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Houston sees resurgence in manufacturing due to petrochemical rebirth

Chevron Phillips Chemical LP is building an ethane cracker at its Baytown plant.

by Molly Ryan
Reporter- *Houston Business Journal*

The chemical industry is at a major turning point, which some experts say could contribute to a manufacturing resurgence.

The popularization of hydraulic fracturing in shale rock formations has led to the production of vast amounts of cheap natural gas, which is used as a chemical feedstock, and the national chemical industry has once again become a hot investment area.

Chemical companies from around the world are flocking to the Houston area to lay down millions, and sometimes billions, in investments to take advantage of the available feedstocks. Click here to see a map of planned projects.

Throughout the nation, the American Chemistry Council predicts that if ethane — a natural gas product — production increases by 25 percent, the chemical industry will gain 17,000 high-paying jobs.

Already, thousands of these jobs have been proposed in the Houston area from recently announced plants and expansions from chemical companies such as Irving-based Celanese Corp. (NYSE: CE) and The Dow Chemical Co. (NYSE: DOW), based in Midland, Mich.

In addition to jobs and money, experts say the manufacturing industry as a whole will benefit from the chemical boom.

"Chemistry is a keystone industry essential to our economy," said Kevin Swift, chief economist for the Washington, D.C.-based ACC. "Ninety-six percent of manufacturing is touched by chemistry. If our industry can provide a more reliable source of chemicals, it is good for the manufacturing industry."

Furthermore, many plastics manufacturing companies are starting to invest in new resources based on the expected trickle-down effect from the chemical industry.

"This is all part of a manufacturing renaissance we are seeing," Swift said. "If you look at all the (chemical) projects announced, you see a 33 percent increase in ethylene …, We have already started to see an uptick in manufacturing plastic products …. Companies are building facilities to export them."

From bust to build

Looking at the current chemical boom, it is hard to remember that just a few years ago the U.S. chemical industry was struggling.

"About four years ago, the future of the petrochemical industry in the U.S. was being seriously questioned," said Mark Oberle, senior vice president of corporate affairs for Celanese, which announced plans last month for a new methanol plant in Clear Lake — part of a planned company expansion of up to $1 billion.

"Our energy cost as a country was incredibly expensive on a relative global basis (a few years ago)," he explained.

During this time, many chemical companies, including Celanese, shuttered plants and invested in overseas facilities that used oil-based feedstocks.

But, now, the market has done a 180.

“Over the last 18 months, driven by the affordable lower cost of natural gas (from the abundance of shale drilling), the petrochemical industry has seen a potential renaissance,” Oberle said. “A number of companies are looking to leverage the low cost of feedstock and create a chemical export hub for the world.”

With this new excitement in the industry, the Houston area has proven to be the most likely hub for new chemical investments, said Swift.

“Houston has additional space, existing (chemical) plant sites and there is a lot of existing infrastructure,” he said. “You can export from Houston to anywhere in the world. About two-thirds of new (chemical) investments are in the Gulf Coast.”

It also helps that companies making chemical investments have easy access to some of the most lucrative shale formations, such as the Eagle Ford in South Texas.

Infrastructure already connects Eagle Ford to Houston so companies such as Irving-based Exxon Mobil Corp. (NYSE: XOM) — which filed permit applications this summer for a multibillion-dollar chemical expansion in Baytown that will create about 350 permanent jobs — can take advantage of the natural gas products.

Potential problems

Despite the benefits of the surge in chemical investments, some experts worry that the increase in chemical production could lead to an oversupply.

“There is always a concern with commodity chemicals,” said Edlain Rodriguez, a chemicals analyst for New York-based Lazard Capital Markets. “Everyone is trying to build at the same time, and there is an uncertainty that the demand will be there at the same time (the new chemicals facilities come online in a few years.)”

However, Swift pointed out that if the national demand is not high for chemicals, the companies can always export the additional product overseas. And, he said that if manufacturers ramp up their production facilities at the same time the chemical companies have more products, they can also export more products overseas.

Another concern is the price of natural gas increasing in a few years, especially if energy companies move forward with plans to export liquefied natural gas. If natural gas prices increase too much, it will not be as profitable for chemical companies to create additional production units.

But Celanese’s Oberle said he is not overly worried about prices dramatically increasing.

“We believe even if (price) does go up modestly because of the increased demand, we will still be competitive on a global basis,” he said. “We would like to see as much (natural gas) as possible used here, though we prefer to upgrade it here to create intermediate or end products.”

Chemical snapshot

- **Ethane:** a natural gas liquid used as a feedstock to produce chemicals
- **Ethylene:** produced from ethane, it is a building block for other chemical production
- **Polyethylene:** a plastic resin made from multiple ethylene molecules
- **Methanol:** a natural gas derivative used as a building block for other chemical production
- **1-Hexene:** a critical component used to manufacture polyethylene

Source: American Chemistry Council and Chevron Phillips Chemical Company LP

Molly Ryan covers manufacturing, technology, the Port and logistics for the Houston Business Journal. For her breaking stories and industry insights, follow her on Twitter.