Wind Fence
DustTamer
Reference

DUST SOLUTIONS, INC.

Company Profile

- Founded in 1994
- Based in South Carolina
- Specializes in manufacturing and engineering fugitive dust suppression and control systems for industrial clients
- Serves the following industries:
  - Power Generation
  - Mining/ Minerals
  - Marine/ Rail Terminals
  - Biomass
  - Aggregate/ Cement/ Sand/ Limestone
  - Pulp/ Paper
  - Petroleum/ Gas
  - Glass/ Ceramic
  - Steel/ Foundries
  - Aluminum/ Bauxite
  - Solar/ Wind Power
- Over 2000 Installations Worldwide

Sample of DSI Installations

Xcel Energy Comanche Station (Coal Power)

30m/100ft tall and 520m/1700’ long – Colorado, USA

Xcel Energy Newsletter

Comanche Wind Fence

No high-emission events recorded since fence was installed

A 10-story-tall wind fence now wraps part of the coal yard at Comanche Generating Station – a major component of an integrated fugitive dust control plan at the Pueblo, Colo., plant.

The unique project got under way last spring to help combat a reoccurring problem of dust blowing from coal-handling operations and off plant property. Comanche Station receives up to 8 million tons of coal a year, and its coal pile occupies 10 acres and sits in an open, exposed area that frequently experiences windy conditions.

Since the installation of the massive 1,700-foot-long fence – nearly a third of a mile – no excess dust emissions have occurred, said Fred Prutch, plant director at Comanche. The air-particle monitor onsite, which measures the amount of dust in the air, has recorded no high-emission events since the fence was installed.

Prior to installing the wind fence, the plant took other steps to suppress coal dust, including enclosing coal-unloading operations, spraying the coal with water and dust-suppression chemicals, sealing the inactive coal pile, and minimizing coal handling during high winds. All of these measures were part of the plant's integrated fugitive dust control plan, he said.

"Wind fencing had been proven to control fugitive dust under similar conditions at other facilities around the country, so it was chosen as the most effective solution for Comanche, as well," Prutch said. "The results so far have been promising, and we expect continued improved air quality, which is good for the environment and our neighbors near the plant."

The fence is made of a mesh screen, and the project cost about $4 million. The factory-tested fence is estimated to last 20 years, according to the manufacturer. It was constructed around the coal pile to reduce the speed of the wind blowing through the coal yard.

The fence is situated upwind of the coal pile in the path of the prevailing wind direction. It acts as a barrier to the wind, reducing wind speed by 50 percent, which decreases the amount of fugitive dust that is blown from the coal yard. Winds from the southwest can be particularly troublesome for the plant's dust-mitigation efforts, especially during windy periods that occur in the spring and fall months.

"We recognized the need for additional dust control measures at the plant," said Gary Magno, manager of Environmental Services. "It is part of our ongoing air-compliance obligation and responsibility as a good neighbor."

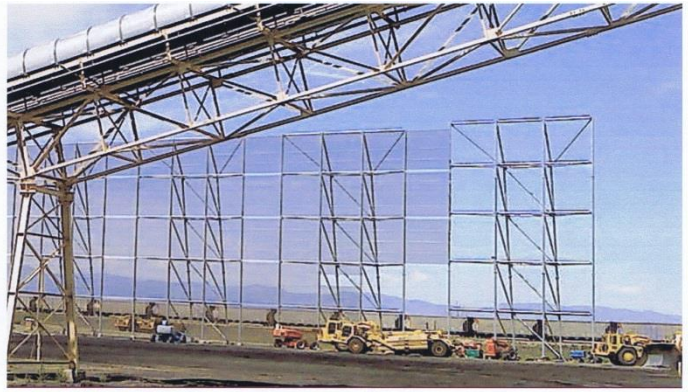
The fence was the most unobtrusive, effective and economical solution, he said. The Colorado Air Pollution Control Division agreed and included the installation of the wind fence in the company's site air quality permit.

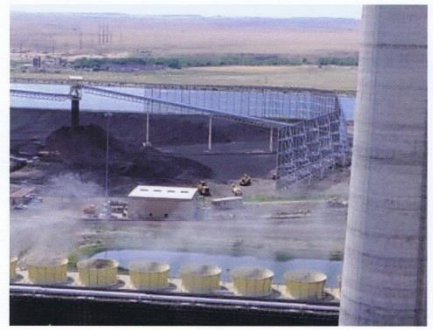
As part of the Comanche Unit Three project, which added a new unit at the facility, the company was required to install an air-monitoring system to measure particulate matter. The monitor, located along the plant's eastern fence line, measures particulate matter concentrations in the air. All episodes of elevated emissions prior to the installation of the fence were associated with high wind events, he said, ranging from 25 to 50 miles per hour.

"We worked with Comanche and Engineering and Construction, and sought ways to reduce dust emissions from coal handling and storage operations, including installing a wind fence," Magno said.

The fence is not your typical variety and is made of an engineered fabric that knocks down the wind. While this type of fencing is installed in other locations across the country, Comanche's wind fence is the first of this magnitude, he added.

"We'd like to send kudos to the folks at the plant, who have stayed on top of the fugitive-dust issue and completed a number of different mitigation efforts," he said. "It's been a big challenge for everyone involved."





COMANCHE FENCE

The new factory-tested fence at Comanche Generating Station in Pueblo, Colo., is made of a mesh screen and is estimated to last 20 years. It was constructed around the coal pile to reduce the speed of the wind blowing through the coal yard and is situated upwind of the coal pile in the path of the prevailing wind direction.

Amfire Mining (Coal Mining)

12m/40ft tall and 305m/1000’ long – Pennsylvania, USA

Premcor (Valero) Petroleum Coke

9.1m/30ft tall and 229m/750’ long – Delaware, USA

Deer Run Mine

21m/70ft tall and 305m/1000’ long – Illinois, USA

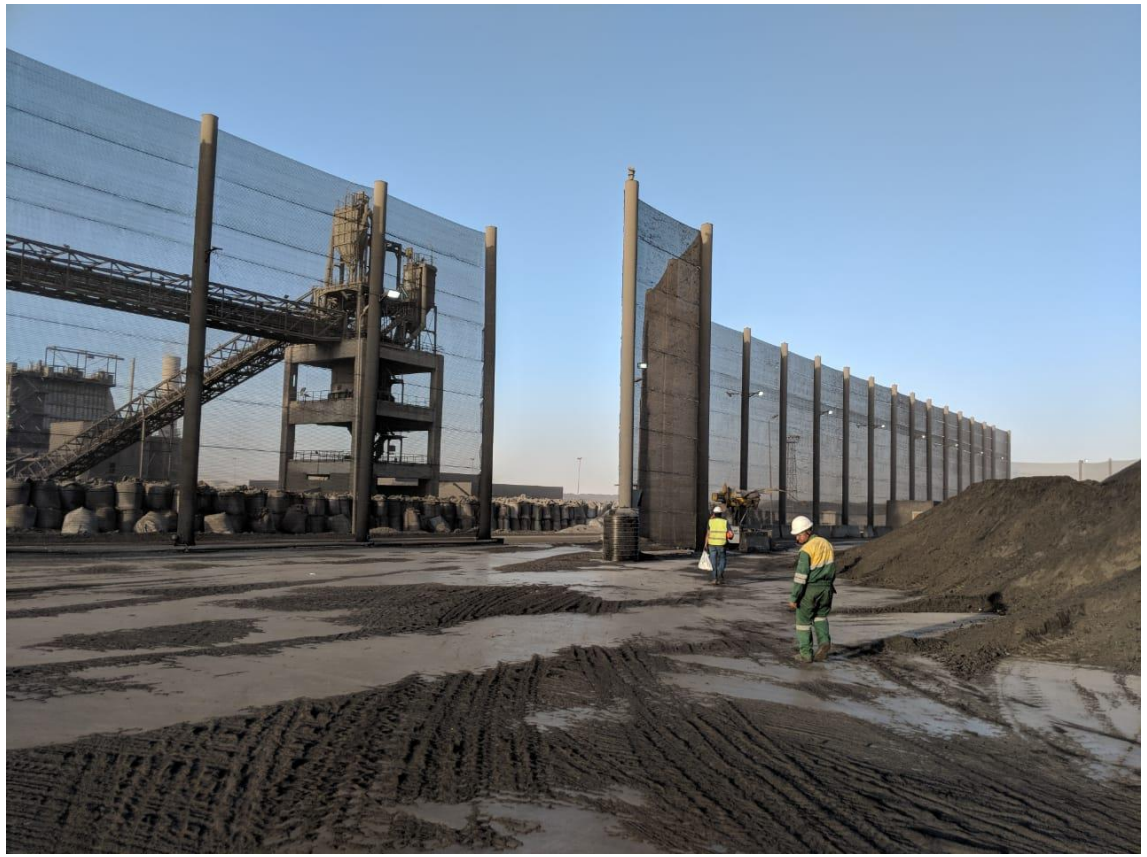
Suez Cement- Egypt Coal Pile

7m/23ft tall and 440m/1443’ long – Egypt

MVV Environmental- UK Biomass

7.5m tall and 109m long – United Kingdom

Lafarge Cement, Beni Suef Egypt



TXU Sandow Coal Power Plant

12m/40ft tall and 219m/720’ long – Texas, USA

Duke Cayuga Wind Fence

12m/42ft tall and 32m/107’ diameter – Indiana, USA

Titan Cement Pet Coke

13m/42ft tall and 304m/1000’ – Beni Suef, Egypt

Killen Station-Gypsum Pile

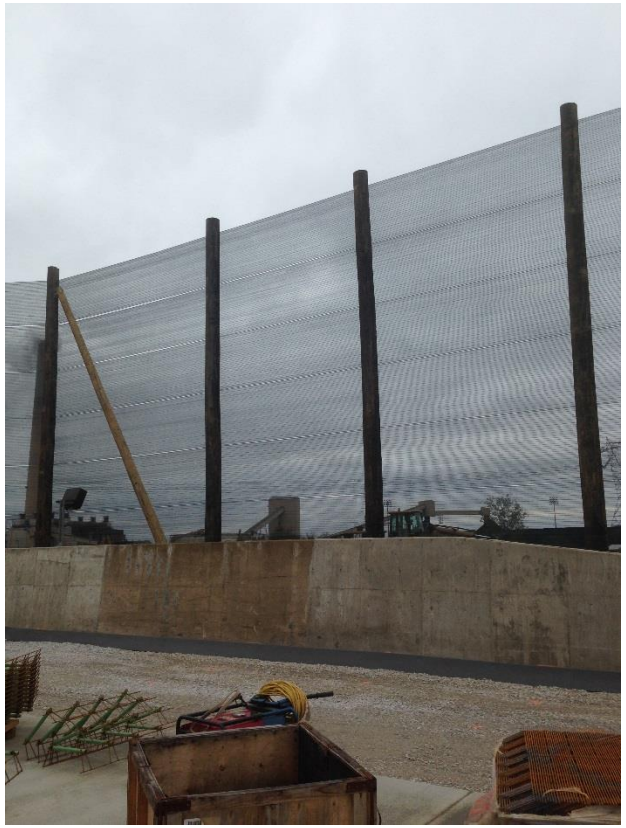
12m/40ft tall and 472m/1550’ long – Ohio, USA

SD-Bilina Coal Mine

13.5m tall and 337.6m long – Czech Republic

Hoosier Energy-Gypsum Pile

12m/40ft tall and 250m/820’ long – Indiana, USA



Talen Energy- Ash Pond

12m/40ft tall and 1000m/3280’ long – Montana, USA

Expera Papers

7m/23ft tall and 200m/650’ long – Wisconsin, USA

Wisconsin Energy

30m/100ft tall and 800m/2500’ long – Wisconsin, USA

Oteko Taman Russia

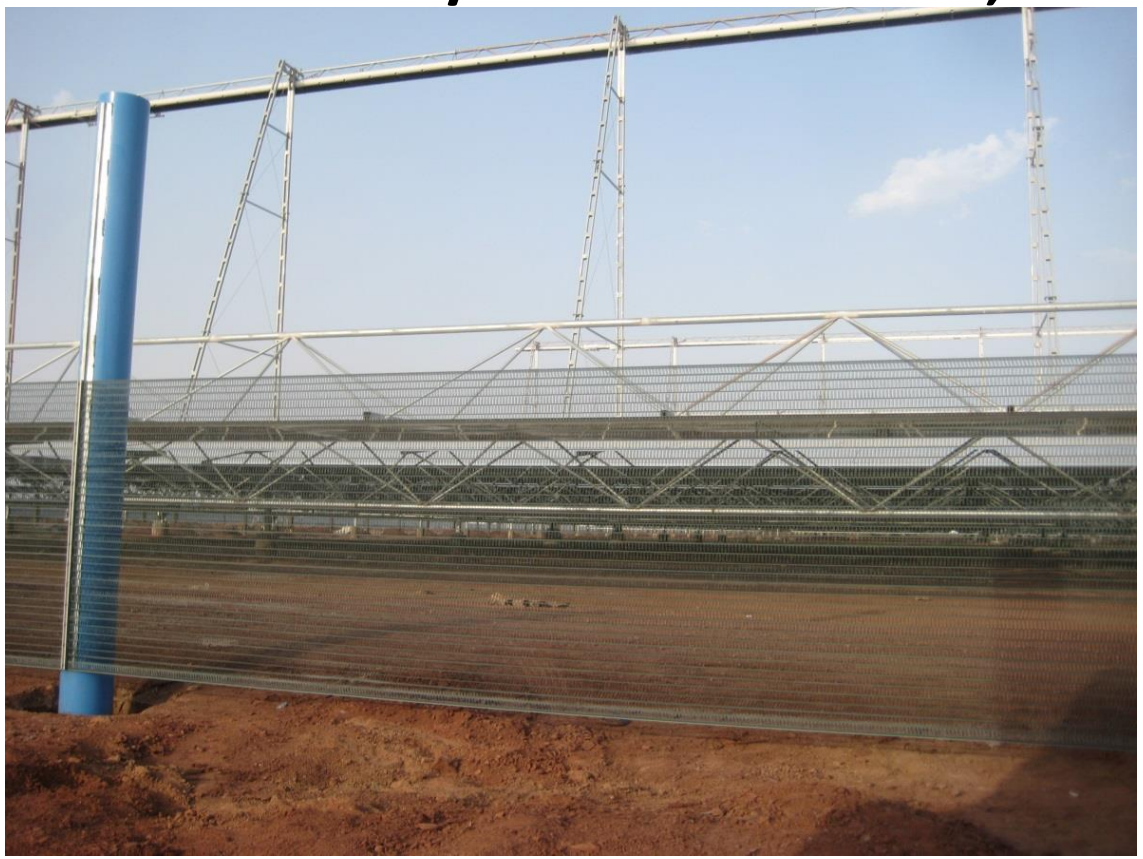
30m/100ft tall and 3500m/11482’ long – Taman, Russia

Falconbridge Mine Tailings

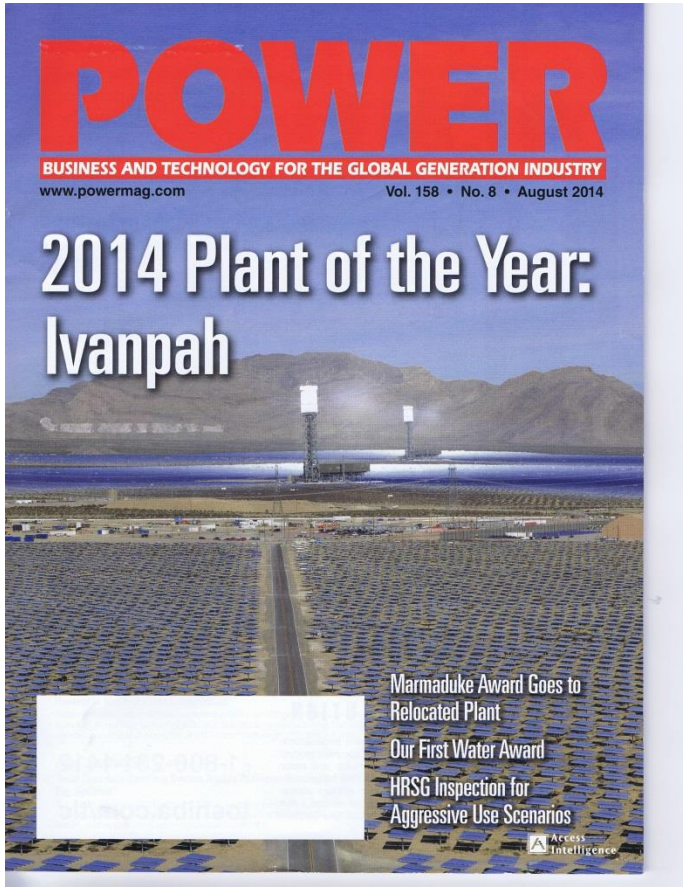
6m/20ft tall and 457m/1500’ long – Ontario, Canada

Areva Solar/Reliance Solar Plant

3m/9.84 ft tall and 7,044m/23,111’ long – Jodhpur, India



Bechtel Ivanpah Solar Project



Fence for Solar Array Staging Area for Bechtel Construction