



PROPANE BUTANE AMMONIA ETHANE ETHYLENE



QUARTERLY, MONTHLY & ANNUAL REPORTS



STRATEGY PRESENTATIONS, WORKSHOPS & EVENTS



ONLINE DATABASE

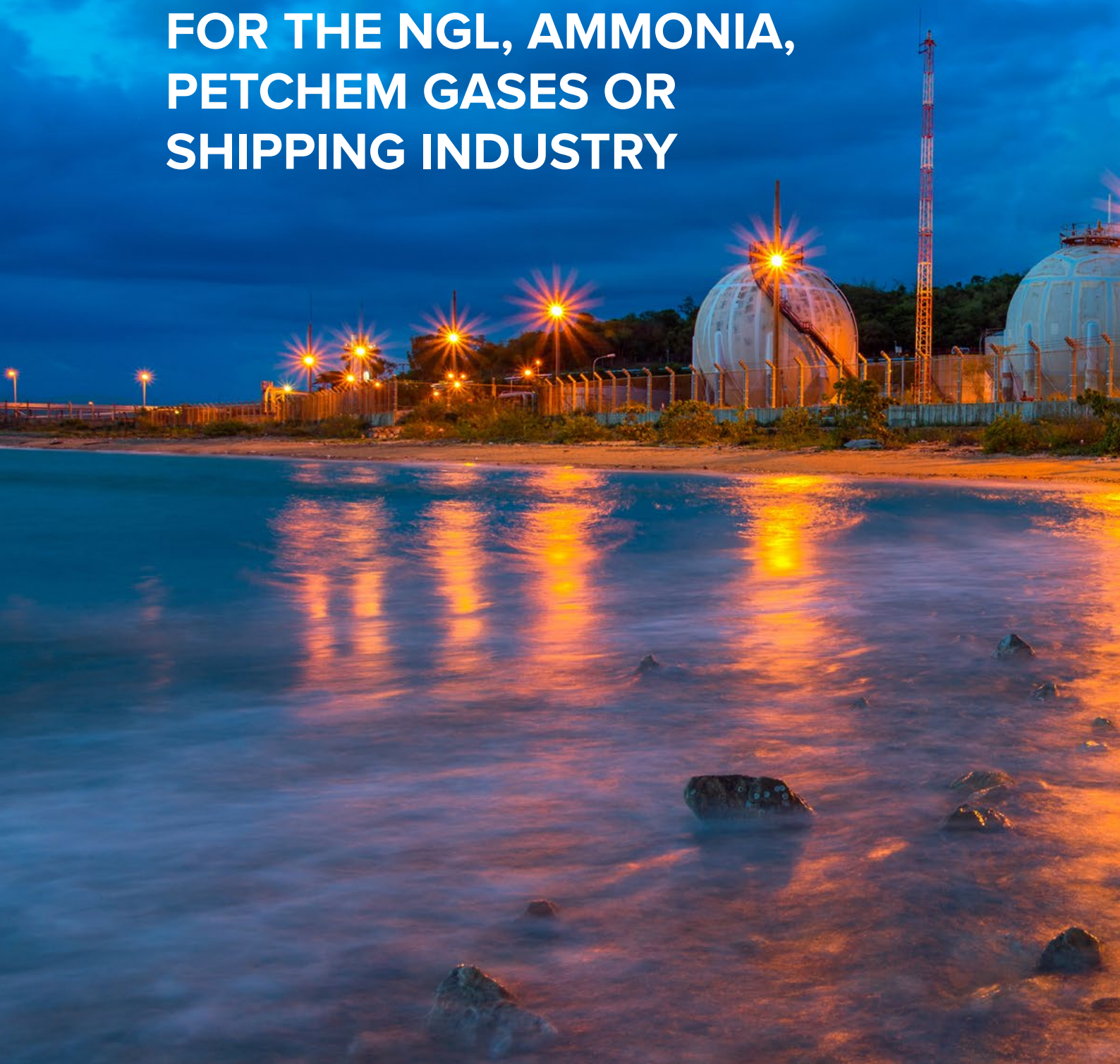


CONSULTANCY



COMMERCIAL ADVISORY

**NGLSTRATEGY WILL ENGAGE
WITH YOU TO DEVELOP A
REPORT FIT FOR PURPOSE
FOR YOUR PROJECT, BY
PROVIDING IN DEPTH
ANALYSIS AND DIRECTION
FOR THE NGL, AMMONIA,
PETCHEM GASES OR
SHIPPING INDUSTRY**



CONNECTING HIGH QUALITY ANALYTICS WITH COMMERCIAL DECISION MAKING



MICHAEL PANAS

Michael is a specialist in the field of natural gas liquids particularly LPG, ethane and ammonia. He has a vast experience of global commodity, trading and shipping markets focussing on commercial aspects, supply/demand issues, shipping analysis and freight forecasting.



PETER MANNING

Peter has over fifty years of experience in market analysis and developing corporate strategies within the petrochemical and energy sectors. He has extensive understanding of the interface between petrochemicals and their feedstocks.



DR EMMA LAMB

Emma has a PhD in Chemistry focussing on bioplastics, and over a decade of experience in commodities. Her expansive knowledge of the chemical industry and its influence on seaborne trading, allows her to advise key players within the natural gas liquids market on effective strategies.



INTERACTIVE PORTAL



NGLSTRATEGY CLIENT PORTAL

KEY TOPICS

- Supply/demand
- Seaborne Trade
- Petchem Feedstocks
- Shipping/Freight
- Pricing

Giving you all the LPG data you need at your fingertips

REPORTS AND SERVICES



LPG SHORT TERM

NGLS Weekly Report

Supply/Demand Overview with 3-month Outlook
MONTHLY SERVICE

Global Propane & Butane Market Overview & Outlook
QUARTERLY SERVICE

US NGL Market 12-month Outlook
QUARTERLY SERVICE

 Access to NGLStrategy Client Portal



LPG LONG TERM

Global LPG Outlook to 2035
QUARTERLY SERVICE

US NGL Market Outlook to 2027
QUARTERLY SERVICE

 Access to NGLStrategy Client Portal



AMMONIA

Ammonia Seaborne Trade Outlook to 2040
ANNUAL SERVICE

Ammonia Seaborne Trade Outlook to 2040
QUARTERLY SERVICE



ETHANE & ETHYLENE

Global Seaborne Ethylene Trade to 2035
ANNUAL SERVICE

Global Seaborne Ethane Trade to 2035
ANNUAL SERVICE



CLIENT SERVICES

- Consulting
- Training / Workshops
- Commercial Advisory
- Market Analytics
- Strategy Presentations



MONTHLY ANALYSIS

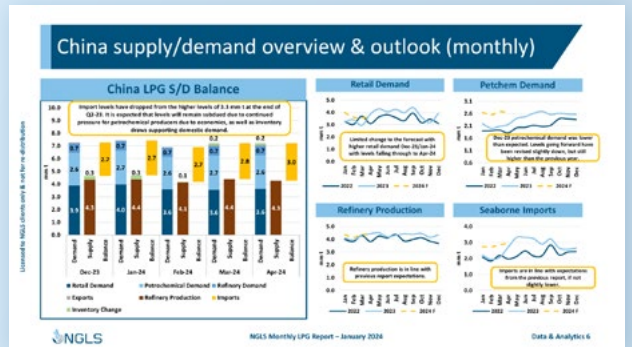
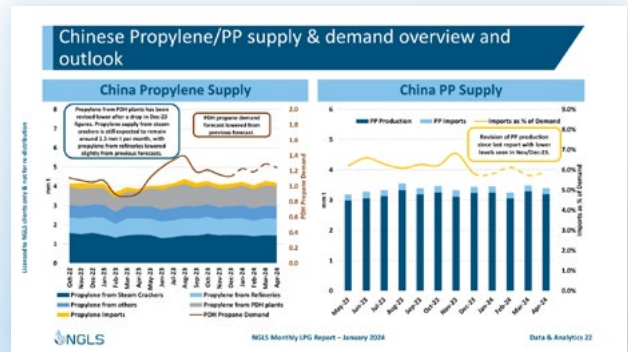
Global Propane & Butane Market Overview & Outlook

Overview of current market developments and discover on a monthly basis what the next 2-3 months hold for propane and butane markets and understand the changes observed in the market to help shape future decisions.



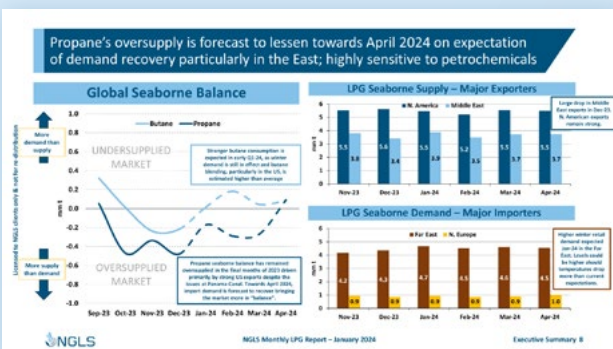
KEY TOPICS IN THE REPORT

- Last month Market Review
- Propane & Butane Trade Patterns and Monthly Forecast
- Global Propane & Butane Supply/Demand Topics, Overview and Outlook
- Propane & Butane Price Trends and Forecasts
- Petrochemical Feedstock Analysis and Outlook
- Shipping Analysis & Market Forecast Including Freight Rate Outlook
- Market Insights and Analytics



INCLUDES

- Access to our consultants for questions
- Detailed data tables in excel file
- A report in executive style
- This service can be part of our bundled options which provide cost optimization



WEEKLY ANALYSIS
LPG Weekly Report

Examination of key indices in the short-term market for LPG, providing a clear view of the current market and changes in the short-term forecast.






KEY TOPICS IN THE REPORT

- Weekly market summary/sentiment
- Propane and butane key market influences e.g. breakeven values
- Overview and evaluation of key market metrics
- LPG shipping, pricing and petrochemical updates

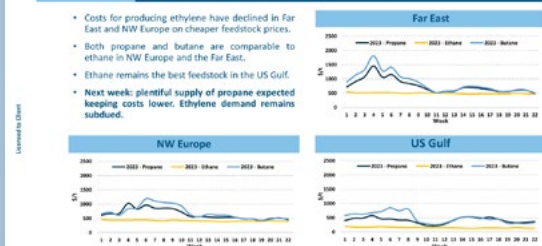


INCLUDES

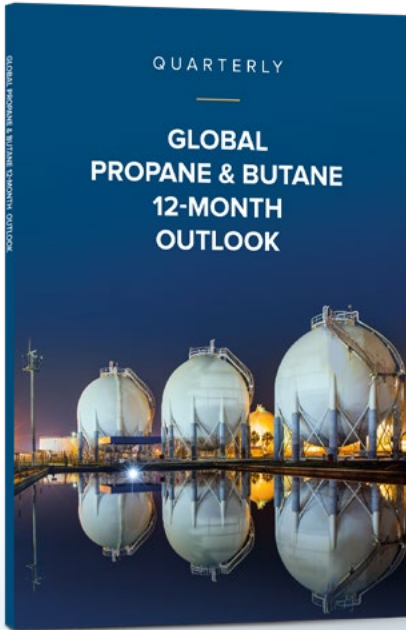
-  Access to our consultants for questions
-  A report in executive style
-  This service can be part of our bundled options which provide cost optimization

PETCHEM Ethylene Production Costs

- Costs for producing ethylene have declined in Far East and NW Europe on cheaper feedstock prices.
- Both propane and butane are comparable to ethane in NW Europe and the Far East.
- Ethane remains the best feedstock in the US Gulf.
- **Next week: plentiful supply of propane expected keeping costs lower. Ethylene demand remains subdued.**



Notes: variable costs. Ethane costs in NW Europe & Far East based on delivered ethane from US Gulf
LPG Market & Global Networks Update - September 2022



QUARTERLY ANALYSIS

Global Propane and Butane 12-month Supply-Demand Outlook

Find out on a quarterly basis what the next 9 to 12 months hold for the propane and butane markets and understand the changes observed in the market to help shape future decisions.

Propane & butane trade grids – Q3 2023 and Q4 2023

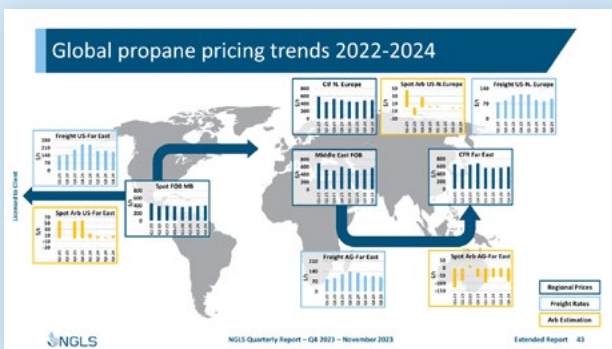
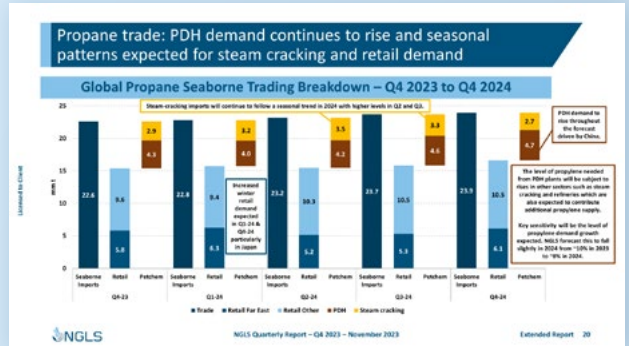
Region	Importing Region					Total	Region	Exporting Region					Total
	Asia	NAFTA	W. Europe	Latin America	Other			Asia	NAFTA	W. Europe	Latin America	Other	
Asia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NAFTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
W. Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Latin America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

NGLS Quarterly Report – Q4 2023 – November 2023



KEY TOPICS IN THE REPORT

- Last Quarter Market Review
- Propane & Butane Trade Patterns and Quarterly Forecast
- Global Propane & Butane Supply/Demand Topics, Overview and Outlook Propane & Butane Price Trends and Forecasts
- Petrochemical Feedstock Analysis and Outlook for Short-term Consumption per Region Shipping Analysis & Market Forecast Including Freight Rate Outlook
- Key Current Topics Analysis and Perspective



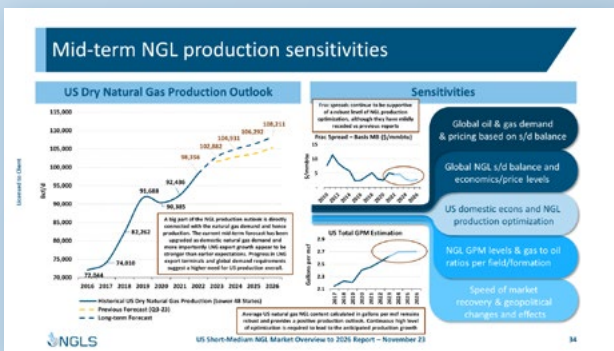
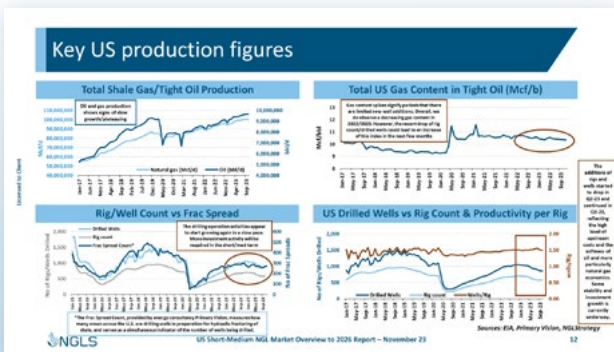
INCLUDES

- Access to our consultants for questions
- Detailed data tables in excel file
- Two reports of over 60 slides combined in executive style
- This service can be part of our bundled options which provide cost optimization



QUARTERLY ANALYSIS US NGL Market Outlook

NGLStrategy's US specific short-medium term report provides an up to date forecast for LPG on the largest exporter of volume globally. The quarterly update is essential for market participants to understand the US market relative to the global LPG landscape on both the short and medium term.



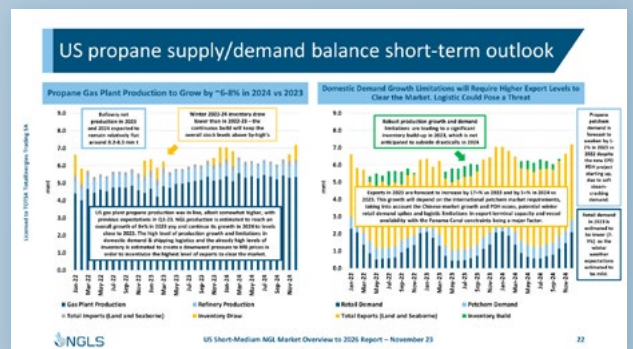
KEY TOPICS IN THE REPORT

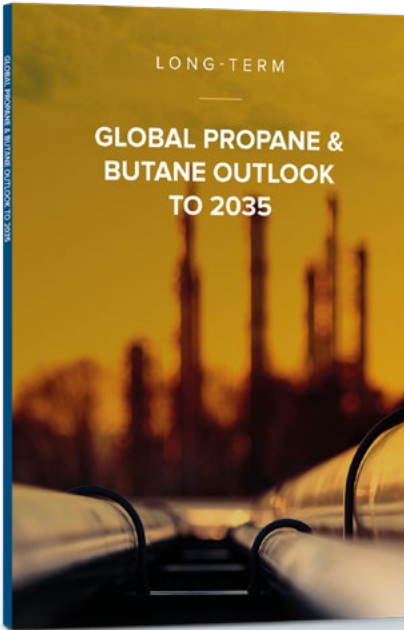
- Oil & Gas Fundamentals
- US NGL Production Outlook & Analysis by PADD Including Key Sensitivities
- Propane & Butane Price Trends and Forecasts
- Domestic Demand Breakdown Including Both Retail & Petrochemical Supply/Demand on a Monthly Basis for the Short-Term and Annually to 2027
- Availability for Exports & Terminal Utilization
- Overview of Key Topics that can Affect Supply/Demand Balance



INCLUDES

- Access to our consultants for questions
- Detailed data tables in excel file
- A report in executive style
- Provides monthly data for next 9-12 months and annual data to 2027
- This service can be part of our bundled options which provide cost optimization

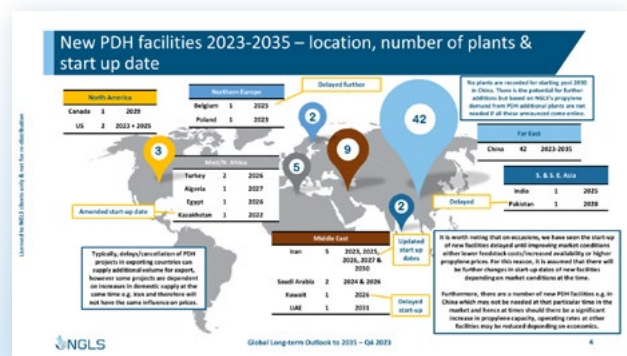




QUARTERLY ANALYSIS

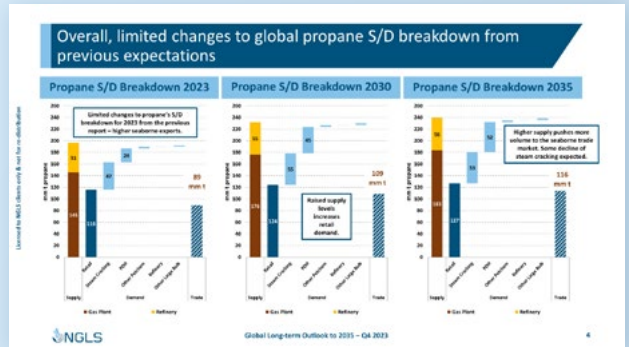
Global Propane & Butane Outlook to 2035

NGLStrategy's long-term quarterly report provides a thorough data breakdown of propane & butane's supply and demand by country and by major sector to 2035.



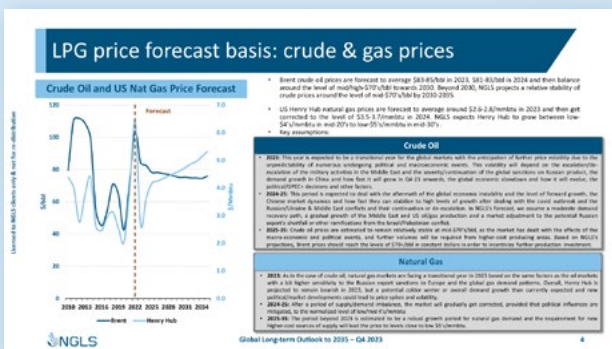
KEY TOPICS IN THE REPORT

- Breakdown by Region and by Country of Propane/Butane Supply and Demand by Individual Sectors
- Global Propane & Butane Supply/ Demand Topics, Overview and Outlook
- Propane & Butane Price Trends and Forecasts
- Petrochemical Feedstock Analysis and Outlook for Consumption per Region to 2035
- VLGC Supply/Demand Balance Outlook
- Key Current Topics Analysis & Perspective



INCLUDES

- Access to our consultants for questions
- Option to include either detailed data breakdown for over 70 key countries and regions supply/demand, or global seaborne export & import breakdown by key country, or both
- A report of over 50 slides in executive style
- This service can be part of our bundled options which provide cost optimization

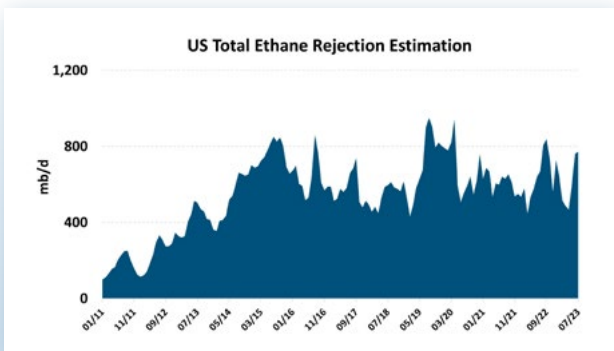




ANNUAL STUDY

Global Seaborne Ethane Trade to 2035

Explore the N. America domestic ethane market and potential new projects internationally to understand how global seaborne trade can be affected and shape future decisions.



Assessment of ethane market

US Remains a Key Game Changer

US Ethane Production vs Availability

What Does This Mean for the Global Market?

Key Questions	Result
How much of the additional production will be pushed to the export market?	In our base case scenario ethane surplus (increased and rejected ethane) will peak at 1,000 mb/d in 2021 before dropping. The availability between 2025-2030 will tightly depend on potential domestic projects – see following page and production economics.
What is the necessary infrastructure needed to facilitate the additional trade?	Two current export terminals, both of which can expand further. Also another 4 possible additional terminals, could come onstream but will depend on demand and commitments from off takers.
Where will the additional volume go?	Currently Europe & Asia due to the cost advantage for the production of ethylene via US Gulf ethane against alternative feedstocks, e.g. Naphtha. China shows the most potential for future volume.
What are the drivers for importing ethane?	An ethane cracker is the cheapest ethylene plant to build. US sourced ethane is expected to remain the lowest cost to market for the production of ethylene in Europe and the Far East.
What will be the price implications?	Producers prefer long weight related price and consumers prefer local feedback price relationships (i.e. naphtha). Eventually, most contracts include a combination of price options in different weights.

KEY TOPICS IN THE REPORT

- US Ethane Supply and Forecast to 2035 Including Scenarios
- Domestic Ethane Consumption and Outlook for Seaborne Availability
- Infrastructure Analysis and Expectations for Future Developments
- Ethane Price Trends and Forecasts
- Analysis & Forecast for Key Potential Importers of US Ethane
- Shipping Analysis & Market Forecast
- Global Delivered Ethane Economics/ Cost Comparison with Regional Competing Feedstock



INCLUDES

- Access to our consultants for questions
- Detailed data tables in excel file
- A report in executive style
- This service can be part of our bundled options which provide cost optimization

Base case shipping cost for key trade routes

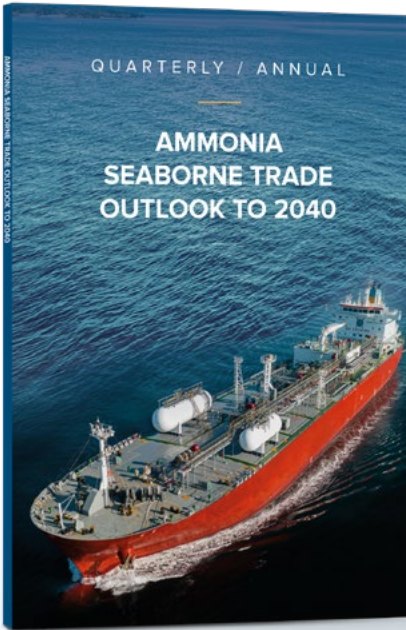
NGLS Estimated Shipping Cost Per Route (VLEC)



Shipping cost is a key component of the ethane supply chain. Ethane is not a widely marketed product and as a result there is no active trading market and consequently fleet. The first VLECs were delivered in 2016 for the Raffia project. Since ethane's only demand relates to petrochemical use, NGLS expects the shipping cost of this market to be part of the cost structure of the project and less connected through a market/trading market.

Based on the above estimation, the "typical" cost per route is calculated as a function of the CAPEX/OPEX and the required return for a shipping company to buy and operate the vessels. For the purposes of this report, NGLS assumes that the required average IRR is about 8%. Other companies might require higher IRR levels and petchem companies that own the vessels could run the vessels even with a cost assumption as low as 0% IRR.

The base/typical estimations of the map beside are based on VLEC (80,000 cbm) and a required 8% IRR for an estimated N/B cost of \$115 million.



QUARTERLY / ANNUAL STUDY

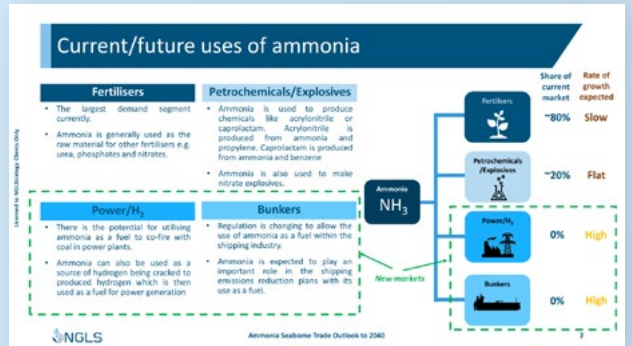
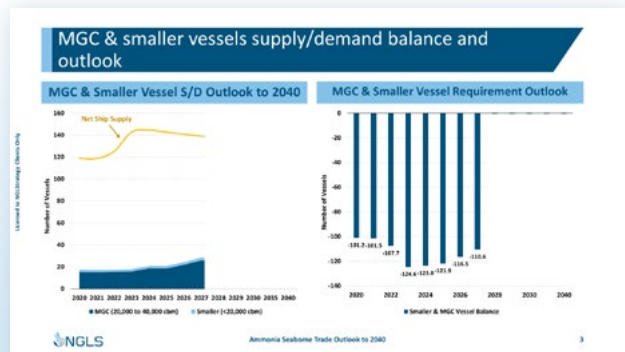
Ammonia Seaborne Trade Outlook to 2040

The quarterly or annual report takes a look at new developments in the ammonia landscape to 2040 and what this will mean for seaborne trade.



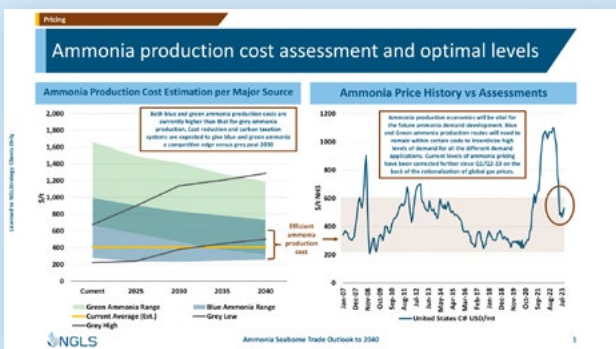
KEY TOPICS IN THE REPORT

- New ammonia uses such as for co-firing with coal, as a hydrogen carrier, and as a bunker fuel
- Supply and demand drivers including where the new developments will be and the evolution of costs
- Seaborne trade movements outlook to 2040
- What the implications of new developments mean for the shipping market and how each segment of the fleet will grow
- Low, base and high case scenarios for seaborne trade and vessel segments



INCLUDES

- Access to our consultants for questions
- A comprehensive annual report in executive style with the option for quarterly updates of developments
- Data tables in excel file
- This service can be part of our bundled options for cost optimization



ANNUAL STUDY

Ethylene Seaborne Trade Study to 2035

Find out what future ethylene trade will look like and unravel the possibilities thrown up by new investment in North America and Asia to help shape future decisions.




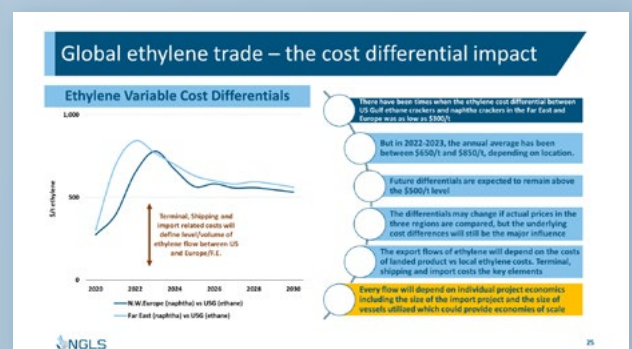
KEY TOPICS IN THE REPORT

- Ethylene Trade Patterns and Forecast to 2035
- Impact of Feedstocks on Ethylene Costs
- Gas Shipping Supply/Demand Analysis and Forecast to 2035
- Infrastructure Analysis & Investment Potential
- Current Market Analysis and Perspective on how the Ethylene Market is Shifting



INCLUDES

-  Access to our consultants for questions
-  Detailed trade grids for ethylene
-  A detailed report in executive style
-  This service can be part of our bundled options which provide cost optimization





**PORTAL
UPGRADE
COMING
2024**



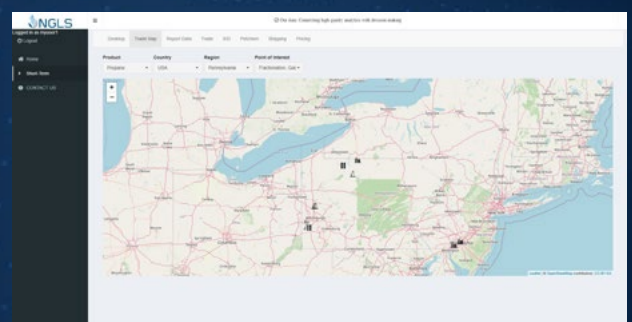
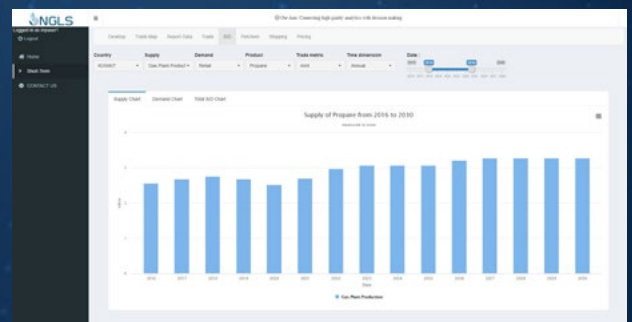
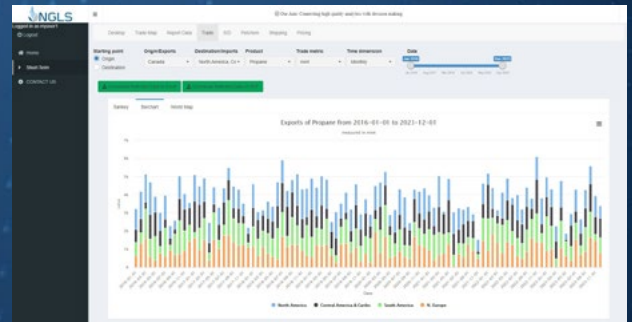
KEY TOPICS IN THE NGLSTRATEGY CLIENT PORTAL

- Client Customized Desktop
- Infrastructure Map including key LPG related infrastructure assets
- Download current and historical NGLS reports and files
- Global Trade historical & forecast data
- Global Supply/Demand historical & forecast data
- Global Petrochemical historical & forecast data
- Global Shipping historical & forecast data
- Global Pricing historical & forecast data

SHORT & LONG TERM ONLINE SERVICES

NGLStrategy Client Portal

Access on-demand data in an interactive format. The online portal provides the figures behind NGLStrategy's regular reports, and allows a visual representation of the raw data.



INCLUDES

- Access to the LPG short and long-term services
- Options to download NGLS current and historical reports
- Availability to download all data in excel or pdf format
- This service can be part of our bundled options which provide cost optimization

**NGLSTRATEGY HELPS
CLIENTS DEVELOP
BUSINESS STRATEGIES
AND COMMERCIAL
ALIGNMENTS FOR
TODAY'S AND
TOMORROW'S MARKETS**



**PLEASE
CONTACT
US** : Contact us to receive a sample of our current reports,
: or schedule a call to speak with us in more detail
: about how we can tailor our services to your need.

✉ info@nglstrategy.com

NGLStrategy, LLC 📍 P.O. Box 37209, Houston TX, USA 77237
☎ +1281 436 9565 🌐 www.nglstrategy.com