

## COMBUSTION PLANTS USING NON-COMMERCIAL FUELS IN CHEMICAL INDUSTRY

CEFIC



**NOTE: BREF LCP AND EGTEI  
STUDY DON'T COVER  
PROCESS FURNACES OR  
HEATERS**

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## COMBUSTION PLANTS IN CHEMICAL INDUSTRY

- Capacity: 50 to 250 MWth of steam to support the production of the chemical plant in all situations that may occur during industrial operations.
- Utility boilers located inside the chemical plant.
- Combined Heat-Power plant (CHP) different from combined cycle (CCGT).
- Non commercial fuel as by product of the process.
- Multi – fuel firing in variable range and composition.



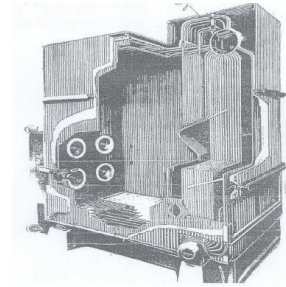
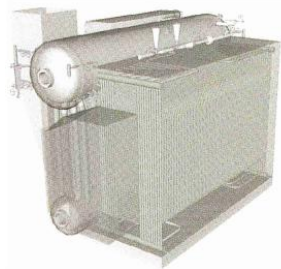
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## PARTICULARITIES OF UTILITY BOILERS

- Variable load operation due to the process: exceptional, start up, shut down
- Variable fuel composition and back up fuels.
- Daily emissions may be very higher from yearly average values.
- Some BAT not feasible for exceptional operation situations.
- Layout of existing installations that don't allow for retrofitting with some BAT.
- Restricted size of the firebox that may hamper for installation of some BAT.
- Reduced performances of BAT in existing installations.



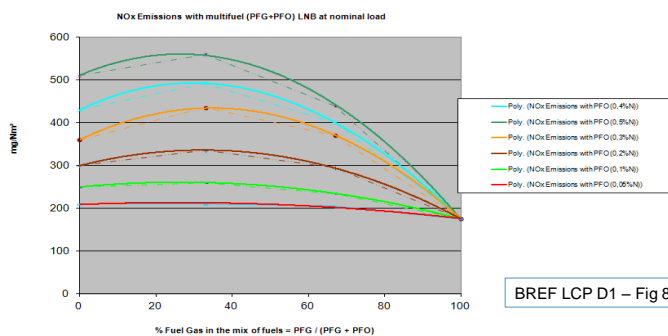
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## PARTICULARITIES OF NON COMMERCIAL FUELS

- Variable availability of fuels: multi-fuel firing, fuels switch, flexibility
- Variable composition due to process : Hydrogen, Nitrogen, sulfur, ash, catalytic fines, metals,...
- NOx emission performance with primary measures



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**COMMENTS ABOUT BREF LCP D1 - FIGURE 8.6**

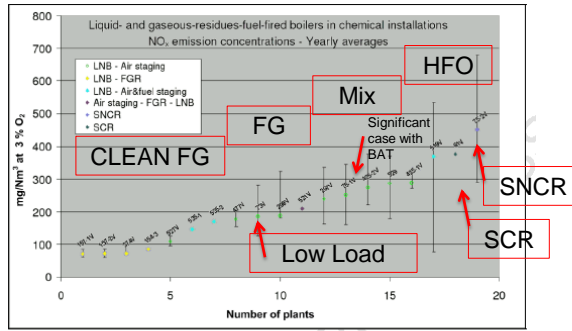


Figure 8.6: NC-fuel-fired boilers - NO<sub>2</sub> emission concentrations; yearly averages; 5<sup>th</sup> and 95<sup>th</sup> percentiles of short-term values are represented as span bars

Table 10.39: BAT-associated emission levels for NO<sub>2</sub> from the combustion plants using chemical industry process fuels, including the mixtures with other fuels

Fuel	Pollutant	Unit	BAT-AEL		Monitoring frequency
			Yearly average	Daily average	
Mixture of gases and/or liquids	NO <sub>2</sub>	mg/Nm <sup>3</sup>	70 - 200 <sup>(1)(2)</sup>	90 - 250 <sup>(1)(2)</sup>	Continuous measurement
	NH <sub>3</sub>		< 1 - 5 <sup>(3)</sup>	ND	
	CO		< 1 - 20	ND	

Not Consistent with data collected

**CONCLUSIONS**

- Technical feasibility of BAT is highly dependent on the installations.
- Economical feasibility of BAT is not demonstrated for the exceptional case of operation.
- Particularities of non commercial fuel and multi fuel firing should lead to higher BAT AEL for daily average and yearly average as well.
- Cost of reduction techniques may be different for chemical sector than for power generation sector