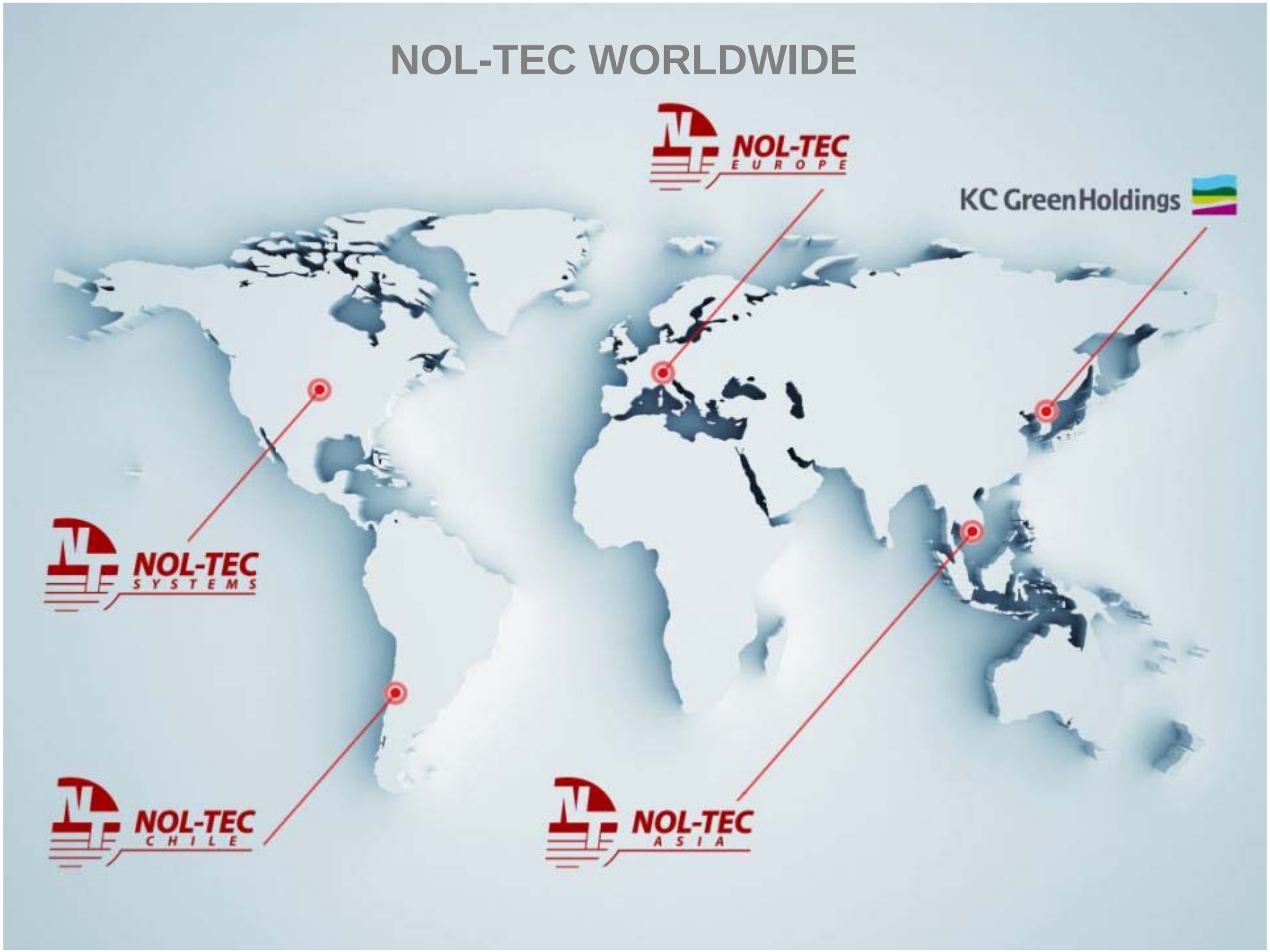
NOL-TEC EUROPE

Proven Technologies for **Cement** Industries

- **Turn Key Batching Tower.**
- **APC.** Air Pollution Control
- **DSI.** Dry Sorbent Injection
- **Dust Handling.**
- Carbon & Alternative **Fuel Addition**

Nol-Tec Group SOC

NOL-TEC WORLDWIDE



HISTORY

- 1982: Establishment of NOL-TEC SYSTEMS
- 1998: Establishment of NOL-TEC EUROPE
- 1999: ISO 9001Certification
- 2005: Establishment of NOL-TEC AUTOMATION AND SERVICE
- 2010:Incorporation of NOL-TEC into KCGreenHoldings
- 2012: Establisment of NOL-TEC CHILE

THE COMPANY GOALS

Planning, realization, installation start up and assistance of:

- Industrial Plants (Pneumatic Conveying)
- Automation and Control
- Weighing and Dosing Systems
- Spare Parts

For this capabilities Nol-Tec Europe reached from "DET NORSKE VERITAS" the quality system certification UNI EN ISO 9001:2000

CORPORATE CAPABILITIES:

- Dust Collection Systems
- Sorb-N-Ject Technology (APC)
- Dilute Phase Pneumatic Conveying
- Dense Phase Pneumatic Conveying
- Integrated Control Systems
- Engineering Service
- Service, Training, and Start-Up
- Supervise Equipment Installation
- In-House Testing
- Wonderbatch
- Air Blending
- Weighing and Batching

INDUSTRIAL FIELDS

+light duty

+heavy duty

HANDLED AND TREATED MATERIAL

Activated Carbon
Adipic Acid
Aggregates
Alumina
Aluminum Oxide
Amorphous Silica
Antimony Oxide
Ash
Aspirin Starch
Atrazine
Barium Sulfate
Borax
Boric Acid
Calcined Magnesium Oxide
Calcium Carbonate
Carbon Black
Carbon Char
Carbon Fibers
Catalyst
Cement
Cheese Powder
Chromium Acetate
Clay
Coconut Char
Coffee Beans
Colemanite
Copper
Corn Flour
Corn Starch
Cristobalite
Crystalline Aspirin
Dextrine
Dibutyltin Difluoride
Dolomite
Dried Sludge
Dust (various types)
Epoxy Resin
FCC Catalyst
Feldspar
Fertilizer
Flint
Fluorspar
Fly Ash
Foundry Bond
Foundry Sand
Fused Silica
Glass Batch
Glass Bubbles
Glass Cullet
Glass Frit
Ground Coffee
Hydrated Lime
Ilmenite
Iron Chromite
Iron Oxide
Kaolin Clay
Lactose
Lead Oxide
Lime
Limestone
Magnesium Oxide
Methylcellulose
Mica
Molding Sand
Molybdenum Oxide
Monosodium Phosphate
Municipal Waste Ash
New Sand
No-Bake Sand
Paraffin Wax
Peanuts
Pebble Lime
Perlite
Phenolic Resin
Plastic Pellets
Polycarbonate Pellets
Polyester
Polyethylene
Polyurethane
Potassium Hydroxide
Potato Flakes
PVC
Quick Lime
Roofing Granules/Slag
Salt Cake
Sand
Seasonings
Shale
Silica
Silica Flour
Silica Gel
Silica Hydrogel
Slate
Sodium Acrylate
Soda Ash
Sodium Bicarbonate
Sodium Carbonate
Sodium Fluoride
Sodium Sulfate
Spray Dried Tile Body
Starch
Stearic Acid
Sugar
Talc
Titanium Dioxide
Tobacco
Toner
Trona
Ulexite
Urea
Wheat Flour
Whey
Wollastonite
Wood Flour
Xanthan Gum
Zeolite
Zinc Oxide
Zircon
Zirconium

More than 600 systems realized for our customers

More than 600 systems realized for our customers

SERVICE

MAINTENANCE:

- Customized Maintenance Packages
- Start up
- Setting and Calibration services
- Technical Assistance 24 / 7
- Remote Assistance 24 / 7
- Spare parts

CUSTOMER ASSISTANCE:

- Customized tests to move and blend powder
- Construction of Plants
- Revamping of Existing Plants
- Repair of Components
- Pre-Assembly of Machines
- Training Course

EUROPEAN RESEARCH CENTRE

Nol-Tec performs tests of:
- conveyability
- degradation
- capacity
- segregation

of each product, as to have no problem during the plant start-up.

The customer can really check how the product acts according to the different pneumatic conveying configurations. Moreover, the test, performed by skilled technicians, gives relevant indications to how each system should be designed and operated.

NTE/PRAXAIR

Nol-Tec Europe and **Praxair** provide technical knowledge for gas and solids handling: they are two world-wide companies united by a common vision of the market:

- high professional problem solving;
- innovative ideas;
- research of new markets;
- consultative approach

...elements that represent
the common basis of this partnership.

Praxair, is the largest industrial gases company in North and South America, and one of the largest worldwide, with 2010 sales of $10 billion. The company produces, sells and distributes atmospheric, process and specialty gases, and high-performance surface coatings

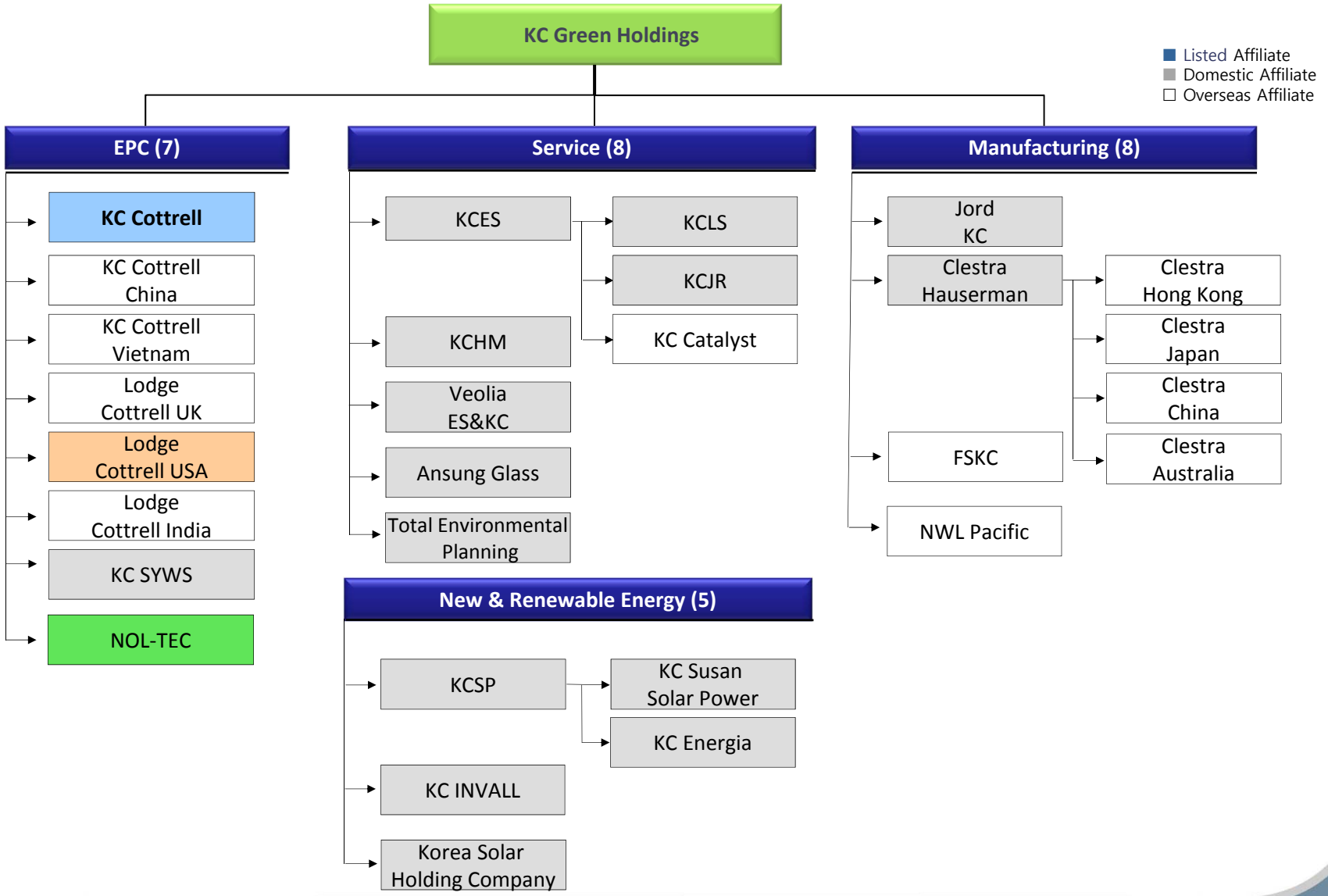
APC
Air Pollution Control

KC GreenHoldings

KC GREEN HOLDINGS MAIN OFFICE IN SEOUL

NOL-TEC EUROPE

Nol-Tec Group SOC


KC Green Holdings
Listed Affiliate
Domestic Affiliate
Overseas Affiliate
EPC (7)
KC Cottrell
KC Cottrell China
KC Cottrell Vietnam
Lodge Cottrell UK
Lodge Cottrell USA
Lodge Cottrell India
KC SYWS
NOL-TEC
Service (8)
KCES
KCLS
KCJR
KCHM
KC Catalyst
Veolia ES&KC
Ansung Glass
Total Environmental Planning
New & Renewable Energy (5)
KCSP
KC Susan Solar Power
KC Energia
KC INVALL
Korea Solar Holding Company
Manufacturing (8)
Jord KC
Clestra Hauserman
Clestra Hong Kong
Clestra Japan
Clestra China
Clestra Australia
FSKC
NWL Pacific

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BUSINESS ACTIVITIES

Flue Gas Treatment Systems	- FGD (Flue Gas Desulphurization) System - De-NOx (Flue Gas De-Noxification) System - SDR (Semi Dry Reactor) System - DI (Dry Injector) System - De-Dioxin System - VOC Removal/Recovery System
Dust Collection Systems	- Electrostatic Precipitator (Dry & Wet Type) - eBF (Electrostatic Bag Filter) - Fabric Filter - Exhaust Fume Collectors - Wet Scrubbers - Cyclone Collectors
Incineration Systems	- Rotary Kiln & Stocker Incinerator - Fluidized Bed Incineration System (PYROFLID) - Sludge Dryer - Solid Waste Incineration System - Plasma Arc Melting System
Ash Handling Systems	- Pneumatic Ash Handling System - Bottom Ash Handling System - HCSD (High Concentration Slurry Disposal) System - Mechanical Ash Handling System
Industrial Machinery	- Damper, Diverter & Expansion Joint - Air Cooled Heat Exchanger - Pressure Vessel - Floodgate (Stop Gate) - Intake Facility - Wastewater Treatment system

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KC REFERENCE PROJECTS

	APC Equip.	Power	Steel	Cement	Others
Dry ESP	51	40	63	231	386
Wet ESP	25	20		6	51
Fabric Filter		36	14	22	72
Wet Scrubber		20		15	35
MCC	5	10		18	33
AHS	18			3	21
FGC	15	3			18
SCR	4	3		7	14
FGD	15	6		16	37
Total	133	138	77	318	642

POWER STATION (500MWx6) ESP’s

POWER STATION (500MWx4) FGD SYSTEM

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BLAST FURNACE
RAW MATERIAL HANDLING ESP & BHF

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CEMENT EBF FOR KILN

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FGD PLANT

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THERMAL POWER PLANT (500MWx2)

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KC MANUFACTURING FACILITY (ANSHUN)

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Nol-Tec Group SQC

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Nol-Tec Group SQC

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NOL-TEC
EUROPE

Nol-Tec Group
SOC

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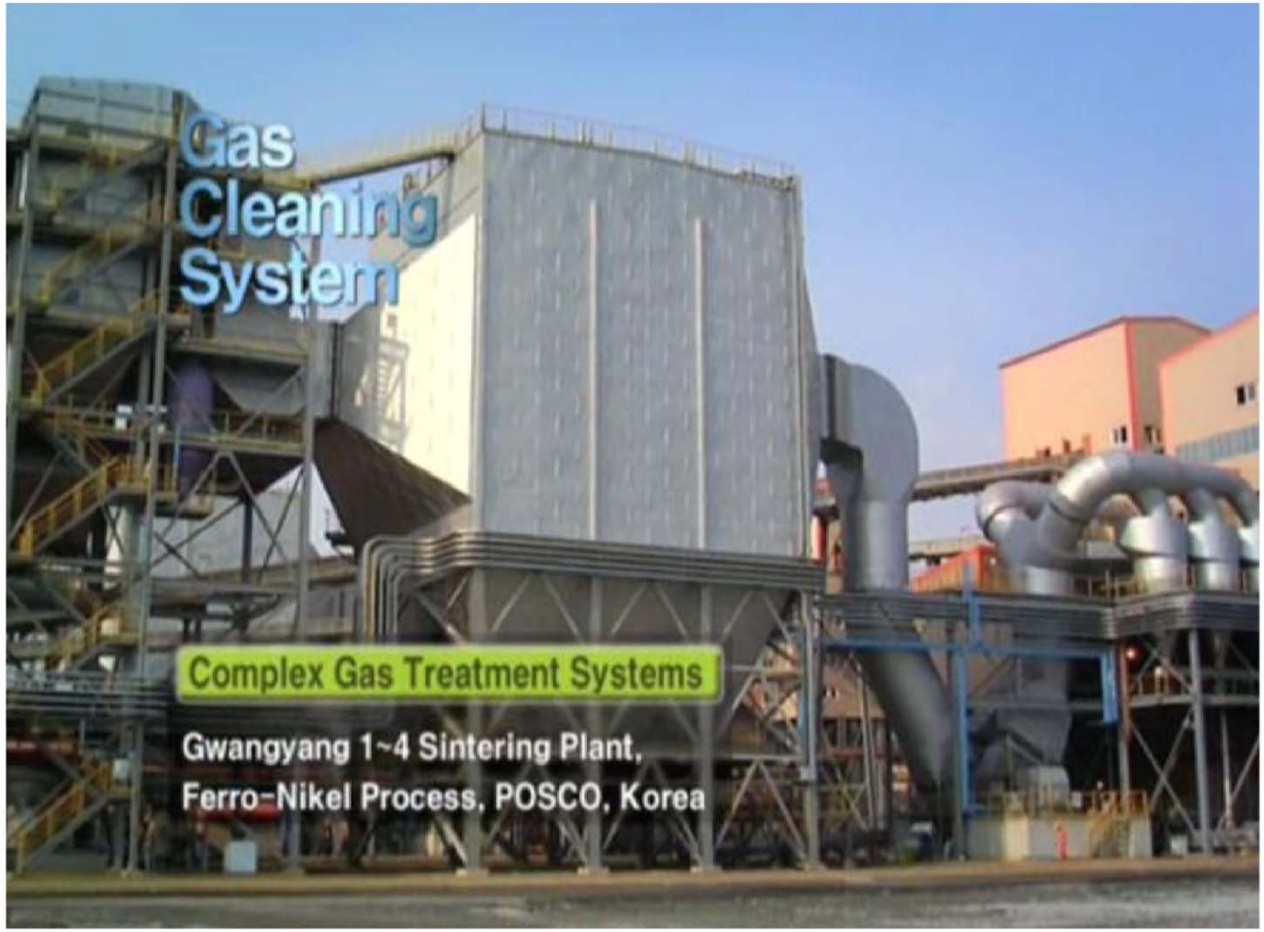

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DUST COLLECTION

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NOL-TEC DENSE PHASE TECHNOLOGY

- High pressure with low ratio of air used for pneumatic conveying (2Bar typical conveying pressure).
- Low product speed inside the conveying lines.
- Material gently conveyed through the controlled creation of product slugs.
- Technology suitable for abrasive products.

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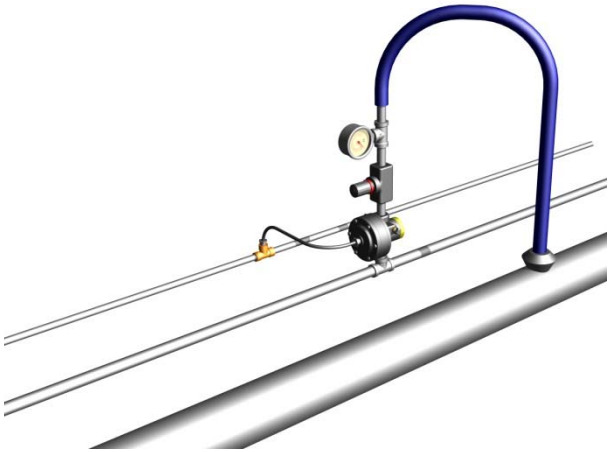
AIR ASSIST™ SYSTEM



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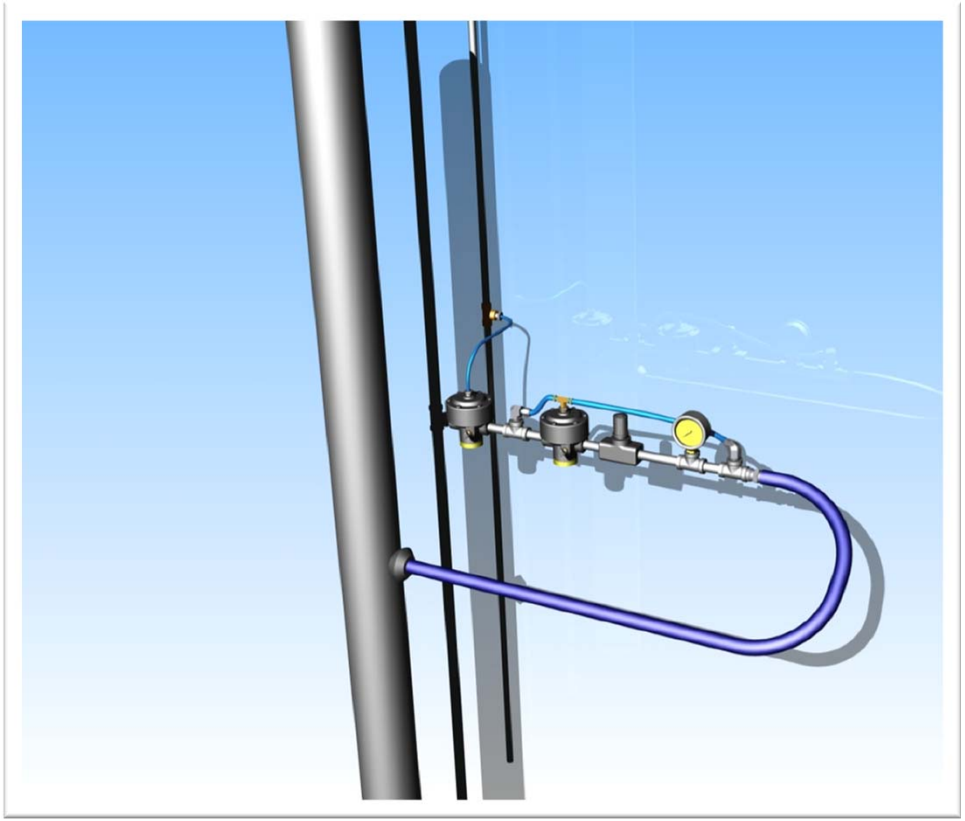
APPLICATIONS
Dense Phase with Air Assist

THE AIR MIZER REVOLUTION
REDUCTION OF GAS CONSUMPTION
UP TO 30 %



- Pressure increase/decrease automatic control system
- Automatic recognition of pressure increase or decrease
- Switching on and off
- Reduction of the air consumption of 12%-15%
- Used over long distances (more than 100 m)

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APPLICATIONS
Dilute Phase with Screw Pumps

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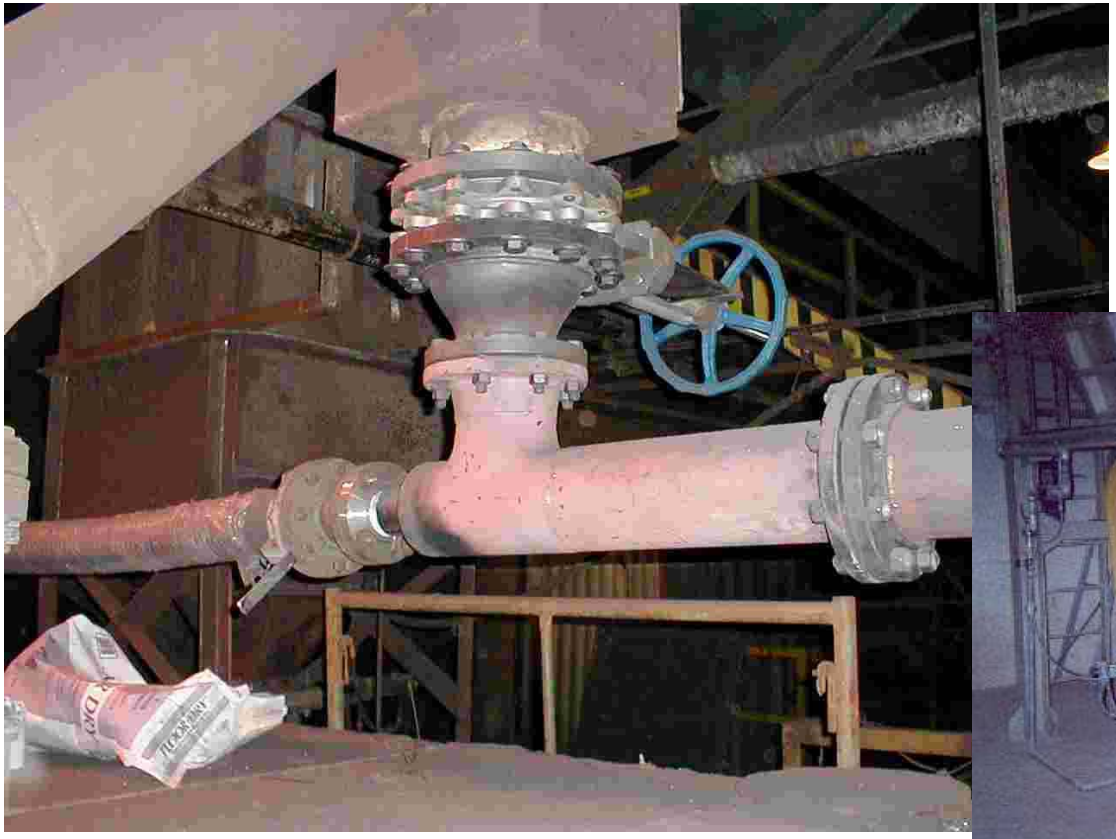
APPLICATIONS

Pneumatic Conveying System for kilns and cement filter (Product Temperature up to1000° C)



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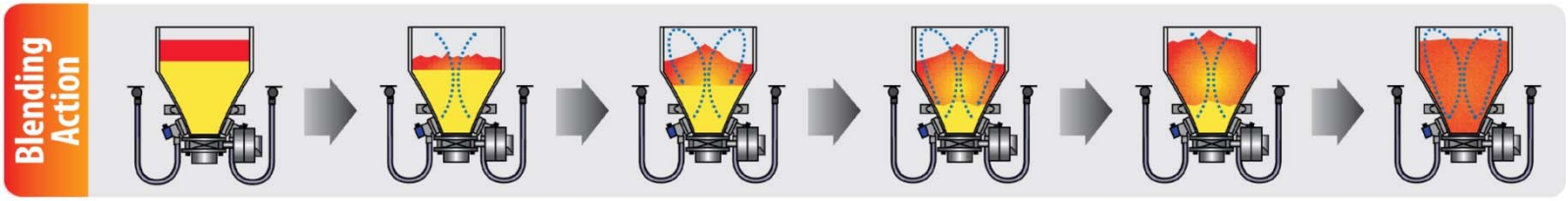
PNEUMATIC BLENDING
FOR HOPPERS AND SILOS

GMP Good Manufacturing Practise · USDA · FDA · CE · PED

Model 244

Model 277

Model 328



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NOL-TEC PNEUMATIC BLENDING

- The Pneumatic Blending is the most efficient and cleanest homogenization mean for powder, granules and abrasive materials.

- Compared to common mechanical blenders, pneumatic blenders use air to efficiently blend different components in an homogeneous mix.

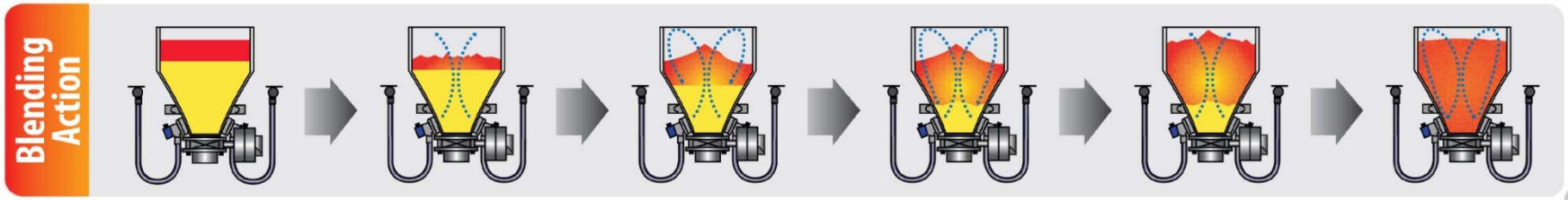
MINIMAL MAINTENANCE

- Six air injection valves are placed on the blending cone.
- The valve positioning on the cone leads to the air injection towards the centre avoiding the cone wear.
- On the outlet there is a flanged operated butterfly valve.
- Both the injection air valves and the discharge butterfly valves can be easily reached from the outside, making the maintenance quicker and easier.

BLENDING IN ACTION

- The product is pushed up and outwards with a circular motion.

- The blending efficiency is optimized setting the right “on time” and “off time” values, the pression and the number of cycles.



KEY ADVANTAGES

- Rapid and efficient blending.
- Easy to be cleaned.
- Reduced maintenance.
- Use of the common network air.
- Usable together with the dense phase conveying.

SILO BLENDER

- ***NOL-TEC*** has a Silo Blender of high capacity (blender model 277).
- 12 injection air valves.
- Suitable for the blending of large dust, granular and abrasive batches.

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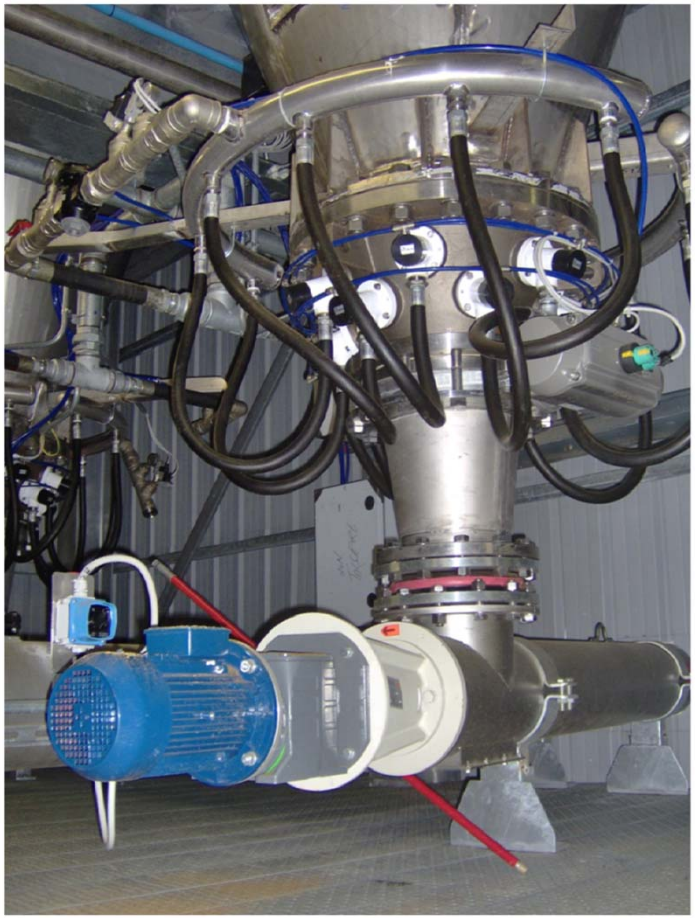
SILO BLENDER



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SILO BLENDER

NOL-TEC EUROPE

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SILO BLENDER

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SILO BLENDER

FLUIDIZING BIN BOTTOM

- Nol-Tec Blender is also available in a version with three valves to fluidize high capacity silos (Fluidizing Bin Bottom).
- 3 air injection valves.
- Suitable for the blending of large dust, granular and abrasive batches with bridging action.

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FLUIDIZING BIN BOTTOM

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PRE-ASSEMBLED BLENDER/TRANSPORTER

- Pre-assemled component ready to be installed
- Minimal activity
- Rapid installation, control and start up
- Time and money saving

NOL-TEC EUROPE DRY SORBENT INJECTION

PORTABLE SILOS

Demo & Temporary / Rental or Purchase

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DROP OFF SILO
Demo & Temporary

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PERMANENT INSTALLATIONS

- Truck/Rail Unload
- Storage
- Dust Collection
- Silo Discharge (fluidization)
- L-I-W (Loss-In-Weight) Feeders
- Dryers
- Blowers
- Heat Exchangers
- Convey Lines
- Splitters
- Injection Points
  - Lance Purge
- Electrical Control

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TRUCK/RAIL UNLOAD

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STORAGE SILOS

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DUST COLLECTION

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SILO DISCHARGE AERATION

SILO DISCHARGE and DISTRIBUTION

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L-I-W FEEDERS

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COMPRESSOR & DRYER/PD BLOWER PACKAGES

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CONVEY LINES

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SPLITTERS & LANCES OF INJECTION

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LANCE SELF-DIAGNOSIS AND AUTOMATIC CLEANING

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CONTROL ROOM

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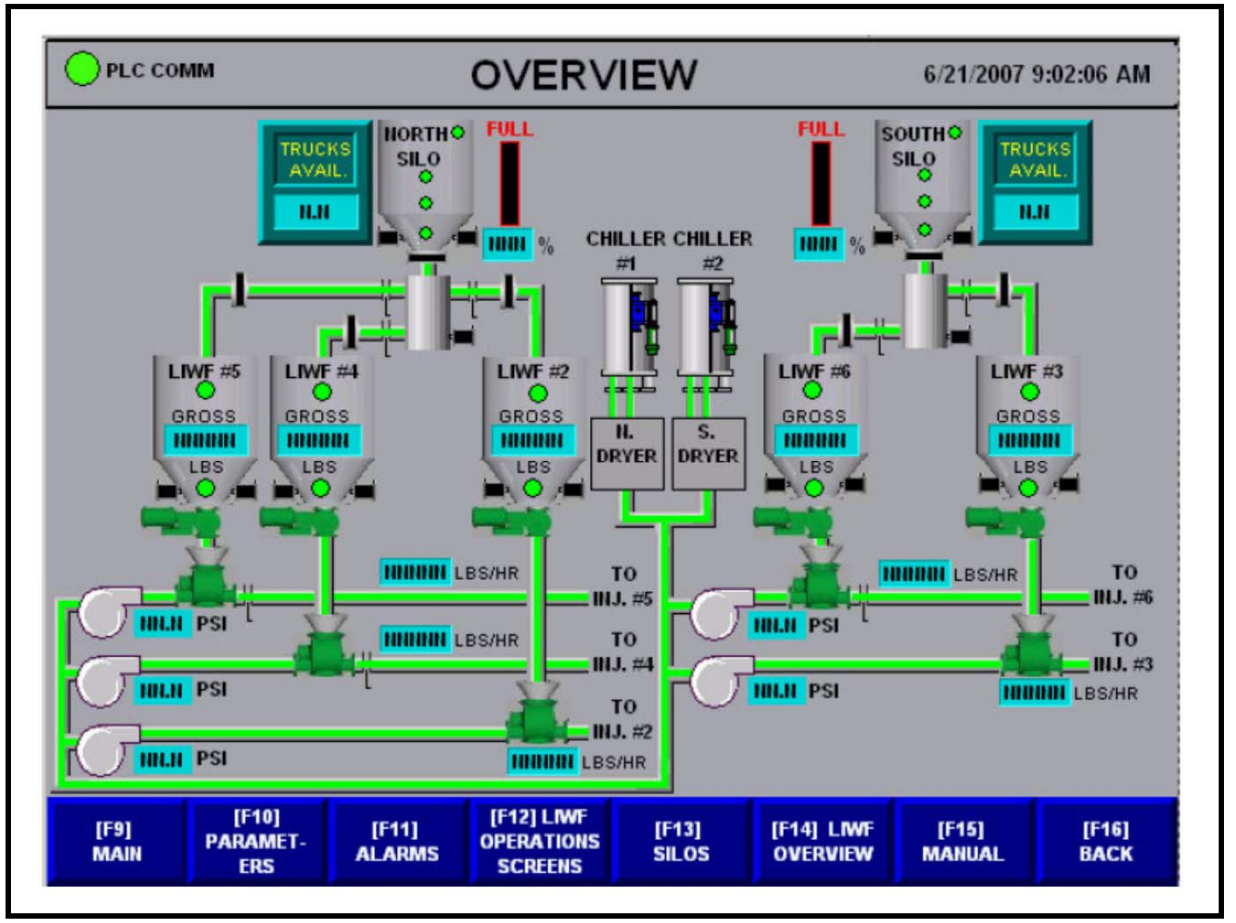
OPERATOR INTERFACE SCREEN



NOL-TEC EUROPE

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THE NOL-TEC EUROPE SORB-N-JECT SYSTEM FOR LIGNITE POWER PLANT

PERFORMANCE: 300 mW unit

1,100,000 Nm^3/h flue gas per duct

Temperature: 135-150 ° C

H_2O Content: 22%

SO_2 Average: 1100 mg/Nm^3

SO_2 Reduction: 60-80%

Injection Rate Green Line: 8 t/h

NO MORE BLOCKAGE AND BUILD UP!

FUTURE TARGET: 4t/h fresh lime and 4t/h recycled using 5 t/h water injection

SORB-N-JECT
Lignite Power Plant Photos

Rotary Airlock

Storage Silos

SORB-N-JECT
Lignite Power Plant Photos

Blower & Heat Exchanger

Splitter

HYDRATED LIME REFERENCES

Client / Owner / Plant	Unit(s)	Location	State	Pollutant (s)	MW	Type of System	Material	Date
AES Somerset, LLC	N/A	Barker	NY	SO_3	655	Sorbent Injection - Truck to Storage - Dilute Phase	Trona <1% moisture content	2007
Duke Energy / Gallagher Generating Station	2, 4	New Albany	IN	SO_2	150, 150	Sorbent Injection System - Dilute Phase	Trona (milled), Sodium Bicarbonate	2010
DuPont de Nemours & Co.	N/A	Washington	WV	SO_3		Sorbent Injection System - Dilute Phase	Sorbent (hydrated lime)	2007
E.ON U.S. / Kentucky Utilities / Ghent 1	1	Ghent	KY	SO_3	560	Dilute Phase to Injection Lances	Trona or Hydrated Lime (<1% moisture)	2009
E.ON U.S. / Kentucky Utilities / Ghent 3	3	Ghent	KY	SO_3	560	Dilute Phase to Injection Lances	Trona or Hydrated Lime (<1% moisture)	2007
E.ON U.S. / Kentucky Utilities / Ghent 4	4	Ghent	KY	SO_3	560	Dilute Phase to Injection Lances	Trona or Hydrated Lime (<1% moisture)	2007
E.ON U.S. / LG&E / Trimble County	1	Bedford	KY	SO_3	566	Dilute Phase to Injection Lances	Trona or Hydrated Lime (<1% moisture)	2007
E.W. Brown Station/ Kentucky utilities	3	Harrodsburg	KY	SO_3	235	Dilute Phase to Injection Lances	Trona or Hydrated Lime (<1% moisture)	2012
GE - Progress Energy - Lee Station		Goldsboro	NC	Hg		Dilute Phase Pressure Powdered Activated Carbon Injection	Powdered Activated Carbon	2006
Jenkin's Brick - Jordan Plant	N/A	Leeds	AL	SO_2		Dilute Phase Pressure Lime Injection	Hydrated Lime	2006
Jenkin's Brick - Montgomery Plant	N/A	Montgomery	AL	SO_2		Dilute Phase Pressure Lime Injection	Hydrated Lime	2006
Medical Center Co. (The)	N/A	Cleveland	OH	SO_3		Dilute Phase Pressure Lime Injection	Hydrated Lime	2006
Progress Energy Carolinas, Inc. Robinson Unit 1	Unit 1	Raleigh	NC	SO_2	176	Sorbent Injection System	Hydrated Lime - 4 silos	2007
Seminole Electric	1	Palatka	FL	SO_3	715	Dilute Phase Pressure Injection	Hydrated Lime	2009
Seminole Electric	2	Palatka	FL	SO_3	715	Dilute Phase Pressure Injection	Hydrated Lime	2009
Southern Co. / Alabama Power / EC Gaston	5	Wilsonville	AL	SO_3	952	Dilute Phase Sorbent Injection System - 56 injection points	Trona	2010
Southern Co. / Georgia Power / Bowen	1, 2	Cartersville	GA	SO_3	806, 789	Dense & Dilute Hydrated Lime Injection Systems	Hydrated Lime	2009
Southern Co. / Georgia Power / Bowen	3, 4	Cartersville	GA	SO_3	952, 952	Dense & Dilute Hydrated Lime Injection System	Hydrated Lime	2009

HYDRATED LIME REFERENCES

Southern Co. / Georgia Power / Hammond	1, 2, 3, 4	Coosa	GA	SO_3	125, 125, 125, 578	Truck Unload, Dilute Phase Pressure, Sorbent Injection	Hydrated Lime	2009
Southern Co. / Georgia Power / Wansley	1, 2	Carrollton	GA	SO_3	865, 865	Dense & Dilute Hydrated Lime Injection System	Hydrated Lime	2008
Southern Co. / Gulf Power / Crist Generating Station	4, 5, 6, 7	Pensacola	FL	SO_3	94, 94, 370, 578	Sorb-N-Ject	Hydrated Lime	2010
TVA - Bull Run	1	Clinton	TN	SO_3	950	Dilute Phase Pressure, Sorbent Injection	Hydrated Lime	2011
TVA - Cumberland	1, 2	Cumberland City	TN	SO_3	1300, 1300	Dry Hydrated Lime Injection System	Hydrated Lime	2006
TVA - Cumberland	2	Cumberland City	TN	SO_3	1300	Dry Hydrated Lime Injection System	Hydrated Lime	2006
TVA - Paradise	3	Drakesboro	KY	SO_3	1150	Unit 3 - Dilute Phase Pressure, Sorbent Injection	Hydrated Lime	2011
TVA - Paradise	1, 2	Drakesboro	KY	SO_3	704, 704	Units 1 & 2 - Dilute Phase Pressure, Sorbent Injection	Hydrated Lime	2011
TVA - Widows Creek	8	Stevenson	AL	SO_3	550	Dilute Phase Pressure Lime Injection	Hydrated Lime	2005
Tri-Mer Corp. / Illumina, Inc.		San Diego	CA	SO_2		Sorb-N-Ject, Bulk Bag Unloader, Volumetric Feed	Sodium Bicarbonate (pre-milled)	2012
Tri-Mer Corp. / Durand Glass		Millville	NJ	SO_2		Sorb-N-Ject, Truck Unload, Dilute Phase Pressure Conveying	Sodium Bicarbonate (pre-milled)	2012
Tri-Mer Corp. / Pyramax Ceramics		Wrens	GA	SO_2		Sorb-N-Ject, Truck Unload, Dilute Phase Pressure Conveying	Sodium Bicarbonate (pre-milled)	2012
Hoosier Energy / Ratts Station	2	Petersburg	IN	HCl, SO_2, Hg		Portable Silo / Trailer	Sodium Bicarb, Trona, Hydrated Lime, Powdered Limestone, B-PAC	2012
Southern Co / Southern Power / Plant Wansley		Carrollton	GA	Hg		Portable Silo / Trailer	PAC	2012
Southern Co / Southern Power / Plant Wansley		Carrollton	GA	HCl		Portable Silo / Trailer	Lime	2012
Southern Co. / Georgia Power / Bowen		Cartersville	GA	Hg		Portable Silo / Trailer	PAC	2012
Southern Co. / Georgia Power / Plant Hammond		Coosa	GA	Hg		Portable Silo / Trailer	PAC	2012
Southern Co. / Georgia Power / Plant Hammond		Coosa	GA	HCl		Portable Silo / Trailer	Lime	2012

HYDRATED LIME REFERENCES

TVA - Gallatin Fossil Plant		Gallatin	TN	Hg		Portable Bulk Bag Unloader	PAC	2012
TVA - Gallatin Fossil Plant		Gallatin	TN	HCl		Portable Silo / Trailer	Lime & Trona	2012
LG&E / Trimble County		Bedford	KY	SO_3		Self-Erecting Portable Silo, Dilute Phase Conveying & Sorbent Injection	Hydrated Lime	2011
Confidential Customer		Midwest	WI	SO_2		Portable Storage / Trailer	Trona (milled and unmilled), Sodium Bicarbonate	2011
Confidential Customer		Midwest	WI	SO_2		Portable Storage / Trailer	Trona (milled and unmilled), Sodium Bicarbonate	2011
Confidential Customer		Midwest	IL	SO_2		Portable Silo / Trailer	Trona (milled and unmilled), Sodium Bicarbonate	2011
Kentucky Utilities / E.W. Brown Station *(Permanent Test System)*	1, 2 & 3	Harrodsburg	KY	SO_3		Portable Silo / Trailer	Trona &r Hydrated Lime	2011
Southern Co / Southern Power / Plant Wansley		Carrollton	GA	SO_3		Self-Erecting Portable Silo, Dilute Phase Conveying & Sorbent Injection	Hydrated Lime	2011
Southern Co. / Georgia Power / Plant Bowen	3	Cartersville	GA	SO_3		Self-Erecting Portable Silo, Dilute Phase Conveying & Sorbent Injection	Hydrated Lime	2011
Electric Energy / Joppa Generating Station LLC	2	Joppa	IL	SO_2	366	Portable Silo / Trailer	Trona (milled and unmilled), Sodium Bicarbonate	2010
TVA - Kingston		Harriman	TN	SO_3		Portable Silo / Trailer	Hydrated Lime	2010
Confidential Customer		Midwest	IL	SO_2		Portable Silo / Trailer	Trona (milled and unmilled), Sodium Bicarbonate	2009

HYDRATED LIME REFERENCES

Kentucky Utilities / Ghent 1 *(formerly E.ON)* *(Permanent Test System)*	1	Ghent	KY	SO_3		Portable Silo / Trailer	Trona	2009
Southern Co / Georgia Power / Plant Yates *(Permanent Test System)*	1	Newnan	GA	SO_3		Added Silo with Mini-Jet to Make System Permanent	Hydrated Lime/Trona	2008
Southern Co / Georgia Power / Plant Yates	1	Newnan	GA	SO_3	1488	Testing - Dilute Phase Pressure/BBU Sorbent Injection	Several Hydrated Limes and Two Tronas	2006
EERC		Varies		Varies		Portable BBU	Varies	2005
Southern Co. / Gulf Power / Plant Crist		Pensacola	FL	SO_2	1230	Material Handling & Slurry Production	Powdered Limestone	2008
Southern Co. / Alabama Power / Plant Barry		Bucks	AL	SO_2	2830	Material Handling	Pulverized Limestone	2009
TVA - Kingston	1-9	Harriman	TN	SO_2	1700	Unloading, Storage & Delivery for Slurry	Pulverized Limestone	2010
Southern Co., / Mississippi Power		Escatawpa	MS			Discharge & Meter from Silo to Slurry Tank	Powdered Limestone	2012
Tri-Mer Corp. / Durand Glass		Millville	NJ			Dense Phase Pressure	DSI Waste (Ash)	2012
Tri-Mer Corp. / Pyramax Ceramics		Wrens	GA			Dense Phase Pressure	DSI Waste (Ash)	2012

HYDRATED LIME REFERENCES

Customer0	Country/City	Industry	RATE t/h	DISTANCE m	Product	Type	Abrasive	Ship
ACEGAS	ITALY	Municipality/Incinerator	2	150	Hydrated Lime	DENSE PRESSURE NO PURGE	Moderately Abrasive	2005
AMSA - SILLA 2 (GRUPPO a2a)	ITALY	Ecology&Environment	0,15	250	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2009
APRICA SpA (GRUPPO a2a)	ITALY	Ecology&Environment	0,3	120	Depurcal	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	In process
BRIANZA ENERGIA AMBIENTE SpA	ITALY	Municipality/Incinerator	2	145	Hydrated Lime	DENSE PRESSURE NO PURGE	Moderately Abrasive	2007-2011
CaO HELLAS MACEDONIAN LIME INDUSTRY S.A.	GREECE	Power Plant	6	80	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2011
CARMEUSE NATURAL CHEMICALS	BELGIUM	Ecology&Environment	0,03-0,3	100	Depurcal	SORB-N-JECT	Moderately Abrasive	2012
CARMEUSE NATURAL CHEMICALS	BELGIUM	Ecology&Environment	0,03-0,3	100	Depurcal	SORB-N-JECT	Moderately Abrasive	2012
COMPAGNIA ENERGETICA BELLUNESE SpA (EDISON)	ITALY	Municipality/Incinerator	0,2	20	Hydrated Lime/Sodium Bicarbonate	VENTURI EDUCTOR	Moderately Abrasive	2011
E-CL/GDF SUEZ	CHILE	Power Plant	8	150	Hydrated Lime	DENSE PRESSURE NO PURGE	Moderately Abrasive	2012
ECOLOMBARDIA 4 SpA (GRUPPO a2a)	ITALY	Ecology&Environment	1	150	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2007
ENERCON Srl	ITALY	Foundry	2	15	Hydrated Lime	DILUTE PRESSURE VENTURI	Moderately Abrasive	2004
EUROPOWER SPA (ACCAM SpA)	ITALY	Municipality/Incinerator	1,5	25	Hydrated Lime	MINIJET	Moderately Abrasive	2006

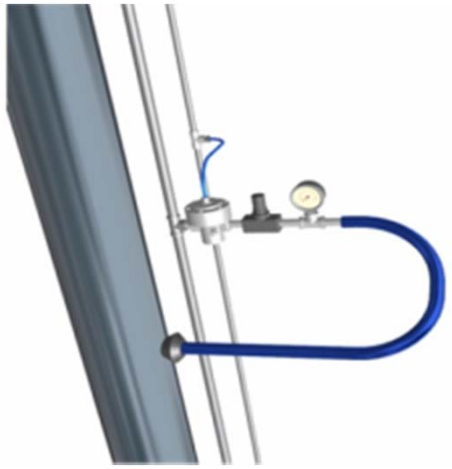
HYDRATED LIME REFERENCES

Customer	Country/City	Industry	RATE t/h	DISTANCE m	Product	Type	Abrasive	Ship
EUROPROGETTI SRL (GRUPPO UNICALCE)	ITALY	Cement	0,3	150	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2008
EUROPROGETTI SRL (GRUPPO UNICALCE)	ITALY	Cement	1	100	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2009
FISIA ITALIMPIANTI SpA (INCENERITORE ACERRA)	ITALY	Municipality/Incinerator	60	150	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2009
FISIA ITALIMPIANTI SpA (INCENERITORE ACERRA)	ITALY	Municipality/Incinerator	1	125	Hydrated Lime	FLUIDIZING SYSTEM	Moderately Abrasive	2009
MAC SPA	ITALY	Building Products	10	30	Hydrated Lime	SEMI DENSE PRESSURE PURGE	Moderately Abrasive	2002
MINERMIX Srl	ITALY	Mineral/Mining	15	120	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2006
NEOTECHNIK GmbH	GERMANY	Ecology&Environment	0,05	50	Sodium Bicarbonate	SORB-N-JECT	Moderately Abrasive	2012
REDECAM Srl	ITALY	Ecology&Environment	0,15	150	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2009
REDECAM Srl	ITALY	Ecology&Environment	0,1	120	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2009
SAINT-GOBAIN VETRI S.p.A.	ITALY	Glass	1	14	Hydrated Lime	MINIJET	Moderately Abrasive	2006
TECNOCASIC S.C.p.A.	ITALY	Municipality/Incinerator	0,05	50	Hydrated Lime	DILUTE PRESSURE ROTARY VALVE	Moderately Abrasive	2008
UNIECO	ITALY	Municipality/Incinerator	5	120	Hydrated Lime	DENSE PRESSURE NO PURGE	Moderately Abrasive	2011

FILTER DUST HANDLING

Nol-Tec has developed a unique technology to convey fly ash (and reacted products) from ESPs or Filters to storage silo.
Nol-Tec Dense Phase Technology is used to convey reducing:

- Air consumption (reduction up to 20% using Air Mizer Technology)
- Wear of conveying pipeline (low velocity of the product inside pipeline)



Air Assist™

The Air Assist™ technology also allows to re-start conveying in case of accidental stop with pipelines full of product.
Fly ash transporter is equipped, as standard, with the new double ceramic disc valve, suited to convey very abrasive and hot (up to 450° C) products without the use of gaskets.

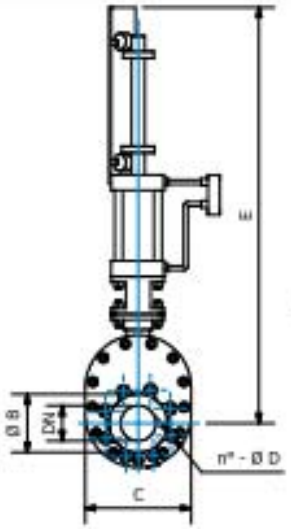
For special applications, Nol-Tec also offers Venturi eductor for small rate and very high temperature (up to 1000° C), Screw conveyors (low profile when limited installation space is available) and Vacuum Conveying System (bed ash up to 20 mm).

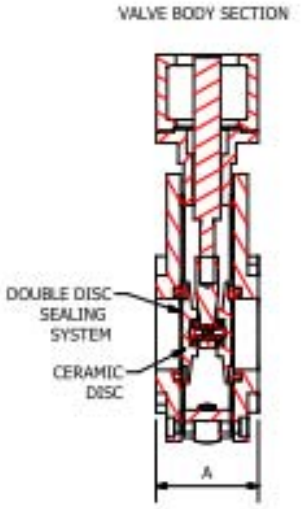
FILTER DUST HANDLING PRODUCTS

- Dense Phase Pneumatic Conveying
  - Pressure & Vacuum
- Dilute Phase Pneumatic Conveying
  - Pressure & Vacuum

Filter Dust Minijet
on Skid with double ceramic disc valve

SPECIAL HEAVY DUTY INLET VALVE

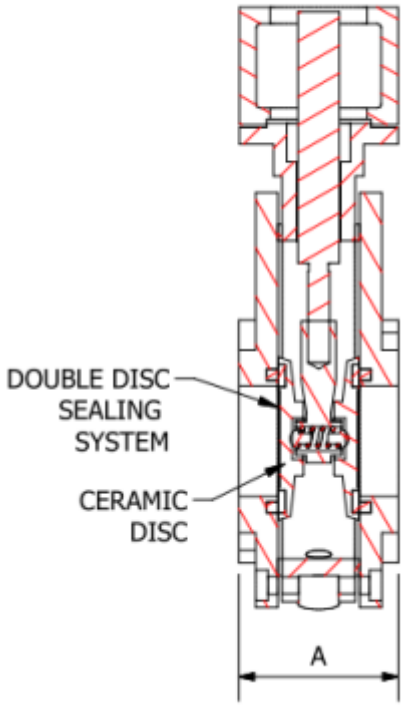




DN	A [mm]	Ø B [mm]	C [mm]	n° - Ø D [mm]	E [mm]	Weight [Kg]
50	114	99	200	4 - M16	830	30
65	114	118	220	4 - M16	860	40
80	114	132	240	4 - M16	804	45
100	130	156	280	8 - M16	911	80
125	170	184	320	8 - M16	997	100
150	170	221	360	8 - M20	1110	120
200	230	266	470	8 - M20	1300	180
250	280	319	560	12 - M20	1528	240
300	320	363	630	12 - M20	1650	380

DIMENSION SUBJECT TO CHANGE WITHOUT NOTICE

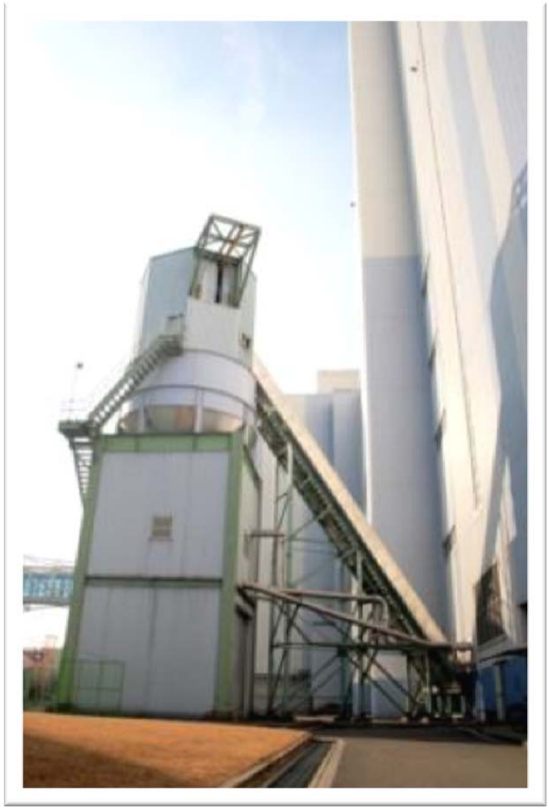
VALVE BODY SECTION



DENSE PHASE
FILTER DUST HANDLING
WASTE TO ENERGY PLANT

STORAGE SILOS

DILUTE PHASE



Dust Silo and Unloading Chute
- Volume : 180 m3
- Diameter x Height : 7m x 8.24m

Air Lock Feeder & Filter Dust Transporting Pipe

Filter Dust Transporting Pipe

NOL-TEC FILTER DUST CONVEYING AND HYDRATED LIME HANDLING

Typical Turnkey Project

PERFORMANCE:

FILTER DUST		HYDRATED LIME	
Rate:	13 t/h	Rate:	8 t/h
Distance:	150 m	Distance:	120 m
Bulk Density:	0.8 Kg/dm³	Bulk Density:	0.8 Kg/dm³
Particle size:	fine	Particle size:	fine
Explosion risk:	Safe Area	Explosion risk:	Safe Area
Moisture:	3%	Moisture:	dry
Temperature:	Max 200 ° C	Temperature:	ambient
System Capacity:	11,67 t/h	System Capacity:	4 MTPH
Conveyed Distance:	150 m	Conveyed Distance:	160 m

HYDRATED LIME SILO

APC
Air Pollution Control

KC GreenHoldings

HYDRATED LIME INJECTION SYSTEM

NOL-TEC EUROPE

Nol-Tec Group SOC

APC
Air Pollution Control

KC GreenHoldings

FILTER DUST SILO

NOL-TEC EUROPE

Nol-Tec Group SOC

FILTER DUST MINIJET ON SKID

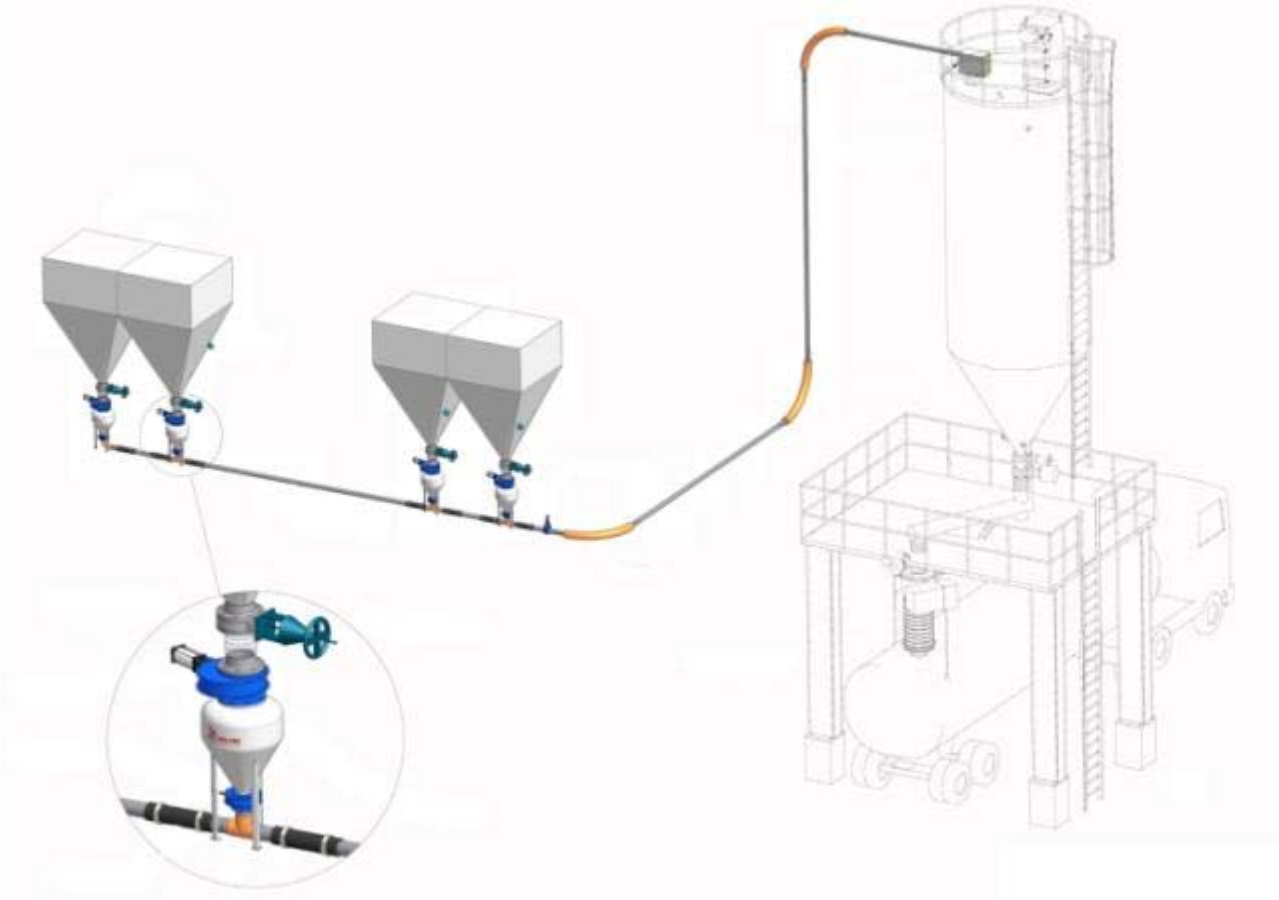
Pre-assembled and pre-wired fire in house testing

FILTER DUST
MINIJET ON SKID

Installation with minimal field connections

ECONOMIZER FILTER DUST TRANSFER SYSTEM

FILTER DUST CONVEYORS AND DOME VALVES



PERFORMANCE:
Product: Filter Dust
Bulk Density: 0.8 Kg/dm^3
Temperature max: 435˚ C (max)
Rate: 2.1 t/h
Distance max:70 m
Bends: 4

ESTIMATED SYSTEM OPERATING CONDITIONS:
System: Semi Dense Phase
Pipeline dia: 4”
Transporter: 280 l
Air use: 400-500 Nm^3/h
Air average: 400-500 Nm^3/h

APC
Air Pollution Control

KC GreenHoldings

FILTER DUST CONVEYOR

NOL-TEC EUROPE

Nol-Tec Group SOC

NOL-TEC EUROPE TYPICAL PLANT FOR WASTE TO ENERGY AND BIOMASS

PERFORMANCE:

Product:	Filter Dust	Filter Dust	Filter Dust
Bulk Density:	1.4 Kg./dm^3	0.4 Kg./dm^3	0.6 Kg./dm^3
Temperature max:	190° C	100° C	250° C
Rate:	1.1 t/h	700 Kg/h (Peak)	2 t/h
Distance max:	46 m	54 m	160 m
Bends:	5	3 max	10 max

ESTIMATED SYSTEM OPERATING CONDITIONS

System:	Dense Phase Purge	Dense Phase Purge	Dense Ph. Purge
Pipeline dia:	2 ½''	3”	3”
Transporter:	25 l	25 dm^3	280 l
Air use:	200Nm^3/h	200Nm^3/h	400Nm^3/h
Air average:	50Nm^3/h	100 Nm^3/h	400Nm^3/h

APC
Air Pollution Control

KC GreenHoldings

MINIJET WITH DOUBLE CERAMIC DISK VALVE

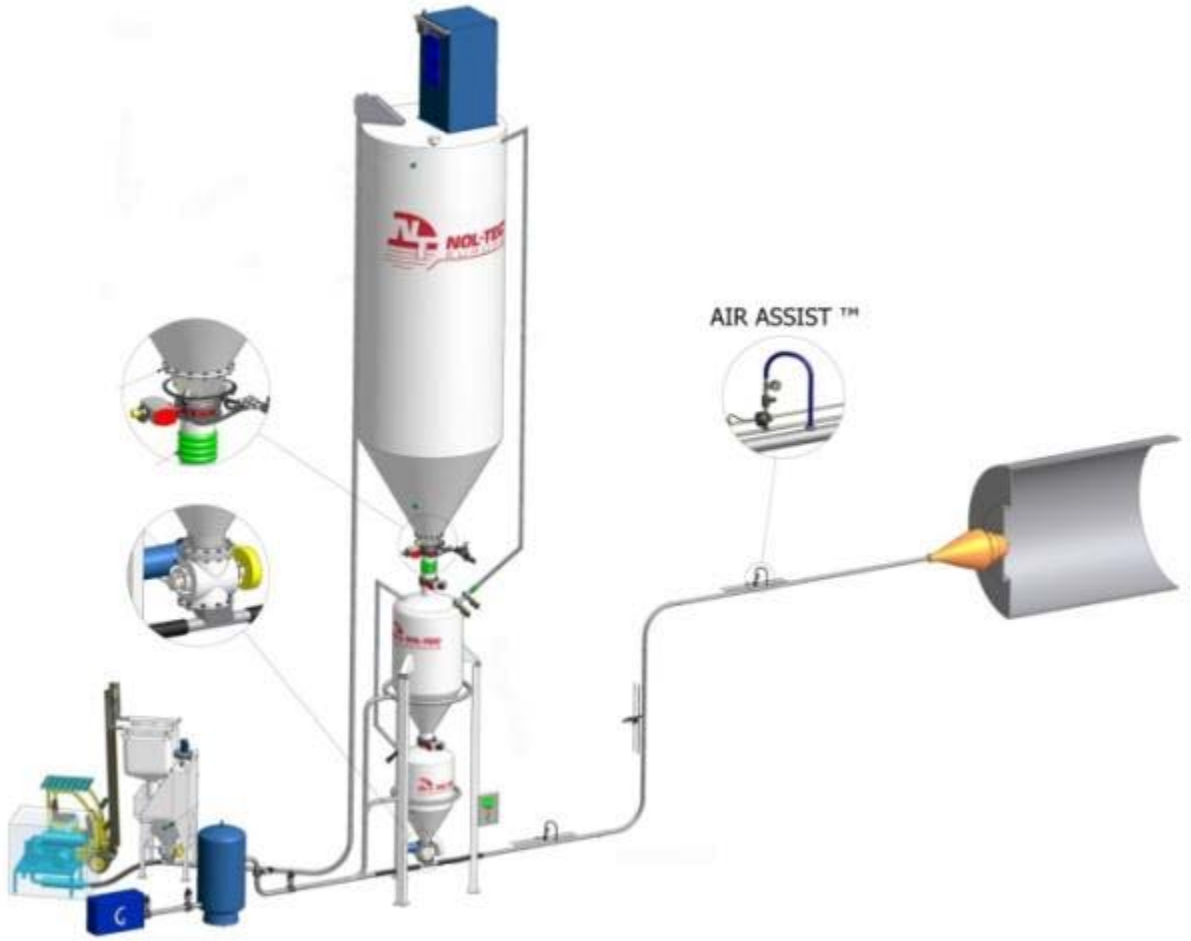
NOL-TEC EUROPE

Nol-Tec Group SOC

Minijet: pre-assembled and pre-wired fire in house testing

Minijet on field

NOL-TEC EUROPE BIOMASS INJECTION EXPERIENCES



NOL-TEC EUROPE SOLUTION:

Sawdust continuous dense phase injection system from storage silo to boiler:

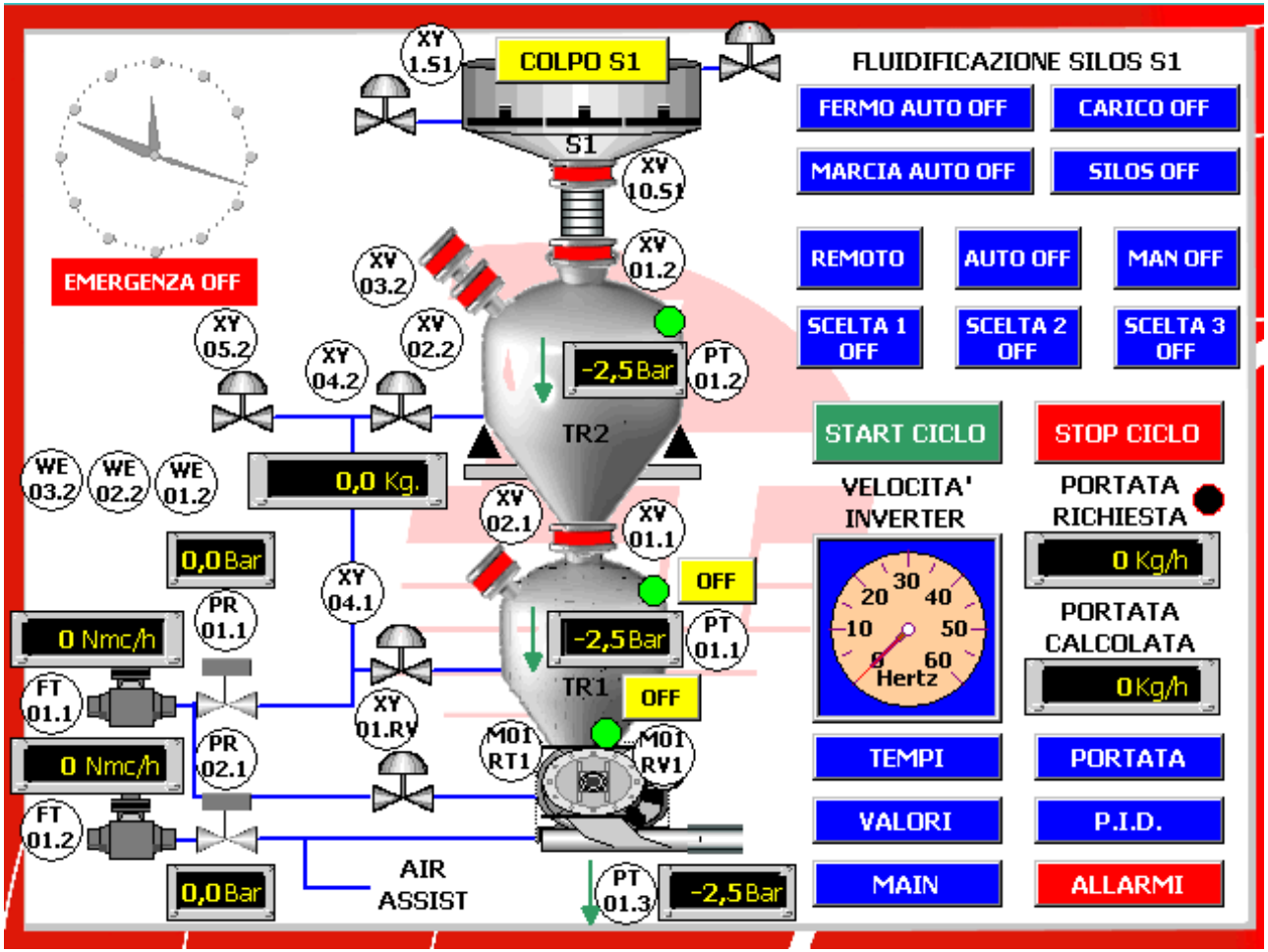
- 2 over-under transporters + 1 airlock
- Automated system with software based on S7300 Siemens

PERFORMANCE:

- Capacity: 350 Kg/h - 7000 Kg/h
- Air: product ratio always less than 1:4

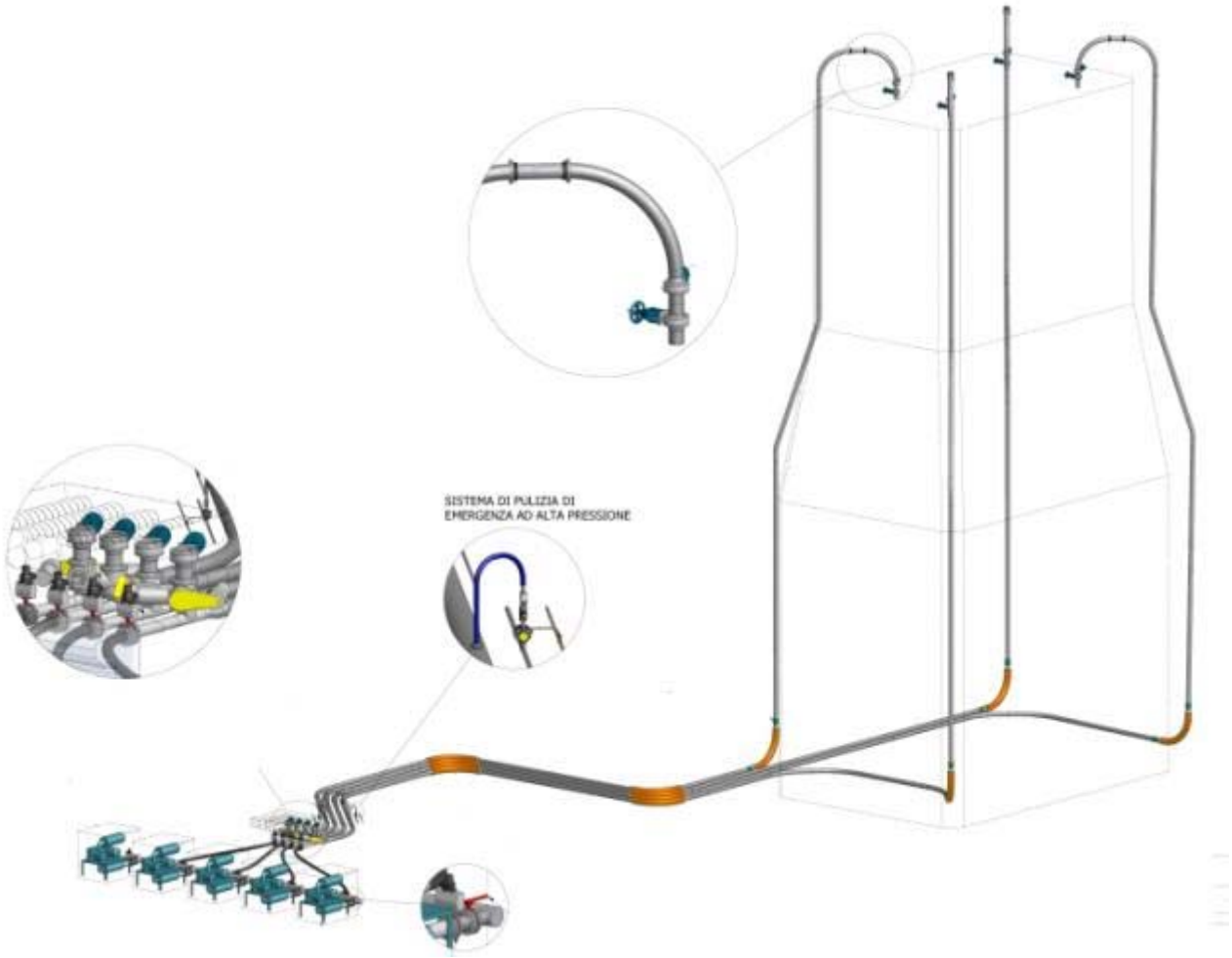
DENSE PHASE L-I-W CONTINUOUS SYSTEM FOR BIOMASS INJECTION

HMI INTERFACE



Control system HMI Screen

POWER PLANT (OIL FIRED) CO-FIRED WITH PALM KERNEL SHELL



PERFORMANCE: Product: Palm Kernel Schell (PKS) Biomass
Bulk Density: 0,48 Kg./dm^3
Particle Size: 90% < 1mm
100% < 5mm
Explosion risk: ATEX 21/22
Moisture: max 14% (not hygroscopic)
Temperature: 25° C (to be specified)
Three injection lines
Required Capacity: 1-5 T/h per line
Vertical DIstance: 28m
Horizonatl Distance: 73m
Estimated bends: 7 max (90°)

ESTIMATED SYSTEM OPERATING CONDITION

System proposed: pressure dilute phase with rotary valve
Convey Line Dia: 6"
Power installed: 50 kW

APC
Air Pollution Control

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Filling System

Dilute Phase Injection SYstem

NOL-TEC EUROPE

Nol-Tec Group SOC

THANK YOU

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