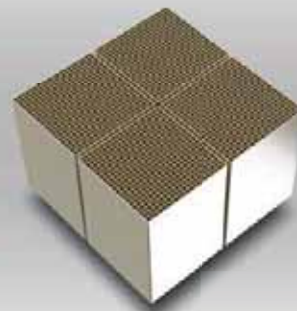


SCR Shell Wesseling



Retrofitted SCR for Low NO_x Emissions

Application	Technical Data	Scope of Supply
<p>Power Plants and Industrial Boilers NO_x reduction</p> <p>Benefits</p> <ul style="list-style-type: none"> • Reduction of NO_x emissions • Extension of fuel range • High availability • Increase in operational flexibility • Low pressure loss 	<p>Type: Selective Catalytic Reduction</p> <ul style="list-style-type: none"> • With honeycomb catalyst • With plate catalyst <p>Selective Non-Catalytic Reduction</p> <p>Emissions: NO_x < 50 mg/m³ (STP) NH₃ slip < 1 mg/m³ (under high dust conditions)</p>	<ul style="list-style-type: none"> • Consultancy • Process engineering • EPC for SCR installations • Optimization concepts • Adaptation of boiler water-steam cycle • Adaptation of heating surfaces • Optimization of flue gas distribution and NH₃-injection (CFD simulations)
	<p>Fuel Type</p> <ul style="list-style-type: none"> • Bituminous coal • Heavy fuel oil & residues • Waste • Lignite • Co-firing of biomass 	

Selective Catalytic Reduction of NO_x

Scope	Client
Concept Design Study: Assessment, comparison and selection of feasible NO _x reduction technologies and concept engineering for a total of 10 bituminous coal fired power stations	Eskom Enterprises, Johannesburg, South Africa
Know-how transfer, design tools and training for DeNO _x (SCR) for bituminous coal-fired power plants, South Africa	Eskom Enterprises, Johannesburg, South Africa
License and know-how transfer agreement for catalytic DeNO _x system, China	Guizhou XingYun Environment Protection Co., Ltd., Guiyang, China
Owner`s engineer for 3 SCR installations, modification of 5 steam generators, 75 t/h, 110 t/h, 150 t/h, Refinery Residues, Oil and Gas, Mineral Oil Refinery Oberrhein (MIRO), Germany	MIRO, Karlsruhe, Germany
Engineering and supply for retrofit of a SCR-DeNO _x plant, 200 t/h, Heavy Fuel Oil and Low-Pressure-Gas, Shell Rheinland Refinery, Germany	Shell Deutschland Oil GmbH, Wesseling, Germany

Legend:

PS – Power Station
PF – Pulverized Fuel
CHP – Heat and power plant

SCR – Selective Catalytic Reduction
STP – Standard Temperature and Pressure
HRSG – Heat Recovery Steam Generator

FGD – Flue Gas Desulphurization
CFB – Circulating Fluidized Bed
ESP – Electrostatic Precipitator

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