

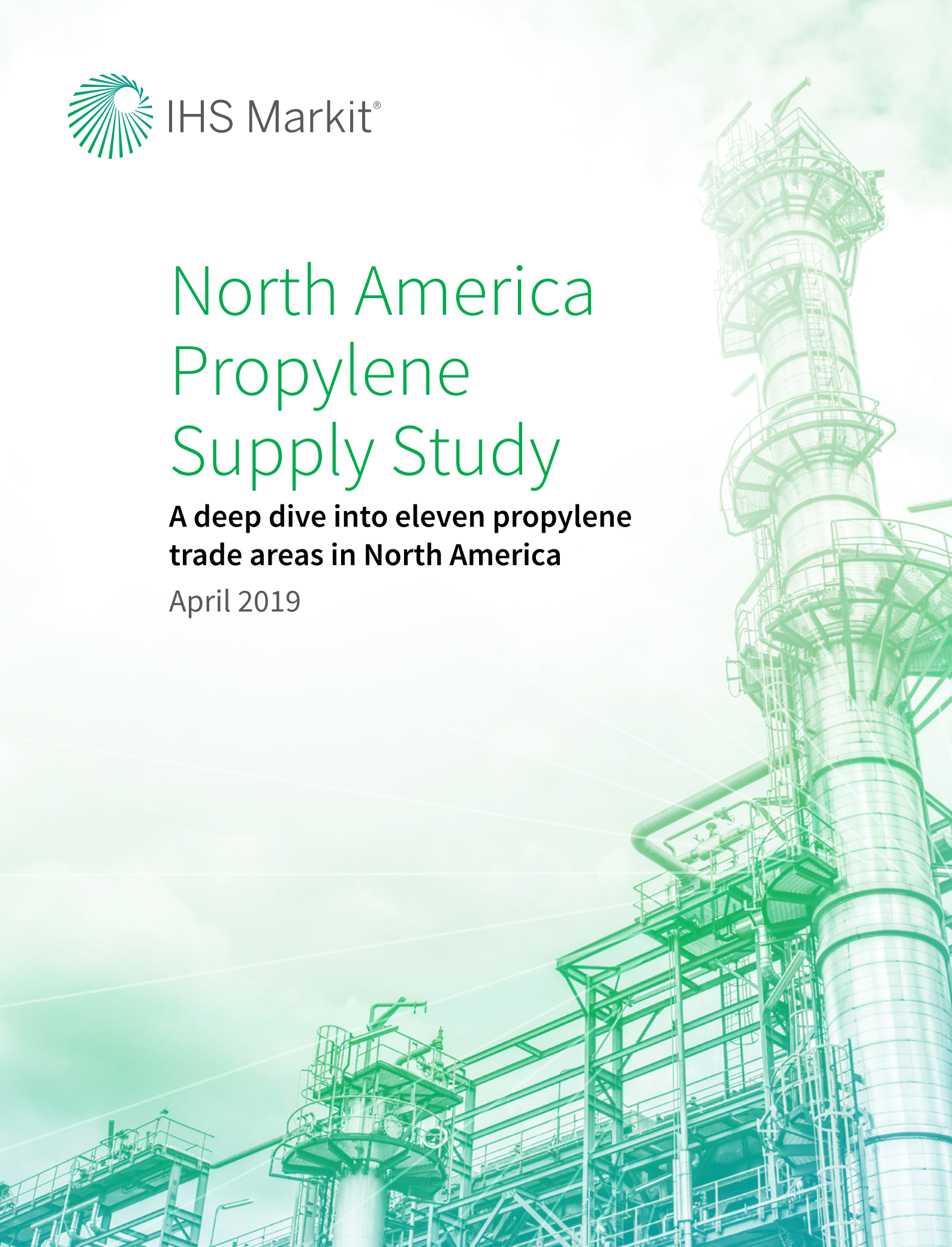


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North America Propylene Supply Study

**A deep dive into eleven propylene
trade areas in North America**

April 2019



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Introduction

As the Shale Gale has shaped the petrochemicals global market, North America has responded by leveraging its new raw material advantage. However, in a world with lower crude oil expectations, the plan has not gone exactly as predicted and North America's propylene market dynamics continued to evolve. As the factors influencing the propylene market continue to develop, the North America Propylene Supply Study can provide insight into these changes and key strategic issues that will impact the North American propylene market forward.

During recent years, increased natural gas production brought an excess of natural gas liquids such as ethane and propane. Ethane's emergence as a cost advantaged feed for ethylene production has led to reduced propylene availability from steam cracking. At the same time, propane availability has driven both North American investment in on-purpose propylene production via PDH and expansion of propane export capability which has supported PDH investments in Asia.

In addition, availability of propylene originating within refineries as a by-product of gasoline production and alkylation of refinery grade propylene will be affected by future changes in refinery operations and fuel demand. Evolving propylene market dynamics are expected to influence infrastructure changes, derivative investments, and movement of propylene within the region and globally.

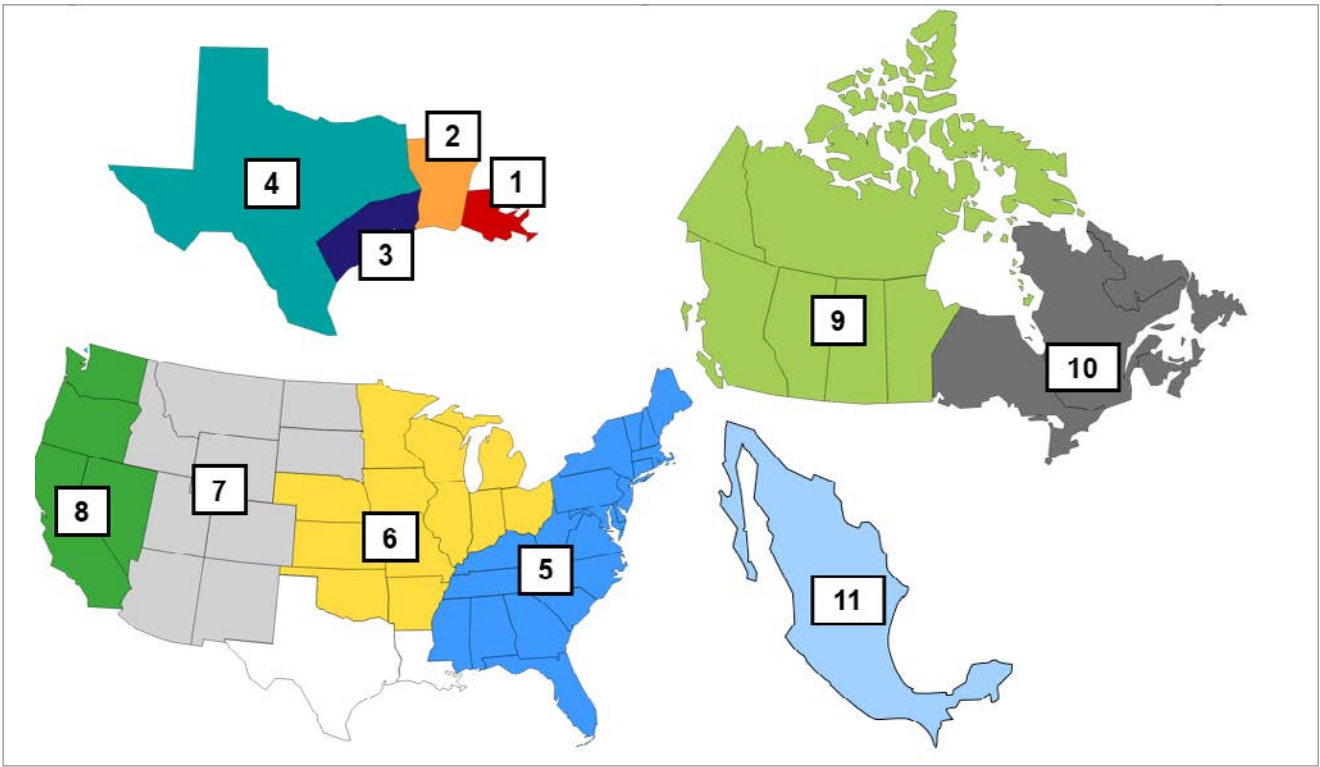
The North America Propylene Supply Study provides in-depth discussion of key strategic questions facing the propylene industry such as:

- What is the effect of shale gas and tight oil development on propylene supply?
- What is the effect of changes in oil fundamentals on propylene supply?
- What is the impact of propane dehydrogenation (PDH) in North America?
- What is the North American impact of propylene production in China?
- What is the impact of changes in North American logistic infrastructure for propylene?

The study will include in-depth analysis of eleven North America propylene trade areas (PTAs). For each PTA, IHS Markit will provide:

- Capacity by propylene grade and technology type
- Pipeline, rail, terminal capabilities
- Demand by propylene grade
- Inter-PTA and offshore trade flow snapshots

The propylene trade areas within North America are defined as follows:



Study Scope

This special report provides a detailed look at North America's propylene trade areas (PTAs) with coverage of the following topics:

Strategic Issues

- Shale Gas/Tight Oil Impact on Propylene
- Impact of Changes in Oil Fundamentals
- PDH in North America
- Significant Propylene Investment in China
- Changes to Propylene Logistic Infrastructure

North America Producer Profiles

Prices

- Mechanisms
- Energy Forecast through 2028
- Propylene Price Forecast through 2028

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- Description of Major Technologies Including Process Flow Diagrams
- Economic Snapshots for Major Technologies for Propylene Production

Supply-Demand

- Discussion of Key Supply-Demand Trends
- Supply-Demand Balances 2000-28 for North America, Canada, Mexico, and U.S.

Distribution

- Definition of Propylene Trade Areas (PTA)
- Inter-PTA trade grids, PTA production and consumption, PTA supply and demand
- Polymer-Grade, Chemical-Grade, and Refinery-Grade propylene integration by PTA
- Steam Cracker and PDH Propylene Producers' Capacity and Logistics Capabilities
- Refinery Propylene Producers' Capacity and Logistics Capabilities
- Propylene Export Terminals

Trade

- Discussion of Propylene Trade
- Tables of Net Equivalent Trade, Imports, Exports
- North America, Canada, Mexico, United States

Appendices

- Production Location Maps
- Capacity Tables
- PG/CG Integration Tables
- RGP Integration Tables

Deliverables

The final Report in narrative form (PDF) will be delivered via IHS Markit's Connect platform with detailed market analysis and insight on topics listed in the study scope.

The study also includes:

- On-line access to Excel files containing propylene supply/demand tables and graphs, capacity tables, and trade grids as developed for the study

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IMO 2020 Rolls In

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Marathon Petroleum
Motiva
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North America PG, CG Capacity Integration by PTA, 2008-2028

North America RG Capacity Integration by PTA, 2008-2028

Methodology

IHS Markit has earned a reputation within the petrochemical industry for its ability to build upon its extensive models and databases and to provide meaningful forecasting and strategic planning services to its clients. Looking past the “numbers” has allowed IHS Markit to not only provide clients with short-term solutions, but to also become a valuable partner in longer-term strategic planning with an eye to the global petrochemical picture.

Over three decades in the business of petrochemical consulting, IHS Markit has developed the most comprehensive databases of supply/demand that are available to the industry, providing a solid base of information from which to build.

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- Product Design: Engineering Design, Research and Development
- Supply Chain: Procurement, Logistics, Operations, Manufacturing
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