Topic ID	**OEA53T**
Title	**An Overview of Fuel Blending Economics**
Category	**M-Manage Infrastructure**
eLearning Level	**Basic**

Introduction

Two variables make a refinery unique: capability and capacity. Fuel blending and its optimization provide more complexity but better capacity and capability to a refinery. Therefore, this drive to increase efficiency is one of the most critical components in achieving a financially feasible refining process.

This topic will discuss refinery complexity, Nelson complexity factors, EDC and Nelson complexity index, a typical small refinery configuration with 10-25 KBD, world crude oil refining capacity, worldwide refining capacity distribution, from oil to consumers, types of crude classifications, types of the refinery, intermediate refining processes, typical refinery configurations, etc.

Aspects of Fuel Blending Economics in Refinery

A detailed study of the world's energy source shows that in the year 2040, petroleum and natural gas will constitute 31% and 28% of all sources, respectively.

A summary of data concerning several countries with financially recoverable oil reserves (including non-conventional oil deposits) indicates Venezuela's largest reserve. Comparing global crude oil refining capacity shows that Asia and Oceania have the highest average refining capacity and several refineries. Globally, 100 KBD is the average refining capacity for a country. Furthermore, 63 percent of countries have at least one refinery.

Nelson Complexity Index

Refinery complexity is measured and ranked using NCI (Nelson complexity index). The metric provided by this index is easy to comprehend. Here, all refinery equipment is assigned a complexity factor. Complexity values are summed up to estimate the complexity of a refinery. Cost index, investment intensity, and potential value addition of a refinery are indicated by NCI.

NCI consists of many factors: catalytic hydro refining/hydrocracking/reforming/cracking, coking, thermal processes, vacuum distillation, distillation capacity, aromatics/isomerization, and alkylation/polymerization, asphalt, oxygenates, hydrogen, etc. NCI helps to assess the relationship between offsite facilities and various refineries. The focus is on regular complexity. There is not much use for total complexity.

EDC

EDC stands for Equivalent Distillation Capacity. It is derived from NCI and used to estimate workforce requirements. It is also used as a measure of the processing capacity and flexibility of a refinery.

Summary

Oil being the world's largest energy source, there is a need to evaluate the economic impacts of fuel blending. Here, oil industry statistics were presented. Refinery classification, as well as crude types, were also described. Refinery process units were also discussed in the context of various processing capacities.

Options for eLearning This Topic

Mode of eLearning	Available?
Free Course	No
Refresher Course	Yes
Pick N Choose (Custom Curriculum)	Yes
Advanced Level Course	Yes
Structured MCOR Curriculum	Yes