ANALYSIS OF PROPOSED AGREEMENT CONTAINING CONSENT ORDERS TO AID PUBLIC COMMENT

In the Matter of Linde AG, Praxair, Inc., and Linde PLC

I. INTRODUCTION

The Federal Trade Commission ("Commission") has accepted, subject to final apprtl apprtl appr
e proposed merger of Praxair, Inc. ("Praxair") and Linde

Linde will divest; carbon dioxide facilities; all of Linde's
bulk helium sourcing contracts; all of Linde's
uipment, contracts, and related assets. Linde also
er gas business to Messer.
("HyCO") for on-site customers, along with Linde's hydrogen pipeline in the Gulf Coast and related customer contracts, to Matheson Tri-Gas, Inc. ("Matheson"). Lastly, Linde will divest two additional HyCO plants to their respective owners. Linde will divest its HyCO plant in Clear Lake, Texas to Celanese Corporation ("Celanese") and its HyCO plant in La Porte, Texas to LyondellBasell Industries N.V. ("LyondellBasell").

Praxair and Linde have agreed to divest the required facilities and assets to the aforementioned buyers or to alternative Commission-approved buyers with possibly alternative Commission-approved assets, within 120 days after Linde signed the Consent Agreement on October 1, 2018. Although Praxair and Linde will be allowed to close on their transaction, the Order to Hold Separate and Maintain Assets ("Hold Separate Order") requires Linde and Praxair to hold the entirety of their worldwide businesses separate until they have accomplished the divestitures to Messer and Matheson. The
should withdraw from the proposed Consent Agreement, modify it, or mak
accompanying Decision and Order.

[1] Messer has partnered with CVC Capital Partners to finance its acquisition of the divested assets.

II. THE TRANSACTION

On June 1, 2017, Linde and Praxair entered into an agreement and plan of merger, in a transaction valued at approximately $80 billion. Pursuant to the terms of their agreement, the parties will initiate a stock-for-stock exchange to form a new company under the Linde name with headquarters split between Danbury, Connecticut and Munich, Germany. The Commission's Complaint alleges that the proposed merger, if consummated, would violate Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 45, by substantially lessening competition in the United States in markets for bulk liquid oxygen; bulk liquid nitrogen; bulk liquid argon; bulk liquid carbon dioxide; bulk liquid hydrogen; bulk refined helium; excimer laser gases; onsite hydrogen; and onsite carbon monoxide

III. THE PARTIES

Praxair is an international industrial gas and surface technology company headquartered in Danbury, Connecticut. The company primarily serves industrial and specialty gas customers in manufacturing, metals, and chemicals industries. Praxair is the third-largest industrial gas supplier globally by revenue. In the United States, Praxair owns 41 ASUs and 28 carbon dioxide facilities. In 2017, Praxair's revenue totaled approximately $11.4 billion, about $5 billion of which derived from business in the United States.

Linde, headquartered in Munich, Germany, is a global supplier of industrial gases, homecare respiratory services, and engineering services to customers in the healthcare, chemicals, and energy industries. Linde is the second-largest global industrial gas supplier worldwide. In the United States, Linde owns 32 ASUs and 35 carbon dioxide facilities.[2] In 2017, Linde generated approximately $20.2 billion in total revenue. Linde's 2017 U.S. revenue totaled approximately $4.4 billion, of which about $2.5 billion derived from its LinCare home healthcare business.[3]

IV. THE RELEVANT MARKETS FOR BULK LIQUID OXYGEN, BULK LQUID NITROGEN, AND BULK LQUID ARGON

Oxygen, nitrogen, and argon are "atmospheric gases" present in the Earth's atmosphere in varying amounts. Industrial gas suppliers like Linde and Praxair produce atmospheric gases for a range of customer applications and industries, such as oil and gas, steelmaking, healthcare, and food manufacturing. Oxygen, nitrogen, and argon are three of the most widely used atmospheric industrial gases. Each atmospheric gas has specific properties that make it uniquely suited for its respective applications. For most of these applications, there is no substitute for oxygen, nitrogen, or argon.

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[2] Linde's carbon dioxide facilities include production plants, finished product pick-up agreements, and depots.

[3] Praxair does not have a home healthcare business in the United States. Thus, the transaction does not raise competitive concerns in this market, and the merged firm will retain Linde's LinCare business.

Suppliers distribute atmospheric gases to customers in different forms and methods, depending on the volume of gas that the customer requires. Customers that require extremely large volumes receive atmospheric gases from on-site

V. THE RELEVANT MARKETS FOR BULK LIQUID CARBON DIOXIDE

Carbon dioxide is a “process gas,” which means that it is captured as a byproduct of other manufacturing processes, such as ethanol, ammonia, and hydrogen. Crude carbon dioxide also derives from natural sources, such as natural gas wells. Suppliers convert and distill crude carbon dioxide into final liquid form using a cryogenic process at plants often located near carbon dioxide gas sources. The most common applications for liquid carbon dioxide are in food and beverage production. For example, customers commonly use carbon dioxide in processes to carbonate beverages and chill or freeze food. For the majority of its applications, liquid carbon dioxide has no viable substitutes.

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gutts-icyl-TJf[i]/ob-2n$ebpf)2i(ekin-7mf(b()3-4in)]TJ120(g)-14(S)-4 (und, a2 (e)pationnd)g t]TJ -34.29Td ( )Tj 3[(C t)-4inhation

The relevant geographic market for bulk liquid hydrogen is national. The value of bulk liquid hydrogen relative to the cost of transportation is the primary factor in defining the relevant geographic market. Liquid hydrogen's high value and limited production allows suppliers to transport it over long distances economically and more efficiently than hydrogen in bulk gaseous form.

Linde and Praxair are two of just four main suppliers of bulk liquid hydrogen in the United States. The U.S. bulk liquid hydrogen market is highly concentrated, and Praxair is the largest producer of bulk liquid hydrogen in the United States. The proposed merger would remove one of the few bulk liquid hydrogen suppliers from the market.

VIII. THE RELEVANT MARKET FOR EXCIMER LASER GASES

Excimer laser gases are a subset of specialty gases commonly used to serve customers in the electronics industry, such as semiconductor or liquid crystal display manufacturers. Excimer

U.S. markets for on-site hydrogen and carbon monoxide are highly concentrated. Praxair is a market leader, and Linde represents one of a limited number of viable alternative HyCO suppliers. The proposed merger would remove one of the few HyCO suppliers from the market.

X. EFFECTS OF THE ACQUISITION

The proposed merger would eliminate direct and substantial competition between Praxair and Linde in each of the relevant markets, provide the merged firm with an enhanced ability to increase prices unilaterally, and eliminate a competitor for gas customers in markets where alternative sources of supply are limited. The proposed merger, therefore, likely would allow the merged firm to exercise market power unilaterally, increasing the likelihood that purchasers of bulk liquid oxygen, bulk liquid nitrogen, bulk liquid argon, bulk liquid carbon dioxide, bulk liquid hydrogen, bulk refined helium, excimer laser gases, on-site hydrogen, and on-site carbon monoxide would pay higher prices in the relevant areas.

The proposed merger would also enhance the likelihood of collusion or coordinated action among remaining firms in the relevant markets, because the merger would eliminate a significant competitor from each market, leaving a small number of viable competitors. In addition, certain market conditions, such as the relative homogeneity of suppliers and products, and the transparency of detailed market information, are conducive to coordination among competing suppliers. These conditions also enhance the ability of competitors engaged in a coordinated scheme to detect and punish deviations from the scheme.

XI. ENTRY

New entry into the relevant markets would not occur in a timely manner sufficient to deter or counteract the likely adverse competitive effects of the proposed merger. Entry into the bulk liquid oxygen, nitrogen, and argon markets is costly, difficult, and unlikely because of, among other things, the time and cost required to construct the ASUs that produce these products. Constructing an ASU at a scale sufficient to be viable in the market would cost at least $30 to $100 million, most of which are sunk costs. Moreover, it is not economically justifiable to build an ASU unless a significant amount of the plant's capacity has been sold prior to construction, either to an on-site customer or to customers with commitments under contract. Such pre-sale opportunities occur infrequently and unpredictably and can take several years to secure.

Entry into the bulk liquid carbon dioxide market would also not be timely, likely, or require liquid hydrogen suppliers to have backup supply and be able to deliver product to their sites. A firm is more likely to succeed if it has a portfolio of diversified liquid hydrogen sources, as well as a reliable distribution network, which would require substantial time, resources, and investments to obtain.

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will not increase concentration in any market for bulk liquid nitrogen, oxygen, or argon. As part

LyondellBasell, respectively. This divestiture will resolve the competitive issues that these customers would otherwise face post-merger, as they will be able operate the facilities themselves or contract with one of the firms with a nearby hydrogen pipeline.

Linde and Praxair have agreed to divest the required facilities, together with all related equipment, customer and supply contracts, technology, and goodwill, to one or more Commission-approved buyers within 120 days after signing the Consent Agreement. All acquirers of divested assets must receive the prior approval of the Commission.

The proposed Consent Agreement incorporates an Order to Hold Separate to ensure that Linde and Praxair (1) continue to operate separately until the divestitures to Messer and Matheson have been completed and (2) continue to maintain all assets until the required divestitures have been completed. The Order to Hold Separate appoints Grant Thornton LLP as monitor to oversee compliance with all the obligations and responsibilities under the proposed Decision and Order and requires Linde to execute an agreement conferring upon the monitor all of the rights, powers, and authorities necessary to permit the monitor to ensure the continued health and competitiveness of the divested businesses. Further, if the parties fail to divest the assets as required within the time specified, the Commission may appoint a divestiture trustee to divest the assets in a manner consistent with the proposed Decision and Order and subject to Commission approval.

The purpose of this analysis is to facilitate public comment on the proposed Consent Agreement, and it is not intended to constitute an official interpretation of the proposed Consent Agreement or to modify its terms in any way.