Processes within the Petroleum Refining Industry

Crude Oil

Atmospheric Distillation

Heat, Pressure

Fugitive HC

visbreaker

Heat, Pressure, Catalyst

Cracking (Hydro/Catalytic)

Vacuum Distillation

Heat, Pressure

Hydrogen, Hydrogen Sulfide

Coking

Heat, Pressure

Fugitive HC

Heavy Gas Oil, Lubricating Oil, Asphalt

desalts

Treatment and Blending:
Alkylation, Hydrotreater, Polymerization, Sulfur recovery

Heat, Fuel Gas, Steam, Hydrogen, Catalyst

Fuel Oil

Alkylate, Butane, Propane, Fuel Gas

Diesel, Fuel Gas, Kerosene

Liquified Petroleum Gas (LPG), Gasoline

Sulfur

Coke

Asphalt

Diagram Key
- = input
= emission

Figure 1: The general outline of the refining processes in the petroleum industry. Adapted from Speight and Andres et. al 2007.
(EEER, 1992). The raw materials are heated at temperatures ranging from 2600 to 3100 degrees.

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Refer to Figure 1 for manufacturing steps. The first step in manufacturing glass is forming.

Source: EEER, 2002