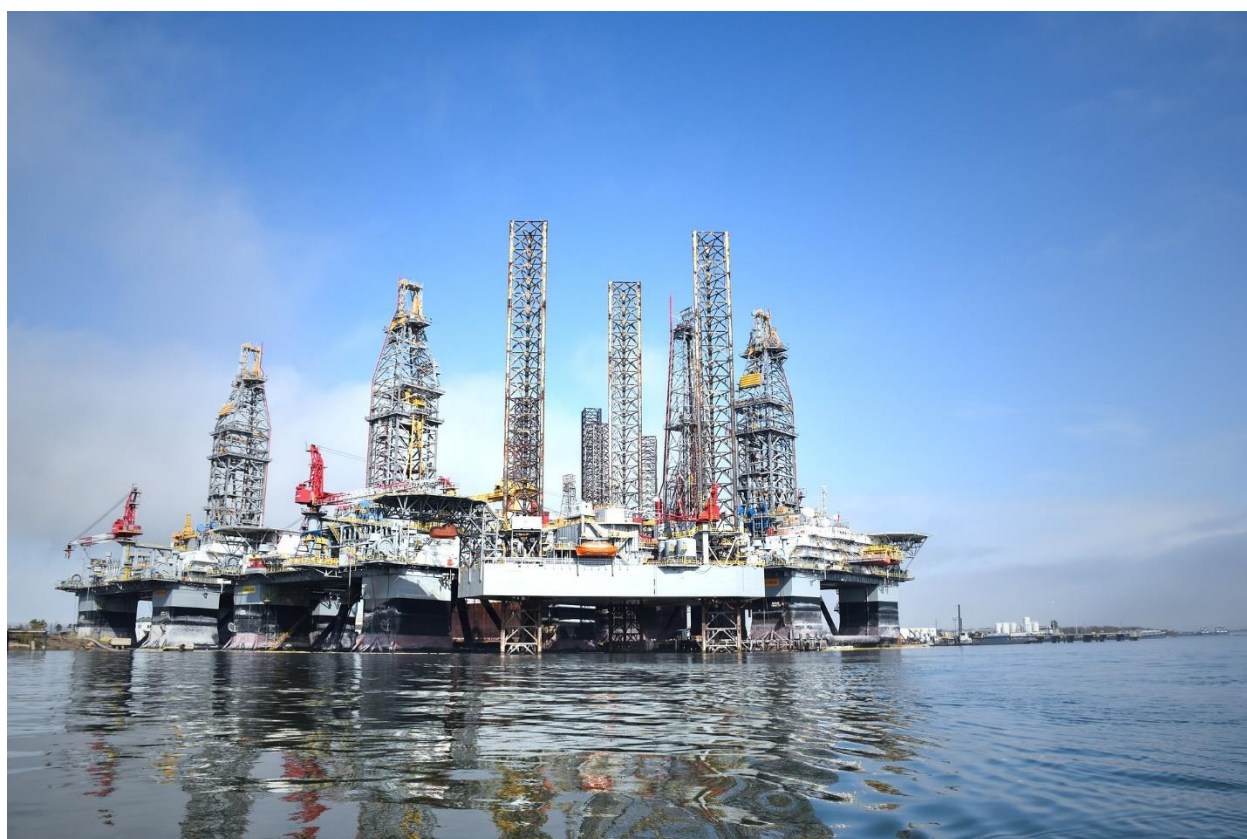


# 2022 Refining Industry Outlook



Uday Turaga

# 2022 Refining Outlook: Cautious optimism in the wake of a challenging transition

January 2022

Looking back, 2021 was likely more frustrating for petroleum refiners globally than 2020. Refiners had reconciled to the black swan year of 2020 represented by the pandemic, the resulting lockdowns, and fuel demand destruction. However, 2021 was supposed to mark a return to normalcy, and, to a large extent, the world made a lot of progress towards normalcy. But the COVID variants put paid to the complete recovery oil & gas markets were hoping to achieve.

First, the Delta variant roiled major fuel consumers such as India in the summer of 2021, and, then, Omicron engulfed the world and slowed down the momentum towards recovery. Collectively, only ~40% of the ~7.5 million barrels per day that refiners cut throughput by in 2020 was recovered in 2021. Refiners thus enter 2022 with tempered expectations and cautious optimism, which is appropriate given the 10 themes we are forecasting at ADI Analytics.

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Demand recovery across fuels and regions will, however, be uneven. For example, jet fuel demand recovery will continue to struggle through 2023. [Historically, jet fuel demand destruction has been slow to recover as we have pointed out in a recent blog for our new multi-client study on the future of jet fuel markets.](#)

**Crack spreads will generally follow fuel demand and utilization recovery but we anticipate diesel cracks to be better positioned in 2022.**

At a high level, there was little news in how gasoline, diesel, and jet fuel cracks performed across the major markets in 2021. Going forward, however, we anticipate limited upside in either gasoline or jet fuel cracks. Diesel margins, however, may benefit from the high natural gas prices in European and Asian markets driving up demand for gasoil. Another factor that will likely drive up diesel margins will stem from growing competition for bio-based feedstock to feed renewable diesel hydrotreaters.

# FlexPO + 2022 Agenda

Thursday, February 17, 2022, Houston, TX

<https://flexpo.adi-cmr.com/>

7:30 am Registration and Breakfast

8:15 am Keynote Presentation



**Scott Wright**, Huntsman,  
Division President

9:00 am Chemicals Outlook in 2022



**Dr. Uday Turaga**, ADI  
Chemical Market Resources,  
CEO

Break

10:05 am Feedstocks Review



**Dhaval Shah**, SABIC, GM  
Corporate Technology &  
Innovation



**Macgill James**, Borealis,  
Manager, Feedstocks Supply  
& Business Development

11:05 am Polyethylene and polypropylene markets



**Richard Thomas**, TotalEnergies US, Sr. Manager, Strategy and  
Business Development

12:05 pm Lunch

01:05 pm Specialty polymers and performance materials



**Jose Mendez**  
SK Geo Centric, Global  
Business Director



**Juan Gaytan**  
Kaneka North America, VP,  
MS Polymers

02:05 pm Engineered polymer markets



**Dr. Vijay Mhetar**, Kraton,  
SVP and CTO



**Dr. Hartmut Siebert**, Sulzer,  
Head of Polymers Business

Break

03:30 pm Investor panel



**Meghan Leggett**  
White Deer, Principal



**Brian Orkin**  
Arsenal Capital Partners,  
Investment Partner

04:15 pm Innovation, recycling and sustainability



**Raj Krishnaswamy**  
CJ Bio, VP, Polymers R&D



**Roman Wolff**  
Origin Materials, VP,  
Engineering

Adjourn and Cocktails

FlexPO+ Partner



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*Major refining capacity hubs, e.g., U.S. Gulf Coast and Middle East, will have to continue improving their cost competitiveness as exporters to emerging markets.*

## **High oil prices and a return to traditional pricing differentials will help refiners but high inflation rates globally may start impacting fuel demand and cut into margins.**

In 2022, continued discipline among OPEC and shale oil producers is expected to push oil prices, at least, into the \$80s and potentially higher. Further, as crude oil supply is closer to demand, traditional pricing differentials, e.g., between light and heavy crude, will be restored. Collectively, large and complex, high-conversion refiners will enjoy better margins. But the crude oil discounts that mid-continent refiners in the U.S. enjoyed due to lack of pipeline capacity or high production rates are now a thing of the past. Collectively, these trends will support refining crack spreads in 2022.

## **Global refining capacity is oversupplied by 5% to 6% today after adjusting for utilization, with much higher levels of excess capacity in some regions.**

ADI has benchmarked the global asset base of refineries for their economic and sustainability competitiveness and our analysis shows that, while refinery closures have picked up pace, another 2-3 million barrels per day of refining capacity will have to be closed over the next year or two. In the absence of such closures, refining margins will face severe downward pressure in a few markets.

## **Major refining capacity hubs, e.g., U.S. Gulf Coast and Middle East, will have to continue improving their cost competitiveness as exporters to emerging markets.**

Latin America and some parts of Asia continue to struggle with supplying refined products to their rapidly growing domestic markets. [This has over the past decade created opportunities for refiners on the U.S. Gulf Coast and the Middle East to export although both regions are oversupplied in refining capacity.](#) Refined product importers are, however, changing by implementing fuel policy reforms, improving capacity utilization rates, and promoting adoption of electric vehicles, fuel efficiency standards, and biofuels. In the wake of these developments, refiners relying on exports will have to continue to find ways to improve their competitiveness in 2022.

*Sustainable aviation fuel (SAF) is in the spotlight, and while more progress will occur in 2022, the year may also highlight the significant challenges that await its widespread commercialization.*

*Understand global small-scale LNG markets with ADI's new research study*

## **Renewable diesel capacity will continue to rise but the party may begin winding down in 2022 due to falling credit prices, feedstock supply challenges, and more competition.**

Renewable diesel (and gas) is helping operators simultaneously address multiple challenges: growing demand for energy transition investments, California's greenhouse gas emission regulations, and the need to cut surplus, high-cost refining capacity. Aided by incentives from California's Low-Carbon Fuels Standard (LCFS), renewable diesel capacity could grow with new projects to 7-8 billion gallons through 2025. However, soybean oil and other bio-based feedstocks are likely to fall short of renewable diesel capacity. That coupled with lower LCFS credit prices could impact renewable diesel margins.

## **Sustainable aviation fuel (SAF) is in the spotlight, and while more progress will occur in 2022, the year may also highlight the significant challenges that await its widespread commercialization.**

As various airlines run commercial flights with SAF-blended jet fuel, the renewable fuel is enjoying its place in the sun. Even so, these are baby steps relative to the challenges of decarbonizing aviation, which is a hard-to-abate sector that is also the focus of intensive consumer scrutiny. While a number of SAF technologies are making progress, costs are still too high and widespread commercialization will face the same challenges in sourcing bio-based feedstocks that we are seeing with renewable diesel.

## **Net-zero commitments in response to sustainability and energy transition pressures rely heavily on biofuels beyond which cutting emissions becomes increasingly expensive.**

Refiners can cut their greenhouse gas footprint significantly through the production of ethanol, biodiesel, and renewable diesel, and most are pursuing those opportunities to the fullest extent possible within their assets' capabilities. Beyond that, operators will have to rely on



**2022 ADI Forum, Thursday, February 24, 2022, Houston, TX**
[www.adi-forum.com](http://www.adi-forum.com)

7:30 am	<b>Registration and Breakfast</b>		8:15 am	<b>Welcome</b>	
8:30 am	<b>Keynote Presentation</b>		9:15 am	<b>Energy Outlook in 2022</b>	
		<b>Chris Smith</b> Cheniere Energy, SVP Policy, Govt & Public Affairs		<b>Uday Turaga</b> ADI, CEO	
10:00 am	<b>Panel 1: Upstream Oil &amp; Gas</b>				
		<b>Kirsty McCormack</b> BP, VP, Special Projects		<b>Linhua Guan</b> Surge Energy, CEO	
				<b>Aaron Ketter</b> Devon Energy, VP Mid-Cont. & S. TX	<b>Natalya Brooks</b> Moderator
11:00 am	<b>Break</b>				
11:20 am	<b>Panel 2: Midstream and Natural Gas Liquids</b>				
		<b>Paul Bienawski</b> Enstor Gas, CEO		<b>John Staebel</b> LyondellBasell, Dir, NA Feedstocks	
				<b>David Paradis</b> Trillium Flow, CEO	<b>Joseph Gentry</b> GTC Vorro, VP, Licensing
12:15 pm	<b>Lunch</b>				
01:15 pm	<b>Panel 3: Natural Gas &amp; LNG</b>				
		<b>Michael Mott</b> NextDecade, SVP Strategy		<b>Matt Jackson</b> Crowley, VP BD, Ship. New Energy	
					<b>Dena Wiggins</b> Natural Gas Supply Assoc., CEO
2:15 pm	<b>Panel 4: Refining and Downstream</b>				
		<b>Heath DePriest</b> Phillips 66, VP Emerging Energy		<b>Brandon Schwertner</b> Priority Power Management, CEO	
3:15 pm	<b>Break</b>				
3:35 pm	<b>Panel 5: Hydrogen</b>				
		<b>David Hatrick</b> Huntsman, VP Innovation		<b>Trevor Best</b> Syzygy Plasmonics, CEO	
					<b>Muhammad Islam</b> IHI E&C, SVP BD and Technology
4:35 pm	<b>Panel 6: Energy Transition</b>				
		<b>Eric Bradley</b> Taurus Invest. Holdings, MD New Energies & Sustainability		<b>Leslie Beyer</b> Energy Workforce & Technology Council, CEO	
					<b>Alex Robart</b> Microsoft, Energy & Sustainability Leader
5:30 pm	<b>Adjourn and Cocktails</b>				

*Refiners will continue to add more granularity to their long-term corporate strategies especially around preparing for the Energy Transition.*

*Retail assets and competencies are fashionable again and will be pursued aggressively in 2022.*

carbon capture and storage for any material reductions. However, CCS is very expensive to deploy in refineries and likely uncompetitive for smaller plants. Even so, a few refiners will have to explore options to deploy CCS to prepare for their companies' broader net-zero commitments.

### **Refiners will continue to add more granularity to their long-term corporate strategies especially around preparing for the Energy Transition.**

Refining has changed significantly in the past few years and a number of those changes were motivated by pressures that are, to a large extent, related to the Energy Transition. For example, several U.S. refiners shifted their West Coast capacity towards renewable fuels and/or terminals as California's climate change and low-carbon fuel policies made for challenging operations. Similarly, a number of integrated European oil majors divested their refining assets. Finally, refining independents have begun identifying carefully developing opportunities that fit their competencies in an Energy Transition world. For example, Phillips 66 leveraged its specialty coke capabilities to acquire stake in a battery materials company. Valero continue to strengthen and expand its biofuels business and Reliance is exploring crude oil-to-chemicals although its tie-up with Aramco is being re-evaluated. Such careful portfolio optimization will intensify in 2022 preparing the largest refiners for the Energy Transition.

### **Retail assets and competencies are fashionable again and will be pursued aggressively in 2022.**

Petroleum refiners spent the 2000s getting rid of retail fueling stations in a bid to pursue opportunities that offered higher returns on capital employed. In a low-/zero-carbon world, oil & gas majors will need deeper relationships with their customers that can be facilitated through strong fuel retailing brands. Refiners will likely strengthen their existing presence or explore opportunities to build retail presence in 2022.

Uday Turaga

**ADI brings deep expertise in fuels, refining, and downstream markets including chemicals and petrochemicals through its ADI Chemical Market Resources business. We will continue to track these markets through consulting and research projects. Please [contact us](#) to learn more about our [research](#).**