

# इंडियन ऑयल कॉर्पोरेशन लिमिटेड

रजिस्टर्ड ऑफिस : 'इंडियनऑयल भवन',  
जी - ९, अली यावर जंग मार्ग, बांद्रा (पूर्व), मुंबई - ४०० ०५९.

## Indian Oil Corporation Limited

CIN-L23201MH1959GOI011388

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**IndianOil**

A Maharatna  
Company

Secretarial Department

No.Secl/Listing

8<sup>th</sup> February, 2016

Manager (Listing),  
National Stock Exchange of India,  
Exchange Plaza, 5<sup>th</sup> floor,  
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The Corporate Relationship Department,  
BSE Ltd.,  
1<sup>st</sup> Floor, New Trading Ring,  
Rotunda Building,  
P.J.Towers, Dalal Street,  
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Dear Sir,

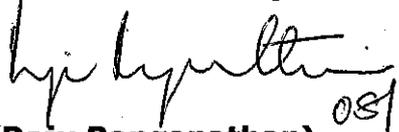
**Sub :IndianOil's Paradip Refinery : Dedicated in the Service of the Nation**

We are pleased to notify that the Hon'ble Prime Minister, Shri Narendra Modi has dedicated IndianOil's 11<sup>th</sup> Refinery at Paradip, Odisha to the Nation at a function held on 7th February, 2016. A press release in this regard is attached herewith for information and record please.

Thanking you,

Yours faithfully,

**For Indian Oil Corporation Limited**

  
08/02/2016  
**(Raju Ranganathan)**  
**Company Secretary**

## **PRESS BACKGROUNDER**

### **IndianOil's Paradip Refinery: Dedicated in the Service of the Nation**

**Paradip, February 7, 2016:** The dedication to the nation of IndianOil's 11<sup>th</sup> refinery by the Hon'ble Prime Minister of India, Shri Narendra Modi, here today is a significant milestone in its corporate vision to be 'The Energy of India' and to become 'A globally admired company.' The foundation stone of the prestigious project was laid by the former Prime Minister of India, Shri Atal Bihari Vajpayee.

The project is the result of the combination of support and efforts of the Ministry of Petroleum & Natural Gas (GoI), State Government of Odisha, local administration and all the stakeholders, consultants, contractors and their teams, the local communities, nearby villages along with the committed team of IndianOil. For IndianOilPeople, it is a world-class structure set up in the service of the nation.

#### **IndianOil: The Energy of India**

IndianOil is India's flagship national oil company in the downstream sector and the country's largest commercial enterprise, accounting for nearly half of India's petroleum products market share, about 35% national refining capacity, and 71% downstream sector pipelines throughput capacity. IndianOil's business interests straddle the entire hydrocarbon value-chain – from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil & gas, marketing of natural gas and petrochemicals, besides forays into alternative energy and globalisation of downstream operations. The Corporation is implementing ambitious plans to broaden its energy basket with alternative energy options such as wind, solar and bio-fuels. During the XII Plan period (2012-17), the Corporation is investing Rs. 56,200 crore in a host of projects that include expansion of refining capacity and petrochemicals infrastructure, besides building its oil & gas assets portfolio in India and abroad.

With the commissioning of Paradip Refinery, the IndianOil Group now owns and operates 11 of India's 23 refineries. The Corporation's refining capacity, including that of its subsidiary, will increase to 80.7 MMTPA. Major upgradation projects are on the anvil in operating refineries to reach the time-bound target for supplying BS-IV & subsequently BS-VI grade auto-fuels in the country. The Corporation is focussing on capability-building for processing heavy and sour crude oils for better profitability and refining margins.

#### **Paradip Refinery – a project for a sunshine future**

It is for its proximity to the port that IndianOil chose to set up the refinery to meet the burgeoning energy demands of the domestic market and partly the South-East Asia export market. The finished petroleum products from Paradip Refinery will be shipped to as far as Asia Pacific, Europe, USA, and to the demand centres in the east of India, north east and to some southern states like Andhra Pradesh and Telangana.

By virtue of its configuration and the state-of-the-art technologies selected from various licensors of international repute, the refinery is the most-modern refinery of the country, with a complexity factor of

12.2 based on Nelson Index. The refinery is equipped to produce fuels of premium grade Euro-IV and Euro-V quality.

Many first-time technological features like flue gas desulphurisation, vapour recovery system from jetty loading, and an alkylation process to get octane-rich low-benzene MS blend component, etc., are the hallmark of the refinery that would ensure environment-friendly operations with minimum impact on the eco-system.

The refinery is configured to process high-sulphur heavy crude oils with major secondary processing units like Fluidised Catalytic Cracker (FCC, i.e., INDMAX technology developed in-house by IndianOil R&D), Delayed Coking Unit (DCU) for coke production, besides Diesel Hydro-treatment and Catalytic Reformer, Alkylation unit, Merox, etc., for quality upgradation of products.

### **INDMAX- Shining example of Make in India**

A shining example of 'Make in India' in Paradip is the indigenously-developed INDMAX Technology. Developed by IndianOil's R&D Centre, it is a novel process that can make India self-reliant in LPG fuel and create immense potential in boosting the Indian petrochemical industry. The technology enables direct conversion of various petroleum hydrocarbon streams into more valuable, light distillates and petrochemical feedstock. Globally licensed by M/s. Lummus Technology, USA, the process shall radically improve the refinery yield pattern. This innovation has saved the country foreign exchange to the tune of USD 6.9 million.

Widely recognised in the field of science and technology, the technology has been conferred with several prestigious awards such as National Petroleum Management Programme (NPMP), Department of Science & Industrial Research (DSIR), Department of Science & Technology (DST) & Chemtech CEW award, and was also shortlisted for Platt's award (USA) and Energy Institute Award (UK).

Successfully demonstrated at IndianOil's Guwahati Refinery, the INDMAX technology is now an integral part of the refining process of the newly-commissioned Paradip Refinery.

### **An extraordinary execution**

Paradip Refinery is spread over a total area of 3,345 acres with approximately 39 km boundary length, including about 300 acres for Refinery Township and about 100 acres of land for building two approach roads to connect the refinery site with the existing road network. About 7 acres of land has been acquired at Cuttack for setting-up the raw-water intake facility.

The final execution was undertaken in a hybrid mode with M/s. Foster Wheeler (UK) as the main project management consultant, and partnering with many other prestigious Project Management Consultants (PMC); Engineering, Procurement, Construction Management (EPCMs); Build-Own-Operate (BOO); and Build-Own-Operate-Transfer (BOOT). For the first time in the Corporation, the BOO & BOOT contracts have been implemented for the construction of a refinery. The other major partners who helped in constructing this prestigious project are M/s Essar Projects (India); Punj Lloyd (India); KazStroy Services (Kazakhstan); UDHE Ltd. (India); JACOBS (India), TOYO (India); DCPL (India); BHEL (India); and EIL (India).

## **Technological highlights**

Being a marshy land, the foundation of the refinery had to be fortified & compacted with dredging and 27.4 million cubic metres of sand-filling in two phases in the entire project site to withstand earthquakes, cyclones or Tsunami. It was a unique engineering achievement, transporting a mixture of dredged sand and water through a pipeline from a distance ranging from 9-22 km to the site of filling. Readyng the land itself took about 4-5 years.

Since the land lies in the seismic and cyclonic zone, the engineering design benchmarks were raised to accommodate any such eventuality in the future. A comprehensive metrological study was undertaken through M/s. Larsen & Toubro-Ramboll, a consultant of international repute. The refinery structure has been built to withstand the established wind velocity of 65 metres per second or 235 km per hour. More than 30 pieces of equipment weighed more than 300 metric tonnes! Even during 'Phailin' in October 2013 and during cyclone 'Hudhud' in October 2014, the refinery did not sustain major damage, bearing testimony to its world-class engineering and construction standards.

Being a coastal location, the refinery is very susceptible to the eco-system. For the first time in the history of IndianOil, an integrated cathodic protection system has been introduced to protect its underground pipes. A very high-grade of epoxy painting/coating and superior metallurgy have been used to minimise maintenance and wear & tear to mitigate the effects of the corrosive environment.

## **Configured to process varieties of crude**

The refinery is configured to process a mix of high sulphur and heavy/sour crude. The refinery can also process a variety of crudes in combinations like low-sulphur crude from Nigeria, Angola & Malaysia; high-sulphur crude from Iraq, Saudi Arabia, Iran, UAE; and heavy crude from Mexico, Egypt, Syria, Venezuela, and Brazil, among others.

The crude shall be imported through Very large Crude Carriers (VLCC), unloaded through Single Point Moorings (SPMs) and transferred to the crude oil storage tanks through dedicated crude pipelines.

## **Storage capacity**

The refinery is equipped with 11 crude oil tanks to store high-sulphur heavy crude, with 58 petroleum product & intermediate tanks (including for liquid sulphur storage tanks). Apart from these liquid storage facilities, there are LPG storage mounded bullets, propylene storage mounded bullets, Hydrogen and alkylation feed mounded bullets.

## **Distribution modes**

The petroleum products of the refinery include 49.6% of middle distillates (SKO, ATF, Euro-III HSD, Euro-IV HSD, 31.5% of light distillates (LPG, Propylene, Euro-III MS, Euro-IV MS) and 19.9% of Petcoke, Sulphur, etc.

An elaborate infrastructure has been developed for pumping crude oil to the Paradip Refinery and for the smooth, safe and efficient movement of the finished products. This includes a crude oil unloading facility at Paradip offshore with the first Single Point Mooring (SPM) facility on the east coast of India; a complex

cross-country product pipeline network; a marketing terminal with truck loading bays and tank-wagon gantry; an LPG terminal with facilities for road dispatch; but the biggest crude receipt and product dispatch infrastructure of Paradip Refinery is the captive South Oil Jetty, the first-of-its-kind in India made for a greenfield coastal refinery. The product shall be dispatched through pipelines (20-25%), rail (20-25%), road (15-20%) & coastal (40-50%) movements.

### **Environment-Friendly Refinery**

Right from the inception of the project, extensive care has been taken to ensure that Paradip Refinery is constructed and run in the most environment-friendly way possible. An extensive quantitative risk assessment study was carried out to assess risk levels and to reduce them to as low as reasonably practical (ALARP). The main focus of the IndianOil engineers was to install all the necessary checks and balances in technology to prevent any unwanted emissions/discharge that may lead to hazardous results. Hazard and Operability Study (HAZOP) of each process has been carried out to identify the probable risks and the studies have been used to achieve safer, efficient and reliable refinery operations. Most of the discharge from the refinery is recycled and re-used back into the plant operations.

580 acres of green cover has been developed in and around the refinery with the active support of Odisha Forest Development Corporation Ltd. Approximately 6.5 lakh trees have been planted in and around the refinery and its township area, comprising 50 different species, including more than 22,000 fruit-bearing trees. The verdant landscape shall also act as a pollution sink and help control emission of dust, heat and noise beyond the boundary of the plant.

### **Community Development**

Like every other geography where IndianOil operates, at Paradip as well, the Corporation has partnered many life-changing community development projects at an investment of Rs. 9 crore till date. The Corporation has undertaken multidimensional social initiatives in the areas of education (school buildings), health care (check-up camps & drinking water), sanitation (*swachh bharat abhiyan* & *swachh vidyalaya abhiyan*), infrastructure (cyclone centres, roads, and orphanages), environment (tree plantation and green belts), social development (sports and art & culture) and skill development (skill development workshop and centres) and empowerment of the girl child and women. It is a saga of commitment, which will continue.

### **Raising the skill quotient with country's 1<sup>st</sup> Skill Development Institute**

To cater to the skills requirement in the hydrocarbon sector, the national oil companies in India, under the leadership of the Ministry of Petroleum & Natural Gas, have started action to equip India's youth with vibrant and skilled talent. The first-of-its-kind world-class Skill Development Institute (SDI) in the country in the hydrocarbon sector - is being set-up by IndianOil at Bhubaneswar. The focus of the institute will be on imparting downstream sector skills, with the objective of creating a pool of certified skilled technicians to meet the demand of growing industries in the region of east and northeast of India.

In the meanwhile, as a precursor to the SDI, Skill Development Programmes shall begin under the aegis of IndianOil, at a temporary site in Bhubaneswar from the 2016-17 academic session.

## **Strategic partnership with State of Odisha**

IndianOil enjoys a strategic partnership with Odisha and its people as an energy provider to fuel the growth and development of the region. The Indian Oil logo emblazoned across the State through its vast infrastructure, stands for trust, reliability and commitment. This includes bulk storage depots (Bhubaneswar, Balasore, & Sambalpur), Indane LPG bottling plants (Balasore & Jharsuguda), IndianOil Aviation Fuelling Stations (Bhubaneswar & Charbatia). The Aviation Fuelling Station at Charbatia caters to the requirement of Indian Air Force. IndianOil serves the people of Odisha through nearly 735 petrol/diesel stations, including Auto LPG stations and 268 *Kisan Seva Kendra* outlets in the rural areas. The 112 kerosene agencies support the rural sector of the State and BPL families with fuel supply through the public distribution system of the State.

With a market share of about 52.3%, IndianOil supports the transportation, mining and industrial segments of Odisha through smooth supplies of POL products to major bulk customers like Indian Railways, NTPC, NALCO, Vedanta, Aditya Birla, RSP-SAIL, Tata Steel, Essar Steel, Paradip Phosphate Ltd., IFFCO, Mahanadi Coal Field, TRL, HAL, Paradip & Dhamra Port. Almost 65% of the industry demand of the State is being met by IndianOil, especially in the major industrial hubs of Balasore, Jagatsinghpur, Sambalpur, Angul, Jeypore, Jharsuguda, Rourkela, Barbil, Joda and Paradip.

Reaching out to every nook and corner of India with the clean-green LPG cooking gas is a commitment of the Ministry of Petroleum and Natural Gas, Government of India. To support this initiative, IndianOil is expanding related infrastructure under the leadership of the Petroleum Ministry. Indane - the flagship LPG brand of IndianOil, serves nearly 13 lakh households in the State through a network of 225 IndianOil LPG distributors. There has been a quantum leap in the reach of LPG within the State from 28% in 2014 to 36% in 2015, with a major contribution from IndianOil. 'PaHaL' is another major initiative of the Ministry of Petroleum & Natural Gas, and Odisha ranks as one of the best performing States in terms of seeding. 5-kg LPG cylinders were launched for the BPL families by the Minister of State (Independent Charge), Shri Dharmendra Pradhan, in 2015.

About 65% of Odisha's requirement of bitumen, used for laying road network, is being met by IndianOil's Haldia Refinery.

The latest addition to Odisha's industrial horizon -- Paradip Refinery -- by IndianOil is surely meant to propel the State's development in a fast orbit.

## **Fuelling economic growth**

Paradip Refinery brings a promise of growth to the State of Odisha and to the nation at large. The coming up of the refinery shall accrue benefits to the nation by adding to manufacturing of value-added petroleum products, thereby leading to reduced dependency on imports and substantial savings in foreign exchange. There will also be major savings in transportation costs for moving petroleum products from other locations to eastern India, and it will enhance the security of POL supplies to energise the State of Odisha. The refinery shall play a critical role in the growth of the region, spurring trade-related activities, while increasing opportunities for direct and indirect employment. These shall have a ripple effect on the development of hospitality services, communication, health care and education in the region in the near future. The imminent potential development of ancillary and auxiliary industries, in turn, will generate more revenue for the State, increasing employment opportunities within the local area.

With a 700-kilo tonnes per annum capacity Polypropylene Plant to be commissioned at Paradip by 2017-18, IndianOil will be fuelling the Government of Odisha's vision of energising the petrochemicals hub. This unit will spur the development of a large number of polypropylene-based downstream industries like furniture, packaging, houseware, disposable cups, medicine bags & textile packaging in Odisha and its neighbouring States. This is expected to result in an investment of about Rs. 1200 crore, with direct employment of approximately 7000 people. The feasibility reports on other critical projects like Ethylene Derivative Project (400 KTA capacity Mono Ethylene Glycol (MEG)); PX-PTA Unit, Petcoke Gasification Unit (for generation of synthetic ethanol), have already been completed.

There is more to come -- a new LPG import terminal at Paradip is proposed that shall provide an additional source of LPG supply to the States of Odisha, West Bengal, Bihar and Jharkhand.

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