NEWS RELEASE

DuPont Clean Technologies

CNOOC Successfully Completes Performance Test for DuPont IsoTherming® Hydrotreating Unit

Further Reducing Environmental Impact with Sustained Performance

WILMINGTON, Del., September 22, 2020 – DuPont Clean Technologies (DuPont) is pleased to announce that an IsoTherming® hydrotreating unit installed at the CNOOC Huizhou Refinery in Guangdong Province, China has successfully completed its performance test, certifying that the unit is meeting performance guarantees. The IsoTherming® VGO hydrotreater at CNOOC is designed to process 51,419 bpsd (2,600 kmta) of a vacuum gasoil feedstock as feed for the FCC unit. The IsoTherming® hydrotreater was designed for output of <1000 wppm sulfur and <600 wppm nitrogen.

The VGO hydrotreater was initially commissioned in late September 2017 but, due to the market-driven, reduced refinery throughput, the IsoTherming® VGO hydrotreater ran at various lower rates until recently. The performance test results highlight the IsoTherming® technology's ability to sustain catalyst activity over a long period of time with the unit still satisfying performance guarantees.

CNOOC has indicated the IsoTherming® VGO hydrotreater had a lower investment cost and offered greater than $4,000,000 per year savings in utility costs compared to conventional trickle bed technology. This, along with sustained catalyst performance, has provided CNOOC both an economic and social benefit.

Operating costs savings in the form of reduced consumption of utilities, as well as capital cost advantages when compared to conventional technologies were key drivers for CNOOC to select the IsoTherming® technology for this project. CNOOC also chose the IsoTherming® technology for a 71,637 bpsd (3,400 kmta) ULSD hydrotreating unit (again at the Huizhou refinery) which was also commissioned in September 2017 after passing its performance test in 2018.

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"It's great to see how the IsoTherming® technology showcased sustained catalyst performance over the past few years with the unit still able to achieve start-of-run performance guarantees," said Kevin Bockwinkel, global business manager, IsoTherming® hydroprocessing technology.

IsoTherming® hydroprocessing technology utilizes a novel liquid phase reactor system that is superior to conventional hydroprocessing technologies, as it uses the hydrogen and catalyst more efficiently. It also offers lower capital and operating costs compared to conventional hydroprocessing technologies in achieving the desired product quality. This technology is suitable for a wide range of applications, including kerosene hydrotreating, transmix hydrotreating, diesel hydrotreating, FCC feed hydrotreating (VGO hydrotreating), mild hydrocracking, dewaxing, gas-to-liquid (GTL) upgrading, and heavy oil upgrading for both grassroots and revamp configurations.

To date, DuPont has 27 IsoTherming® hydroprocessing technology licenses globally, of which 15 are in commercial operation. These licensed units include a diverse set of applications ranging from 100 percent kerosene to 100 percent light-cycle oil (LCO), and various mixtures of distillates and heavy gas oils, including coker blends, with capacities ranging from 1,500 bpsd to 80,000 bpsd.

Growing global demand for cleaner transportation fuel continues to drive refiners toward operations that maximize hydroprocessing capacity and capability through unit debottlenecks or new unit construction. More stringent environmental regulations and the processing of cost-advantaged sour and heavy feed stocks make meeting this demand even more challenging. Licensed and marketed by DuPont, as part of its Clean Technologies portfolio in Overland Park, Kansas, USA, IsoTherming® hydroprocessing technology provides a proven solution to meet this growing global demand.

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About DuPont Clean Technologies

The Clean Technologies division of DuPont is a global leader in process technology licensing & engineering, with an unwavering commitment to customer support. We provide extensive global expertise across our portfolio of offerings in key applications - MECS® sulfuric acid production, STRATCO® alkylation, BELCO® wet scrubbing and IsoTherming® hydroprocessing. Offering critical process equipment, products, technology

and services, we enable an array of industrial markets, including phosphate fertilizer, non-ferrous metals, oil refining, petrochemicals and chemicals, to minimize their environmental impact and optimize productivity. We are dedicated to helping our customers produce high-quality products used in everyday life in the safest, most environmentally-sound way possible, with a vision to make the world a better place by creating clean alternatives to traditional industrial processes. We make everyday life better, safer, cleaner. **www.cleantechnologies.dupont.com**

About DuPont

DuPont (NYSE: DD) is a global innovation leader with technology-based materials, ingredients and solutions that help transform industries and everyday life. Our employees apply diverse science and expertise to help customers advance their best ideas and deliver essential innovations in key markets including electronics, transportation, construction, water, health and wellness, food and worker safety. More information can be found at **www.dupont.com**