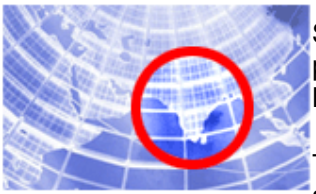
Reliance's Jamnagar complex represents the largest industrial project ever implemented by anyone from the Indian corporate sector.

The Jamnagar complex is a fully integrated manufacturing facility, with a petroleum refinery complex, an aromatics/petrochemical complex, a power generation complex and a port and terminal complex that provides access to a pipeline network.

The high degree of integration at the Jamnagar complex allows for feedstock and product linkages that continue to lead to higher efficiencies and enhanced value addition.

Location



Situated on the northwest coast of India, the integrated refinery-cum-petrochemicals complex of Reliance is located at village Motikhavdi, Lalpur Taluka, Jamnagar District, in the state of Gujarat.

The complex, about 815 kilometers by road from Mumbai and approximately 25 kilometers from the city of Jamnagar, is in proximity to the Gulf of Kutch, a sheltered bay close to the Middle-East crude oil sources.

Total area

The entire Jamnagar complex, consisting of manufacturing and allied facilities such as utilities and off-sites, port facilities and a township for the employees, sprawls over more than 7,500 acres. If the complex were to be located in Mumbai or London, the area would have covered more than one-third of these metropolises.

Total investment

The entire Jamnagar complex entailed a total investment of about **Rs 25,000 crore** (about **US$ 6 billion**).

Making of Jamnagar complex

Created in a record time of **less than three years**, the Jamnagar complex would always remain a special experience for Reliance. The project is of titanic proportion and has taken, for its completion, millions of engineering man-hours spread over many international engineering offices; thousands of tonnes in equipment and material, procured from leading suppliers across the globe; highly advanced construction equipment of unbelievable sizes; construction workforce of over 75,000 working round the clock for months; a great number of innovative techniques in project execution; and project management expertise of Reliance acquired over the past several years.

A vast complex

The magnitude of the Jamnagar complex is perhaps better appreciated through the following indicators:

- Total structural steel tonnage used for completing the complex is adequate to construct nineteen **Eiffel towers.**
- Total cement concrete used for completing the complex is adequate to create **ten buildings** like the **Empire State Building.**

- Total length of pipelines in the complex is adequate to **link the northern and the southern tips of India** or **Seattle with Miami.**
- Total length of power and control cables in the complex, about 14,000 kilometers, can **link the eastern and the western parts of India six times over** or **cover the coastline of the USA**.
- The length of the roads in the complex can connect **Mumbai with Pune**, a distance of 170 kilometers or **Los Angeles with San Diego.**

Refinery-cum-petrochemicals complex

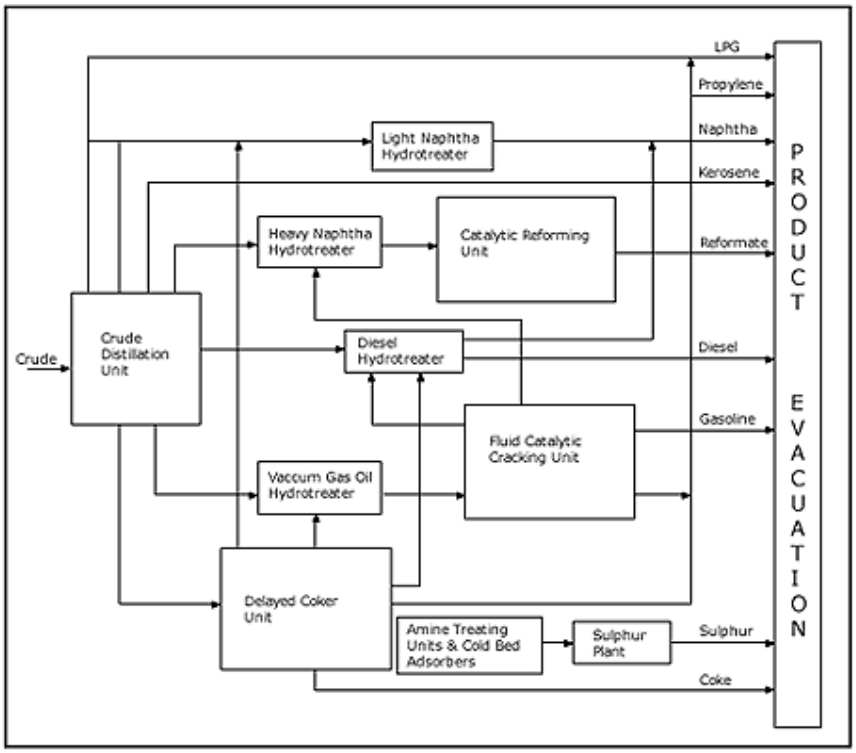
The Jamnagar complex primarily has a 27-million tonnes per annum refinery of RPL that is fully integrated with downstream petrochemicals units of RIL, which manufacture naphtha-based aromatics as well as propylene-based polymers. Fully equipped with facilities for meeting the captive energy requirements in the form of power and steam, the complex is well supported by world-class logistics and port facilities.

Refining processes

The refinery complex at Jamnagar has more than 50 process units, which together process the basic feedstock, crude oil, to obtain various finished products deploying the following major refining processes:

- Crude oil distillation (Atmospheric as well as vacuum distillation)
- Catalytic cracking (Fluidised Catalytic Cracker)
- Catalytic reforming (Platforming)
- Delayed Coking

The following simplified schematic diagram shows how crude oil is refined to obtain various finished products.



Special features of the refinery complex :

Reliance refinery configuration is characterized by its superior product slate as compared to that of the other refineries. Two important features in this regard are:

- High proportion of high-value products such as propylene and LPG (adding to over 10% on crude processed as compared to 2-3% for other refineries)
- Nil production of low-value "black oils" - fuel oil (compared to 12-20% on crude processed for other refineries) under normal circumstances.

Process technologies

All process units of the Jamnagar complex are based on state of the art technologies. Some of the major technologies are:

Hydrodesulphurisation	: UOP
Catalytic Reforming Unit	: UOP
Fluid Catalytic Cracking Unit	: UOP
Delayed Coker Unit	: Foster Wheeler Inc.
Sulphur Recovery	: Black & Veatch Pritchard
Hydrogen Generation	: Linde A G
Merox Treating	: UOP
SHP / TAME*	: UOP

* (Selective Hydrogenation Process / Tertiary Amyl Methyl Ether)

World Scale Plants

All process units in the Jamnagar complex, the largest grass-roots refinery complex in the world, are of world-scale sizes. In fact, some of the process units are the largest operating units in the world. A few examples are:

- Delayed Coking unit
- Fluidised Catalytic Cracking unit
- TAME (Tertiary Amyl Methyl Ether) unit

Township

The complex includes a self-contained township, appropriately named as Reliance Greens, for over 2,500 Reliance employees and their families. Sprawling over 415 acres of land, the township has been designed to provide the best possible residential, educational and recreational facilities to the employees.

The township includes fully furnished housing for the employees, as well as a medical centre, school, playgrounds, temple, community centers, health centers, banks, mall/supermarket, gas station, parks, swimming pool, golf course and tennis courts etc.
