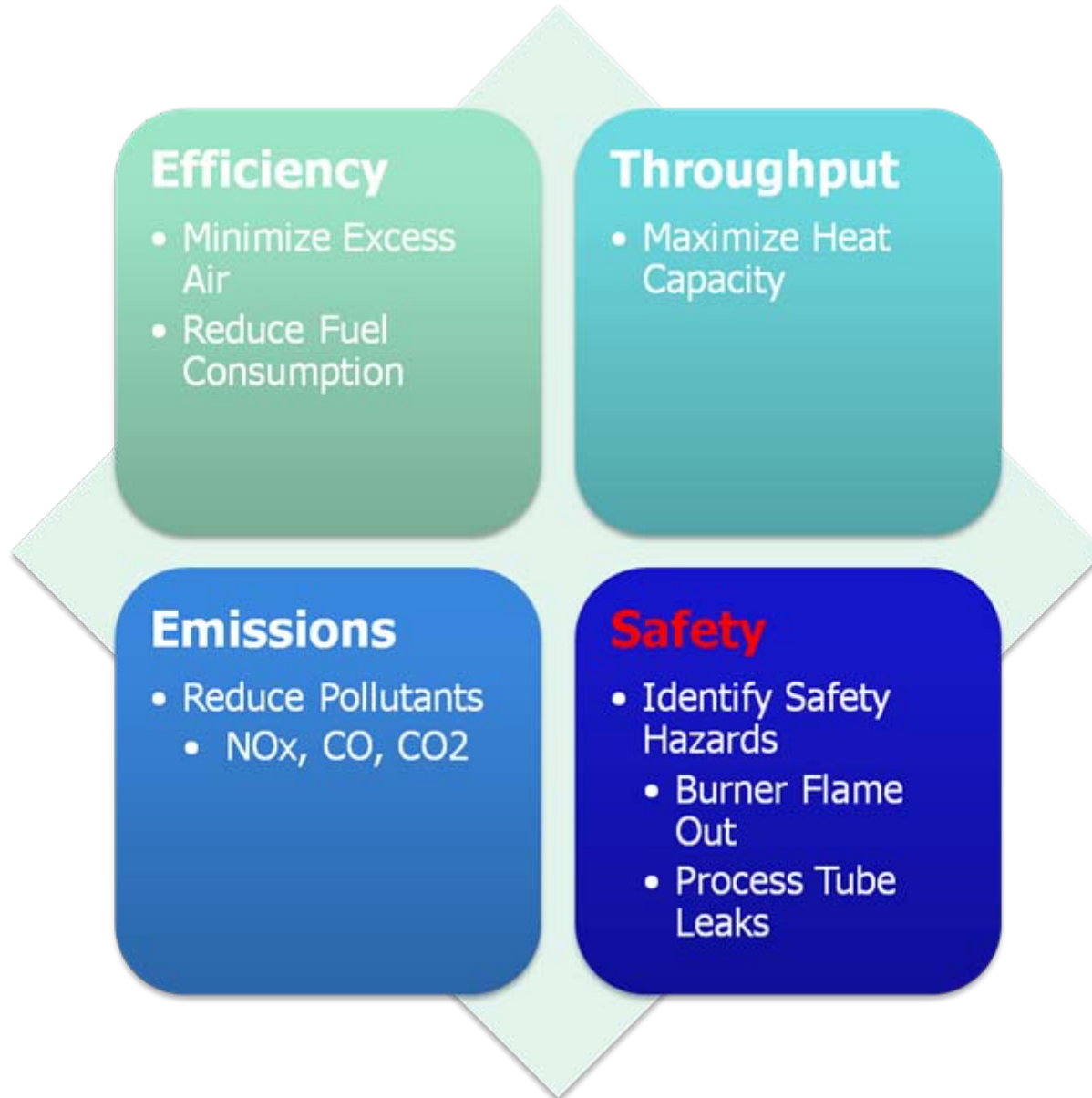
**vigilantplant.**<sup>®</sup>

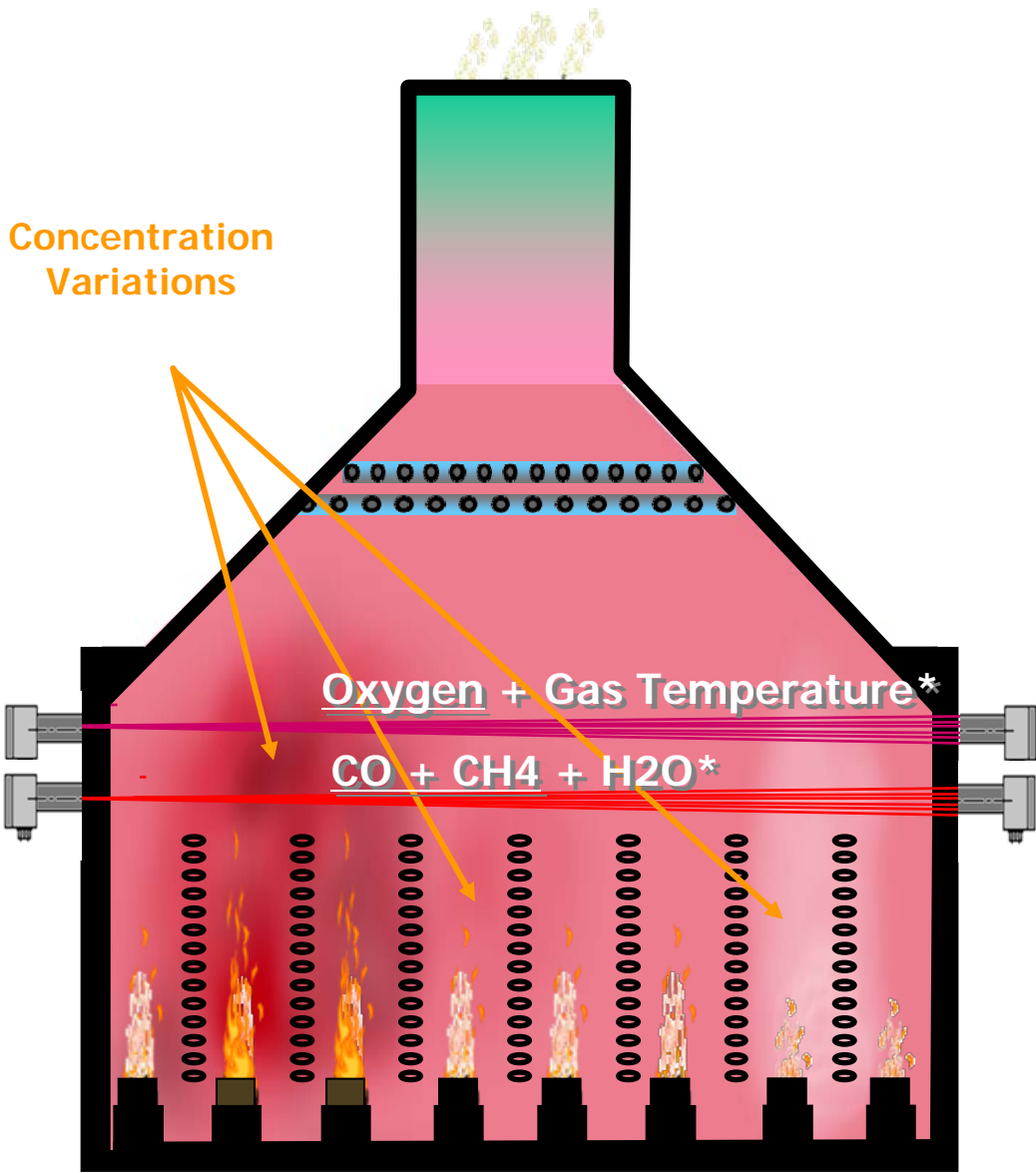
The clear path to operational excellence



# TDLS200 *TruePeak* TDLS Gas Analyzer

## Combustion Analysis





## TruePeak TDL Enables

-Measurement in/near combustion zone

- Before CO levels are reduced

-Fast Response

-5 seconds

-High Sensitivity for CO

-<10 ppm

-CH4 Measurement for Safety

-Burner Coverage

- Cross burner measurement to catch CO and CH4 breakthrough

-O2/CO Measurement "Matching"

-Same location, same conditions

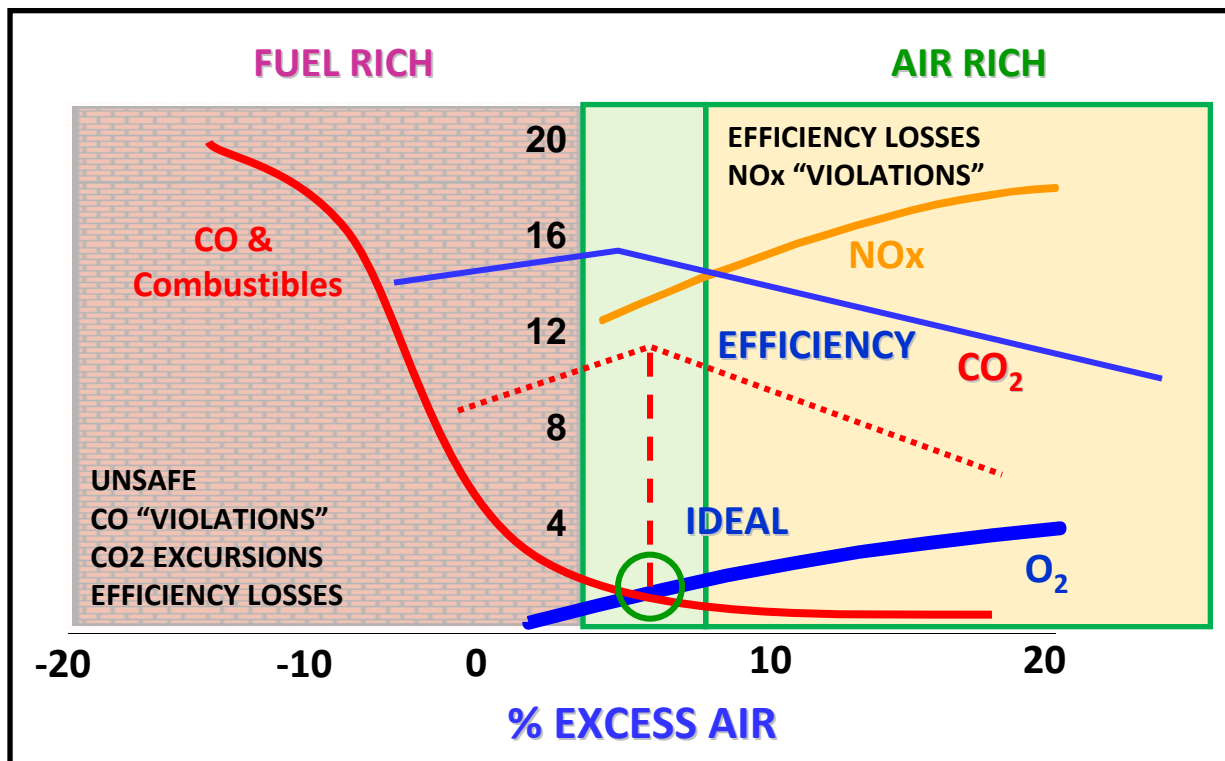
\*Gas Temperature and H2O measurement capability are application dependant, contact Yokogawa

## Oxygen

- Primary combustion efficiency measurement. Easy to use for control
- Typically also used as safety measurement

## CO

- Ideal set point measurement (for excess air)
- Pre-cursor to combustibles breakthrough





## Efficiency & Emissions

- $O_2/CO$  to minimize excess air, maximize efficiency and reduce emissions

## Fuel rich burner conditions

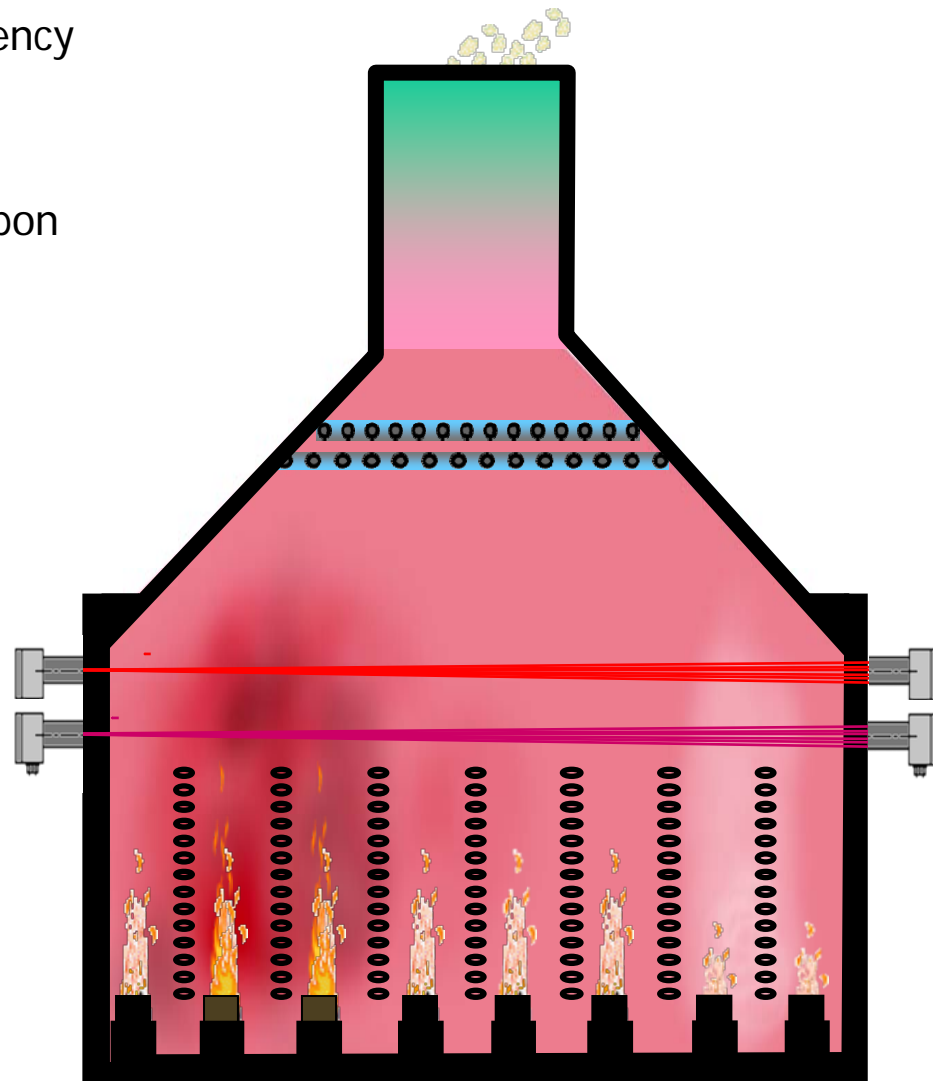
- $CO$  levels increase as a precursor to hydrocarbon breakthrough

## Burner flame out

- Temperature** drops rapidly\*
- Hydrocarbons (methane)** increase rapidly
- Oxygen** increases rapidly
- Moisture** drops rapidly\*

## Process tube leaks

- Moisture** may increase (steam cracking)\*
- Hydrocarbons** increase (**methane**)
- Oxygen** may not change significantly
- Temperature** may not change significantly\*
- CO** may not change significantly

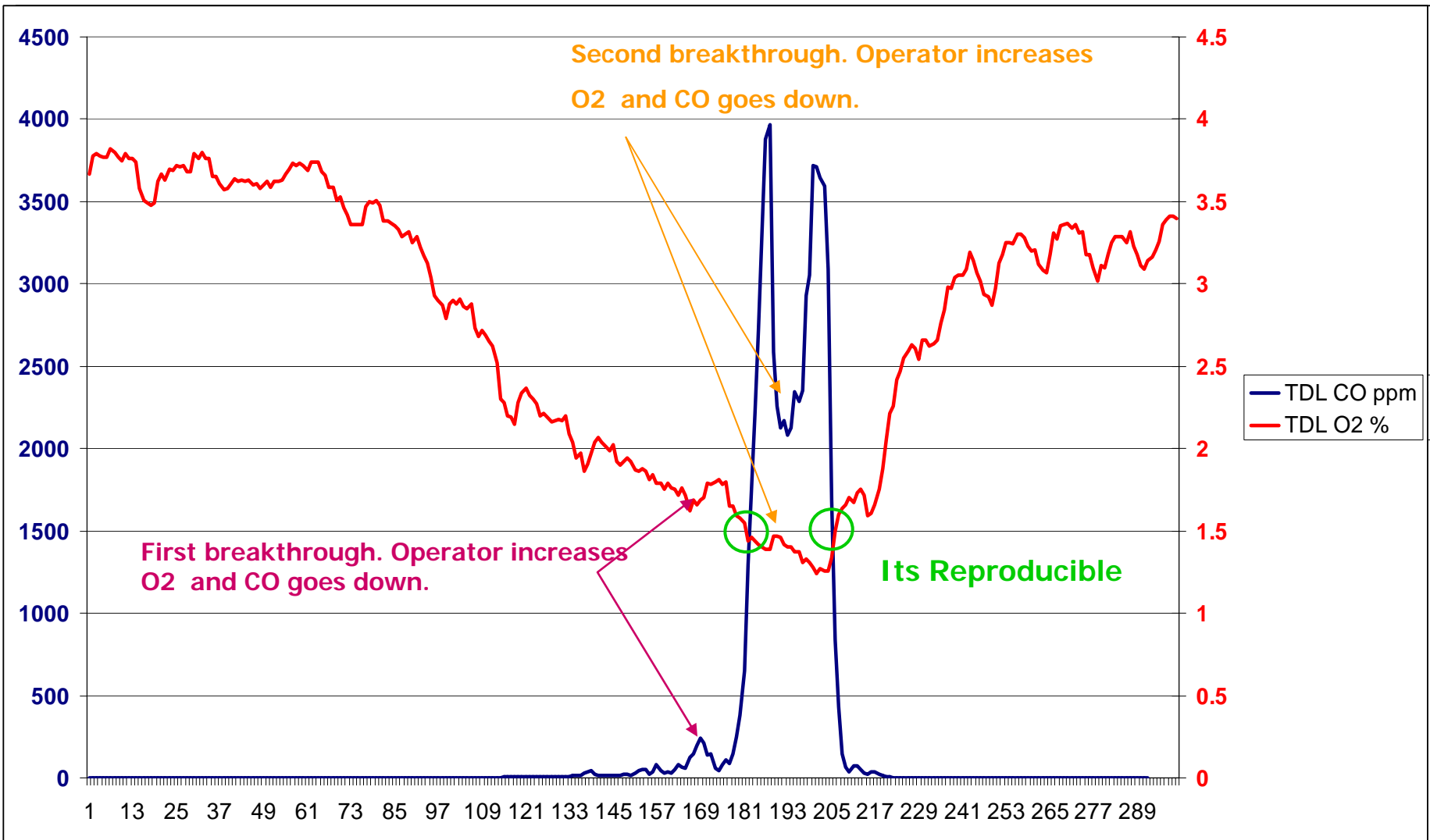


\*Consult Yokogawa for Temperature, and  $H_2O$  .  
These are application dependant



# Simultaneous TDLS measurement of O<sub>2</sub> + CO

Operator Test. Adjust O<sub>2</sub> downward to cause CO breakthroughs.





TDLS measurements can provide combustion diagnostics not possible before:

- CO measurement with cross firebox coverage
- Average O2 value from one analyzer
- O2/CO Matching for control
- CH4 and gas temperature measurements at high speed and across the firebox

