

A Renaissance 'made in the USA'

By Charles T. Drevna

President, American Fuel & Petrochemical Manufacturers



Greek philosopher Heraclitus believed in the doctrine that change is the only constant in life. Although he was known as the “weeping philosopher,” I believe he would be wearing a smile knowing that his theory has again been validated. In the United States we have seen a dramatic, tectonic if you will, change in energy production and consequently, the nation is on the cusp of an economic and manufacturing renaissance.

Unprecedented supply and production of US oil and natural gas has resulted in American refiners and petrochemical manufacturers combining low-cost raw materials and fuels with advantages in existing infrastructure and diverse manufacturing capabilities. As these factors continue to align, they put our nation on the right path to a bright and promising future. But, we need to ensure we stay the course to reap the great benefits that lie ahead for our country and our citizens, as well as much of the world.

The current state of affairs of the petrochemical and refining industry is quite different than it was in our recent past. Over the course of the past 20 years, petrochemical manufacturing capacity was stagnant. Then, at the turn of the new century, rapidly decreasing domestic supplies led to escalating cost increases of natural gas and oil. This left domestic producers at a severe competitive disadvantage with the only option to reduce or shut production in the US and move operations overseas to regions like the Middle East and Asia, where feedstocks were more affordable and available. Then, in late 2007, the US saw the beginning of the worst recession since the Great Depression and the entire manufacturing sector suffered even further.

An unexpected recuperation

Around that same time, the shale revolution and the boom in other unconventional oil and gas development signified the early stage of a re-birth of the US manufacturing sector. A combination of the resulting decline in the price of feedstocks and energy costs, along with advantages in infrastructure, diverse manufacturing capabilities and the ability to innovate quickly, put America in a competitive position in chemical manufacturing for the first time in decades. The result has been a dramatic reversal from the mid-2000s, when the US was one of the world's most expensive locations for manufacturing chemicals, to today where it is among the most affordable.

Shale development has since been instrumental in generating a wealth of natural gas liquids, a vital feedstock that is the building block for the magnitude of products supplied by US manufacturers. Responsible development of these reserves has allowed the US petrochemical industry to enjoy its best competitive advantage in more than 30 years.

As a result, chemical companies which had abandoned the US, along with others around the world, have taken notice and have announced planned or possible investments in the US worth more than US\$91 billion. According to IHS Global Insight, by 2025, nearly 515,000 manufacturing jobs will be supported by unconventional oil and gas development and, along with energy-related chemicals, will contribute nearly US\$533 billion annually to the gross domestic product by that time.

Steps to success

A vibrant petrochemical manufacturing sector, however, is just the first step in a resurgence of the manufacturing sector. Petrochemicals provide a ripple effect on the manufacturing industry as a whole because they are a key component of the supply chain for many other industries. A strong overall manufacturing sector can foster a robust and stable economy with well-paying jobs that are vital to our way of life. Workers in manufacturing jobs receive nearly 20 per cent more in pay and benefits compared to workers in non-manufacturing sectors. According to the National Association of Manufacturers, every US\$1.00 spent in the US manufacturing sector overall returns US\$1.48 to the economy, the highest multiplier effect of any economic sector.

The members of the American Fuel & Petrochemical Manufacturers (AFPM) are committed to the realisation of a manufacturing renaissance. After a decade of almost zero capacity expansion in US petrochemicals manufacturing, shale development has prompted many of our members to invest billions of dollars in ethane cracker capacity to harness vast new supplies of natural gas liquids for petrochemical manufacturing and in new technologies to improve efficiency and reliability.

According to Platts, more than 20 projects to increase ethylene capacity have recently been announced, including expansions at existing manufacturing locations, as well as new crackers throughout the US. If these projects are implemented, by late 2017 US ethylene production capacity will grow by more than





10 million tonnes per year, or by around 35 per cent of the current capacity. In addition, billions of dollars in planned development in projects and facilities including integrated projects from polymer and other derivative capacity additions to complement olefins expansions and facilities are in the works.

Setting the right expectations

What exactly does the future hold and how can we set the right expectations? It is important to acknowledge that the manufacturing renaissance will come in waves. We have already experienced enhanced recovery of natural resources and development of the necessary infrastructure to extract the resources. Now it is time to ensure that existing infrastructure is enhanced to transport and refine natural resources into useful manufacturing feedstocks.

As a nation, we must pledge to take the right steps today in order to encourage this development, not immobilise it. AFPM is actively doing its part to ensure the re-birth of manufacturing in the US continues and grows into the powerful global economic force it can be. In 2013, in coordination with several academic institutions, national manufacturing and labour groups as well as non-governmental organisations, we formed the American Shale & Manufacturing Partnership. The group has launched a series of national-level discussions on how best to revitalise the US manufacturing sector. The discussions, still ongoing, focus on the nation's shale development and are designed to provide educational and discussion forums for decision makers, industry leaders, labour, top academics and other stakeholders. Forums focus on the manufacturing supply chain in detail, the potential impacts of responsible shale development, and the role of and need for innovation.

The end goal of this series is to produce a policy blueprint on how to realise the full manufacturing potential of the shale revolution. The final product is intended to be comprehensive in its scope, which will include federal and state policies; infrastructure;

research and innovation; workforce education and jobs creation; and the environment.

Environmentally friendly growth

As this effort moves forward, we will continue to act responsibly to ensure the development of the future work in conjunction with environmental responsibilities – the two are not and should not be mutually exclusive. During the past three decades, industry has invested hundreds of billions of dollars to reduce emissions as reported by the US Environmental Protection Agency (EPA). As a result of these reductions, criteria pollutants have been significantly reduced during that time period. According to the EPA's recent Toxic Release Inventory, emissions from petrochemical facilities have been cut by 98 per cent since the report was first compiled in 1988.

The US refining and petrochemical industries are just as committed to clean air and water and waste reduction as we are to ensuring that manufacturing again becomes a part of America's success story. Powered by ingenuity and innovation, our industries will work diligently to take the right steps to ensure responsible development of our resources. These affordable, abundant, and efficient energy feedstocks will jump-start the revival of the US petrochemical and refining sectors. In a world that is constantly changing, this is change we can all stand behind, with a big smile. ■

Falling natural gas prices help drive US manufacturing competitiveness: Natural gas prices (US\$/million btu)

