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Power plant closures squeeze drywall makers who turn a type of coal waste into wallboard



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Harrisburg Bureau

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The Bruce Mansfield coal-fired power plant in Shippingport is connected by a nearly mile-long system of conveyor belts to the National Gypsum drywall manufacturing plant across the road. There, some of the power plant's waste is [turned into the building blocks](#) of future walls and ceilings.



So when Bruce Mansfield closes by June 2021, as its owner FirstEnergy Solutions [announced in August](#), the impact will ripple along the conveyor belt to its neighbor.



National Gypsum plans to keep running the plant, where 90 people work, indefinitely, spokeswoman Beth Straeten said.

"We have diversified the sources of supply of our gypsum and we are committed to operating our Shippingport plant long term," she said.

The privately held, North Carolina-based company — along with the broader U.S. wallboard industry — is having to adapt as coal plant partners are being priced out of electricity markets by cheaper natural gas and renewable energy.

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Power plant closures squeeze

Air pollution controls installed at those coal plants create, as a byproduct, calcium sulfate — the chemical name for natural gypsum rock.

Seeing an opportunity when the use of air pollution systems expanded, the wallboard industry began locating plants right next to coal plants that were outfitted with the sulfur dioxide-removal technology in the 1990s. They signed long-term contracts with their new neighbors for synthetic gypsum supply.

New wallboard plants sprung up in eastern states, where gypsum mines were few, but coal plants were plentiful and population centers were nearby.

National Gypsum opened its Shippingport plant in October 1999.

USG Corp., a Chicago-based building products manufacturer, opened a wallboard plant in Aliquippa in 2000.

Both rely fully on coal plant byproducts for the gypsum that forms the core of their products — sheets of plaster sandwiched between paper. Wallboard is used in nearly all new home and business construction in the U.S. to form smooth, fire-resistant and sound-dampening walls.

By 2010, 45 percent of U.S. wallboard was made with synthetic gypsum, according to the Gypsum Association, an industry trade group. The percentage has remained roughly the same over the last eight years.

Now, the decline of coal-fired energy in the U.S. has strained that symbiotic relationship.

The U.S. coal-fired power plant fleet has lost one-sixth of its capacity since a recent peak in 2011. The U.S. Energy Information Administration expects a quarter of the nation's current coal-fired power generating capacity to close in the next dozen years.

“As the mix of fuels changes for generating electricity, it is creating a problem for those (wallboard manufacturers) that created their business model around having that supply come across the fence line on that conveyor belt,” said Thomas Adams, executive director of the American Coal Ash Association.

Contract disputes

When FirstEnergy Solutions filed for bankruptcy this spring, it asked the court for permission to reject its contract with National Gypsum — calling it “unnecessarily burdensome.”

The contract requires FirstEnergy to sell National Gypsum at least 450,000 net dry tons of gypsum per year or more



drywall makers who turn a type of coal waste into wallboard



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least 450,000 net dry tons of gypsum per year or pay damages of \$11 per net dry ton.

Two of the three generating units at Bruce Mansfield are shut down, the company wrote, already making it difficult for the plant “to reliably produce and deliver” the contract’s minimum gypsum volumes.

FirstEnergy also said the price it gets for gypsum under the contract — \$3.796 per net dry ton — “is significantly below the market price of \$10 per net dry ton,” and it wanted to be able to sell to other buyers.

Ten days later, FirstEnergy dropped its request to cancel its contract with National Gypsum.

Neither company would comment on what caused the change, although detailed legal billing notes filed with the court show lawyers worked in August on “National Gypsum contract negotiations” and “proposed changes to (the) gypsum supply agreement.”

Similar strains emerged in a North Carolina lawsuit last year, when a subsidiary of Malvern, Pa.-based building products maker CertainTeed alleged that power utility Duke Energy was not meeting the monthly synthetic gypsum volumes their contract required.

The shortfalls left CertainTeed uncertain whether a North Carolina wallboard plant it had built next to a Duke coal-fired power plant would have enough gypsum “to operate at all — much less at full capacity,” the company said in legal filings. The state’s Business Court ruled in favor of CertainTeed in August.

Kathryn Thompson, CEO of the construction materials analysis firm Thompson Research Group, said in a note to clients at the time that the lawsuit “is compelling proof that the risk of a tightening of synthetic gypsum supply is starting to impact companies.”

A shrinking supply is expected to push prices for synthetic gypsum higher, Ms. Thompson said. The impact is already showing up in higher transportation costs, as wallboard manufacturers pay more to ship synthetic gypsum — often in a heavy, damp form prone to freezing in winter — from farther away.

Gypsum galore?

Although a new energy mix will require some readjustments, there is still plenty of gypsum around.

Natural gypsum rock, harvested through mining, “is a very plentiful mineral globally,” said Stephen Meima, executive director of the Maryland-based Gypsum Association.

U.S. coal plants produced about 32 million tons of synthetic gypsum in 2017 — about twice as much as they sold to companies that recycle it for wallboard, cement and agriculture, according to the U.S. Geological Survey.

Most of the rest is discarded.

The problem is not whether enough gypsum exists, but whether wallboard companies can get it when and where they need it.

Power plants run close to their capacity — and produce a lot of synthetic gypsum — when it is very hot or very cold, Mr. Adams of the coal ash association said. The logistical challenge, then, is “being able to store enough material to get through those months when the power plants aren’t running real hard.”

“We get calls fairly frequently when the supplies are tight, looking for other sources and, unfortunately, it’s not a material that is readily available on the spot market.”

Switching to mined gypsum is not always feasible. Synthetic gypsum is, in most cases, purer than the natural form, Mr. Adams said, and some lightweight wallboard products can’t be made with mined gypsum.

Kaitlyn Henderson, a spokeswoman for USG, said, “Changes in the supply chain are commonplace in our industry.”

The company, which operates a second Pennsylvania wallboard manufacturing plant near a coal-fired power plant in Montour County, has “multiple sources for our raw materials, including our own natural gypsum reserves,” she said. “We’re confident that we are well prepared for future needs.”

Its Aliquippa plant — with direct access to rail, highway and the Ohio River — does not depend on a particular neighboring coal plant for supply. Ms. Henderson would not say where the plant gets its gypsum, but the company’s most recent sustainability disclosures note that 9 to 17 percent of its raw materials come from 100 miles away or less.

In its most recent annual report, USG listed shrinking supplies of synthetic gypsum among the risk factors it faces as coal plants close or convert to natural gas. About 43 percent of the gypsum used at the company’s plants is synthetic.

“We could incur substantial costs in connection with any significant reduction in the availability of synthetic gypsum, including costs to convert our plants to use natural gypsum or increased costs to transport synthetic gypsum to our plants from farther away,” the company wrote.

But Ms. Henderson pointed to more optimistic figures.

Recent statistics from the U.S. Energy Information Administration “indicate that around 60 percent of coal-fired power plants will still be operating in 2050,” she said, “so we anticipate a continued supply of synthetic gypsum for the foreseeable future.”

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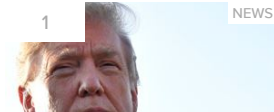
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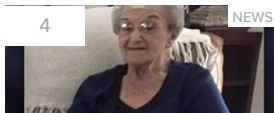


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