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SPECIALISTS IN GASES AND WELDING

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State of the CO₂ supply in the Midwest

As a regional distributor of industrial gases and welding supplies, Cee Kay Supply provides CO₂ (Carbon Dioxide) to a wide variety of customers and industries throughout Missouri and Illinois. Just a few of the many customer applications that rely on our CO₂ supply include metal fabrication, dry ice, beer and beverage, bio-medical research, water treatment and aerosol packaging.

As is often the case, CO₂ is a critical component to many of our customers processes and an ample and reliable supply is the primary concern when partnering with a supplier. For this reason, the Cee Kay Supply team traveled to Indianapolis, IN to attend the first ever North American CO₂ summit to further understand the complexity and opportunities surrounding the fragile supply network in our region. As your trusted supplier we believe it is beneficial to inform and share with our customers interested in a deeper understanding of the products within their supply chain.

Where does CO₂ come from?

Unlike Nitrogen, Argon and Oxygen, CO₂ cannot currently be extracted or separated from the atmosphere in high volume. Therefore, CO₂ for industry use is typically derived from natural wells, oil refineries, ammonia plants or ethanol production facilities around the country. The CO₂ from these sources gets transferred by pipeline to a liquification plant in order to be compressed, cooled and purified in preparation to be transported and sold into industry. Once complete, the CO₂ is tested for purity and loaded as a liquid into vacuum insulated containers for over the road or rail transport and delivered into storage tanks like the ones at Cee Kay or others throughout the country.

While CO₂ is a relatively inexpensive product it is limited in its ability to economically travel as with other cryogenics it is continuously venting and losing payload increasing the expense as the miles add on. Our region is home to seven liquid CO₂ plants within a day drive of our headquarters in St. Louis, MO, six of which are sourced from ethanol facilities. Due to the size of these supply sources any interruption can create a vacuum in the market and demand shifts to other plants in the region.

Why is CO₂ Supply so tight?

First, CO₂ demand is growing at roughly 6% per year which includes beer and beverage, food chilling and freezing, stunning, water treatment, dry ice and fracking EOR. New applications are only increasing this demand including concrete curing and sub-critical cannabis extraction and cultivation.

Second, supply is concentrated and often times sporadic regionally. The Midwest benefits from the prevalence of corn, the main raw material for ethanol production, but this also creates a heavy reliance on one

industry for up to 70% of the availability of CO₂ in our market. During the summer time CO₂ demand often times increases beyond the production supply and coincidentally often overlaps with supply interruptions as ethanol facilities can often go 'off-line' for routine or emergency maintenance or due to market conditions.

Lastly, there are several macroeconomic forces at play including oil pricing, availability of corn and its pricing, mandates (currently 15%) and credits on blending requirements and the national shortage of CDL drivers capable of transporting these products longer distances.

Over the past decade CO₂ has truly become a global supply and reliability issue with major shortages throughout Mexico, Europe and recently parts of the United States. Demand continues to outpace production with very few new liquid supply sources coming into the market to keep up.

What can be done about it?

While natural wells are the most reliable and highest quality sources, they are mostly found in southern states including New Mexico, Texas, Mississippi and Colorado where transport into Missouri and Illinois is not economical.

The CO₂ market is broken up into 7 major producers who total roughly 13 million tons per year of total production capacity per year. This represents 11% of all industrial gas sales in the country by revenue. Cee Kay will be looking to strengthen our current partnerships and make new investments with partners that share in our sourcing commitments.

We will also be watching the new and exciting opportunities developing for CO₂ supply including direct air capture and other innovative approaches to solve these challenges including companies like Inventys which are capturing smoke stack and flue gas emissions using solid sorbent technologies and 8 Rivers Capital starting up their Allam Cycle project in La Porte, TX.

Our company provides CO₂ in cylinders, liquid dewars, dry ice containers, Microbulk and Bulk tanks up to 50 Ton capacity. Our commitment is to be the trusted supplier in the region no matter the size of your business and draw upon our 70-year history of navigating these types of challenges to provide solutions. We continue to look for opportunities in order to diversify supply sources, improve efficiencies, reduce waste, alternative technologies, increase on-site storage, transportation and production capacities. Due to these circumstances we appreciate upfront discussions with our customers regarding increased and new applications within your company involving CO₂ so we can plan and service the need accordingly. If you would like to discuss this topic further please contact me directly or discuss with your sales representative.

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