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Topping

Crude is a mixture of petroleum products. The topping refinery just separates the crude into its constituent petroleum products by distillation, known as Atmospheric Distillation. Topping Refinery produces naphtha but no gasoline.

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Hydroskimming

The hydroskimming refinery is defined as a refinery equipped with Atmospheric Distillation, naphtha reforming and necessary treating processes. Hydroskimming refinery is more complex than a topping refinery and it produces gasoline.

Hydroskimming refinery produces a surplus of fuel with unattractive price and demand.

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Cracking

The cracking refinery is, in addition to the above, equipped with vacuum distillation and catalytic cracking. The cracking refinery adds one more level of complexity to the hydroskimming refinery by reducing fuel oil by conversion to light distillates and middle distillates.

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Coking

The coking refinery refers to the one which is equipped to process the vacuum residue into high value products using the Delayed Coking Process. The coking refinery adds further complexity to the cracking refinery by high conversion of fuel oil into distillates and petroleum coke.

Catalytic Cracking, Coking and other such conversion units are referred to as secondary processing units. [The Nelson Complexity Index](#), captures the proportion of the secondary conversion unit capacities relative to the primary distillation or topping capacity. The Nelson Complexity Index typically varies from about 2 for Hydroskimming refineries, to about 5 for the Cracking refineries and over 9 for the Coking refineries.

Refineries, with high Nelson Complexity Index have the necessary flexibility in processing a wide variety of crudes and are capable of achieving higher value addition.

Reliance's Jamnagar refinery has Catalytic Cracking and Coking as the main secondary processing Units, and has a Nelson Complexity Index of 9.93. This excludes the Aromatics Complex, which is set up under RIL. If the Aromatics Complex is also included for the Jamnagar Refinery then the Nelson Complexity Index is over 14.0.

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