

Complaint

IN THE MATTER OF

**LINDE AG,
PRAXAIR, INC.
AND
LINDE PLC**CONSENT ORDER, ETC. IN REGARD TO ALLEGED VIOLATIONS OF SECTION 5 OF THE FEDERAL
TRADE COMMISSION ACT AND SECTION 7 OF THE CLAYTON ACT*Docket No. C-4660; File No. 171 0068**Complaint, October 19, 2018 – Decision, February 26, 2019*

This consent order addresses the \$80 billion acquisition by Linde AG of certain assets of Praxair, Inc. The complaint alleges that the merger violates Section 7 of the Clayton Act and Section 5 of the Federal Trade Commission Act by eliminating direct and substantial competition between Praxair and Linde in relevant markets, providing the merged firm with an enhanced ability to increase prices unilaterally, and eliminating a competitor for gas customers in markets where alternative sources of supply are limited. The consent order requires Linde to divest the vast majority of Linde's U.S. industrial gas business, and some worldwide assets to MG Industries GmbH. The order also requires Linde to divest five facilities that produce hydrogen and carbon monoxide ("HyCO") for on-site customers, along with Linde's hydrogen pipeline in the Gulf Coast and related customer contracts, to Matheson Tri-Gas, Inc., its HyCO plant in Clear Lake, Texas to Celanese Corporation and its HyCO plant in La Porte, Texas to LyondellBasell Industries N.V.

Participants

For the *Commission*: Jordan S. Andrew, Peter Colwell, Jeffrey Dahnke, Kelly A. Horne, and Samantha R. Morelli.

For the *Respondents*: Renata Hesse, Steven L. Holley, and Joseph J. Matelis, Sullivan & Cromwell LLP; Thomas A. McGrath, Linklaters LLP.

COMPLAINT

Pursuant to the Clayton Act and the Federal Trade Commission Act ("FTC Act"), and its authority thereunder, the Federal Trade Commission ("Commission"), having reason to believe that Respondent Linde AG ("Linde"), a corporation subject to the jurisdiction of the Commission, and Praxair, Inc. ("Praxair"), a corporation subject to the jurisdiction of the Commission, have entered into an agreement and plan of merger to form Linde PLC, a corporation subject to the jurisdiction of the Commission, in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, and it appearing to the Commission that a proceeding in respect thereof would be in the public interest, hereby issues its Complaint, stating its charges as follows:

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I. RESPONDENTS

1. Respondent Linde is a corporation organized, existing, and doing business under, and by virtue of, the laws of Germany, with its office and principal place of business located at Klosterhofstrasse 1, 80331 Munich, Germany. Linde's United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Linde North America, Inc., 200 Somerset Corporate Boulevard, Bridgewater, New Jersey 08807 (attention: Greg Schuetz, Esq.).

2. Respondent Praxair is a corporation organized, existing, and doing business under, and by virtue of, the laws of the State of Delaware, with its office and principal place of business located at 10 Riverview Drive, Danbury, Connecticut 06810.

3. Respondent Linde PLC is a corporation organized, existing, and doing business under and by virtue of the laws of Ireland with its executive office located at The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey GU2 7XY, United Kingdom. Linde PLC's United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Praxair, Inc., 10 Riverview Drive, Danbury, Connecticut 06810 (attention: Guillermo Bichara, Esq.).

4. Respondents are engaged in, among other things, the production and sale of industrial gases, including, but not limited to, bulk liquid oxygen, bulk liquid nitrogen, bulk liquid argon, bulk liquid carbon dioxide, bulk liquid hydrogen, bulk refined helium, on-site hydrogen, on-site carbon monoxide, and excimer laser gases.

5. The Respondents are, and at all times relevant herein have been, engaged in commerce, as "commerce" is defined in Section 1 of the Clayton Act as amended, 15 U.S.C. § 12, and is a company whose business is in or affects commerce, as "commerce" is defined in Section 4 of the FTC Act, as amended, 15 U.S.C. § 44.

THE PROPOSED MERGER

6. Pursuant to a Business Combination Agreement dated June 1, 2017, the Respondents will come together under a new holding company through an all-stock merger of equals transaction valued at approximately \$80 billion (the "Merger"). The Merger is subject to Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

THE RELEVANT MARKETS

7. For the purposes of this Complaint, the relevant lines of commerce in which to analyze the effects of the Merger are the manufacture and sale of:

- a. bulk liquid oxygen;
- b. bulk liquid nitrogen;

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- c. bulk liquid argon;
- d. bulk liquid carbon dioxide;
- e. bulk liquid hydrogen;
- f. bulk refined helium;
- g. on-site hydrogen;
- h. on-site carbon monoxide; and
- i. excimer laser gases (“ELGs”).

8. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the bulk liquid oxygen and bulk liquid nitrogen markets are:

- a. the Northeast;
- b. the Mid-Atlantic;
- c. Upstate and Western New York;
- d. the Carolinas;
- e. Northern Florida and Surrounding Areas;
- f. Atlanta and Surrounding Areas;
- g. the Pacific Northwest;
- h. Northern California;
- i. Southern California;
- j. Arkansas and Surrounding Areas;
- k. Northern Texas and Surrounding Areas;
- l. Southern Texas;
- m. the Central Gulf Coast;
- n. the Eastern Midwest;
- o. Greater Chicago;
- p. Missouri and Surrounding Areas; and

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q. Puerto Rico.

9. For purposes of this Complaint, the relevant geographic area in which to analyze the effects of the Merger on the bulk liquid argon market is the United States.

10. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the bulk liquid carbon dioxide market are:

- a. Northern California;
- b. Southern California;
- c. the Southeast;
- d. the Mid-Atlantic;
- e. the Rocky Mountains;
- f. the Plains;
- g. Southern Texas;
- h. the Eastern Midwest; and
- i. Greater Chicago.

11. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the bulk liquid hydrogen market is the United States.

12. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the bulk refined helium market is the world.

13. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the on-site hydrogen market is the United States.

14. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the on-site carbon monoxide market is the United States.

15. For purposes of this Complaint, the relevant geographic areas in which to analyze the effects of the Merger on the ELG market is the United States.

THE STRUCTURE OF THE MARKETS

16. Respondents Linde and Praxair are two of a limited number of significant participants in each of the relevant markets for bulk liquid oxygen, nitrogen, argon, carbon dioxide, and hydrogen; bulk refined helium; on-site hydrogen and carbon monoxide; and ELGs, and each relevant market is highly concentrated, as measured by the Herfindahl-Hirschman

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Index. The Merger would result in Respondents becoming one of the largest suppliers in each relevant area and significantly increase concentration levels in each relevant market.

ENTRY CONDITIONS

17. 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 Merger.

18. 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 air separation units that produce these products. Constructing an air separation unit at a scale sufficient to be viable in the market would cost at least \$30 to \$100 million, most of which is sunk costs. In addition, argon is only produced at large ASUs that are equipped with specialized equipment capable of capturing argon, which adds millions of dollars to the cost of the plant. The required investment can only be justified if a substantial portion of the plant's capacity is pre-sold prior to construction, either to an on-site customer or to customers with commitments under contract. Such pre-sale opportunities occur infrequently and can take several years to secure.

19. Entry into the bulk liquid carbon dioxide market is not likely to be timely or sufficient to deter or counteract the likely adverse competitive effects of the Merger. Entry into the market requires access to raw carbon dioxide supply sources, which are typically unavailable due to long-term contracts with incumbent liquid carbon dioxide suppliers. In most instances, a supplier must have access to multiple raw carbon dioxide sources to ensure that it is able to supply its customers consistently. In addition, entry requires constructing a plant capable of producing bulk liquid carbon dioxide takes over a year and costs \$5 to \$30 million.

20. Entry into the bulk liquid hydrogen market would also not be likely, timely, or sufficient to deter or counteract the likely adverse competitive effects of the Merger. Constructing a hydrogen production facility capable of producing liquid hydrogen at a scale sufficient to be viable in the market requires a capital investment of \$75 to \$100 million. In addition, an entrant would need to acquire distribution assets and build a network of distribution facilities.

21. Entry into the bulk refined helium market is also costly, difficult, and unlikely, because of, among other things, the time and cost required to gain access to a source of crude helium, acquire helium distributions assets, and build a distribution network. Significant sources of crude helium are limited and all sources of refined helium are committed to long-term contracts. A new entrant would need to locate a new source of crude helium and build a refinery, or rely on a supply agreement with a competitor. Both options require an investment of several million dollars. In addition, millions of dollars would be needed to acquire the necessary infrastructure and distribution assets, including transfill facilities, cryogenic storage containers, and high-pressure tube trailers and liquid dewars capable of transporting helium from the source to customers.

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22. Entry into the on-site hydrogen and carbon monoxide markets would not be likely, timely, or sufficient to deter or counteract the adverse competitive effects of the Merger. Entry into the on-site hydrogen and carbon monoxide markets requires sophisticated engineering capabilities, operational expertise, and significant capital resources. The investment necessary to participate in the markets for on-site hydrogen and carbon monoxide is also a significant obstacle for new entrants. A new facility costs between \$30 and \$300 million to build, depending on the product mix and capacity, and requires years to construct. To participate in the Gulf Coast, a new entrant would need to gain access to a hydrogen pipeline. It is crucial to have access to a hydrogen pipeline in the Gulf Coast to be competitive for on-site opportunities in the region, since pipelines are the only way to monetize excess or by-product hydrogen not sold to the on-site customer. The time, cost, and regulatory hurdles associated with building a pipeline make de novo entry into this region highly unlikely.

23. It is unlikely that there would be entry into the ELG market that is timely and sufficient to deter or counteract the likely adverse competitive effects of the Merger. The largest barrier a new entrant would face is obtaining access to a substantial and reliable source of neon. Neon is a very scarce gas that is produced only at the largest air separation units that are equipped with a specialized neon column. Developing such an air separation unit would take several years and cost hundreds of million dollars, and cannot be justified on the basis of extracting neon. In addition to developing a source of neon, an entrant into the ELG market would also need to construct a plant that is capable of precisely mixing neon with other gases to produce ELGs. Such a facility would cost between \$8 and \$12 million and take approximately one year to eighteen months to construct. Once the facility comes on line, the new entrant must begin the process of qualifying its ELGs with OEMs and customers, which can take an additional year or more to complete. Only after completing all of these steps could the entrant begin selling ELGs to customers.

EFFECTS OF THE MERGER

24. The effects of the Merger may be to substantially lessen competition and to tend to create a monopoly in the relevant markets in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, in the following ways, among others:

- a. by eliminating actual, direct, and substantial competition between Respondents Linde and Praxair;
- b. by increasing the likelihood that Respondents would unilaterally exercise market power in the bulk liquid oxygen, bulk liquid nitrogen, bulk liquid argon, bulk liquid carbon dioxide, bulk liquid hydrogen, bulk refined helium, on-site hydrogen, on-site carbon monoxide, and ELG markets in the relevant geographic areas;
- c. by enhancing the likelihood of collusion or coordinated interaction between or among the remaining firms in the bulk liquid oxygen, bulk liquid nitrogen, bulk liquid argon, bulk liquid carbon dioxide, bulk liquid

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hydrogen, bulk refined helium, on-site hydrogen, on-site carbon monoxide, and ELG markets in the relevant geographic areas; and

- d. by increasing the likelihood that consumers would be forced to pay higher prices for bulk liquid oxygen, bulk liquid nitrogen, bulk liquid argon, bulk liquid carbon dioxide, bulk liquid hydrogen, bulk refined helium, on-site hydrogen, on-site carbon monoxide, and ELG gases in the relevant geographic areas.

VIOLATIONS CHARGED

25. The Merger described in Paragraph 5, if consummated, would constitute a violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

WHEREFORE, THE PREMISES CONSIDERED, the Federal Trade Commission on this nineteenth day of October, 2018, issues its Complaint against said Respondents.

By the Commission, Commissioner Chopra dissenting.

ORDER TO HOLD SEPARATE AND MAINTAIN ASSETS

The Federal Trade Commission (“Commission”) initiated an investigation of the proposed merger of Linde AG and Praxair, Inc. to form Linde PLC (collectively “Respondents”). The Commission’s Bureau of Competition prepared and furnished to Respondents the Draft Complaint, which it proposed to present to the Commission for its consideration. If issued by the Commission, the draft complaint would charge Respondents with violations of 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.

Respondents and the Bureau of Competition executed an agreement (“Consent Agreement”) containing (1) an admission by Respondents of all the jurisdictional facts set forth in the Draft Complaint, (2) a statement that the signing of said agreement is for settlement purposes only and does not constitute an admission by Respondents that the law has been violated as alleged in the Draft Complaint, or that the facts as alleged in the Draft Complaint, other than jurisdictional facts, are true, (3) waivers and other provisions as required by the Commission’s Rules, and (4) a proposed Decision and Order and Order to Hold Separate and Maintain Assets.

The Commission considered the matter and determined that it had reason to believe that Respondents have violated the said Acts, and that a Complaint should issue stating its charges in

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that respect. The Commission accepted the Consent Agreement and placed it on the public record for a period of 30 days for the receipt and consideration of public comments. Now, in further conformity with the procedure described in Commission Rule 2.34, 16 C.F.R. § 2.34, the Commission issues its Complaint, makes the following jurisdictional findings and issues the following Order to Hold Separate and Maintain Assets (“Order to Hold Separate”):

1. Respondent Linde AG is a corporation organized, existing, and doing business under, and by virtue of, the laws of Germany, with its office and principal place of business located at Klosterhofstrasse 1, 80331 Munich, Germany. Linde AG’s United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Linde North America, Inc., 200 Somerset Corporate Boulevard, Bridgewater, New Jersey 08807 (attention: Greg Schuetz, Esq.).
2. Respondent Praxair, Inc. is a corporation organized, existing, and doing business under, and by virtue of, the laws of the State of Delaware, with its office and principal place of business located at 10 Riverview Drive, Danbury, Connecticut 06810.
3. Respondent Linde PLC is a corporation organized, existing, and doing business under and by virtue of the laws of Ireland with its executive office located at The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey GU2 7XY, United Kingdom. Linde PLC’s United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Praxair, Inc., 10 Riverview Drive, Danbury, Connecticut 06810 (attention: Guillermo Bichara, Esq.).
4. The Federal Trade Commission has jurisdiction of the subject matter of this proceeding and of the Respondents and the proceeding is in the public interest.

ORDER**I.**

IT IS HEREBY ORDERED that, as used in this Order to Hold Separate, the following definitions shall apply (to the extent any capitalized term appearing in this Order to Hold Separate is not defined below, the term shall be defined as that term is defined in the Decision and Order contained in the Consent Agreement):

- A. “Linde” means Linde AG, its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Linde AG (including Linde North America, Inc.), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.

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- B. “Praxair” means Praxair Inc., its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Praxair, and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- C. “Linde PLC” means Linde PLC, its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Linde PLC (including Linde North America, Inc., after the Merger), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- D. “Commission” means the Federal Trade Commission.
- E. “Acquirer” means any Person that acquires any of the Gases Assets pursuant to the Decision and Order.
- F. “Active Employee” means any full-time, part-time, or contract individual employed by Linde, Praxair, or Linde PLC whose job responsibilities relate or related to any of part of the Gases Business, as of and after the date of the announcement of the Merger.
- G. “Confidential Information” means any and all of the following information:
 - 1. all information that is a trade secret under applicable trade secret or other law;
 - 2. all information concerning product specifications, data, know-how, formulae, compositions, processes, designs, sketches, photographs, graphs, drawings, samples, inventions and ideas, past, current and planned research and development, current and planned manufacturing or distribution methods and processes, customer lists, current and anticipated customer requirements, price lists, market studies, business plans, software and computer software and database technologies, systems, structures, and architectures;
 - 3. all information concerning the relevant business, including historical and current financial statements, financial projections and budgets, tax returns and accountants’ materials, historical, current and projected sales, capital spending budgets and plans, business plans, strategic plans, marketing and advertising plans, publications, client and customer lists and files, contracts, the names and backgrounds of key personnel and personnel training techniques and materials; and
 - 4. all notes, analyses, compilations, studies, summaries and other material to the extent containing or based, in whole or in part, upon any of the information described above;

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Provided, however, that Confidential Information shall not include information that (i) was, is, or becomes generally available to the public other than as a result of a breach of this Order to Hold Separate; (ii) was or is developed independently of and without reference to any Confidential Information; or (iii) was available, or becomes available, on a non-confidential basis from a third party not bound by a confidentiality agreement or any legal, fiduciary or other obligation restricting disclosure.

- H. “Consent” means any approval, consent, ratification, waiver, or other authorization.
- I. “Decision and Order” means the:
 - 1. Proposed Decision and Order contained in the Consent Agreement in this matter until the issuance and service of a final Decision and Order by the Commission; and
 - 2. Final Decision and Order issued by the Commission in this matter following the issuance and service of a final Decision and Order by the Commission.
- J. “Gases Assets” means the Helium Assets, HyCO Assets, and Industrial Gases Assets and, if applicable, any additional assets identified in Paragraphs I.G., I.H., and I.I. of the Decision and Order.
- K. “Gases Business” means the Helium Business, HyCO Business, and Industrial Gases Business.
- L. “Governmental Authorization” means any consent, license, registration, or permit issued, granted, given or otherwise made available by or under the authority of any governmental body or pursuant to any legal requirement.
- M. “Including” means including without limiting the generality of any description preceding such term.
- N. “Merger” means the merger of Linde and Praxair described in the Business Combination Agreement by and among Linde Aktiengesellschaft, Praxair, Inc., Zamalight PLC, Zamalight Holdco LLC, and Zamalight Subco, Inc., dated as of June 1, 2017.
- O. “Merger Date” means the date the Merger closes.
- P. “Orders” means this Order to Hold Separate and the Decision and Order.

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- Q. “Person” means any individual, partnership, corporation, business trust, limited liability company, limited liability partnership, joint stock company, trust, unincorporated association, joint venture or other entity or a governmental body.

II.

IT IS FURTHER ORDERED that from the date this Order to Hold Separate is issued until the date that all of the Industrial Gases Assets and HyCO SMR Assets have been divested pursuant to the Decision and Order:

- A. Respondents shall continue to operate Linde and Praxair as independent, ongoing, economically viable, competitive businesses held separate, distinct, and apart from each other’s operations.
- B. Respondents shall not coordinate any aspect of the operations of Linde and Praxair, including the marketing or sale of any products. Respondents shall take all steps necessary to ensure that:
 - 1. Neither Linde nor Praxair attempts to influence, direct, or control the management of the other with regard to any aspects of its operations; and
 - 2. The management of Linde and Praxair each shall act to maintain and increase their respective sales and income, and maintain operational, promotional, advertising, sales, technical, customer service, and marketing support at 2018 levels or previously approved levels for 2019, whichever are higher.
- C. Linde and Praxair shall maintain, in accordance with sound accounting principles, separate, accurate, and complete financial ledgers, books, and records that report on a periodic basis, such as the last business day of every month, consistent with past practices, the assets, liabilities, expenses, revenues, and income of each.

III.

IT IS FURTHER ORDERED that from the date this Order to Hold Separate is issued until the Gases Assets are divested, Respondents shall operate the Gases Assets and Gases Business in the ordinary course of business consistent with past practices, including:

- A. Maintaining the (i) Gases Assets and Gases Business in substantially the same condition (except for normal wear and tear) existing at the time Respondents sign the Consent Agreement, and (ii) relations and good will with employees, suppliers, customers, landlords, creditors, agents, and others having business relationships with the Gases Business and Gases Assets;
- B. Providing the Gases Business with sufficient financial and other resources to (i) operate the Gases Business and Gases Assets at least at the current rate of

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operation and staffing and to carry out, at their scheduled pace, all business plans, sales and promotional activities in place prior to the date the Merger was announced; (ii) perform all maintenance to, and replacements or remodeling of, the assets of the Gases Business in the ordinary course of business and in accordance with past practice and current plans; (iii) carry on such capital projects, physical plant improvements, and business plans as are already underway or planned for which all necessary regulatory and legal approvals have been obtained, including but not limited to, existing or planned renovation, remodeling, or expansion projects; and

- C. Preserving the Gases Business and Gases Assets as an ongoing business and not take any affirmative action, or fail to take any action within Respondents' control, as a result of which the viability, competitiveness, and marketability of the Gases Business and Gases Assets would be diminished.

IV.**IT IS FURTHER ORDERED** that:

- A. Respondents shall obtain all Governmental Authorizations and Consents from any Person that are necessary to transfer any of the Gases Assets no later than the date that such assets are divested; *provided, however*, that in the event that Respondents are unable to obtain any:
 - 1. Governmental Authorization, Respondents shall provide such assistance as an Acquirer may reasonably request in Acquirer's efforts to obtain a comparable authorization; and
 - 2. Consent from a third party, Respondents shall, with the acceptance of the Acquirer and the prior approval of the Commission, substitute equivalent assets or arrangements.
- B. Respondents shall cooperate and assist with an Acquirer's due diligence investigation of any of the Gases Assets and Gases Business, including providing access to any and all personnel, properties, contracts, authorizations, documents, and information customarily provided as part of a due diligence process.
- C. From the time Respondents engage in negotiations with any Acquirer until 6 months after the divestiture of any of the Gases Assets to that Acquirer, Respondents shall cooperate and assist the Acquirer to identify and hire any Active Employee whose responsibilities relate in any way to the Gases Assets to be divested to the Acquirer:
 - 1. No later than 10 days after the request of an Acquirer, Respondents shall provide all information of any relevant Active Employee, including providing access to personnel Records (to the extent permissible under

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applicable laws) and allowing Acquirer to privately interview such Active Employee;

2. Respondents shall (i) not solicit the continued employment of any Active Employee (unless Acquirer has informed Respondents that a particular Active Employee will not receive an employment offer from Acquirer) and (ii) not otherwise interfere, directly or indirectly, with the recruitment, hiring, or employment of any Active Employee by an Acquirer;
3. Respondents shall provide reasonable financial incentives as necessary to any Active Employee to accept an offer of employment from an Acquirer, which may include providing a retention bonus for continuing employment in connection with any Gases Assets to be divested; and
4. All Active Employees hired by an Acquirer who are participants in Respondents' retirement and savings plans (i) shall retain their accrued benefits under such plans as of the date the Gases Assets are divested and Respondents shall be liable for payment of the benefits when employees become eligible for them and (ii) shall become fully vested in their accrued benefits as of the date the Gases Assets are divested.

V.

IT IS FURTHER ORDERED that:

- A. Respondents shall (i) not disclose (including as to Respondents' employees) and (ii) not use for any reason or purpose, any Confidential Information received or maintained by Respondents relating to the Gases Assets, Gases Business, and the post-divestiture Gases Business; *provided, however*, that Respondents may disclose or use such Confidential Information in the course of:
 1. Performing its obligations or as permitted under the Orders or any Divestiture Agreement; or
 2. Complying with financial, regulatory, or other reporting or legal obligations, obtaining legal advice, prosecuting or defending legal claims, investigations, or enforcing actions threatened or brought against the Gases Assets or Gases Business or as required by law.
- B. If disclosure or use of any Confidential Information is permitted to Respondents' employees or to any other Person under Paragraph V.A. of this Order to Hold Separate, Respondents shall limit such disclosure or use (i) only to the extent such information is required, (ii) only to those employees or Persons who require such information for the purposes permitted under Paragraph V.A., and (iii) only after such employees or Persons have signed an agreement to maintain the confidentiality of such information.

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- C. Respondents shall enforce the terms of this Paragraph V. as to its employees or any other Person, and take such action as is necessary to cause each of its employees and any other Person to comply with the terms of this Paragraph V., including implementation of access and data controls, training of its employees, and all other actions that Respondents would take to protect their own trade secrets and proprietary information.

VI.**IT IS FURTHER ORDERED** that:

- A. Grant Thornton LLP (“Monitor”) shall serve to monitor Respondent’s compliance with all of its obligations and responsibilities as required by this Order to Hold Separate, Decision and Order, and any Divestiture Agreement.
- B. Respondents shall enter into an agreement with the Monitor, subject to the prior approval of the Commission, that (i) shall become effective no later than one day after the date the Commission appoints the Monitor, and (ii) confers upon the Monitor all rights, powers, and authority necessary to permit the Monitor to perform his duties and responsibilities on the terms set forth in this Order to Hold Separate and in consultation with the Commission:
1. The Monitor shall (i) monitor Respondent’s compliance with the obligations set forth in this Order to Hold Separate and (ii) act in consultation with the Commission or its staff, and shall serve as an independent third party and not as an employee or agent of the Respondents or of the Commission;
 2. Respondents shall (i) ensure that the Monitor has full and complete access to all Respondents’ personnel, books, records, documents, and facilities relating to compliance with the Orders or to any other relevant information as the Monitor may reasonably request, and (ii) cooperate with, and take no action to interfere with or impede the ability of, the Monitor to perform his duties pursuant to the Orders;
 3. The Monitor (i) shall serve at the expense of Respondents, without bond or other security, on such reasonable and customary terms and conditions as the Commission may set, and (ii) may employ, at the cost and expense of Respondents, such consultants, accountants, attorneys, and other representatives and assistants as are reasonably necessary to carry out the Monitor’s duties and responsibilities;
 4. Respondents shall indemnify the Monitor and hold him harmless against any losses, claims, damages, liabilities, or expenses arising out of, or in connection with, the performance of his duties, including all reasonable fees of counsel and other expenses incurred in connection with the

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preparation for, or defense of, any claim, whether or not resulting in any liability, except to the extent that such losses, claims, damages, liabilities, or expenses result from the Monitor's gross negligence or willful misconduct; and

5. Respondents may require the Monitor and each of the Monitor's consultants, accountants, attorneys, and other representatives and assistants to sign a customary confidentiality agreement; *provided, however,* that such agreement shall not restrict the Monitor from providing any information to the Commission.
- C. The Monitor shall report in writing to the Commission (i) every 30 days after the Merger Date and (ii) at any other time as requested by the staff of the Commission, concerning Respondents' compliance with the Orders.
- D. The Commission may require the Monitor and each of the Monitor's consultants, accountants, attorneys, and other representatives and assistants to sign a confidentiality agreement related to Commission materials and information received in connection with the performance of the Monitor's duties.
- E. The Monitor's power and duties shall terminate when this Order to Hold Separate term-inates at which time the Monitor's power and duties shall continue as set forth under the Decision and Order, or at such other time as directed by the Commission.
- F. If at any time the Commission determines that the Monitor has ceased to act or failed to act diligently, or is unwilling or unable to continue to serve, the Commission may appoint a substitute Monitor, subject to the consent of Respondents, which consent shall not be unreasonably withheld:
 1. If Respondents have not opposed, in writing, including the reasons for opposing, the selection of the substitute Monitor within 5 days after notice by the staff of the Commission to Respondents of the identity of any substitute Monitor, then Respondents shall be deemed to have consented to the selection of the proposed substitute Monitor; and
 2. Respondents shall, no later than 5 days after the Commission appoints a substitute Monitor, enter into an agreement with the substitute Monitor that, subject to the approval of the Commission, confers on the substitute Monitor all the rights, powers, and authority necessary to permit the substitute Monitor to perform his or her duties and responsibilities pursuant to this Order to Hold Separate on the same terms and conditions as provided in this Paragraph VI.

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- G. The Commission may on its own initiative or at the request of the Monitor issue such additional orders or directions as may be necessary or appropriate to assure compliance with the requirements of the Orders.

VII.**IT IS FURTHER ORDERED** that:

- A. Respondent shall:
1. No later than 5 days after the Merger Date, notify the Commission via email at bccompliance@ftc.gov of the Merger Date; and
 2. No later than 10 days after the divestiture of any of the Gases Assets has been completed, (a) notify the Commission of the date such divestiture closed and (b) submit the complete Divestiture Agreement to the Commission at ElectronicFilings@ftc.gov and bccompliance@ftc.gov.
- B. Respondent shall submit verified written reports ("Compliance Reports") in accordance with the following:
1. Respondent shall submit interim Compliance Reports 30 days from the date Respondent signs the Consent Agreement (as set forth in the Consent Agreement) and every 30 days thereafter until this Order to Hold Separate terminates; and
 2. Each Compliance Report shall contain sufficient information and documentation to enable the Commission to determine independently whether Respondents are in compliance with the Order (conclusory statements that Respondents have complied with their obligations under the Order are insufficient);
 3. Respondents shall include in their Compliance Reports a full description of the measures Respondents have implemented or plan to implement to ensure that they have complied or will comply with each paragraph of the Order, and a description of all substantive contacts or negotiations for the divestitures and the identities of all parties contacted; and
 4. Respondents shall retain copies of all material written communications to and from such parties, as well as all non-privileged internal memoranda, reports, and recommendations concerning completing their obligations under this Order for a period of 3 years, and shall provide copies of those records to Commission staff upon request.
- C. Respondent shall verify each Compliance Report in the manner set forth in 28 U.S.C. § 1746 by the Chief Executive Officer or other officer or employee

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specifically authorized to perform this function. Respondent shall submit an original and two copies of each Compliance Report as required by Commission Rule 2.41(a), 16 C.F.R. § 2.41(a), including a paper original submitted to the Secretary of the Commission and electronic copies to the Secretary at ElectronicFilings@ftc.gov and to the Compliance Division at bccompliance@ftc.gov. In addition, Respondent shall provide a copy of each Compliance Report to the Monitor if the Commission has appointed one in this matter.

Provided, however, that after the Decision and Order in this matter is issued, the compliance reports required by this Paragraph VII. may be consolidated with and submitted to the Commission on the same timing as the compliance reports required by the Decision and Order.

VIII.

IT IS FURTHER ORDERED that the purpose of this Order to Hold Separate is (i) to hold the operations of Linde and Praxair separate and apart and to preserve the Gases Assets and Gases Business as a viable, competitive, and ongoing business until the divestitures required by the Decision and Order are achieved; (ii) prevent interim harm to competition pending the divestitures and other relief; and (iii) help remedy any anticompetitive effects of the proposed Merger as alleged in the Commission's Complaint.

IX.

IT IS FURTHER ORDERED that Respondents shall notify the Commission at least 30 days prior to:

- A. Any proposed dissolution of Linde PLC;
- B. Any proposed acquisition, merger, or consolidation of Linde PLC; or
- C. Any other change in the Respondents, including, but not limited to, assignment and the creation or dissolution of subsidiaries, if such change might affect compliance obligations arising out of this Order to Hold Separate.

X.

IT IS FURTHER ORDERED that, for purposes of determining or securing compliance with this Order to Hold Separate, and subject to any legally recognized privilege, upon written request and 5 days' notice to the relevant Respondent, made to its principal place of business as identified in this Order to Hold Separate, registered office of its United States subsidiary, or its headquarters office, the notified Respondent shall, without restraint or interference, permit any duly authorized representative of the Commission:

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- A. Access, during business office hours of the Respondent and in the presence of counsel, to all facilities and access to inspect and copy all business and other records and all documentary material and electronically stored information as defined in Commission Rules 2.7(a)(1) and (2), 16 C.F.R. § 2.7(a)(1) and (2), in the possession or under the control of the Respondent related to compliance with this Order to Hold Separate, which copying services shall be provided by the Respondent at the request of the authorized representative of the Commission and at the expense of the Respondent; and
- B. To interview officers, directors, or employees of the Respondent, who may have counsel present, regarding such matters.

XI.

IT IS FURTHER ORDERED that this Order to Hold Separate shall terminate:

- A. Three business days after the Commission withdraws its acceptance of the Consent Agreement pursuant to the provisions of Commission Rule 2.34, 16 C.F.R. § 2.34; or
- B. Three business days after the date that Respondents complete the divestitures required by Paragraph II. of the Decision and Order; *provided, however*, that if at the time such divestitures have been completed, the Decision and Order in this matter is not yet final, then this Order to Hold Separate shall terminate three business days after the Decision and Order becomes final.

By the Commission, Commissioner Chopra dissenting.

DECISION
[Public Record Version]

The Federal Trade Commission (“Commission”) initiated an investigation of the proposed merger of Linde AG and Praxair, Inc. to form Linde PLC (collectively “Respondents”). The Commission’s Bureau of Competition prepared and furnished to Respondents the Draft Complaint, which it proposed to present to the Commission for its consideration. If issued by the Commission, the Draft Complaint would charge Respondents with violations of 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.

Respondents and the Bureau of Competition executed an agreement (“Consent Agreement”) containing (1) an admission by Respondents of all the jurisdictional facts set forth

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in the Draft Complaint, (2) a statement that the signing of said agreement is for settlement purposes only and does not constitute an admission by Respondents that the law has been violated as alleged in the Draft Complaint, or that the facts as alleged in the Draft Complaint, other than jurisdictional facts, are true, (3) waivers and other provisions as required by the Commission's Rules, and (4) a proposed Decision and Order and Order to Hold Separate and Maintain Assets.

The Commission considered the matter and determined that it had reason to believe that Respondents have violated the said Acts, and that a complaint should issue stating its charges in that respect. The Commission accepted the Consent Agreement and placed it on the public record for a period of 30 days for the receipt and consideration of public comments; at the same time, it issued and served its Complaint and Order to Hold Separate and Maintain Assets. The Commission duly considered any comments received from interested persons pursuant to Commission Rule 2.34, 16 C.F.R. § 2.34. Now, in further conformity with the procedure described in Rule 2.34, the Commission makes the following jurisdictional findings, and issues the following Decision and Order ("Order"):

1. Respondent Linde AG is a corporation organized, existing, and doing business under, and by virtue of, the laws of Germany, with its office and principal place of business located at Klosterhofstrasse 1, 80331 Munich, Germany. Linde AG's United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Linde North America, Inc., 200 Somerset Corporate Boulevard, Bridgewater, New Jersey 08807 (attention: Greg Schuetz, Esq.).
2. Respondent Praxair, Inc. is a corporation organized, existing, and doing business under, and by virtue of, the laws of the State of Delaware, with its office and principal place of business located at 10 Riverview Drive, Danbury, Connecticut 06810.
3. Respondent Linde PLC is a corporation organized, existing, and doing business under and by virtue of the laws of Ireland with its executive office located at The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey GU2 7XY, United Kingdom. Linde PLC's United States address for service of process, the Complaint, Decision and Order, and Order to Hold Separate and Maintain Assets is Praxair, Inc., 10 Riverview Drive, Danbury, Connecticut 06810 (attention: Guillermo Bichara, Esq.).
4. The Federal Trade Commission has jurisdiction of the subject matter of this proceeding and of the Respondents and the proceeding is in the public interest.

Decision and Order

ORDER**I.**

IT IS HEREBY ORDERED that, as used in this Order, the following definitions shall apply:

- A. “Linde” means Linde AG, its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Linde AG (including Linde North America, Inc.), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- B. “Praxair” means Praxair, Inc., its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Praxair, and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- C. “Linde PLC” means Linde PLC, its directors, officers, employees, agents, representatives, successors, and assigns; and the joint ventures, subsidiaries, divisions, groups, and affiliates controlled by Linde PLC (including Linde North America, Inc. after the Merger), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- D. “Commission” means the Federal Trade Commission.
- E. “Acquirer” means any Person that acquires any of the Gases Assets pursuant to this Order.
- F. “Active Employee” means any full-time, part-time, or contract individual employed by Linde, Praxair, or Linde PLC whose job responsibilities relate or related to any part of the Gases Business or Gases Assets, as of and after the date of the announcement of the Merger.
- G. “Additional HyCO SMR Assets” means all assets identified on Appendix D of this Order.
- H. “Additional Helium Assets” means all assets located outside of the United States relating to the Helium Business that are not identified on Non-Public Appendix B of this Order.
- I. “Additional Industrial Gases Assets” means all assets (i) identified on Appendix A of this Order except for assets owned by Lincare Holdings, Inc. and (ii) relating to the Specialty Gases Business located in the United States.
- J. “Atmospheric Gases” means oxygen, nitrogen, argon, krypton, neon, and xenon.

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- K. “Atmospheric Gases Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of Atmospheric Gases produced anywhere in the United States, Trail, British Columbia, Canada, and Sarnia, Ontario, Canada including researching, developing, producing, or selling Atmospheric Gases.
- L. “Celanese” means Celanese International Corporation, a corporation organized, existing, and doing business under, and by virtue of, the laws of Delaware, with its office and principal place of business located at 222 West Colinas Blvd., Suite 900N, Irving, Texas 75039.
- M. “CO₂ Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of carbon dioxide anywhere in the United States, including researching, developing, producing, or selling carbon dioxide.
- N. “Confidential Information” means any and all of the following information:
1. all information that is a trade secret under applicable trade secret or other law;
 2. all information concerning product specifications, data, know-how, formulae, compositions, processes, designs, sketches, photographs, graphs, drawings, samples, inventions and ideas, past, current and planned research and development, current and planned manufacturing or distribution methods and processes, customer lists, current and anticipated customer requirements, price lists, market studies, business plans, software and computer software and database technologies, systems, structures, and architectures;
 3. all information concerning the relevant business, including historical and current financial statements, financial projections and budgets, tax returns and accountants’ materials, historical, current and projected sales, capital spending budgets and plans, business plans, strategic plans, marketing and advertising plans, publications, client and customer lists and files, contracts, the names and backgrounds of key personnel and personnel training techniques and materials; and
 4. all notes, analyses, compilations, studies, summaries and other material to the extent containing or based, in whole or in part, upon any of the information described above;

Provided, however, that Confidential Information shall not include information that (i) was, is, or becomes generally available to the public other than as a result of a breach of this Order; (ii) was or is developed independently of and without reference to any Confidential Information; or (iii) was available, or becomes available, on a non-confidential basis from a third party not bound by a

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confidentiality agreement or any legal, fiduciary or other obligation restricting disclosure.

- O. “Consent” means any approval, consent, ratification, waiver, or other authorization.
- P. “Contract” means any agreement, contract, lease, license agreement, consensual obligation, promise or undertaking (whether written or oral and whether express or implied), whether or not legally binding with third parties.
- Q. “Designated Assets” means:
 - 1. all real property interests (including fee simple interests and real property leasehold interests), including all easements, and appurtenances, together with all buildings and other structures, facilities, and improvements located thereon, owned, leased, or otherwise held;
 - 2. all Tangible Personal Property, including any Tangible Personal Property removed from any location of a relevant business since the date of the announcement of the Merger and not replaced;
 - 3. all inventories;
 - 4. all Contracts and all outstanding offers or solicitations to enter into any Contract, and all rights thereunder and related thereto;
 - 5. all Governmental Authorizations and all pending applications therefor or renewals thereof, to the extent transferable;
 - 6. all data and Records, including client and customer lists and Records, referral sources, research and development reports and Records, Records relating to Contracts, production reports and Records, service and warranty Records, equipment logs, operating guides and manuals, financial and accounting Records, creative materials, advertising materials, promotional materials, studies, reports, notices, orders, inquiries, correspondence, and other similar documents and Records, and copies of all personnel Records (to the extent permitted by law); and
 - 7. all intangible rights and property, including Intellectual Property owned or licensed (as licensor or licensee) by Respondent (to the extent transferable or licensable), going concern value, goodwill, and telephone and telecopy listings.
- R. “DivestCo Products” means any raw materials, partially finished products, supplies, and any other product that an Acquirer produces at or provides from a property or third-party source included in the Gases Assets.

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- S. “Divestiture Agreement” means any agreement between Respondents (or between a Divestiture Trustee) and a Person to divest any of the Gases Assets that has been approved by the Commission pursuant to this Order, including any ancillary agreements relating to the divestiture, all amendments, exhibits, agreements, and schedules thereto.
- T. “Divestiture Trustee” means the Person appointed by the Commission pursuant to Paragraph VII. of this Order.
- U. “EP&C Assistance” means field consulting, engineering, procurement, and construction services in connection with the design, delivery, and construction of industrial gases plants.
- V. “Gases Assets” means the Helium Assets, HyCO Assets, and Industrial Gases Assets and, if applicable, any additional assets identified in Paragraphs I.G., I.H., and I.I. of this Order.
- W. “Gases Business” means the Helium Business, HyCO Business, and Industrial Gases Business.
- X. “Governmental Authorization” means any Consent, license, registration, or permit issued, granted, given or otherwise made available by or under the authority of any governmental body or pursuant to any legal requirement.
- Y. “Helium Assets” means all of Respondent’s right, title, and interest in and to all property and assets, real, personal, or mixed, tangible and intangible, of every kind and description, wherever located, relating to the Helium Business, including the Designated Assets; *provided, however*, that the Helium Assets shall not include any Helium Retained Assets; *provided further* that the Helium Assets shall include helium assets owned by Praxair identified on Non-Public Appendix C of this Order.
- Z. “Helium Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of bulk helium anywhere in the world, including researching, developing, producing, or selling bulk helium.
- AA. “Helium Retained Assets” means the (i) Standard Retained Assets, (ii) any assets located outside of the United States other than the assets identified on Non-Public Appendix B of this Order, (iii) any assets exclusively related to the sale of helium through the Specialty Gases Business and Industrial Gases Retained Assets, and (iv) Linde’s supply rights for 100 mmscf per annum starting in 2020 from the helium source contract between ExxonMobil Gas & Power Marketing and Linde Gas North America LLC, dated April 9, 2018.
- BB. “HyCO Assets” means the HyCO Clear Lake Assets, HyCO La Porte Assets, and HyCO SMR Assets.

Decision and Order

- CC. “HyCO Business” means the HyCO Clear Lake Business, HyCO La Porte Business, and HyCO SMR Business.
- DD. “HyCO Clear Lake Assets” means all of Respondent’s right, title, and interest in and to all property and assets, real, personal, or mixed, tangible and intangible, of every kind and description, wherever located, relating to the HyCO Clear Lake Business, including the Designated Assets; *provided, however*, that the HyCO Clear Lake Assets shall not include (i) Linde’s Gulf coast hydrogen pipeline and related assets necessary for its operation, (ii) any Standard Retained Assets or (iii) any assets located outside of the United States.
- EE. “HyCO Clear Lake Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of hydrogen, carbon monoxide, syngas, and superheated steam produced in Clear Lake, Texas, including researching, developing, producing, or selling hydrogen, carbon monoxide, syngas, and superheated steam.
- FF. “HyCO La Porte Assets” means all of Respondent’s right, title, and interest in and to all property and assets, real, personal, or mixed, tangible and intangible, of every kind and description, wherever located, relating to the HyCO La Porte Business, including the Designated Assets; *provided, however*, that the HyCO La Porte Assets shall not include (i) Linde’s Gulf coast hydrogen pipeline and related assets necessary for its operation, (ii) Linde’s air separation unit located in La Porte, Texas, (iii) any Standard Retained Assets or (iv) any assets located outside of the United States.
- GG. “HyCO La Porte Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of hydrogen, carbon monoxide, syngas, and superheated steam produced in La Porte, Texas, including researching, developing, producing, or selling hydrogen, carbon monoxide, syngas, and superheated steam.
- HH. “HyCO SMR Assets” means all of Respondent’s right, title, and interest in and to all property and assets, real, personal, or mixed, tangible and intangible, of every kind and description, wherever located, relating to the HyCO SMR Business, including the Designated Assets; *provided, however*, that the HyCO SMR Assets shall not include any (i) Standard Retained Assets, (ii) assets located outside of the United States, or (iii) assets identified on Appendix D of this Order; *provided further* that the HyCO SMR Assets shall include Linde’s Gulf coast hydrogen pipeline and related assets necessary for its operation.
- II. “HyCO SMR Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of hydrogen, carbon monoxide, syngas, and superheated steam produced anywhere in the United States using SMR technology, including researching, developing, producing, or selling hydrogen, carbon monoxide, syngas, and superheated steam.

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- JJ. “Including” means including without limiting the generality of any description preceding such term.
- KK. “Industrial Gases Assets” means all of Respondent’s right, title, and interest in and to all property and assets, real, personal, or mixed, tangible and intangible, of every kind and description, wherever located, relating to the Industrial Gases Business, including the Designated Assets; *provided, however*, that the Industrial Gases Assets shall not include any Industrial Gases Retained Assets.
- LL. “Industrial Gases Business” means the Atmospheric Gases Business, CO₂ Business, Laser Gases Business, and Liquid Hydrogen Business.
- MM. “Industrial Gases Retained Assets” means the (i) Standard Retained Assets, (ii) any assets located outside of the United States other than assets relating to the Liquid Hydrogen Business located at Magog, Quebec, Canada, and (iii) any assets identified on Appendix A of this Order.
- NN. “Intellectual Property” means all intellectual property owned or licensed (as licensor or licensee), including (1) commercial names, all assumed fictional business names, trade names, “doing business as” (d/b/a names), registered and unregistered trademarks, service marks and applications, and trade dress; (2) all patents, patent applications and inventions and discoveries that may be patentable; (3) all registered and unregistered copyrights in both published works and unpublished works; (4) all rights in mask works; (5) all know-how, trade secrets, confidential or proprietary information, customer lists, software, technical information, data, process technology, plans, drawings, and blue prints; and (6) all rights in internet web sites and internet domain names presently used.
- OO. “Laser Gases” means excimer laser gas mixtures containing neon and one or more of the following gases: argon, krypton, xenon, and fluorine.
- PP. “Laser Gases Acquirer” means the Acquirer of the Industrial Gases Assets relating to the Laser Gases Business.
- QQ. “Laser Gases Assets” means the Industrial Gases Assets relating to the Laser Gases Business.
- RR. “Laser Gases Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of Laser Gases anywhere in the United States, including researching, developing, producing, or selling Laser Gases.
- SS. “License” means a royalty-free, fully paid-up, perpetual, irrevocable, transferable, and sub-licensable license and such tangible embodiments of the licensed rights (including physical and electronic copies) as may be necessary or appropriate to enable the licensee to use the rights.

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- TT. “Liquid Hydrogen Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of liquid hydrogen produced anywhere in the United States and Magog, Quebec, Canada, including researching, developing, producing, or selling liquid hydrogen.
- UU. “Lyondell” means LyondellBasell Industries N.V., a corporation organized, existing, and doing business under, and by virtue of, the laws of The Netherlands, with its office and principal place of business in the United States located at 1221 McKinney Street, Suite 300, Houston, Texas 77010.
- VV. “Matheson” means Matheson Tri-Gas, Inc., a corporation organized, existing, and doing business under, and by virtue of, the laws of Delaware, with its office and principal place of business located at 150 Allen Road, Suite 302, Basking Ridge, NJ 07920. Matheson is a wholly-owned subsidiary of Taiyo Nippon Sanso Corporation.
- WW. “Merger” means the merger of Linde and Praxair described in the Business Combination Agreement by and among Linde Aktiengesellschaft, Praxair, Inc., Zamalight PLC, Zamalight Holdco LLC, and Zamalight Subco, Inc., dated as of June 1, 2017.
- XX. “Merger Date” means the date the Merger closes.
- YY. “Messer” means MG Industries GmbH, a corporation organized, existing, and doing business under, and by virtue of, the laws of Germany, with its office and principal place of business located at Messer-Platz 1, 65812 Bad Soden/Taunus, Germany.
- ZZ. “Multi-Product Customer” means any customer who, at any time within 12 months before the Merger Date, (i) purchased products or services from Respondents included in the Gases Business and (ii) purchased products or services from Respondents in the United States not included in the Gases Business.
- AAA. “Multi-Location Customer” means any customer who, at any time within 12 months before the Merger Date, purchased products or services from Respondents from (i) any location of the Gases Business and (ii) any other location of Respondents in the United States.
- BBB. “Person” means any individual, partnership, corporation, business trust, limited liability company, limited liability partnership, joint stock company, trust, unincorporated association, joint venture or other entity or a governmental body.
- CCC. “Record” means information that is inscribed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form.

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- DDD. “RemainCo Products” means any raw materials, partially finished products, supplies, and any other products relating to any Gases Business that Respondents produce at or provide from a facility or a third-party source that is not included in the Gases Assets.
- EEE. “Specialty Gases” means electronic, specialty, calibration, and other packaged gases, including mixtures and Linde’s Spectra and HiQ products, except for the Laser Gases.
- FFF. “Specialty Gases Business” means all business activities conducted by Linde prior to the Merger Date relating to the sale of Specialty Gases produced anywhere in the United States, including researching, developing, producing, or selling specialty gases.
- GGG. “Standard Retained Assets” means:
1. corporate, business, or other names of Linde or Praxair or any logo, trademark, service mark, domain name, trade or other name or any derivation thereof;
 2. software that can readily be purchased or licensed from sources other than Respondents and that has not been materially modified (other than through user preference settings);
 3. enterprise software that Respondents used primarily to manage and account for businesses other than the Gases Businesses;
 4. the portion of any Record that contains information about any business other than the business divested to an Acquirer;
 5. any Record that Respondents have a legal, contractual, or fiduciary obligation to retain the original; *provided, however*, that Respondents shall provide copies of the Record and shall provide the Acquirer access to the original materials if copies are insufficient for regulatory or evidentiary purposes; and
 6. any assets if not needed by an Acquirer.
- HHH. “Tangible Personal Property” means all machinery, equipment, tools, furniture, office equipment, computer hardware, supplies, materials, vehicles, rolling stock, and other items of tangible personal property (other than inventories) of every kind owned or leased, together with any express or implied warranty by the manufacturers or sellers or lessors of any item or component part thereof and all maintenance records and other documents relating thereto.

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- III. “Transitional Assistance” means the assistance described in Paragraph II.D.1. of this Order.
- JJJ. “Transitional Services” means any (i) goods and services relating to the Gases Business that Linde provides from a property, facility, or third-party source that is not included in the Gases Assets and (ii) training and consultation reasonably necessary to operate the Gases Business, including operation of new facilities constructed by Linde.

II.**IT IS FURTHER ORDERED** that:

- A. No later than 120 days from the date that Linde signs the Consent Agreement, Respondents shall divest the:
1. Industrial Gases Assets and Helium Assets, as on-going businesses, absolutely and in good faith, at no minimum price to Messer or to any other Person that receives the prior approval of the Commission, *provided, however*, that if the Commission approves a Person other than Messer to acquire the Industrial Gases Assets and Helium Assets, then Respondents shall also divest some or all of the Additional Industrial Gases Assets and Additional Helium Assets to such Person;
 2. HyCO SMR Assets, as on-going businesses, absolutely and in good faith, at no minimum price to Matheson or to any other Person that receives the prior approval of the Commission, *provided, however*, that if the Commission approves a Person other than Matheson to acquire the HyCO SMR Assets, then Respondents shall also divest some or all of the Additional HyCO SMR Assets to such Person;
 3. HyCO Clear Lake Assets, as on-going businesses, absolutely and in good faith, at no minimum price to Celanese or to any other Person that receives the prior approval of the Commission; and
 4. HyCO La Porte Assets, as on-going businesses, absolutely and in good faith, at no minimum price to Lyondell or to any other Person that receives the prior approval of the Commission.
- B. With respect to Intellectual Property, Respondents:
1. If Messer acquires the Helium Assets, shall grant a License to Messer under any Intellectual Property not included in the Helium Assets (except for Intellectual Property of the kind identified in Paragraph I.GGG. of this Order) required to operate the Helium Business, as constituted after the divestiture of the Helium Assets, anywhere in the world in a manner

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consistent with the operation of the Helium Business prior to the Merger Date with the freedom to extend existing products and services and develop new products and services; and

2. May receive a License back from the Acquirer under any Intellectual Property included in the Gases Assets that also relates to any business conducted by Linde prior to the Merger that Respondents are not required to divest for use solely in those retained businesses.
- C. Notwithstanding any other provision of this Order, Respondents may retain all or a portion of any Contract with a Multi-Product Customer or Multi-Location Customer as agreed between Respondents and an Acquirer; *provided, however*, that customer Contracts included in any of the Gases Assets shall provide the Acquirer with a volume of business equal to the historical volume of each relevant business and location; *provided further* that the quality and terms of the divested customer Contracts collectively shall be substantially similar to those retained by Respondents.
- D. Respondents shall:
1. In connection with the divestiture of any of the Gases Assets and at the option of the Acquirer of such assets, provide assistance to the Acquirer as set forth below for up to the specified period of time after divestiture:

Type of Assistance	Period of Time
Provide Transitional Services	24 months
Supply RemainCo Products	36 months
Purchase DivestCo Products	36 months

The assistance required by this Paragraph II.D.1. shall be individually and collectively referred to as “Transitional Assistance.”

2. Provide Transitional Assistance on terms and conditions sufficient for Acquirer to conduct the relevant Gases Business, as constituted after the divestiture of the relevant assets, in a manner consistent with the operation of such business prior to the Merger Date, including the ability to develop new products, increase sales of current products, make reasonable modifications to the relevant Gases Business, and maintain the competitiveness of the relevant Gases Business; *provided, however*, that:
 - a. Acquirer may terminate any Transitional Assistance at any time upon commercially reasonable notice and without cost or penalty;

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- b. Upon Acquirer's request, Respondents shall file with the Commission a request to extend the time period of any Transitional Assistance needed to achieve the purposes of this Order; and
 - c. Respondents shall not seek to limit any damages (such as indirect, special, and consequential damages) which Acquirer would be entitled to receive in the event of Respondents' breach of any agreement relating to Transitional Assistance.
- 3. Not sell or provide Laser Gases produced at any facility owned or operated by Linde prior to the Merger Date to any Person in the United States, other than the Laser Gases Acquirer during the period of such sales to the Laser Gases Acquirer, up to 5 years.
- 4. No later than 30 days from the date Respondents divest the Laser Gases Assets, deposit funds as set forth in Non-Public Appendix E into a Commission administered escrow account ("Construction Fund"):
 - a. The Construction Fund shall include earnings, but exclude costs of administration which shall be paid from the Construction Fund.
 - b. The Monitor will oversee payments from the Construction Fund, which shall be used to reimburse the Laser Gases Acquirer for the costs (up to \$12 million) associated with the design and construction or renovation of a facility to manufacture and blend Laser Gases ("Laser Gases Plant") in the United States, and to provide milestone payments to the Laser Gases Acquirer for the certification and operation of the Laser Gases Plant as set forth in Non-Public Appendix E.
 - c. If the Laser Gases Acquirer does not begin actual physical construction or renovation of a Laser Gases Plant within 12 months after the Laser Gases Assets are divested:
 - i. Respondents shall rescind the divestiture of the Laser Gases Assets within 5 days of the failure to meet the 12 month deadline and continue to operate the Laser Gases Business; and
 - ii. The Commission shall appoint a Divestiture Trustee to divest the Laser Gases Assets (including any rights in the Laser Gases Plant and rights to the escrow account) pursuant to Paragraph VII. of this Order.

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- d. The Commission may on its own initiative or at the request of the Monitor issue such additional orders or directions as may be necessary or appropriate to assure compliance with this Paragraph.
5. Provide EP&C Assistance pursuant to Paragraph II.D.2. of this Order to complete the construction of industrial gas plants located in Keyes, California; Claymont, Delaware; and Adel, Georgia; and (ii) at the option of an Acquirer, to design, deliver, and construct industrial gas plants in Indianapolis, Indiana; Enid, Oklahoma; and in connection with the Laser Gases Business; *provided, however*, that notwithstanding Paragraph II.D.2.(c) of this Order, Respondents may enter into arrangements with the Engineering Division of Linde on customary commercial terms.
- E. Respondents shall obtain all Governmental Authorizations and Consents from any Person that are necessary to transfer any of the Gases Assets no later than the date that such assets are divested; *provided, however*, that in the event Respondents are unable to obtain any:
 1. Governmental Authorization, Respondents shall provide such assistance as an Acquirer may reasonably request in Acquirer's efforts to obtain a comparable authorization; and
 2. Consent from a third party, Respondents shall, with the acceptance of the Acquirer and the prior approval of the Commission, substitute equivalent assets or arrangements.
- F. For a period of 2 years after divestiture of any of the Gases Assets, Respondents shall not solicit or induce any:
 1. Multi-Product Customer, Multi-Location Customer, or any customer of the Laser Gases Business to discontinue or reduce such customer's purchases from an Acquirer; *provided, however*, that Respondents may (i) advertise in newspapers, trade publications, or other media in a manner not targeted specifically at customers of an Acquirer or (ii) sell products to a Multi-Product Customer or Multi-Location Customer that initiates communications with Respondents to purchase products, so long as such customers were not solicited by Respondents in violation of this paragraph; or
 2. Active Employee who has accepted an offer of employment with an Acquirer to terminate such employment; *provided, however*, that Respondents may (i) advertise for employees in newspapers, trade publications, or other media not targeted specifically at the employees or (ii) hire employees if employment has been terminated by an Acquirer or who apply for employment with Respondents, so long as such employees were not solicited by Respondents in violation of this Paragraph.

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- G. The purpose of the divestiture of the Gases Assets is to ensure the continued use of the assets in the same businesses in which such assets were engaged at the time of the announcement of the Merger by Respondents and to remedy the lessening of competition resulting from the Merger as alleged in the Commission's Complaint.

III.**IT IS FURTHER ORDERED** that:

- A. Respondents shall set forth and submit to the Commission for prior approval the manner in which they will comply with Paragraph II. of this Order in one or more agreements with one or more Acquirers. Upon approval, such agreements shall individually and collectively be referred to as "Divestiture Agreement."
- B. Respondents shall comply with all terms of any Divestiture Agreement, which shall be incorporated by reference into this Order and made a part hereof; *provided, however*, that a Divestiture Agreement shall not limit, or be construed to limit, the terms of this Order and to the extent any provision in the Divestiture Agreement varies from or conflicts with any provision in the Order such that Respondents cannot fully comply with both, Respondents shall comply with the Order.
- C. Respondents shall not modify, replace, or extend the terms of a Divestiture Agreement without the prior approval of the Commission, except as otherwise provided in Commission Rule 2.41(f)(5), 16 C.F.R. § 2.41(f)(5).

IV.**IT IS FURTHER ORDERED** that:

- A. Respondents shall cooperate and assist with an Acquirer's due diligence investigation of any of the Gases Assets and Gases Business, including providing access to any and all personnel, properties, contracts, authorizations, documents, and information customarily provided as part of a due diligence process.
- B. From the time Respondents engage in negotiations with any Acquirer until 6 months after the divestiture of any of the Gases Assets to that Acquirer, Respondents shall cooperate and assist the Acquirer to identify and hire any Active Employee whose responsibilities relate in any way to the Gases Assets to be divested to the Acquirer:
1. No later than 10 days after the request of an Acquirer, Respondents shall provide all information of any relevant Active Employee, including providing access to personnel Records (to the extent permissible under

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applicable laws) and allowing Acquirer to privately interview such Active Employee;

2. Respondents shall (i) not solicit the continued employment of any Active Employee (unless Acquirer has informed Respondents that a particular Active Employee will not receive an employment offer from Acquirer) and (ii) not otherwise interfere, directly or indirectly, with the recruitment, hiring, or employment of any Active Employee by an Acquirer;
3. Respondents shall provide reasonable financial incentives as necessary to any Active Employee to accept an offer of employment from an Acquirer, which may include providing a retention bonus for continuing employment in connection with any Gases Assets to be divested; and
4. All Active Employees hired by an Acquirer who are participants in Respondents' retirement and savings plans (i) shall retain their accrued benefits under such plans as of the date the Gases Assets are divested and Respondents shall be liable for payment of the benefits when employees become eligible for them and (ii) shall become fully vested in their accrued benefits as of the date the Gases Assets are divested.

V.**IT IS FURTHER ORDERED** that:

- A. Respondents shall (i) not disclose (including as to Respondents' employees) and (ii) not use for any reason or purpose, any Confidential Information received or maintained by Respondents relating to the Gases Assets, Gases Business, and the post-divestiture Gases Business; *provided, however*, that Respondents may disclose or use such Confidential Information in the course of:
 1. Performing their obligations or as permitted under this Order, the Order to Hold Separate and Maintain Assets, or any Divestiture Agreement; or
 2. Complying with financial, regulatory, or other reporting or legal obligations, obtaining legal advice, prosecuting or defending legal claims, investigations, or enforcing actions threatened or brought against the Gases Assets or Gases Business or as required by law.
- B. If disclosure or use of any Confidential Information is permitted to Respondents' employees or to any other Person under Paragraph V.A. of this Order, Respondents shall limit such disclosure or use (i) only to the extent such information is required, (ii) only to those employees or Persons who require such information for the purposes permitted under Paragraph V.A., and (iii) only after

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such employees or Persons have signed an agreement to maintain the confidentiality of such information.

- C. Respondents shall enforce the terms of this Paragraph V. as to its employees or any other Person, and take such action as is necessary to cause each of their employees and any other Person to comply with the terms of this Paragraph V., including implementation of access and data controls, training of its employees, and all other actions that Respondents would take to protect their own trade secrets and proprietary information.

VI.**IT IS FURTHER ORDERED** that:

- A. Grant Thornton LLP (“Monitor”) shall serve to observe and report on Respondent’s compliance with all of its obligations as required by this Order and any Divestiture Agreement.
- B. Respondents shall enter into an agreement with the Monitor, subject to the prior approval of the Commission, that (i) shall become effective no later than one (1) day after the date the Commission appoints the Monitor, and (ii) confers upon the Monitor all rights, powers, and authority necessary to permit the Monitor to perform his duties and responsibilities on the terms set forth in this Order and in consultation with the Commission:
1. The Monitor shall (i) monitor Respondents’ compliance with the obligations set forth in this Order and (ii) act in consultation with the Commission or its staff, and shall serve as an independent third party and not as an employee or agent of the Respondents or of the Commission;
 2. Respondents shall (i) ensure that the Monitor has full and complete access to all Respondents’ personnel, books, records, documents, and facilities relating to compliance with this Order or to any other relevant information as the Monitor may reasonably request, and (ii) cooperate with, and take no action to interfere with or impede the ability of, the Monitor to perform his duties pursuant to this Order;
 3. The Monitor (i) shall serve at the expense of Respondents, without bond or other security, on such reasonable and customary terms and conditions as the Commission may set, and (ii) may employ, at the cost and expense of Respondents, such consultants, accountants, attorneys, and other representatives and assistants as are reasonably necessary to carry out the Monitor’s duties and responsibilities;
 4. Respondent shall indemnify the Monitor and hold him harmless against any losses, claims, damages, liabilities, or expenses arising out of, or in

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connection with, the performance of his duties, including all reasonable fees of counsel and other expenses incurred in connection with the preparation for, or defense of, any claim, whether or not resulting in any liability, except to the extent that such losses, claims, damages, liabilities, or expenses result from the Monitor's gross negligence or willful misconduct; and

5. Respondents may require the Monitor and each of the Monitor's consultants, accountants, attorneys, and other representatives and assistants to sign a customary confidentiality agreement; *provided, however*, that such agreement shall not restrict the Monitor from providing any information to the Commission.

C. The Monitor shall report in writing to the Commission:

1. every 30 days from the date the Monitor is appointed until Respondents have fully complied with the provisions of Paragraphs II.A.-B. of this Order;
2. every 90 days from the date Respondents have complied with Paragraphs II.A.-B. of this Order until Respondents have fully complied with the provisions of Paragraph II.D of this Order;
3. no later than 10 days after Respondents have completed their obligations required by Paragraph II.D of this Order ("Final Report"); and
4. at any other time as requested by the staff of the Commission, concerning Respondents' compliance with this Order.

D. The Commission may require the Monitor and each of the Monitor's consultants, accountants, attorneys, and other representatives and assistants to sign a confidentiality agreement related to Commission materials and information received in connection with the performance of the Monitor's duties.

E. The Monitor's power and duties shall terminate 10 business days after the Monitor has completed his Final Report, or at such other time as directed by the Commission.

F. If at any time the Commission determines that the Monitor has ceased to act or failed to act diligently, or is unwilling or unable to continue to serve, the Commission may appoint a substitute Monitor, subject to the consent of Respondents, which consent shall not be unreasonably withheld:

1. If Respondents have not opposed, in writing, including the reasons for opposing, the selection of the substitute Monitor within five (5) days after notice by the staff of the Commission to Respondents of the identity of

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any substitute Monitor, then Respondents shall be deemed to have consented to the selection of the proposed substitute Monitor; and

2. Respondents shall, no later than five (5) days after the Commission appoints a substitute Monitor, enter into an agreement with the substitute Monitor that, subject to the approval of the Commission, confers on the substitute Monitor all the rights, powers, and authority necessary to permit the substitute Monitor to perform his or her duties and responsibilities pursuant to this Order on the same terms and conditions as provided in this Paragraph VI.
- G. The Commission may on its own initiative or at the request of the Monitor issue such additional orders or directions as may be necessary or appropriate to assure compliance with the requirements of this Order.

VII.**IT IS FURTHER ORDERED** that:

- A. If Respondents have not fully complied with the divestiture and other obligations as required by Paragraph II. of this Order or the Respondents have rescinded the divestiture of the Laser Gases Assets pursuant to Paragraph II.D.4. of this Order, the Commission may appoint a Divestiture Trustee to divest the Gases Assets (including the Laser Gases Assets, if applicable) and perform Respondents' other obligations in a manner that satisfies the requirements of this Order. The Divestiture Trustee appointed pursuant to this Paragraph may be the same Person appointed as Monitor.
- B. In the event that the Commission or the Attorney General brings an action pursuant to § 5(l) of the Federal Trade Commission Act, 15 U.S.C. § 45(l), or any other statute enforced by the Commission, Respondents shall consent to the appointment of a Divestiture Trustee in such action to divest the relevant assets in accordance with the terms of this Order. Neither the appointment of a Divestiture Trustee nor a decision not to appoint a Divestiture Trustee under this Paragraph shall preclude the Commission or the Attorney General from seeking civil penalties or any other relief available to it, including a court-appointed Divestiture Trustee, pursuant to § 5(l) of the Federal Trade Commission Act, or any other statute enforced by the Commission, for any failure by the Respondents to comply with this Order.
- C. The Commission shall select the Divestiture Trustee, subject to the consent of Respondents, which consent shall not be unreasonably withheld. The Divestiture Trustee shall be a person with experience and expertise in acquisitions and divestitures. If Respondents have not opposed, in writing, including the reasons for opposing, the selection of any proposed Divestiture Trustee within 10 days after notice by the staff of the Commission to Respondent of the identity of any

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proposed Divestiture Trustee, Respondents shall be deemed to have consented to the selection of the proposed Divestiture Trustee.

- D. Within 10 days after appointment of a Divestiture Trustee, Respondents shall execute a trust agreement that, subject to the prior approval of the Commission, transfers to the Divestiture Trustee all rights and powers necessary to permit the Divestiture Trustee to effect the relevant divestiture or other action required by the Order.
- E. If a Divestiture Trustee is appointed by the Commission or a court pursuant to this Order, Respondents shall consent to the following terms and conditions regarding the Divestiture Trustee's powers, duties, authority, and responsibilities:
 - 1. Subject to the prior approval of the Commission, the Divestiture Trustee shall have the exclusive power and authority to assign, grant, license, divest, transfer, deliver, or otherwise convey the relevant assets that are required by this Order to be assigned, granted, licensed, divested, transferred, delivered, or otherwise conveyed, and to take such other action as may be required to divest the Gases Assets and perform Respondents' other obligations in a manner that satisfies the requirements of this Order;
 - 2. The Divestiture Trustee shall have 12 months from the date the Commission approves the trust agreement described herein to accomplish the divestiture, which shall be subject to the prior approval of the Commission. If, however, at the end of the 12 month period, the Divestiture Trustee has submitted a plan of divestiture or believes that the divestiture can be achieved within a reasonable time, the divestiture period may be extended by the Commission, or in the case of a court-appointed Divestiture Trustee, by the court;
 - 3. Subject to any demonstrated legally recognized privilege, the Divestiture Trustee shall have full and complete access to the personnel, books, records, and facilities related to the relevant assets that are required to be assigned, granted, licensed, divested, delivered, or otherwise conveyed by this Order and to any other relevant information, as the Divestiture Trustee may request. Respondents shall develop such financial or other information as the Divestiture Trustee may request and shall cooperate with the Divestiture Trustee. Respondents shall take no action to interfere with or impede the Divestiture Trustee's accomplishment of the divestiture. Any delays in divestiture caused by Respondents shall extend the time for divestiture under this Paragraph VIII. in an amount equal to the delay, as determined by the Commission or, for a court-appointed Divestiture Trustee, by the court;

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4. The Divestiture Trustee shall use commercially reasonable best efforts to negotiate the most favorable price and terms available in each contract that is submitted to the Commission, subject to Respondents' absolute and unconditional obligation to divest expeditiously and at no minimum price. The divestiture shall be made in the manner and to an Acquirer as required by this Order; *provided, however*, if the Divestiture Trustee receives bona fide offers from more than one acquiring entity, and if the Commission determines to approve more than one such acquiring entity, the Divestiture Trustee shall divest to the acquiring entity selected by Respondent from among those approved by the Commission; *provided further, however*, that Respondents shall select such entity within 5 days of receiving notification of the Commission's approval;
5. The Divestiture Trustee shall serve, without bond or other security, at the cost and expense of Respondents, on such reasonable and customary terms and conditions as the Commission or a court may set. The Divestiture Trustee shall have the authority to employ, at the cost and expense of Respondents, such consultants, accountants, attorneys, investment bankers, business brokers, appraisers, and other representatives and assistants as are necessary to carry out the Divestiture Trustee's duties and responsibilities. The Divestiture Trustee shall account for all monies derived from the divestiture and all expenses incurred. After approval by the Commission and, in the case of a court-appointed Divestiture Trustee, by the court, of the account of the Divestiture Trustee, including fees for the Divestiture Trustee's services, all remaining monies shall be paid at the direction of the Respondent, and the Divestiture Trustee's power shall be terminated. The compensation of the Divestiture Trustee shall be based at least in significant part on a commission arrangement contingent on the divestiture of all of the relevant assets that are required to be divested by this Order;
6. Respondents shall indemnify the Divestiture Trustee and hold the Divestiture Trustee harmless against any losses, claims, damages, liabilities, or expenses arising out of, or in connection with, the performance of the Divestiture Trustee's duties, including all reasonable fees of counsel and other expenses incurred in connection with the preparation for, or defense of, any claim, whether or not resulting in any liability, except to the extent that such losses, claims, damages, liabilities, or expenses result from gross negligence or willful misconduct by the Divestiture Trustee. For purposes of this Paragraph VII.E.6., the term "Divestiture Trustee" shall include all Persons retained by the Divestiture Trustee pursuant to Paragraph VII.E.5. of this Order;
7. The Divestiture Trustee shall have no obligation or authority to operate or maintain the relevant assets required to be divested by this Order;

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8. The Divestiture Trustee shall report in writing to Respondents and to the Commission every 60 days concerning the Divestiture Trustee's efforts to accomplish the divestiture; and
 9. Respondents may require the Divestiture Trustee and each of the Divestiture Trustee's consultants, accountants, attorneys, and other representatives and assistants to sign a customary confidentiality agreement; *provided, however*, such agreement shall not restrict the Divestiture Trustee from providing any information to the Commission.
- F. The Commission may require the Divestiture Trustee and each of the Divestiture Trustee's consultants, accountants, attorneys, and other representatives and assistants to sign a confidentiality agreement related to Commission materials and information received in connection with the performance of the Divestiture Trustee's duties.
- G. If the Commission determines that a Divestiture Trustee has ceased to act or failed to act diligently, the Commission may appoint a substitute Divestiture Trustee in the same manner as provided in this Paragraph VII.
- H. The Commission or, in the case of a court-appointed Divestiture Trustee, the court, may on its own initiative or at the request of the Divestiture Trustee issue such additional orders or directions as may be necessary or appropriate to accomplish the divestitures and other obligations or action required by this Order.

VIII.**IT IS FURTHER ORDERED** that:

- A. Respondents shall:
1. No later than 5 days after the Merger Date, notify the Commission via email at bccompliance@ftc.gov of the Merger Date; and
 2. No later than 10 days after the divestiture of any of the Gases Assets has been completed, (a) notify the Commission of the date such divestiture closed and (b) submit the complete Divestiture Agreement to the Commission at ElectronicFilings@ftc.gov and bccompliance@ftc.gov.
- B. Respondents shall submit verified written reports ("Compliance Reports") in accordance with the following:
1. Respondents shall submit:
 - a. Interim Compliance Reports 30 days after this Order is issued, every 30 days thereafter until Respondents have fully complied

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with the provisions of Paragraphs II.A.-B. of this Order, and every 90 days thereafter until Respondents have fully complied with the provisions of Paragraph II.D of this Order;

- b. Annual Compliance Reports one year after the date this Order is issued and annually thereafter for the next nine years on the anniversary of that date; and
 - c. Additional Compliance Reports as the Commission or its staff may request;
 - 2. Each Compliance Report shall contain sufficient information and documentation to enable the Commission to determine independently whether Respondents are in compliance with the Order (conclusory statements that Respondents have complied with their obligations under the Order are insufficient);
 - 3. Respondents shall include in their Compliance Reports a full description of the measures Respondents have implemented or plan to implement to ensure that they have complied or will comply with each paragraph of the Order, and a description of all substantive contacts or negotiations for the divestitures and the identities of all parties contacted; and
 - 4. Respondents shall retain copies of all material written communications to and from such parties, as well as all non-privileged internal memoranda, reports, and recommendations concerning completing their obligations under this Order for a period of 3 years, and shall provide copies of those records to Commission staff upon request.
- C. Respondents shall verify each Compliance Report in the manner set forth in 28 U.S.C. § 1746 by the Chief Executive Officer or other officer or employee specifically authorized to perform this function. Respondents shall submit an original and 2 copies of each Compliance Report as required by Commission Rule 2.41(a), 16 C.F.R. § 2.41(a), including a paper original submitted to the Secretary of the Commission and electronic copies to the Secretary at ElectronicFilings@ftc.gov and to the Compliance Division at bccompliance@ftc.gov. In addition, Respondents shall provide a copy of each Compliance Report to the Monitor if the Commission has appointed one in this matter.

IX.

IT IS FURTHER ORDERED that Respondent Linde PLC shall notify the Commission at least 30 days prior to:

- A. Any proposed dissolution of Linde PLC;

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- B. Any proposed acquisition of, or merger or consolidation of Linde PLC; or
- C. Any other change in Respondents, including assignment and the creation, sale, or dissolution of subsidiaries, if such change might affect compliance obligations arising out of this Order.

X.

IT IS FURTHER ORDERED that, for purposes of determining or securing compliance with this Order, and subject to any legally recognized privilege, upon written request and 5 days' notice to the relevant Respondent, made to its principal place of business as identified in this Order, registered office of its United States subsidiary, or its headquarters office, the notified Respondent shall, without restraint or interference, permit any duly authorized representative of the Commission:

- A. Access, during business office hours of the Respondent and in the presence of counsel, to all facilities and access to inspect and copy all business and other records and all documentary material and electronically stored information as defined in Commission Rules 2.7(a)(1) and (2), 16 C.F.R. § 2.7(a)(1) and (2), in the possession or under the control of the Respondent related to compliance with this Order, which copying services shall be provided by the Respondent at the request of the authorized representative of the Commission and at the expense of the Respondent; and
- B. To interview officers, directors, or employees of the Respondent, who may have counsel present, regarding such matters.

XI.

IT IS FURTHER ORDERED that this Order shall terminate on February 26, 2029.

By the Commission.

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Appendix A

The Industrial Gases Retained Assets shall include the type of assets identified below at the specified locations for the following businesses.

Business	Type of Assets	Locations
Atmospheric Gases Business	On-site air separation facilities	Crawfordsville, IN Baton Rouge, LA Fostoria, OH (closed) Warren, OH (closed) Butler, PA Jewett, TX
	On-site ECOVAR facilities	All
	Packaged gases products facilities	Hammond, IN Twinsburg, OH Union City, GA Blythewood, SC
	All assets owned by Linde Engineering	All
	All assets owned by Lincare Holdings, Inc. and the LifeGas business assets	All
	Office building and leased space	Murray Hill, NJ Shreveport, LA (sales) Bridgewater, NJ (leased) Stewartsville, NJ (leased) Butler, PA warehouse (leased)

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Business	Type of Assets	Locations
CO ₂ Business	CO ₂ facilities	El Segundo, CA Muscatine, IA Sandhill, MS Enid, OK (closing) Denver City, TX (closed) Fort Worth, TX McCamey, TX (closed) Green River, WY
	Transfer contracts (FPU)	Sauget, IL Clearfield, PA Oshkosh, WI Cheyenne, WY
Laser Gases Business	Real property and Tangible Personal Property (intangible assets, inventories, and records of the Laser Gases Business shall not be included in the Industrial Gases Retained Assets)	Phoenix, AZ San Marcos, CA Acton, MA Research Triangle, NC Alpha, NJ Pohatcong, NJ Hobbs, NM (closed) Medford, OR Freeport, TX (joint venture) Terrell, TX Vancouver, WA

Non-Public Appendix B

[Redacted From the Public Record Version, But Incorporated By Reference]

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Non-Public Appendix C**[Redacted From the Public Record Version, But Incorporated By Reference]****Appendix D**

The HyCO SMR Assets shall not include the type of assets identified below at the specified locations for the HyCO SMR Business.

Business	Type of Assets	Locations
HyCO SMR Business	On-site SMR facilities (including equipment required for crude CO ₂ production in Decatur, AL, the liquid hydrogen storage assets related to Charleston, TN, and the Charleston, TN SMR spare parts located in the Butler, PA warehouse)	Decatur, AL Delaware City, DE Crawfordsville, IN Toledo, OH Charleston, TN Salt Lake City, UT Morris, IL

Non-Public Appendix E**[Redacted From the Public Record Version, But Incorporated By Reference]**

Concurring Statement

STATEMENT OF COMMISSIONER ROHIT CHOPRA

Today, the FTC is proposing to impose conditions on a merger between Praxair, Inc. (NYSE: PX) and Linde AG (FWB: LIN), the world's second- and third-largest industrial gas suppliers. While these firms may not be household names, they provide inputs to an enormous number of industrial and consumer products throughout our economy. The merger would be clearly anticompetitive in violation of the Clayton Act, with a high likelihood of harming manufacturers of a wide range of industrial and consumer products.

The Commission is proposing to order substantial divestitures across multiple lines of businesses. Notably, Linde is divesting the vast majority of its U.S. industrial gas business to a joint venture between Messer Group GmbH and CVC Capital Partners, a private equity firm. Separately, Linde will also divest other assets to Matheson Tri-Gas, Inc. While the divestitures go a long way to address the anticompetitive concerns, the decision to approve this remedy was still a close call.

The transaction, as originally structured, does not appear to have any significant merger-specific efficiencies that would guarantee benefits to customers. However, the proposed order requires substantial divestitures that might preserve or even increase competition in some product markets. But even with the proposed remedies, this transaction is not without risks to competition. In particular, I would have preferred to include additional protections for the public to safeguard against risks often posed by the private equity buyer interest in the divested assets, as well as the level of debt financing and investment horizons involved.

Divestiture Buyer Financing

Competition enforcers, including the FTC, should always examine whether its merger remedies have been successful over the long term. The FTC's 2017 Merger Remedies study highlighted some of the lessons learned from past merger remedies.¹

When evaluating the suitability of a divestiture buyer, agencies must determine whether the buyer can meaningfully replace competitive market forces eliminated by a merger. For example, agencies need to be confident that the buyer possesses the know-how and technical capabilities to successfully operate the divested businesses. Among other things, the 2017 study found that the success of a divestiture over time depends, in part, on whether the buyer has adequate financing to ensure success. Given recent trends in our capital markets, we need to carefully scrutinize buyer financing.

In situations like the matter before us, I approached this line of inquiry with several questions in mind:

¹ See The FTC's Merger Remedies 2006-2012, A Report of the Bureaus of Competition and Economics, Federal Trade Commission, January 2017, available at: <https://www.ftc.gov/reports/ftcs-merger-remedies-2006-2012-report-bureaus-competition-economics>

Concurring Statement

(1) Does the deal's financing structure allow the buyer to make significant investments to maintain and grow their business in order to vigorously compete? Does the buyer have adequate liquidity to be a nimble and opportunistic competitor?

(2) What is the buyer's level of debt financing, compared to others in the industry? Have creditors protected themselves in ways that are aligned – or misaligned – with the goal of preserving competition?

(3) Does the buyer's financing and governance structure create temptations to make asset sales that would reduce competition?

As noted above, in this matter one of the divestiture buyers, MG Industries, is a new joint venture between Messer Group GmbH, a major industrial gas company, and CVC Capital Partners, a private equity firm.

In this situation, I would have preferred terms in the proposed order that would have required prior notice to or approval by the Commission of any asset sales by MG Industries. There is past Commission precedent for doing so. In situations where there was a risk that the divestiture buyer may subsequently sell assets it acquired pursuant to a divestiture order, the Commission has sometimes ordered the divestiture buyer to agree to a prior approval provision covering any sale of the assets acquired for a defined period of time.

For example, in the Koninklijke Ahold and Delhaize Group matter, due to concern that one of the divestiture buyers (Supervalu) might later transact acquired stores, the Commission required Supervalu to seek prior approval for any such transfer of the divested stores for a period of three years.²

In the Nestle Holdings, Inc. and Ralston Purina Co. matter, the Commission required the divestiture buyer (a private equity fund) to seek approval by the Commission prior to the sale of certain assets held less than five years.³ The buyer would later seek permission from the Commission to sell assets, reducing the likelihood of needing to litigate an anticompetitive transaction.

Special Considerations with Financial Buyers

Private equity funds continue to play a greater role in deal activity across the globe. Notably, private equity participation is associated with higher levels of debt financing, which can amplify both risk and returns on equity. At the most basic level, heavy debt burdens can increase the likelihood of insolvency. Private equity participation is also associated with other firm behavior that can reduce long-term competition, including opportunistic asset sales. This risk may be more acute when funds purchase assets in unusual and distressed situations.

² In the Matter of Koninklijke Ahold and Delhaize Group, C-4588 (Consent) (July 22, 2016), available at: <https://www.ftc.gov/enforcement/cases-proceedings/151-0175/koninklijke-ahold-delhaize-group>.

³ In the Matter of Nestle Holdings, Inc., and Ralston Purina Company, C-4028 (Consent) (December 11, 2001), available at: <https://www.ftc.gov/enforcement/cases-proceedings/0110083/nestle-holdings-inc-ralston-purina-company>.

Analysis to Aid Public Comment

Enforcers must carefully examine investors' unique incentives that can drive firm behavior in ways that affect competition. To assess these incentives, we must always actively probe the entire circumstances of investor involvement in a merger transaction under review. For example, what is the buyer's investment thesis and strategy? How has the investor typically realized gains out of past investments? Does the buyer plan to invest more of its own equity capital into the business or simply further rely on debt financing? When and how does the investor intend to exit its investment? Given all of this, what really is the long-term impact on competition?

While Commission staff certainly ask many of these questions in their review of divestiture buyers, it will be important to ensure that we are conducting careful and adequate due diligence with respect to buyers that are heavily reliant on debt financing and where investment firms exert significant control.

ANALYSIS OF CONSENT ORDERS TO AID PUBLIC COMMENT**I. INTRODUCTION**

The Federal Trade Commission ("Commission") has accepted, subject to final approval, an Agreement Containing Consent Orders ("Consent Agreement") designed to remedy the anticompetitive effects resulting from the proposed merger of Praxair, Inc. ("Praxair") and Linde AG ("Linde").

Pursuant to the Consent Agreement, Linde will divest the vast majority of Linde's U.S. industrial gas business, and some worldwide assets to MG Industries GmbH ("Messer").¹ The divestiture will include air separation units ("ASUs"); carbon dioxide facilities; all of Linde's U.S. bulk refined helium business, as well as global helium sourcing contracts; all of Linde's bulk liquid hydrogen business, as well as equipment, contracts, and related assets. Linde also will divest assets related to its excimer laser gas business to Messer.

Separately, Linde will divest five facilities that produce hydrogen and carbon monoxide ("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

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

Analysis to Aid Public Comment

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 divestiture of these facilities and related assets will preserve the competition between Praxair and Linde that the proposed merger would otherwise eliminate.

The proposed Consent Agreement will be on the public record for thirty days, so that interested persons may submit comments. Comments that the Commission receives during this period will become part of the public record. After thirty days, the Commission will again review the proposed Consent Agreement and the comments received, and will decide whether it should withdraw from the proposed Consent Agreement, modify it, or make final the accompanying Decision and Order.

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; on-site hydrogen; and on-site 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

² Linde’s carbon dioxide facilities include production plants, finished product pickup agreements, and depots.

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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 LIQUID NITROGEN, AND BULK LIQUID 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, health care, 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.

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 ASUs located at their facilities, or via pipelines connecting ASUs to customer sites. Bulk customers require gas volumes that are substantial, but not large enough to justify on-site or pipeline gas delivery. For bulk customers, suppliers typically transport bulk liquid oxygen, bulk liquid nitrogen, or bulk liquid argon in cryogenic trailers that hold the gas in liquid form. The liquid form is more condensed than the gaseous form, and therefore easier to transport and store in large quantities. Bulk liquid gases are then stored in tanks located at customer sites. From there, customers can use the product in its liquid form, or convert it back to its gaseous form before use. Small-volume customers purchase nitrogen, oxygen, or argon in cylinders containing the product in gaseous form. Typically, smaller customers receive gas cylinders from distributors that purchase products from industrial gas suppliers in bulk liquid form. It is impractical for bulk liquid oxygen, bulk liquid nitrogen, or bulk liquid argon customers to switch distribution methods, as their demand is too great to satisfy efficiently with cylinders, but too small to justify the expense of on-site or pipeline delivery.

For atmospheric gases, the ratio of the product’s value to its transportation costs largely determines the relevant geographic market. Due to the relatively low sales prices of bulk liquid oxygen and bulk liquid nitrogen and the significant freight costs associated with transporting them, these gases can ship, economically, a maximum distance of approximately 100 to 250 miles from the ASU that produces the gas. Therefore, it is appropriate to analyze the competitive effects of the proposed merger in regional geographic markets for bulk liquid oxygen and bulk liquid nitrogen. The relevant geographic markets in which to analyze the effects of the proposed merger upon bulk liquid oxygen and bulk liquid nitrogen are the following regions: (1) the Northeast; (2) the Mid-Atlantic; (3) Upstate and Western New York; (4) the Carolinas; (5) Northern Florida and Surrounding Areas; (6) Atlanta and Surrounding Areas; (7) the Pacific Northwest; (8) Northern California; (9) Southern California; (10) Arkansas and Surrounding Areas; (11) Northern Texas and Surrounding Areas; (12) Southern Texas; (13) the Central Gulf

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.

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Coast; (14) the Eastern Midwest; (15) Greater Chicago; (16) Missouri and Surrounding Areas; and (17) Puerto Rico. Because bulk liquid argon is rarer and more expensive than bulk liquid oxygen and bulk liquid nitrogen, suppliers can transport it economically much greater distances. Therefore, the relevant geographic area in which to analyze the effects of the proposed merger on the bulk liquid argon market is the United States.

Each of the relevant markets for bulk liquid oxygen and bulk liquid nitrogen would become significantly more concentrated following the proposed merger. The proposed merger would consolidate two of the leading suppliers of bulk liquid oxygen and bulk liquid nitrogen in each of these areas. For bulk liquid argon, there are five significant suppliers in the United States. Praxair is the second-largest domestic producer of bulk liquid argon. The proposed merger would eliminate one of the largest suppliers and substantially increase concentration in the U.S. bulk liquid argon market, creating a highly concentrated market.

V. THE RELEVANT MARKETS FOR BULK LIQUID CARBON DIOXIDE

Carbon dioxide is a “process gas,” which means that it is captured as a by-product 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.

Suppliers deliver liquid carbon dioxide to customers in bulk trailers or rail cars. Most customers store liquid carbon dioxide in tanks located at their manufacturing facilities. Customers would not switch to cylinder delivery because bulk delivery is far cheaper, and they would have to manage significantly more deliveries to meet their needs. In addition, customers would not consider self-sourcing liquid carbon dioxide unless the cost increased significantly more than ten percent, because of the costs to build necessary infrastructure and the limited sources of carbon dioxide available.

Due to the significant freight costs associated with transporting liquid carbon dioxide relative to its sales price, suppliers can only ship liquid carbon dioxide economically up to 250 miles by truck. In areas with few or no carbon dioxide sources, liquid carbon dioxide is shipped as much as 750 miles by rail. Therefore, it is appropriate to analyze the competitive effects of the proposed merger in regional geographic markets for bulk liquid carbon dioxide. For bulk liquid carbon dioxide, the relevant geographic markets in which to analyze the effects of the proposed merger include the following regions: (1) Northern California; (2) Southern California; (3) the Southeast; (4) the Mid-Atlantic; (5) the Rocky Mountains; (6) the Plains; (7) Southern Texas; (8) the Eastern Midwest; and (9) Greater Chicago.

The proposed merger would combine the largest and third-largest suppliers of bulk liquid carbon dioxide in the United States. In each relevant geographic market for bulk liquid carbon dioxide, the merged firm would control a high share of capacity. Further, Linde and Praxair are

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the two closest suppliers for numerous customers across multiple relevant geographic markets, and the merger would eliminate a close constraint on pricing of bulk liquid carbon dioxide.

VI. THE RELEVANT MARKET FOR BULK REFINED HELIUM

Both Linde and Praxair are suppliers of bulk refined helium. Bulk refined helium has specific properties that make it uniquely suited for its applications. For example, because helium has the lowest boiling point of any element, liquid helium is valuable as a cooling agent in superconductivity for medical applications, such as magnetic resonance imaging (“MRI”), and certain manufacturing applications. For most applications, there is no substitute for bulk refined helium, and customers are unlikely to switch to another gas or product, even if the price of bulk refined helium increased by five to ten percent.

Suppliers distribute refined helium to customers in cylinder form or bulk form, depending on the customers’ volume requirements. Customers that require large volumes of refined helium generally purchase the gas in bulk form. Suppliers often package bulk refined helium in containers called “dewars,” and then distribute the product in liquid form to customers. For customers that require helium in its gaseous state, suppliers can convert bulk refined helium from liquid to gaseous form. Suppliers distribute bulk quantities of gaseous helium in high-pressure “tube trailers.” Customers obtain helium in bulk form because it is the most cost-effective way to purchase the high volume of refined helium that they require. Accordingly, customers would not switch distribution methods for their purchases of refined helium, even if the prices of bulk refined helium distributed by one method increased by five to ten percent.

Helium is a rare and expensive gas that can be, and is, transported economically on a worldwide basis. Capacity and demand for helium produced abroad influences the capacity and demand for helium produced domestically. Suppliers source helium primarily from a few large sources, and ship helium from those sources to customers around the world. Therefore, it is appropriate to analyze the competitive effects of the proposed merger using a worldwide market for bulk refined helium.

The market for bulk refined helium is highly concentrated. Linde and Praxair are two of only five companies in the world with access to significant quantities of bulk refined helium. The proposed transaction combines the largest and third-largest bulk refined helium suppliers in the world. Post-merger, the combined entity would control two-fifths of the global helium supply.

VII. THE RELEVANT MARKET FOR BULK LIQUID HYDROGEN

Hydrogen is a non-atmospheric gas produced as a by-product of other processes, including natural gas extraction and petrochemical production. Most crude hydrogen comes from third-party feedstocks. Industrial gas suppliers purify and liquefy crude hydrogen before distributing it to customers. Customers use liquid hydrogen for a range of applications across several industries. For example, liquid hydrogen has applications in space programs as a primary rocket fuel and as a propellant for nuclear powered rockets and space vehicles, in hydrogenation and clean energy storage, and as an active ingredient in chemical manufacturing processes.

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Customers that require very large quantities of hydrogen on a regular basis typically receive the gas via an on-site plant or pipeline. For customers that require a small amount of hydrogen, cylinders are most economical. Customers that require more hydrogen than can be practicably supplied with cylinders, but not enough volume to justify the costs of on-site or pipeline delivery, typically receive bulk liquid delivery. For most applications, there are no viable economic alternatives to bulk liquid hydrogen. Further, because distribution methods depend on volume requirements, customers cannot switch to cylinders or on-site distribution if bulk prices were to increase.

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 lasers use gas mixtures, typically containing multiple noble gases (e.g., neon, krypton, or xenon) and, occasionally, a halogen gas (e.g., fluorine or chlorine). Suppliers of excimer laser gases produce or source noble and halogen gases worldwide, then purify and blend these gases into products that they distribute to customers in cylinders. Neon comprises 95 to 99 percent of most excimer laser gases, with other rare and halogen gases making up the remainder. Neon, krypton, and xenon are present in the air in extremely small amounts, and industrial gas companies produce them only at very large ASUs with specialized equipment to capture these trace gases.

The semiconductor industry is the main customer base for excimer laser gases in the United States. Excimer laser gases generate ultraviolet light in excimer lasers, a component of photolithography machines. In addition, excimer laser gases have applications in annealing processes to produce display screens and for medical ablation, a minimally invasive process that cuts human tissue with minimal scarring (e.g., LASIK vision surgery).

The relevant geographic market for excimer laser gases is at least as broad as the United States. U.S. suppliers ship excimer laser gases to customer sites around the country and the world. Suppliers source excimer laser gas inputs, such as neon, domestically and internationally. Although international customers may not distinguish between excimer laser gases produced domestically or abroad, U.S. excimer laser gas customers prefer suppliers that have domestic production facilities and sources of neon.

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Before supplying excimer laser gases to customers, suppliers must complete qualification processes with both laser manufacturers and individual customers to ensure that their excimer laser gases meet purity, quality, and other specifications. Each qualification takes three to eighteen months, and costs at least \$125,000. Customers cannot switch from excimer laser gases to another product because there is no substitute that produces the same wavelength of light, and switching to another supplier often requires additional qualifications, resources, and time.

The market for excimer laser gases in the United States is highly concentrated. Linde and Praxair have a combined share of approximately 70 percent in this market, and the proposed merger would reduce the number of domestic suppliers from four to three.

IX. THE RELEVANT MARKET FOR HYCO

HyCO is the industry term for the on-site provision of hydrogen and carbon monoxide gas. The same chemical process produces both gases, so one gas is always the by-product of the other. Plants that produce hydrogen and carbon monoxide create a mixture called synthesis gas (“syngas”), which producers separate into its constituent parts using a cryogenic process.

HyCO includes separate product markets for on-site hydrogen and carbon monoxide, because the two gases are not substitutes for each other. For most applications, there are no viable substitutes for hydrogen or carbon monoxide. Likewise, customers cannot substitute bulk delivery for on-site supply of hydrogen or carbon monoxide, and so on-site supply of these gases is a distinct product market, as well.

There are three main types of HyCO plants: (1) the steam methane reformer (“SMR”); (2) the partial oxidation plant (“POX”); and (3) the autothermal reformation plant (“ATR”). Each plant type produces different proportions of hydrogen and carbon monoxide. SMRs produce the highest proportion of hydrogen relative to carbon monoxide. POX and ATR plants produce these gases in more equal proportions. For most on-site hydrogen customers, suppliers build on-site SMRs; however, for customers that need on-site carbon monoxide, suppliers will typically construct POX or ATR plants. On-site HyCO customers usually conduct a competitive bidding process several years in advance of a plant’s opening. This bidding process is the source of most competition in the HyCO market. The customer and winning bidder typically enter into long-term contracts that lock-in prices and other terms.

The majority of HyCO plants in the United States are SMRs built for oil and petrochemical companies that only require hydrogen. Carbon monoxide customers are few in number, but large in size and gas needs—most are chemical companies that produce acetic acid, polyurethane, and other compounds. HyCO plants are expensive, costing from \$30 million to over \$400 million, depending on size and type. The industrial gas supplier usually absorbs the cost of building the plant, and then yields the return from a long-term (15 to 20 year) supply contract with the customer. HyCO is a critical input for its customers’ products, and HyCO plants often integrate into customers’ production sites. Accordingly, HyCO customers require suppliers to have engineering and operational expertise, as well as a demonstrated history and reputation of successfully operating HyCO plants.

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Relevant geographic markets for on-site hydrogen and carbon monoxide are national. HyCO suppliers are generally able to serve customers in all areas of the country. The Gulf Coast region is a distinct submarket within the broader national markets for on-site hydrogen and carbon monoxide, as it has the highest concentration of HyCO customers anywhere in the United States. There, hydrogen pipelines serve multiple customers from a single HyCO plant or serve as backup. Hydrogen pipelines allow HyCO suppliers to offer customers lower prices than they could with a dedicated on-site plant at the customer's location. Consequently, HyCO suppliers are only competitive in areas of the Gulf Coast where they have hydrogen pipeline networks.

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 these 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 pre-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.

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Entry into the bulk liquid carbon dioxide market would also not be timely, likely, or sufficient to deter or counteract the adverse competitive effects of the proposed merger. Constructing a plant capable of producing bulk liquid carbon dioxide would cost at least \$5 to \$30 million. In addition, successful entry into the bulk liquid carbon dioxide market requires access to raw carbon dioxide supply sources, which are typically unavailable due to long-term contracts with incumbent liquid carbon dioxide suppliers.

New entry into the bulk liquid hydrogen market is unlikely to be timely or sufficient to counteract the proposed transaction's likely anticompetitive effects. Liquid hydrogen production facilities require years to construct and considerable capital to finance. Further, customers 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.

Timely, sufficient entry into the bulk refined helium market is extremely unlikely, if not impossible. The most significant impediment to entry is securing a source of refined helium. A new entrant would need to secure multiple sources of refined helium, acquire necessary transportation and storage equipment, and establish a distribution infrastructure. Market incumbents secure all available sources of refined helium in long-term contracts. A new entrant would need to locate a new source of crude helium and build a refinery. In addition, an entrant would need to invest tens of millions of dollars to acquire necessary infrastructure and distribution assets, including transfills, cryogenic storage trailers, high-pressure tube trailers, and liquid dewars capable of transporting helium from the refinery to customers. Given the substantial costs and challenges of entering the bulk refined helium market, new entry sufficient to counteract the competitive effects of the proposed merger would not occur in a timely manner.

Entry into the HyCO market requires engineering expertise, experience in designing and operating the various types of HyCO plants, significant capital resources, and a proven record of success with HyCO customers. It would take several years and substantial investments for a new entrant to develop the expertise, experience, reputation, and credibility necessary to compete in the HyCO market. A new HyCO facility costs \$30 to \$300 million, depending on the plant size and product mix. Further, in the Gulf Coast, a hydrogen pipeline is an added barrier to enter the HyCO market. Existing pipelines are scarce in this region, and building a new pipeline requires substantial time and resources that few firms have. Finally, opportunities to compete for new or existing HyCO customers are limited, as HyCO supply contracts are long-term, and customers invariably award contracts to proven suppliers.

New entry sufficient to deter or avert the proposed merger's anticompetitive effects in the market for excimer laser gases is unlikely to occur. The principal barrier to new entry is sourcing neon, which accounts for just 0.0018 percent of the Earth's atmosphere. Suppliers can produce neon efficiently only at the largest ASUs, which must have a neon gas column. Such an ASU would take several years and cost hundreds of million dollars to construct. In addition, an entrant would have to produce or otherwise secure other input gases, as well as supply, logistics, and distribution infrastructure and employees. An entrant would also have to construct a facility

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to blend excimer laser gases. Finally, an entrant would have to qualify its products with laser manufacturers and customers, which involves testing gas blends at a customer plants. The costs of entry would be difficult to justify, as the total U.S. excimer laser gas market is only around \$40 million.

XII. THE CONSENT AGREEMENT

The proposed Consent Agreement aims to eliminate the competitive concerns that the proposed merger raises in each relevant market. It requires Linde to divest to Messer all 32 of its U.S. ASUs, along with related equipment, supply contracts, technology, and goodwill, in the 17 bulk liquid oxygen and nitrogen markets at issue in this matter. With the divestitures, the merger will not increase concentration in any market for bulk liquid nitrogen, oxygen, or argon. As part of the divestiture, Messer will acquire all of Linde's customer contracts and bulk tanks located at the customer locations.

The proposed Consent Agreement also requires Linde to divest to Messer 27 carbon dioxide facilities, including production plants and all associated rail depots. Linde will divest all existing contracts with customers supplied by the respective carbon dioxide facilities. Additionally, all assets used to support the distribution of bulk liquid carbon dioxide will be part of the divestiture, including trailers, tractors, and rail cars.

Linde must also divest to Messer its entire bulk liquid hydrogen business, which includes Linde's liquid hydrogen production facility in Magog, Quebec, source agreements, and four hydrogen transfills. Linde will divest all assets related to the bulk liquid hydrogen business including, among other things, employee contracts and information, customer and supply contracts, leases, distribution trailers, and equipment necessary to distribute bulk liquid hydrogen.

The proposed Consent Agreement requires Linde to divest to Messer all of Linde's U.S. bulk refined helium business, as well as global helium sourcing contracts, which, when combined with divestitures in other jurisdictions, are equal to Praxair's current worldwide helium capacity. In addition, Linde will divest its entire network of helium transfills across the United States. All of Linde's helium customer contracts in the United States, Canada, Brazil, Colombia, and Chile are included in the divestiture. The proposed Consent Agreement also provides Messer with the requisite number of dewars, tube trailers, and helium ISO containers to serve its helium customers worldwide.

To address competitive concerns in the market for excimer laser gases, the proposed Consent Agreement also requires Linde to divest to Messer all of Linde's customer contracts, intellectual property, and key Linde staff to sustain business operations and customer relationships. Neon-producing ASUs are also included in the asset package. To ensure a seamless transfer, Linde has agreed to supply its finished excimer laser gas products to Messer for a period of three years (with possible extensions of time). This supply agreement will give Messer sufficient time to construct or renovate a facility and obtain OEM and customer certifications. The proposed Decision and Order also requires Linde to underwrite the cost of building Messer's new facility. If Messer does not commence construction of the plant within

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one year, then Linde must rescind its sale of the excimer laser gas business to Messer and divest it to a Commission-approved acquirer.

The proposed Consent Agreement also requires Linde to divest to Matheson five on-site hydrogen SMRs to Matheson, along with Linde's hydrogen pipeline in the Gulf Coast and all relevant customer contracts. The proposed divestiture includes Linde's SMR facilities in Anacortes, Washington; Lemont, Illinois; Lima, Ohio; McIntosh, Alabama; and Saraland, Alabama. The SMR assets also include Linde's Remote Operating Center in La Porte, Texas, the "control center" for Linde's on-site hydrogen business. In addition, Linde will divest its POX plants in Clear Lake, Texas, and La Porte, Texas, back to their customers, Celanese and LyondellBasell, respectively. This divestiture will resolve the competitive issues that these customers would otherwise face post-merger, as they will be able to 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.

Opinion of the Commission

IN THE MATTER OF
IMPAX LABORATORIES, INC.

FINAL ORDER AND OPINION OF THE COMMISSION IN REGARD TO ALLEGED VIOLATIONS OF
SECTION 5 OF THE FEDERAL TRADE COMMISSION ACT AND SECTION 1 OF THE SHERMAN ACT

Docket No. 9373; File No. 141 0004

Final Order and Opinion, March 28, 2019

This case addresses Impax Laboratories, Inc.'s reverse-payment agreement with Endo Pharmaceuticals Inc. to obstruct lower-cost generic competition to Opana ER, one of Endo's core branded prescription drug products. The complaint, 165 F.T.C 960, alleges that Impax Laboratories, Inc. violated section 5 of the Federal Trade Commission Act through its agreement in restraint of trade with Endo Pharmaceuticals, Inc. to eliminate the risk of generic competition to Opana ER for at least 2½ years. In his Initial Decision, 165 F.T.C. 988, the Administrative Law Judge found that the evidence failed to demonstrate that the Challenged Agreement constituted an unreasonable restraint of trade in violation of Section 5 of the Federal Trade Commission Act and dismissed the Complaint. 165 F.T.C. 1197. Complaint Counsel appealed the Initial Decision and Respondent filed a cross-appeal. On October 11, 2018, the Commission heard oral arguments in this matter. The Commission reversed the Initial Decision finding that Impax had engaged in an unreasonable restraint of trade in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1, and an unfair method of competition in violation of Section 5(a) of the FTC Act, 15 U.S.C. § 45(a).

Participants

For the *Commission*: Daniel Bradley, Dan Butrymowicz, Synda Mark, Maren Schmidt, Eric Sprague, Jamie Towey, and Rebecca Weinstein.

For the *Respondent*: Anna Fabish and Ted Hassi, O'Melveny & Myers LLP.

OPINION OF THE COMMISSION

By Commissioner Noah Joshua Phillips, for the Commission:

I. INTRODUCTION

The Constitution empowers Congress to “promote the progress of science and useful arts” by creating intellectual property rights, including patents. U.S. CONST. art I, § 8, cl. 8. Congress has done so since the founding of our Republic and, today, the United States leads the world in, among other things, the development and manufacturing of pharmaceutical drugs, which save and enhance lives around the world.

But Americans too often pay more than they should for the prescription drugs they need. In 1984, Congress sought to address this problem by enacting the DRUG PRICE COMPETITION AND PATENT TERM RESTORATION ACT OF 1984, Pub. L. No. 98-417, 98 Stat. 1585 (1984) (codified as amended at 21 U.S.C. § 355) (1994) (“Hatch-Waxman Act”), which created a specialized process to encourage the market entry of generic prescription pharmaceutical drugs. Generic drugs contain the same active ingredients as branded drugs, but typically at a much lower cost. The Hatch-Waxman Act, together with other legislation at the federal and state levels, has facilitated a “dramatic rise in sales of generic drugs,” making them more widely available to