

Air Pollution Control

For the Fertilizer Industry
in the Middle East

Technology
for a
sustainable future

Through our subsidiary company, APC Process Engineering, ERG has an impressive track record in the Middle East Fertilizer Production Industry.

All our systems come with a performance guarantee backed by more than 30 years of experience successfully treating industrial air pollution around the world.

ERG's systems are being used for treating silica, phosphate rock and scale dust, ammonia, hydrogen fluoride, silicon tetrafluoride, hydrofluorosilicic acid fumes, together with sulphuric and phosphoric acid fumes.

The case studies overleaf describe a selection of our installations which make use of a range of different technologies:

- **Tray scrubbers**

Used as a robust means of scrubbing soluble contaminants and particulate (> 5 micron size) from dirty air streams.

- **Venturi scrubbers**

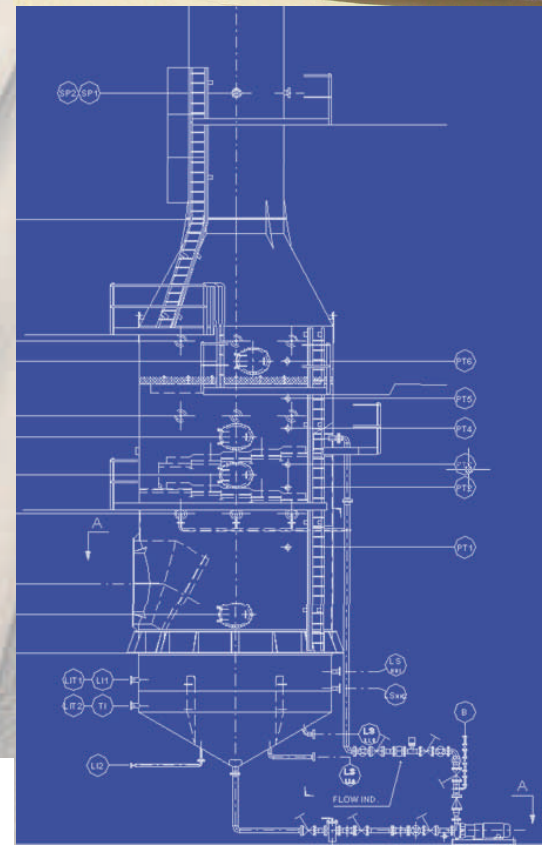
High energy venturis are used for capture of sub-micron dust, and lower energy venturis for removal of larger particulate from process air streams. Used in combination with droplet collection and mist elimination vessels.

- **Spray towers**

A non-blocking alternative to packed towers, spray towers are used for the hydrolysis of slower reacting contaminants and for highly soluble gas scrubbing.

- **Ancillary equipment**

ERG's systems typically also include rubber lined or coated fans, robust recirculation pumps and pipework, and a control system for water addition and effluent removal. Zero-effluent systems are also available.



APC Process Engineering Limited

A wholly-owned subsidiary of ERG (Air Pollution Control) Ltd



ERG

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Case study #1

QAFCO 2, 3, 4 and 5

The 2nd, 3rd, 4th and 5th expansion plants at Qatar Fertilizer Company all employ a skid-mounted venturi and knock-out vessel system provided by APC Process Engineering. Supplied since 1993, and with the most recent QAFCO5 equipment (two identical packages) shipped in 2010, the systems are designed for removal of dust from natural gas which is used for ammonia production. The QAFCO5 equipment is manufactured in 316 stainless steel to ASME codes with a design pressure of 38 barg.

Case study #2

SABIC Al Bayroni - Al Jubail Fertilizer Company

APC provided a detailed design to SABIC in Jubail, KSA, for a tray scrubber package to treat urea dust and ammonia from their fertilizer reactor and urea processing facility. A 2-stage tray scrubber with 4.5m diameter and integral mist eliminator. The system has successfully operated for 10 years.

Case study #3

Two Egyptian Fertilizer Manufacturers

APC has supplied 2 systems to Egyptian companies: Al Nasr Company for Intermediate Chemicals (NCIC) and Aswan Fertilizers & Chemical Industries Co (AFCI). Both systems comprise a venturi and spray tower followed by a horizontal demister. The systems are designed to remove phosphate rock dust and silica particulate, HF and H_2SiF_6/SiF_4 . The process air is drawn from direct-contact reactors (phosphate dens). NCIC was commissioned in 2007 and achieved discharge concentrations of $<1\text{mg}/\text{Nm}^3$ fluorinated compounds. AFCI commissioning is scheduled during 2010.

ERG also offers a range of air pollution control and odour control systems for industrial and municipal applications.

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