

# EXPANDING THE WORLD



THE GLOBAL POPULATION IS TRANSFORMING, AND IT'S BRINGING THE PETROCHEMICAL INDUSTRY WITH IT.

Petrochemicals are the building blocks of many items used daily — from clothing and cars to plastic food packaging and advanced medical devices. The feedstock to produce petrochemicals starts with hydrocarbons, such as natural gas liquids (NGLs) or refined products like naphtha. The chosen feedstock is cracked or reformed to produce the base petrochemicals that make up these everyday items.

The demand for these petrochemical-derived products — particularly plastics — is surging thanks to an expanding global population. According to the International Energy Agency, the demand for plastics has nearly doubled since 2000, outpacing bulk materials such as steel, aluminum or cement. And this demand continues to grow. By 2050, petrochemicals are set to account for nearly half the growth in oil demand, ahead of trucking, aviation and shipping.

“Global economics rise and fall, but the long-term market demand for petrochemicals should be strong considering the growth potential of some of the world’s largest developing countries,” says Ryan Spangler, a vice president in the Oil, Gas & Chemical Group at Burns & McDonnell. “Capturing the global market impacts and opportunities requires a long-term view and a disciplined approach to project evaluation and development.”



EXPLORE THE INS AND OUTS OF TODAY'S OIL-TO-CHEMICAL COMPLEXES.

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**7.7** BILLION  
IN 2019

**10** BILLION  
BY 2050

## INCREASED URBANIZATION

The U.N. reported that 55% of the world's population lived in urban areas in 2018. By 2050, this number is expected to jump to 68%. This increase in the world's urban population is forecasted to be highly concentrated in a few countries — with China, India and Nigeria alone expected to account for a third of the change. As people transition from a rural to a city-based lifestyle, petrochemical resources will be essential to support the demand for housing, manufacturing and associated infrastructure.

## GROWING MIDDLE CLASS

There are 3.6 billion people in the world's middle class. It's the fastest-growing segment of the population, projected to reach 5.3 billion people by 2030, according to the Brookings Institute. The middle class propels the global economy, accounting for two-thirds of household consumption. According to GlobalData, urbanization coupled with growing income levels will drive demand for packaging and other plastic products. China and India are forecasted to account for 40% of the global capacity additions by 2023.

With exponential growth on the horizon, oil companies and engineering firms are working to get new facilities online as well as create process efficiencies to help meet this demand. Global efficiency is realized when companies take advantage of low-cost feedstock, such as the shale gas available today on the U.S. Gulf Coast, or through proximity to markets in India, China and the Middle East.

The transformation required to meet this projected demand comes at a high cost. The construction of a petrochemical plant with its specialized and heavy equipment can easily reach billions of dollars. In addition to the capital outlay, regulatory costs remain high as the industry deals with chemical waste and climate change concerns. The industry is also challenged to help reduce reliance on single-use plastics and to contribute to global improvements in waste management practices. ●



**PETROCHEMICAL PRODUCTS IMPROVE LIFE, CREATING ITEMS THAT CAN BOTH SAVE YOUR LIFE AND MAKE IT MORE COMFORTABLE. HOWEVER, WE SEE A GROWING ISSUE WITH THE RESPONSIBLE DISPOSAL OF PLASTICS. ULTIMATELY, PETROCHEMICAL COMPANIES MUST BE PART OF THE SOLUTION. AS THE INDUSTRY EXPANDS, DOING SO IN A SUSTAINABLE WAY WILL BE ESPECIALLY CRITICAL IN LIGHT OF THE GROWING GLOBAL POPULATION.**



### JERRY PRICE

Director of business case assessments at 1898 & Co., a business, technology and security solutions consultancy, part of Burns & McDonnell