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The Shell Pennsylvania Petrochemicals Complex near Pittsburgh will employ 1,000 electricians for more than a year, making it one of the largest projects in the IBEW.

\$6.5 Billion Pa. Cracking Plant Puts a Region to Work

August 8, 2019

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One of the largest projects in the IBEW is finally underway north of Pittsburgh.

The \$6.5 billion project will take the bountiful natural gas from the Marcellus and Utica shales and pump out trillions of tiny, transparent building block of countless consumer and industrial products.

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At the moment, Beaver Local 712 has more than 350 members on site, but by the start of next year, peak demand for our members will reach 1,000 and continue at that level for more than 12 months.

"We haven't had a job this big since the Beaver Valley nuclear plant 40 years ago," said Local 712 Business Manager Frank E. Telesz Jr.

The plant is the first of its kind outside of the Gulf Coast and is only possible because of the meteoric growth of U.S. natural gas production since horizontal fracturing — better known as fracking — was introduced just over a decade ago. Twenty years ago, next to no natural gas was produced in the Ohio River Valley. Today, it accounts for nearly 30% of the national supply.

If it were a country, the region including parts of Ohio, Pennsylvania and West Virginia would be the third-largest producer of natural gas in the world behind the rest of the U.S. and Russia.

And unlike the Gulf Coast, where most cracking plants are today, it is less than a day's drive to nearly all the companies that use polyethylene beads to pump out car parts, medical equipment, consumer goods, food containers, sporting goods and much, much more.

And there are no hurricanes.

"This is the kind of job the IBEW was built for. We are the only place to find that many skilled wiremen and apprentices to do it right, do it safely and do it on budget," said Construction and Maintenance Department Director Mike Richard.

Local 712 has only about 450 members and, like many locals, nearly everyone is working.

There is both a need and an opportunity for travelers, Telesz said.

"They are running staggered daylight shifts and started a second turn," Telesz said.

The contractors are especially eager, he said, for veterans (12% of the current workforce) and women (15%).

"Most of the petrochemical plants on the Gulf Coast have been built, at least in part, nonunion. We have been pitching Shell on the value of working with the IBEW. Now is our time to deliver on that promise," he said.

The scale of the project is nearly unprecedented. Just during pre-work, Shell built two heavy haul bridges, relocated a portion of a highway and moved 7.2 million cubic yards of dirt.

The Horsehead zinc smelter on the site was demolished and the concrete from its foundation was recycled into a 200-foot retaining wall.

The heart of the plant is the "cracker," which heats the natural gas liquid ethane to nearly 2,000 degrees, strips off hydrogen atoms and breaks it down into a smaller molecule, ethylene. The ethylene is then cooled in the 4-million pound quenching tower that was recently installed by one of the largest cranes in the country, known as the "Mother of All Cranes."

The ethylene is then strung back together in long chains as either high- or low-density pellets, and this single plant will churn out billions of pounds each year.



The scale of the project is unprecedented in the area, and uses one of the world's largest cranes at nearly 700 feet tall, it can lift 3,500 tons.

When the project is complete, in addition to the ethane cracker, the two high-density polyethylene pellet units and the single linear low-density polyethylene unit, general contractors Great Arrow Builders will construct a water treatment plant, a 250-MW natural gas-fired power station, an office building, a 900-foot cooling tower, rail and truck facilities and a laboratory.

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early next year, there will be 6,000 construction workers from all trades across the site.



The Ohio Valley is one of the richest natural gas resources in the world and the Shell plant is expected to be the beginning of a petrochemical boom in the region worth more than \$100 billion.

In operation, Shell said there will be 600 full-time jobs.

However massive the Shell project is, it is likely only the beginning. Natural gas production from the more than 13,000 wells in the region will have risen 700% between 2013 and 2023.

Thousands of feet below the Ohio River is the Marcellus Shale, the second-largest natural gas field in the world. Hundreds of feet below that is an equally valuable natural gas deposit known as the Utica shale.

Even better, the rocks are loaded with natural gas liquids — ethane, propane and their chemical cousins — that are mingled in the more common methane heating gas. Those liquids are the building blocks of what could become a petrochemical powerhouse.

"Ethane is to the chemical industry what flour is to bakers," said Steven Hedrick, chief executive of the Mid-Atlantic Technology, Research & Innovation Center at a recent energy conference.

MATRIC estimates that there could be as many as 25,000 permanent jobs in plastics and related manufacturing just in this region.

A study sponsored by a regional development company found that the Ohio Valley could support up to four more ethane cracking plants equal in size or larger than the Pennsylvania plant.

"We could become the new Gulf Coast," Telesz said.

In March 2018, then-Ohio Gov. John Kasich announced a stepped-up investment commitment by Thailand's PTT Global Chemical and South Korea-based Daelim Industrial Co. Ltd. for a proposed cracking plant in Belmont County, in the heart of Utica's "wet" shale gas area. Community leaders are hoping for a positive decision by the end of this year on a project that could be worth up to \$10 billion. The company has already spent more than \$150 million on engineering and design work for the project, and a final decision is expected sometime this year.

Then, in November 2017, China Energy Investment Corporation and West Virginia officials signed a memorandum of understanding outlining a staggering \$84 billion investment commitment in natural gas industries that would span two decades.

"It is hard to even fathom what that amount of investment in this region would mean," said Third District Business Development International Representative Ed Hill Jr. "There is nothing to compare it to."

However, in the shadow of the trade war launched by the Trump Administration, the Chinese conglomerate's first visit to the region was canceled last summer.

"I would take it more as a sign of the potential value of the resources in this region rather than, say, clearing space on my calendar to get a job," said Hill said.

In his annual report to Congress last year, Energy Secretary Rick Perry recommended that a new ethane storage and distribution hub be built in the region, further cementing the region's new reality as a near-permanent jobs center in the U.S.

"I have not been as excited about a prospective project with anything I've done in Texas, as I am about this," Perry said in an interview with the Washington Examiner.



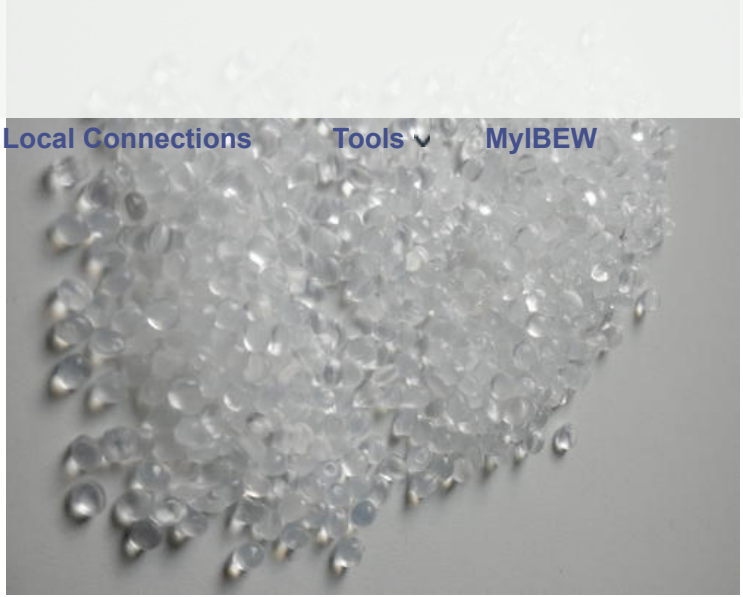
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In fact, the Pennsylvania petrochemical plant was one of the very first projects targeted by the Business Development Department nearly a half decade ago. Local 712 is the home local of Hill's late father, former International President Edwin D. Hill.

"Lives will be changed and careers will be made with all the work we are going to see in this region for people who have seen hard times and need a break," Hill said. "There is now real opportunity for people here."



Polyethylene beads are the building block of countless consumer and industrial products and the Shell plant will produce trillions every year.