

**A  
Report  
on  
Industrial Visit  
At  
Adani (Mundra) Port, Kutch, Gujarat**



**Organized By**

**DEPARTMENT OF ELECTRICAL  
ENGINEERING**



**छोटुभाई गोपालभाई पटेल प्रौद्योगिकी संस्थान, बारडोली**  
**Chhotubhai Gopalbhai Patel Institute of Technology, Bardoli**

## **Industry Profile:**

Company Name: Mundra Port & Special Economic Zone Ltd.

Address: Adani House, Nr. Mithakhali Circle Navrangpura, Ahmedabad,

Gujarat. PIN Code: 380009.

Phone: Tel +91 79 2656 5555

Fax +91 79 2656 550

Homepage: [www.info@adani.com](http://www.info@adani.com)

**Work profile:** Natural gateway for the cargo hubs functioning in the Northern and Western states of India as well as the NCR.

## **About Mundra Port:**

Mundra Port is the largest private port of India located on the north shores of the Gulf of Kutch near Mundra, Kutch district, Gujarat. Formerly it was operated by Mundra Port and Special Economic Zone Limited (MPSEZ) owned by Adani Group which later it was expanded into Adani Ports & SEZ Limited (APSEZ) managing several ports.

In 2013-2014, Mundra Port has handled 100 million tons of cargo in a year becoming the first Indian port to do so. It also became India's biggest port by cargo handled.

## **About Visit:**

Department of Electrical Engineering organized the visit to Adani Mundra Port for the student of 6<sup>th</sup> sem B.Tech and Diploma Electrical on 23<sup>rd</sup> and 24<sup>th</sup> February 2018.

<b>Date of Visit</b>	<b>Branch and Semester</b>	<b>No. of Students</b>	<b>Accompanied Faculties</b>
23/02/2018	Electrical 8 <sup>th</sup> & 6 <sup>th</sup> Diploma	76	Mr. Bhargav D. Patel Mr. Lokesh Shah Ms. Arpita Patel Mrs. Chand D Thakur
24/02/2018	M.Tech 2 <sup>nd</sup> & Electronics 8 <sup>th</sup>	38	Mr. Mayank Kapadiya Ms. Karmani Rajput

### **Activities on the Day of Visit:**

The private buses were boarded up to Ahmedabad. The buses reached Ahmedabad around 5.30 AM than from there the buses from Adani were taken up to Mundra port. The buses reached Adani Shantivihar around 3.00 PM. The students were allocated specific rooms and then lunch was provided later. After lunch there was a visit to Adani Wilmar and Adani Port.

### **Adani Mundra Port:**

The multi-purpose terminals contain nine berths of a total 1.8 thousand meters long with alongside depths ranging from 9 to 16.5 meters. Berth 1 is 275 meters long with alongside depth of 15.5 meters and can accommodate vessels to 75 thousand DWT. Berth 2 is 180 meters long with alongside depth of 13 meters and can accommodate vessels to 30 thousand DWT. Accommodating vessels to 60 thousand DWT, Berths 3 and 4 are each 225 meters long; Berth 3 has alongside depth of 14 meters, and Berth 4 has alongside depth of 12 meters. Berths 5 and 6 are each 250 meters long with alongside depth of 14 meters, and both can accommodate vessels to 150 thousand DWT. Berths 7 and 8 are each 175 meters long with alongside depth of 12 meters and can accommodate vessels to 40 thousand DWT. The Barge Berth is 80 meters long with alongside depth of 6 meters and capacity for vessels of 2500 DWT.



The Mundra Port offers 21 closed dockside warehouses with capacity for 137 thousand square meters to store wheat, sugar, rice, fertilizer and fertilizer raw materials, and deoiled cakes. The port offers 880 thousand square meters of open storage for steel sheets, coils, plate, clinker, scrap, salt, coke, bentonite, and coal. An additional 26 thousand square meters of open storage is available alongside the railway. The port also offers a wheat-cleaning facility with capacity to handle 1200 metric tons per day and a rice-sorting and –grading facility that can handle 500 metric tons per day.

The Port of Mundra is planning several additions and improvements. Two thermal power plants are under construction that will produce over 8600 megawatts. A new terminal site is proposed to be located about ten nautical miles west of the current terminals at the Port of Mundra. The terminal will eventually contain three deep-water offshore berths and two sets of stackyards for coal, iron ore, and other dry bulk cargo.

The marine infrastructure at Mundra Port consists of ten (10) berths for handling dry bulk & break bulk cargo, three (3) berths for handling liquid cargo, six (6) container berths including a Ro-Ro berth, three (3) mechanised import cargo

berths and 2 single point moorings for crude oil imports. The mechanised import cargo berths can handle vessels with maximum draft of 19 meters and other berths can handle vessels with maximum draft of 17 meters. The SPM facility offers a draft of 32 meters.

Heaps of coal was alongside the road. There was PORT based SEZ which was spread in 15000 hectares. There were open stock yard for MINERALS & Closed Stock yards for FERTILIZERS & GRAINS etc. Jetty was divided as DRY CARGO, CONVEYOR BELT for COAL & PIPELINE for Liquid crude i.e. VLCC(Very Large Cargo Container) & ULCC(Ultra Large Cargo Container)

### **Adani Wilmar Limited:**

Adani Wilmar Limited (AWL) is a joint venture incorporated in January 1999 between Adani Group, the leaders in International trading & Private Infrastructure with businesses in key industry verticals - resources, logistics and energy. The group was created with a vision of 'Nation Building' by developing assets of national economic significance. Wilmar International Limited - Singapore, Asia's leading Agri-business group & its business activities include oil palm cultivation, oilseed crushing, edible oil refining, sugar milling and refining, specialty fat, biodiesel and fertilizer manufacturing and grain processing. It has over 450 manufacturing plants and an extensive distribution network covering China, India, Indonesia and some 50 other countries.

In the refining process, the first step was BLEACHING. Under bleaching, the major impurities were removed from the oil which deteriorated the color of the oil. The bleached oil was then FILTERED and the heavy impurities were taken out from it. Finally, the strong smell of crude was to be eliminated to get the final product. Thus the DEODERIZATION of oil was done. This process removed all the impurities which were deteriorating the odor of oil. At 250-270 degrees Celsius, the oil was made to pass high vacuum pressure which refined it completely. Fatty acids, which were removed while deodorizing, were sent to the soap industry. Other impurities which were extracted from the crude while bleaching and filtration were sent to incense stick making industries. And thus, no part of the crude was wasted at any of the step in the refining process.

After knowing refining, students were taken to the packaging section of the

oil industry. Uniform conveyer belt system that connected the whole packaging process into one. The oil bottles were filled and entered into the station where first they were shut with bottle caps. And then they were further passed to put on the Label. Afterwards, a packaging machine packed 36 bottles each at the same time into three different boxes i.e. 12 bottles in one box. Finally the boxes were sealed with tape and were further sent for storage or export.



The whole process was fully automatic and was working on PLCs. The PLCs made the work so easy that not a single human was involved in this process at any instance of time. ADANI WILMAR packaging unit has 6 cold storage units in which the temperature is slowly decreased upto -5 degree Celsius. The fully-equipped Adani Wilmar can produce 6000-7000 liters of oil/hour in the industry.

Next day 24<sup>th</sup> February morning was started by yoga followed by laughing session. After yoga session and laughing session everyone had breakfast. The students have check out their rooms for visiting West port and Adani power plant.

## **Adani Power Plant:**

The Mundra Thermal Power Project was conceived to provide power for the captive consumption of APSEZ in Mundra. Thereafter the vision and the capabilities of the promoters has made Mundra Power project the largest single location Coal based Thermal Power Station in India and one of the top five in the World. All the nine units of Mundra power plant have been commissioned one after another in shortest possible time of 33 months.

Capacity - 4620 MW (5 X 660 MW + 4 X 330 MW)

Largest single location private coal based power plant in the world. Adani Power created history by synchronizing the first super-critical technology based 660MW generating unit at Mundra. This is not only the first super-critical generating unit in the country but also the fastest project implementation ever by any power developer in the country with synchronization within 36 months from the inception.

The Phase III of the Mundra Project, which is based on supercritical technology, has received 'Clean Development Mechanism (CDM) Project' certification from United Nations Framework Convention on Climate Change (UNFCCC). This is the world's first thermal project based on supercritical technology to get registered as CDM Project under UNFCCC.

The power plant supplied 4620 MW of energy. Out of these 2000 is supplied to HARYANA, 2000 to GUJARAT government, & 620 is internally used. It uses HVDC (High Voltage DC) for transmission to HARYANA as it is a long distance transmission it is to be converted into DC first & then it is again recovered. Live status of frequency and power generated was available in the control room.

The visit was ended after lunch and feedback to the officials. The buses have started from Mundra around 1 pm and reached Ahmedabad at 10 PM. Than via private bus reached to Surat at 6 AM on 25<sup>th</sup> February.



## Glimpses of Visit



**Group Photo at Adani Mundra Port, Kutch, Gujarat**



**Group Photo at Adani Mundra Port, Kutch, Gujarat**





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We heartiest thanks to Adani Mundra Port to give an opportunity to visit such an esteem organisation and we also want to thank our director Dr. N. C. Shah sir, Head of the Department Mr. Rakesh Gajare and all the faculties for coordinating the visit.