ExxonMobil

Improving renewable diesel yield with BIDW™ dewaxing catalyst

Meeting the high severity dewaxing needs of bio-feedstocks

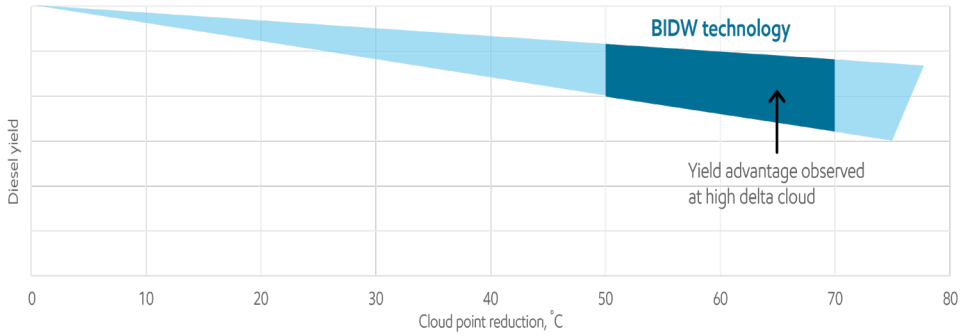
Energy lives here

Choosing the right dewaxing catalyst is critical to maximize yield from bio-feedstocks which produce diesel with a high n-paraffin content. ExxonMobil's BIDW™ dewaxing catalyst suite provides solutions that meet cold-flow specifications for renewable diesel to improve yield in either two stage or single stage service applications. With nearly half a century helping refiners produce high yields of deeper delta cloud diesel fuel, take advantage of ExxonMobil's innovative dewaxing catalyst technology expertise.

Cutting-edge technology for next-generation fuels

Renewable diesel producers face additional challenges in meeting cold-flow specifications because of the high n-paraffins generated when bio-feeds are hydrotreated. BIDW dewaxing catalyst provides a solution for cold-flow improvement under recommended operating conditions, because it isomerizes the n-paraffins to iso-paraffins, improving distillate yield and offering low-temperature performance while retaining high cetane.

Renewable diesel yield vs. cloud point reduction



Key benefits

Higher yields of renewable diesel

- Paraffins are isomerized instead of cracked
- Retains more diesel product

Decreased hydrogen consumption

- Reduced cracking helps lower operating costs (hydrogen consumption)

Excellent product qualities

- High cetane value is retained
- Lower pour point and cloud point

Proven stability

- Base metal can withstand hydrotreating effluent conditions in bio-feed
- Both base and noble metal have high tolerance for nitrogen and sulfur

Flexible, adaptable applications

- Various BIDW™ dewaxing catalyst grades to meet unique refinery needs for:
  - Two stage or single stage drop-in applications
  - Stand-alone dewaxing reactors
- BIDW applications are customized to meet cold-flow objectives.
- Easily integrated with complementary technologies for clean, high-quality renewable diesel.
- Combining BIDW dewaxing catalyst with ExxonMobil's process technology can provide refiners with powerful dewaxing in winter mode, while dialing back performance in summer mode for reduced product severity.

BIDW catalyst technology services

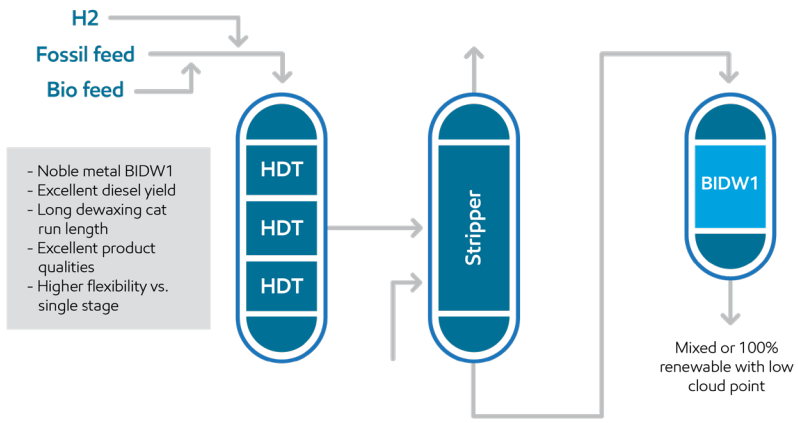
- Initial non-confidential consultations and proposal development
- Basic engineering package, including design specifications and operating guides
- Technical support during front-end design and engineering, procurement and construction stages
- Technology training, catalyst loading and start-up support
- Unit monitoring support

Why ExxonMobil Catalyst and Licensing?

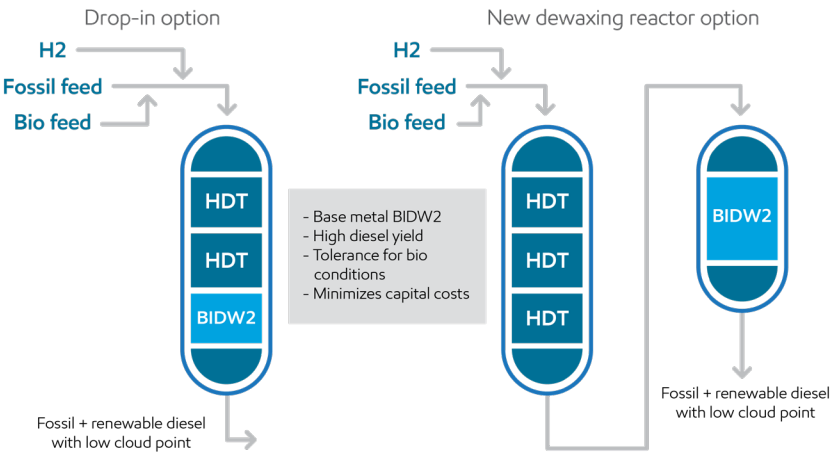
Advance your refining, gas and petrochemical business by improving operations, increasing capacity, lowering costs, improving margins and reducing emissions using our differentiated high-performance specialty catalysts, advantaged processing technologies, and worldwide operational expertise. With a proven commitment to helping customers implement best practices for the operation of safe, reliable and efficient facilities that have delivered better results for 60 years, place your trust in ExxonMobil's Catalyst and Licensing Business.

BIDW™ technology is backed up by almost half a century of ExxonMobil's innovation in diesel dewaxing.

100% bio-feed or co-processing in two stage service



Co-processing with single stage service dewaxing



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