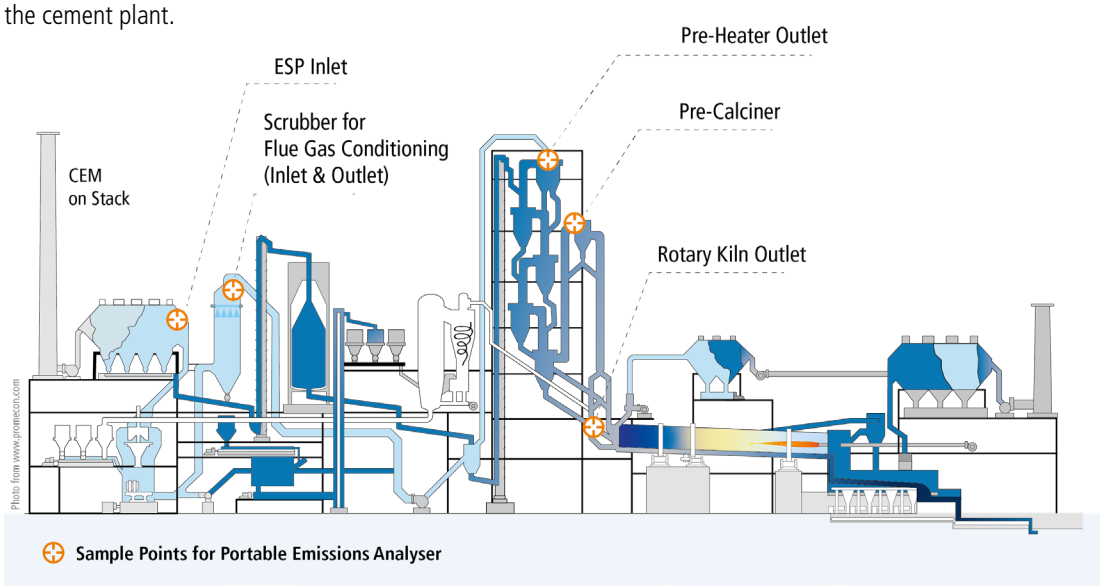
# IMPORTANCE OF PORTABLE EMISSIONS ANALYZERS FOR PROCESS & EMISSIONS OPTIMIZATION AT A CEMENT PLANT

There are many locations that should be measured & monitored with a portable emissions analyzer to maximize product quality, combustion efficiency, safety, & emissions reduction in a cement plant including the following:

1. Rotary Kiln gas outlet – $O_2$, CO, NOx, $CO_2$, $SO_2$, CxHy, temperature
2. Pre-Heater & Pre-Calciner – $O_2$, CO, NOx, $CO_2$, temperature
3. Flue Gas Conditioning System – CO, NOx, $SO_2$, $CO_2$ such as scrubber, SCR (Selective Catalytic Reduction), SNCR (Selective Non Catalytic Reduction)
4. Electrostatic Precipitator (ESP) inlet – CO
5. Main Stack for Continuous Emissions Monitoring system (CEM) back-up – $O_2$, CO, NOx, $CO_2$, $SO_2$, CxHy

Although a CEM measures the emissions from the main stack for regulatory compliance, a portable flue gas analyzer with a high temperature sampling probe is fundamental to measure the parameters that significantly affect the cement process control & product quality, the kiln combustion efficiency, and the emissions generated throughout the cement plant.




The levels of CO, $CO_2$, NOx (NO & $NO_2$), $SO_2$, & CxHy as well as gas temperature should be measured to ensure optimal combustion efficiency of the kiln that will result in fuel savings and reduced emissions.

**Instrument Solution: Si-CA 8500 Portable Emissions Analyzer**

The Si-CA 8500 portable emissions analyzer can easily be used for accurate emissions measurements of $O_2$, CO, $CO_2$, both NO & $NO_2$ for True NOx, $SO_2$, and CxHy throughout a cement plant.

The Si-CA 8500 flue gas analyzer also has sample extraction and conditioning well suited for cement plants with high temperature (2200 °F / 1200 °C) probes, dust filtration, and a built-in thermoelectric chiller.