

Argus Renewable Diesel R99 Price Assessments



Using real market transactions and bids/offers, resulting in prices that accurately reflect the daily values and specific supply/demand dynamics of this increasingly important low carbon renewable fuel market.

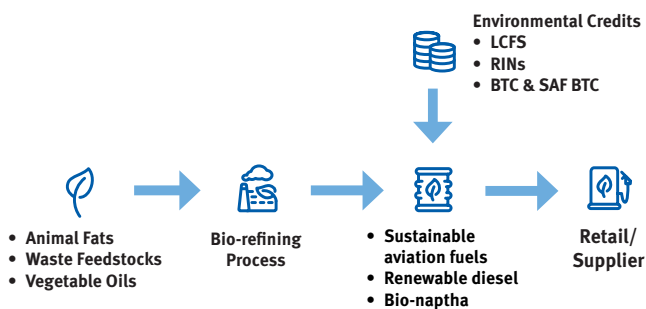
With U.S. production capacity for renewable diesel more than doubling from current levels by the end of 2027, it is critical to ensure fair and reflective values are provided for market participants. This is provided by the Argus renewable diesel assessments, which are underpinned by actual physical bids, offers and trades of renewable diesel. Between 2011 and 2021, consumption grew from 1 million barrels to 28 million barrels per year, over 18 times its original volume. If all announced/planned projects are executed, capacity is expected to rise to 373 KB/d.

significant renewable diesel volumes including major conversion projects in California that benefit from these incentives and drive volumes to highly incentivized states like California.

What is renewable diesel?

Renewable diesel is a non-petroleum hydrocarbon fuel made up of 100pc renewable raw materials. These include food and feed crops such as palm oil, rapeseed oil or soybean oil, waste products such as used cooking oil (UCO) and palm oil mill effluent (POME) as well as tallow. Renewable diesel is chemically identical to conventional road diesel.

Renewable fuel refining process



Why is Argus assessing the renewable diesel market in the US?

California consumes the vast majority of US renewable diesel supply. Renewable diesel and biodiesel made up more than 50% of the diesel used in California last year. Lastly, there are large financial incentives provided by state based low carbon fuel standards along the US west coast, the US Renewable Fuel Standard, the US Biodiesel Tax Credit, and ahead with the Inflation Reduction Act's Clean Fuel Production Credit. Driven by supportive legislation, there is

Which renewable diesel prices is Argus assessing?

- Renewable diesel R99 hop Los Angeles and del rail Los Angeles
- Renewable diesel R99 hop San Francisco and del rail San Francisco
- Renewable diesel R99 fob barge USGC
- Renewable diesel R99 del barge NYH

Who should use the Argus renewable diesel price assessments?

- Producers that need a market value for their renewable diesel
- Downstream fuels suppliers needing to understand the most economic option for blending renewable fuels to comply with regulatory mandates
- Renewable diesel feedstock originators seeking to understand the value of the finished product to help them price their feedstock
- Traders that connect renewable diesel producers and suppliers
- Downstream fuel retailers and pricing managers that need price input to set accurate renewable diesel sales prices for end-consumers
- Analysts needing a valuation tool for renewable fuels, for example for investments into hydrotreated renewable fuels capacity

- Risk managers needing to control financial exposure related to renewable diesel
- Road transport companies and other downstream fuel consumers being supplied renewable diesel on term contracts
- Sustainable Aviation Fuels (SAF) market participants - for example, HEFA SAF producers looking to understand values for alternative hydrotreated products or SAF buyers keen to follow a more frequently traded hydrotreated product than SAF

How does Argus assess renewable diesel prices across the US?

California bulk R99 Methodology

Specification: Kinder Morgan RD

Modality: head of pipeline

Locations: Los Angeles and San Francisco

Frequency: Daily

Basis:

1. CARB ULSD + attributes [CCA cost for diesel + LCFS deficit cost for diesel + crude CI deficit cost for diesel]

2. Front-month CME Nymex ULSD

Timing: Any time during the named month at buyer's option; excluding specified delivery times

Volume: 5,000 bl min

Attached credits: Assessments are for material from which RINs, LCFS and blender's tax credits have been stripped.

Basis roll timing: The basis for the Los Angeles assessment tracks the Kinder Morgan pump dates schedule for diesel, while the basis for the San Francisco assessment tracks the midpoint of the Kinder Morgan pump date schedules for gasoline and diesel.

California del rail R99 Methodology

Specification: ASTM D975

Locations: Terminals within a 200-mile radius of San Francisco and Los Angeles

Timing: any month

North America daily renewable diesel price assessments	
Description	PA Code
Renewable diesel R99 hop Los Angeles (CARB complex basis)	PA4000777
Renewable diesel R99 hop Los Angeles (NYMEX heating oil basis)	PA4000778
Renewable diesel R99 hop San Francisco (CARB complex basis)	PA4000779
Renewable diesel R99 hop San Francisco (NYMEX heating oil basis)	PA4000780
Renewable diesel R99 del rail San Francisco (NYMEX heating oil basis)	PA0041581
Renewable diesel R99 del rail Los Angeles (NYMEX heating oil basis)	PA0041579
Renewable diesel R99 fob barge USGC (Nymex heating oil basis)	PA0041767
Renewable diesel R99 del barge NYH (Nymex heating oil basis)	PA0041768
Renewable diesel R100 (soybean oil-based) del California	PA0034485
Renewable diesel R100 (tallow-based) del California	PA0034486
Renewable diesel R100 (used cooking oil-based) del California	PA0034487
Renewable diesel R100 (corn oil based) del California	PA0034488
Renewable diesel R100 (soybean oil-based) del Oregon	PA0034489
Renewable diesel R100 (tallow based) del Oregon	PA0034490
Renewable diesel R100 (used cooking oil-based) del Oregon	PA0034491
Renewable diesel R100 (corn oil-based) del Oregon	PA0034492
Renewable diesel margin indicator US Gulf coast	PA0034973

**Prices available in Argus Americas Biofuels*

European and Asia-Pacific daily HVO (hydrotreated vegetable oil) price assessments:	
Renewable Diesel Price Assessment Name	PA Code
HVO (hydrotreated vegetable oil) fob ARA range (Class I) USD/t	PA0030620
HVO (hydrotreated vegetable oil) fob ARA range (Class II) USD/t	PA0030623
HVO (hydrotreated vegetable oil) fob ARA range (Class III) USD/t	PA0030626
HVO (hydrotreated vegetable oil) fob ARA range (Class IV) USD/t	PA0039451
RED HVO fob Singapore (Class I) netback	PA0031231
RED HVO fob Singapore (Class II) netback	PA0031232
RED HVO fob Singapore (Class III) netback	PA0031233
RED HVO fob Singapore (Class IV) netback	PA0039452
HVO (hydrotreated vegetable oil) fob China (Class II)	PA0033032
HVO (hydrotreated vegetable oil) fob China (Class IV)	PA0040398

**Prices available in Argus Biofuels*

Volume: 145,000 USG min (equivalent to five railcars)

Basis: del rail

Pricing structures: 1) CARB ULSD + attributes 2) Front-month Nymex ULSD

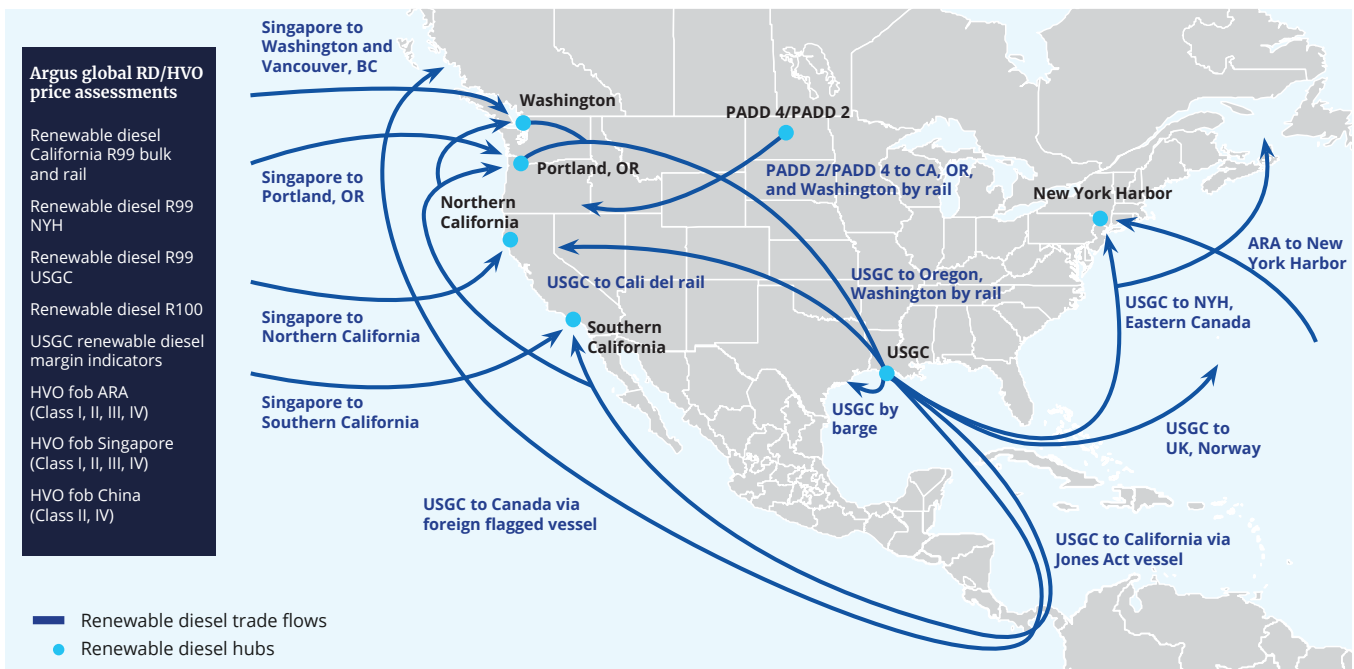
USGC fob R99 Methodology

Specification: ASTM D975

Locations: fob barge USGC

Basis: fob waterborne

Global Renewable diesel/HVO trade flows



Pricing structures: 1) Argus R99 hop Los Angeles Nymex heating oil basis flat price, plus the average of the California LCFS value by feedstock (per existing Argus methodology), less the Argus New Orleans to Angeles clean tanker assessment 2) Argus ULSD 62 fob USGC waterborne clean tanker quote, plus 20¢/USG Texas state excise tax credit, less (est) 10¢/USG intra-gulf transportation costs 3) Front-month Nymex ULSD

New York Harbor fob R99 Methodology

Specification: ASTM D975

Locations: del barge New York Harbor

Basis: delivered waterborne

Pricing structures: USGC + Freight from USGC to NYH (Argus Houston to New York clean tanker quote) 2) Front-month Nymex ULSD

What are the attributes for CARB Diesel?

Petroleum diesel is a deficit generating fuel in states with LCFS programs (CA, OR, WA) and therefore incurs LCFS costs, which would increase the value of the alternative renewable diesel – Argus publishes this LCFS deficit compliance cost for diesel in CA, OR and WA. Furthermore, in states with state cap-and-trade programs (CA, WA), compliance costs are

levied on the diesel fuel position holder at the terminal – Argus publishes this CCA cost for diesel at the rack in CA and WA. This also adds cost to the diesel and therefore value to the alternative renewable diesel.

- PA0014057 - California Carbon Allowance cost for CARB diesel

Compliance costs for California cap and trade program levied on the diesel fuel position holder at the terminal, based on the Argus assessment of prompt-month allowances. It adds costs to diesel and therefore value to the diesel alternative (RD).

- PA0014061 - California LCFS deficit cost for CARB diesel

Petroleum diesel in California is obligated under the LCFS, incurs additional cost, and in turn adds value to its alternative RD. This is a cents per gallon cost based on the Argus spot LCFS credit assessment.

- PA0030383 - California LCFs deficit cost - crude CI CARB diesel

This is a cost to account for the crude CI score that CARB updates every year. If it goes above a certain level, the agency adds more deficits to accounts. Together, these three PA codes are viewed as the avoidance costs of conventional diesel in California.

How does the US renewable diesel pricing portfolio fit in with the global renewable diesel market?

Renewable diesel is produced across the US, Europe and Asia and exported to the highest valued markets with biofuels incentives and mandates. Our global suite of indices allow traders and plant operators to evaluate changing market conditions and opportunities and deliver to key market locations based on the appropriate benchmark index.

What additional renewable diesel market coverage does Argus provide?

- Argus Biofuels Outlook provides a 15 month forwarding looking view into demand and prices
- Argus Biofuels Analytics provides long-term forecasts out to 2035
- Argus Americas and International Biofuels Forward Curves provides a tool to support investment and trading decisions

For more information

This price is published in the *Argus Marine Fuels* and *Argus Americas Biofuels* reports.

For general queries and to talk to one of our experts, please contact oil-products@argusmedia.com.

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