



## Power Generation Emissions Monitoring & Analysis

- ✓ Relied upon by Europe's largest coal fired powerplant plant
- ✓ Over 200 aggregate years operation in dry and wet lime
- ✓ Gas Turbine, Diesel, Coal, Oil, base and transient peak load applications

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For more than 25 years, coal, oil and gas fired power plants have formed the largest installed user base for Procal CEM systems. Throughout this period, there has been increasing environmental scrutiny and process upgrades, including the near-ubiquitous use of after-treatment systems such as sophisticated FGD and SCR.



Procal 2000 emissions analysers are used in coal and biomass fired plants in Europe, USA and in the Asia Pacific region, including Europe's largest coal fired powerplant, operated by Drax Power in the UK, where a total of eighteen units are installed. Drax have relied on Procal 2000 units for over 10 years of continued and reliable operation on coal and biomass top-up fired fuels. Assurance of availability is backed by a 24 hour service and maintenance agreement.



Oil & gas fired thermal powerplants are a mirror of their larger coal fired equivalents although specific emissions limits are often lower. This places demanding requirements on the CEMS analyser in terms of process stress with an additional loading of having to measure at lower absolute levels.

Procal 2000 units are used on plants to switch between fuels without adjustment to the analyser units while still remaining in-tolerance for the applicable emissions limits. An example installation is operated by Endesa in Buenos Aires, Argentina, where five Procal 2000 units were installed between 2005 and 2007 on stack outlets from boilers operated on either oil or natural gas as a switchable fired fuel.

Diesel power plants are a frequent choice where rapid economic development outstrips the local grid capacity or remoteness precludes linkage with that grid. Often operating on variable load profile and frequent stop/start conditions, the systems require reliability as service support will often be a remote resource. Procal's experience in this application covers island power plants and desert, tropical and marine-based diesel installations. As an example, Ace Power in Sri Lanka operate fourteen Procal 2000 units installed in 2004.

### Example

Coal Fired fitted with Flue Gas De-Desulphurisation (FGD) Scrubber

Gas	Inlet Analyser	Outlet Analyser	Function
SO <sub>2</sub>	0 – 1,000 ppm	0 – 100 ppm	Control / Reporting
NO	0 – 1,000 ppm	0 – 1,000 ppm	Reporting
CO	0 – 250 ppm	0 – 250 ppm	Control /Reporting
CO <sub>2</sub>	0 – 15%	0 – 15%	Reporting
H <sub>2</sub> O	0 – 20%	0 – 20%	Diagnostic / Dry Basis Correction



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