

FlexUP™ Technology is a novel desulfurization and upgrading process that removes sulfur, nitrogen, trace metals and increases API on heavy-sour oil feeds. It includes the FlexOX™ family of catalysts, the FlexUP™ chemical package and FlexUP Support Services. FlexUP™ significantly reduces the operational and capital costs of the current method of sulfur removal, hydrotreating (HDT) which translates to significant savings and increased margins for your refinery.

Reduction in Hydrogen consumption. While hydrotreating relies on energy intensive hydrogen to meet sulfur regulations, FlexUP™ uses air, eliminating the need to use hydrogen to meet these environmental regulations. This allows current hydrogen capacity to be used for hydrogenation, further increasing profit margins.

Lower capital costs. In a direct comparison to hydrotreating, FlexUP™ is a fraction of the capital cost. For refineries looking to add HDT capacity, FlexUP™ can save hundreds of millions of dollars for future projects. For refineries with installed HDT capacity, FlexUP™ can avoid expanding hydrogen gas capacity which can save capital costs by as much as hundreds of millions of dollars. Additionally, FlexUP™ can enable lower quality crude oils to be used without the cost of expensive capital equipment upgrades that protect against naphthenic acids, metals and higher sulfur levels.

Meet sulfur regulations. FlexUP™ removes sulfur from the heaviest distillates using low energy inputs. Globally, sulfur regulations for road diesel, marine fuel and other distillates are becoming stricter and more expensive to meet. FlexUP™ has proven to be extremely effective in removing sulfur down to desired levels on all oil feeds, including heavy fuels where HDT struggles to achieve desired results.

Smaller CO₂ footprint. FlexUP™ operates at much lower operating temperatures and pressures (atmospheric) than hydrotreating. This means an overall reduction in energy consumption and lower carbon dioxide footprint. Using FlexUP™ versus HDT in a refinery can reduce the CO₂ footprint by up to 40%.

Auterra is working with strategic energy companies looking to meet current and future fuel quality regulations or building new refining capacity. FlexUP™ Technology is currently in the pilot plant stage and Auterra expects to have first commercial field units for FlexUP™ in place by 2016. Please contact Auterra for more information on FlexUP™ Technology, FlexOX™ catalysts, FlexDS™ chemical package or FlexUP Support Services.

For more information, contact:

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FlexUP™ Highlights

- Lower capital and operating cost of HDT
- Reduces total refinery H₂ and costs
- Removes sulfur and nitrogen compounds, trace metals
- Reduces refinery carbon footprint
Ideal for all oil feeds; including gas oil, diesel and crude
- Efficiently meets current and future environmental regulations

