

North American Downstream Market Advisory

*Subscription service for research, intelligence, analytics, and insights on
North American downstream oil markets and supply chain*

October 2020



ADI Analytics
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Outline

▶ **Executive Summary**

- ▶ Prospectus: Market Outlook for U.S. Refined Product Exports to Latin America
- ▶ Downstream Market Review
- ▶ In-Depth Insight: Renewable Natural Gas
- ▶ Prospectus: North American Downstream Market Advisory

Crack spreads, fuel demand, and downstream capital spending will pick up in 4Q 2020 but will remain lower year-over-year

Highlights

- Lower crude oil prices and stable gasoline and distillate prices have supported U.S. Gulf Coast 3-2-1 crack spreads in 4Q 2020
- WTI crude oil prices will remain flat in 4Q 2020 due to pick up in OPEC+ crude oil production coupled with slower oil demand recovery
- U.S. natural gas prices will remain supported by rapid growth in LNG exports and uptick in winter heating demand
- U.S. gasoline consumption and exports will grow in 4Q 2020 but are lower year-over-year
- U.S. distillate demand will recover slowly while exports will pick up rapidly in 4Q 2020 but will remain lower than the 2019 levels
- U.S. refinery turnarounds will pick up in 4Q 2020 driving sustaining capex and refinery utilization will stay flat amid lower fuel demand

Near-Term Outlook for NA Refining

Crack spreads	
Crude oil prices	
Fuel demand	
Utilization	
Turnarounds	
Capital spending	



Increase



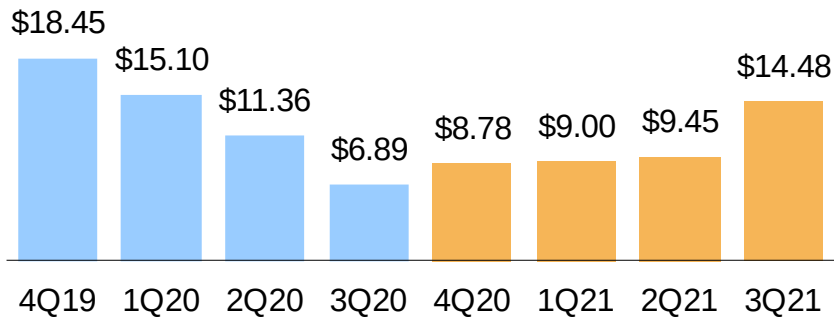
Neutral



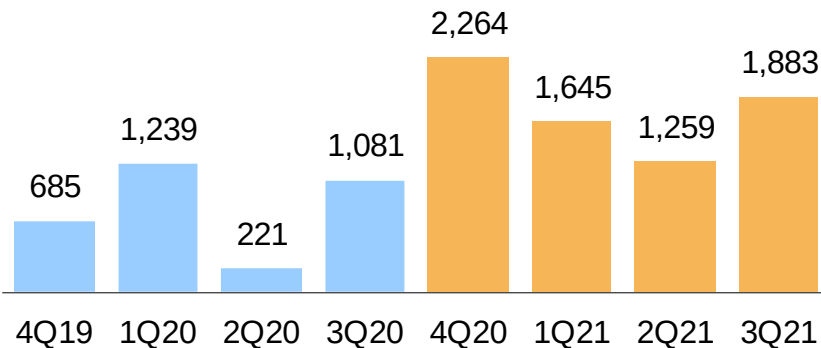
Decrease

Refinery crack spreads and utilizations will stay bleak and turnaround activities will pick up in the near-term

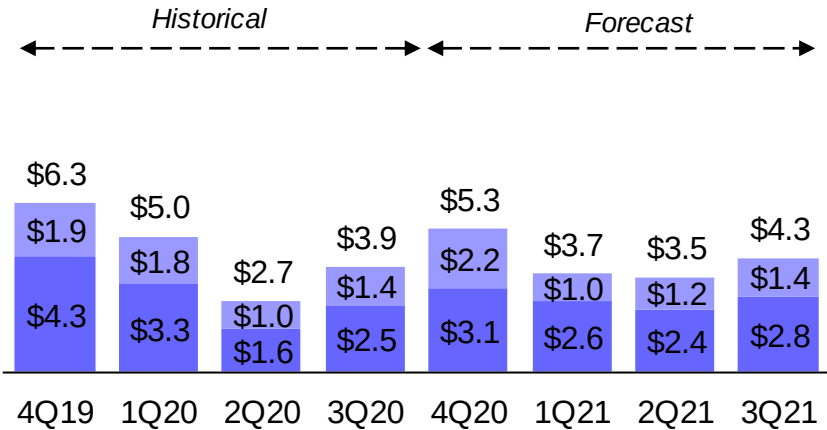
U.S. Gulf Coast Crack Spread
(USD Per Barrel)



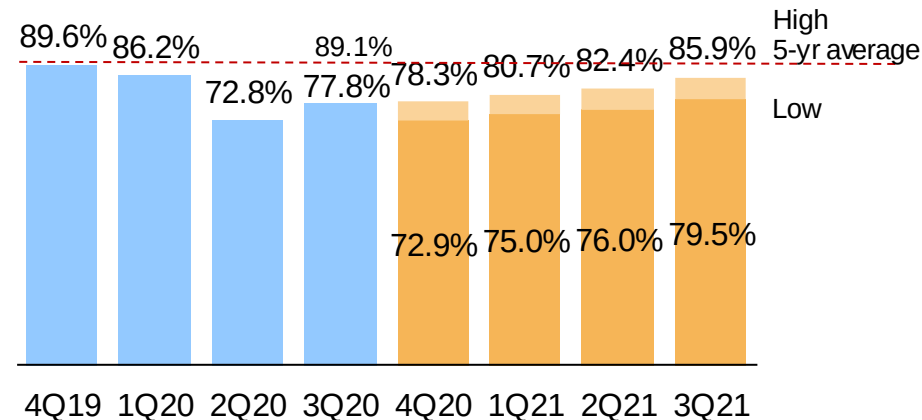
Announced / Planned Refinery Outages
(Thousand Barrels Per Day)



North American Downstream Capex
(USD Billion)



U.S. Refining Capacity Utilization Rate
(Percentage)



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Market Outlook for U.S. Refined Product Exports to Latin America



[Learn more >>](#)

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Downstream news: New refining complex, project delays, refinery shutdowns, refinery sale, and hydrogen filling stations

Capital Projects

- China began construction of its \$20 billion Yulong mega petrochemical and refining complex in the Shandong province's refinery hub. The complex will consist of a 400,000-bpd oil refinery and a 3 MMtpy ethylene plant.
- Saudi Aramco and SABIC will re-evaluate their \$20 billion crude-oil-to-chemicals project and are now looking at integrating existing facilities instead to conserve cash due to a collapse in demand caused by the coronavirus pandemic.

Outages and Shutdowns

- Portugal's Galp temporarily suspended fuel production at its Matosinhos refinery and Japan's biggest refiner, Eneos permanently shut the 115,000-bpd crude distillation unit at its Osaka refinery.
- PBF will shut most refining units at its 180,000-bpd Paulsboro, NJ, refinery amid coronavirus-related fuel demand destruction. In 2019, the Philadelphia Energy Solutions plant was shut down following an explosion and fire.

Acquisitions and Divestitures

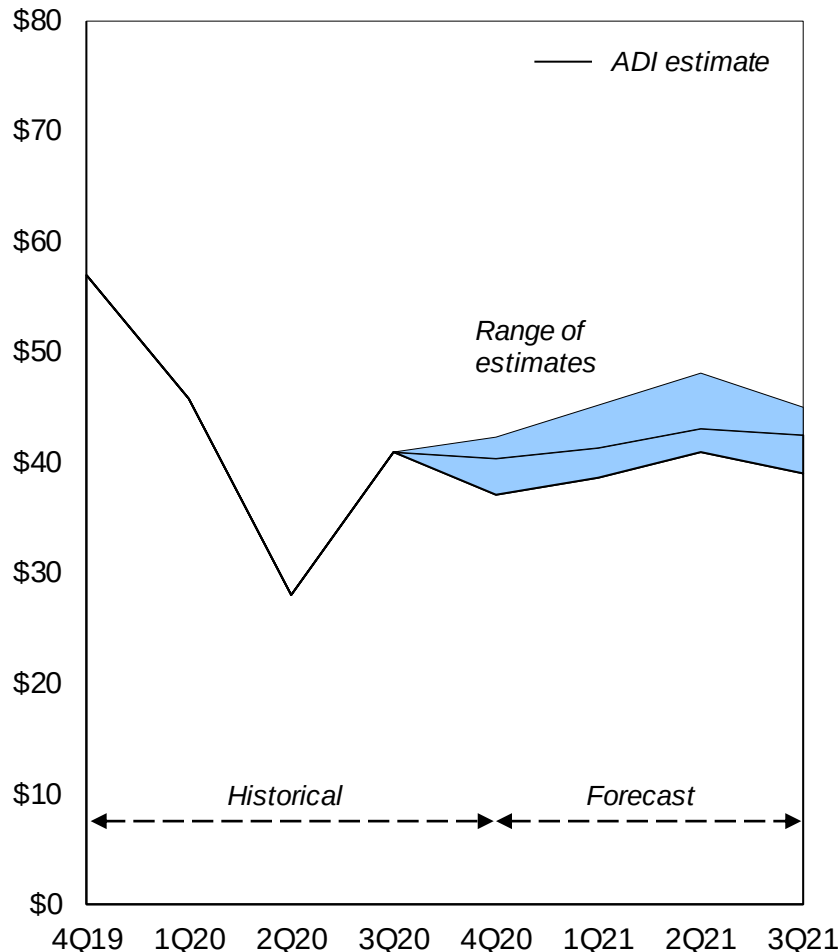
- Cenovus Energy will buy rival Husky Energy for \$2.9 billion creating Canada's third largest oil and gas producer due to the pandemic-driven collapse in oil demand.
- Irving Oil withdraws from an agreement to purchase North Atlantic refinery which included buying the idled 135,000-bpd Come-by-Chance refinery in Newfoundland while U.S.-based energy company Origin International remains interested.

Energy Transition

- Qatar Petroleum began supply of ultra low-sulfur diesel from its 137,000-bpd Mesaieed refinery for the local transportation market to meet the Euro-5 fuel standards in the country.
- German regional transport group RMV began construction on a filling station near Frankfurt that will use the hydrogen by-product from chemicals manufacturing to fuel 27 hydrogen-powered fuel cell trains by 2022. The fuel cells will help cut carbon pollution from transport.

WTI crude oil prices will remain flat in 4Q 2020 due to pick up in OPEC+ production coupled with slower oil demand recovery

WTI Spot & Forecast Prices (USD Per Barrel)

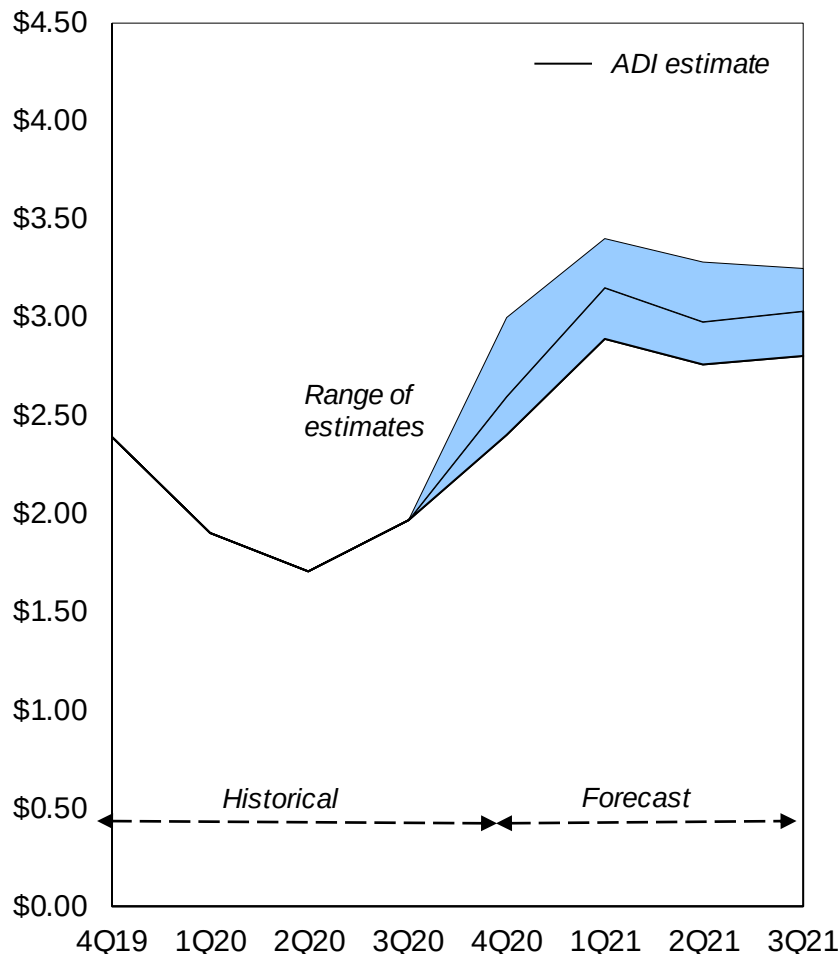


Discussion

- **Crude oil price outlook**
 - WTI crude oil prices remained stable in the beginning of 4Q 2020 and ...
 - ... ADI forecasts it to remain between \$35 to \$45 for the rest of 2020
- **Crude oil demand outlook**
 - Crude oil demand recovery will slow down in 4Q 2020 with renewed government-imposed lockdowns due to rising coronavirus cases
 - U.S. crude exports to refiners in Asia will also be impacted amid rising OPEC+ production
- **Crude oil supply outlook**
 - Although U.S. crude oil production picked up recently, it remains 15% lower year-over-year in the beginning of 4Q 2020
 - U.S. crude oil production is expected to fall to 11.5 million barrels per day in 2020, a 6% decline from 2019 production and 11.1 million barrels per day in 2021

U.S. natural gas prices will remain supported by record growth in LNG exports and uptick in winter heating demand

Henry Hub Spot & Forecast Prices (USD Per Million Btu)

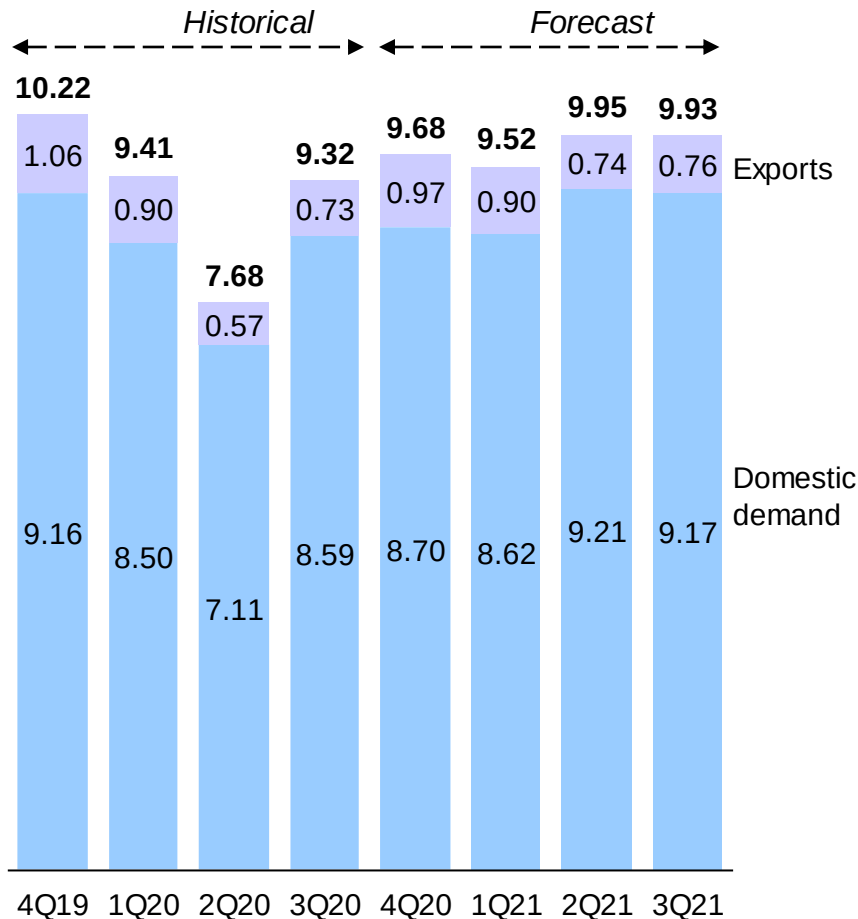


Discussion

- **Natural gas price outlook**
 - Natural gas spot prices rose in 4Q 2020 and ADI expects Henry Hub spot prices to stay below \$3.00 per MMBtu in the rest of 2020
- **Natural gas demand outlook**
 - Natural gas demand will continue to fall in industrial sectors amid reduced manufacturing activity and in electric power sector due to higher natural gas prices
 - However, rapid growth in LNG exports coupled with a seasonal increase in natural gas consumption for heating will persist
 - U.S. natural gas consumption will average 83.7 Bcf per day in 2020, down 1.8% yoy
- **Natural gas supply outlook**
 - U.S. natural gas production will continue to fall due to lower associated natural gas production from oil-directed rigs in the Permian and will average 90.6 Bcf per day in 2020, 3% lower yoy

U.S. gasoline consumption and exports will pick up in 4Q 2020 but will remain lower year-over-year

U.S. Motor Gasoline Demand (Million Barrels Per Day)



Discussion

U.S. gasoline demand outlook

- U.S. gasoline consumption is expected to average 8.7 million bpd in 4Q 2020 which will be 5% lower year-over-year
- Rising COVID-19 cases and increased number of people working from home will result in fall in personal commuting activity

U.S. gasoline supply outlook

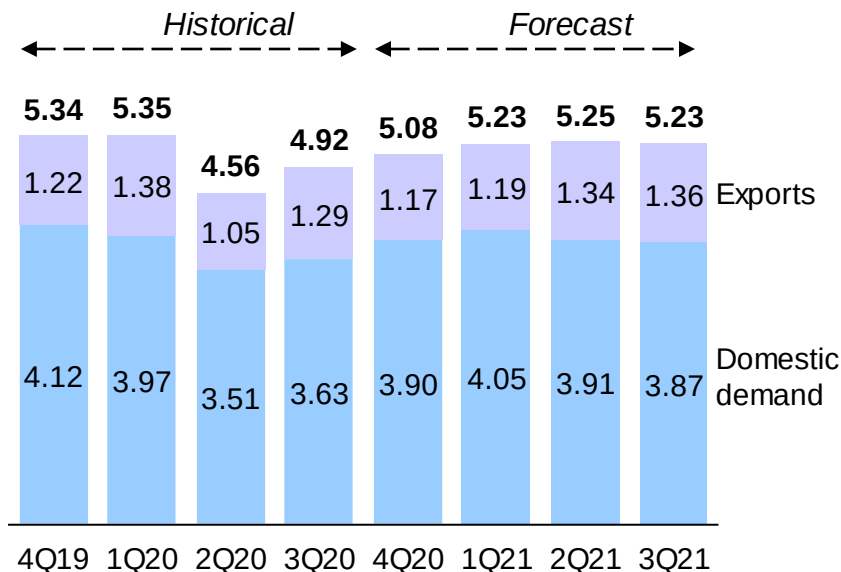
- U.S. total gasoline stocks including gasoline blending components in the beginning of 4Q 2020 remained at ~226 million barrels, 6% lower from the prior quarter and slightly over the 2015–19 average as gasoline production fell due to storm-related refinery closures in the U.S. Gulf Coast

U.S. gasoline exports outlook

- U.S. gasoline exports will also grow in 4Q 2020 to 0.97 million barrels per day but will remain 8% lower yoy amid mounting coronavirus cases and further lockdowns

U.S. distillate demand will recover slowly while exports will pick up rapidly in 4Q 2020 but will not reach 2019 levels

U.S. Distillates Demand (Million Barrels Per Day)



Discussion

U.S. distillate demand outlook

- U.S. distillate consumption will witness slower recovery in 4Q 2020 averaging 3.90 million barrels per day but will remain 7.2% lower year-over-year
- U.S. distillate demand fell due to reduced industrial activity and decline in oil drilling

U.S. distillate supply outlook

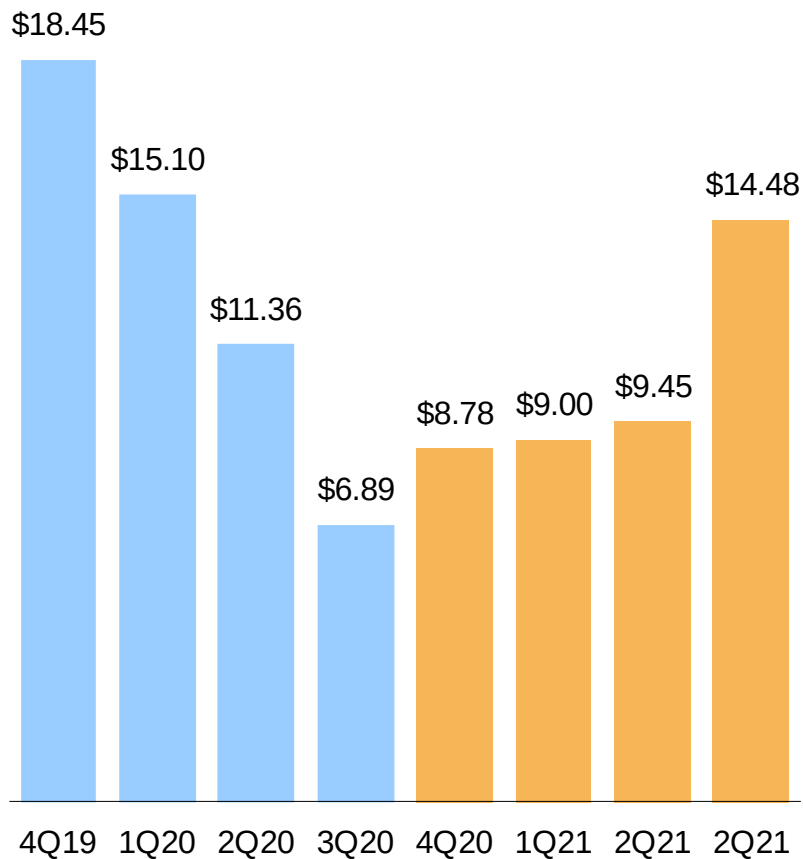
- U.S. distillate stocks in the beginning of 4Q 2020 fell to 163 million barrels, almost 8% lower compared to 3Q 2020 but 19% higher than the 2015–19 averages as refiners shifted towards increased distillates yield to cut jet fuel production

U.S. diesel export outlook

- U.S. distillate exports will grow rapidly in 4Q 2020 at 1.17 million barrels per day but will remain 4% lower yoy due to additional lockdown measures amid rising COVID-19 cases and slower industrial activity

USGC 3-2-1 crack spreads in 4Q 2020 will remain stable amid fuel supply disruptions and slower growth in demand

U.S. Gulf Coast 3-2-1 Crack Spreads (USD Per Barrel)

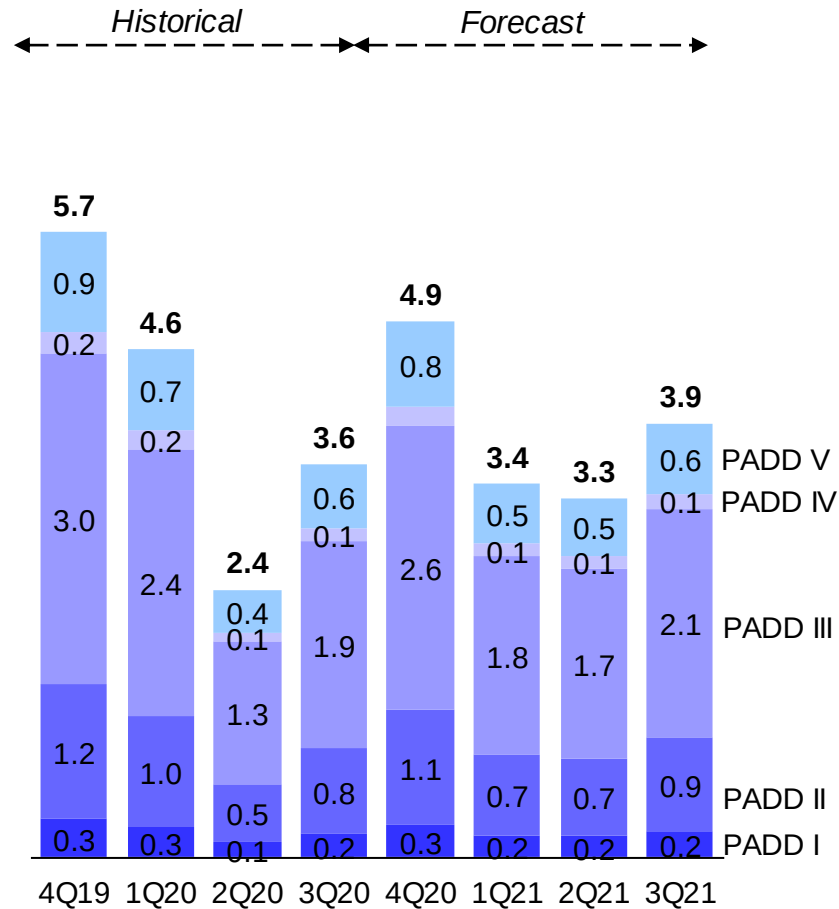


Discussion

- U.S. Gulf Coast 3-2-1 crack spread picked up in the beginning of 4Q 2020 in response to fall in fuel inventories due to storm-related refinery supply disruptions
- Further, increase in commuting coupled with an uptick in exports will drive U.S. gasoline demand and support U.S. gasoline prices and crack spreads through the rest of 2020
- Slow recovery in U.S. distillate consumption coupled with rapid growth in U.S. distillate exports will continue to support U.S. distillate prices and in-turn crack spreads going forward in 4Q 2020
- U.S. gasoline and distillates prices will remain stable and this coupled with lower crude prices will support U.S. Gulf Coast crack spreads through 2020
- However, the crack spreads will likely not reach pre-COVID levels through 2021

U.S. downstream companies will continue to be in cash preservation mode by focusing on sustaining businesses

U.S. Downstream Capex By PADD
(USD Billion)



Discussion

- U.S. downstream companies will increase sustaining capital spending in 4Q 2020 and through 2021 to complete turnarounds
- Refiners are likely to continue capex cuts in 2021 by re-considering planned projects to save capital as fuel demand is less likely to recover to the pre-pandemic levels next year
- U.S. downstream companies have maintained a capex cut of 20-25% with respect to pre-COVID guidance in 2020 to offset losses incurred by cratered oil products demand
- Future capital spending growth for the U.S. downstream industry will be dictated by the trajectory of global fuel demand recovery and may not happen until 2022

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Executive Summary

1	Renewable natural gas is pipeline-quality biogas obtained from renewable sources that can replace natural gas. Biogas obtained from various sources can be used as a substitute for natural gas as they have similar methane content.
3	RNG is produced mainly via anaerobic digestion in landfills and waste plants followed by biomass gasification. Raw biogas is cleaned and upgraded to pipeline quality gas using a combination of pre-treatment and finishing processes.
5	Biogas upgrading technologies have different process requirements and yield RNG with varying methane levels.
6	A variety of renewable feedstocks such as animal manure, energy crops, municipal solid waste, industrial waste can, in principle, yield biomethane that can be inserted into the natural gas chain.
7	Interest towards cleaner energy source and government directives will drive the market for renewable biomethane and Asia and Europe account for nearly two-thirds of global biomethane demand assuming rapid energy transition there.
8	Several industrial players in the RNG sector, across the globe have announced new projects in the next few years with most of these projects involving industrial collaborations in the North America region.

**For the complete in-depth insight on
renewable natural gas,
please subscribe to
[ADI Downstream Market Advisory](#) or
purchase this report at the [ADI Store](#).**

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ADI's new advisory will provide a comprehensive, strategic, and insightful view of the downstream oil and gas industry

Research Goals

1

Downstream industry performance and profitability assessment and forecast

2

Downstream capital spending, investment outlook, and industry projects by key players

3

Issues and outlook for the downstream supply chain

4

Profiles and analyses of industry players, trends, projects, and news

Select Insights

- Crude oil pricing, supply, and forecast
- Fuel and product demand and outlook
- Refinery crack spreads and margins
- Plant utilization rates and turnarounds
- Industry outlook with risks and drivers
- Industry investment drivers and analyses
- Capital spending and forecast by region
- Breakdown of capital spending by key segments across the supply chain
- Key industry projects by player
- Trends and opportunities in supply chain
- Outlook for key parts of the value chain
- Winners and losers across key scenarios
- Supplier profiles and business models
- Profiles of industry players and projects
- Summaries and analyses of industry news
- Signposts and milestones for key trends
- Strategic insights and future scenarios

Frequent and regular updates will cover a wide range of metrics and issues in the North American downstream market

1

Industry Performance and Market Analytics

Capacity utilization rates	Product supply and demand analyses	Capital and operating costs	Commodity price scenarios in near- and mid-term
Regulatory landscape	Maintenance and turnaround plans	Regional supply and demand analyses	Players strategies and global competition

2

Strategic Insights

Corporate strategy review and analysis	Asset / competitive strategy review and analysis	Investment strategy review and analysis	Geopolitical strategy review and analysis
Industry-wide supply and demand analyses	Risk management strategy review and analysis	Operations / technology strategy review and analysis	Processing needs and costs

3

Stakeholder Analyses

Operator profiles and analyses	Supplier and supply chain assessments	Industry news summaries and analyses	Stakeholder outlook
Competitive landscape	Stakeholder outlook in key scenarios	Technology and industry / supply chain impacts	Supply chain outlook

In addition, ADI will review every month a topic in depth covering the entire downstream value and supply chains



[Refining Capex Outlook Post-COVID](#)



[Global Methanol Outlook](#)



[Refineries' Road to Recovery – PADD Level Analysis](#)



[Crude Oil to Chemicals](#)



[Riches to Rags – Downstream O&G in Perfect Storm](#)



[Rising Octane Value and Aromatics Markets](#)



[Global Crude Oil Supply-Demand Scenarios Post COVID](#)



[Strategic Issues in U.S. West Coast Refining Market](#)



[Hydrogen Market Outlook](#)



[Global Biodiesel and Renewable Diesel Markets' Outlook](#)



[Digital Initiatives in Downstream Oil and Gas](#)



[The Wave Isn't Temporary – Cracker Cycle Continues](#)

Our research service will offer several deliverables to provide rich, data-driven insights into the downstream market

	Deliverable	Format	Frequency
1	Monthly market snapshot	Report	Monthly
2	Market data and analytics	Spreadsheet	Monthly
3	Industry insights	Report	Monthly
4	Quarterly conference call	Interactive conference call	Quarterly
5	Analyst access	Live	On-demand
6	Complimentary admission to ADI Forum	Conference	Annual

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Investors

Industrial gas players

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Over 150 clients – Fortune 500 brands, mid-sized firms, start-ups, and investors – engage ADI to shape decisions

Oil & Gas



Chemicals



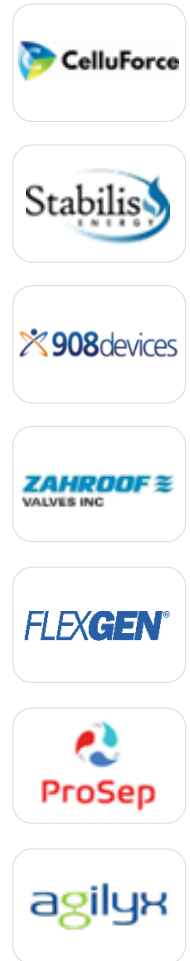
Industrials



Investors



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