

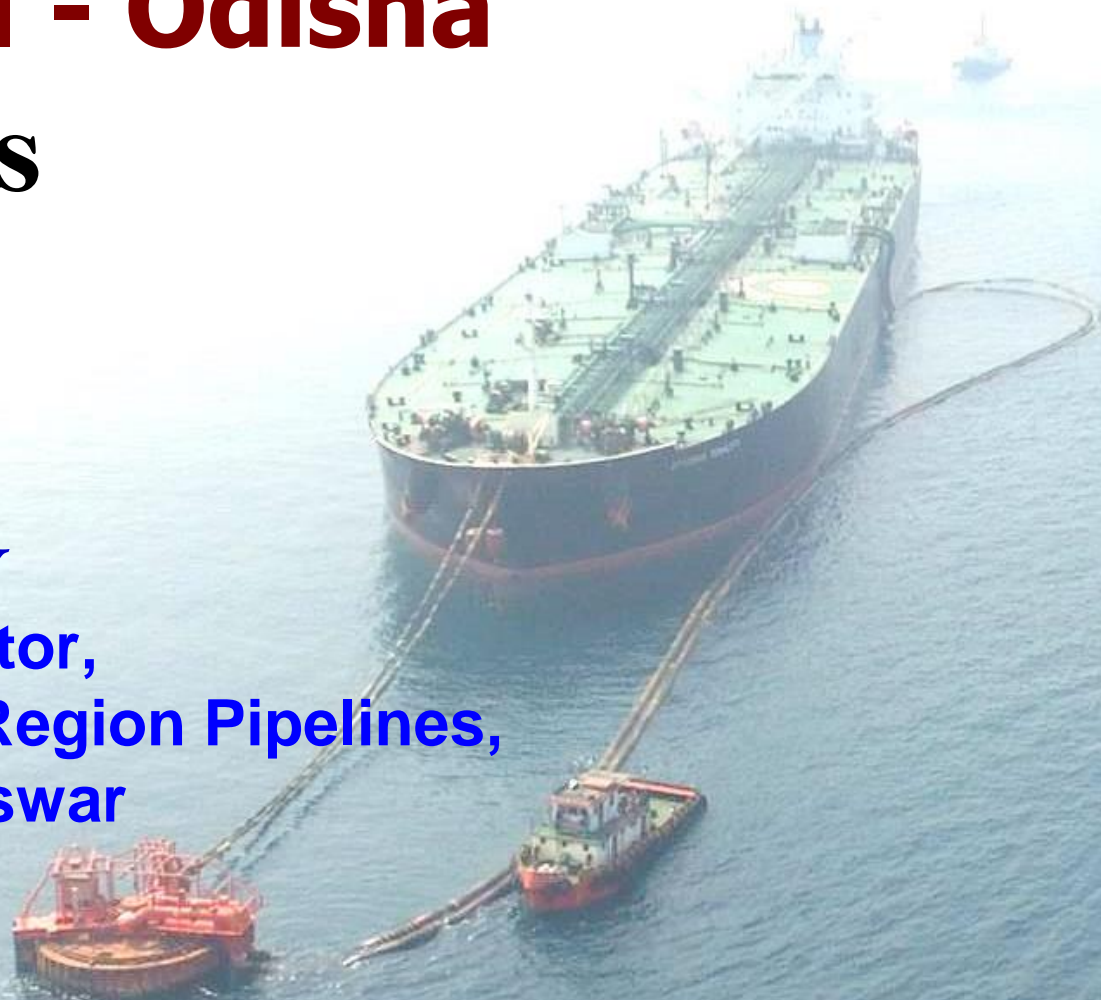


IndianOil

# IndianOil - Odisha Logistics

*P C Choubey*

Executive Director,  
South Eastern Region Pipelines,  
IOCL, Bhubaneswar





IndianOil

# Indian Oil Overview



IndianOil

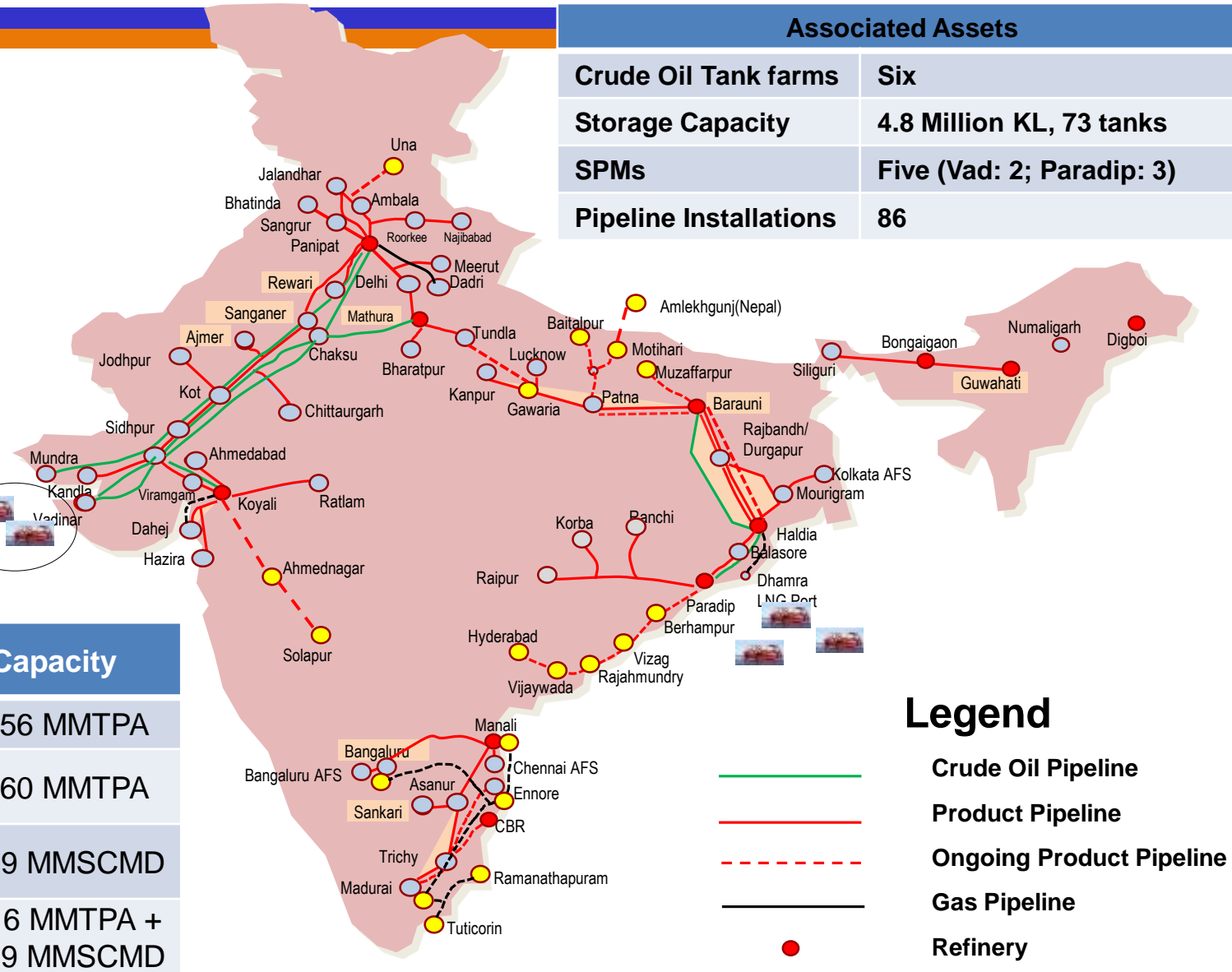


IndianOil  
The Energy of India



# Assets and Reach

IndianOil



| Associated Assets      |                           |
|------------------------|---------------------------|
| Crude Oil Tank farms   | Six                       |
| Storage Capacity       | 4.8 Million KL, 73 tanks  |
| SPMs                   | Five (Vad: 2; Paradip: 3) |
| Pipeline Installations | 86                        |

| Pipeline | Length | Capacity                   |
|----------|--------|----------------------------|
| Product  | 8830   | 45.56 MMTPA                |
| Crude    | 5301   | 48.60 MMTPA                |
| Gas      | 161    | 21.69 MMSCMD               |
| Total    | 14292  | 94.16 MMTPA + 21.69 MMSCMD |

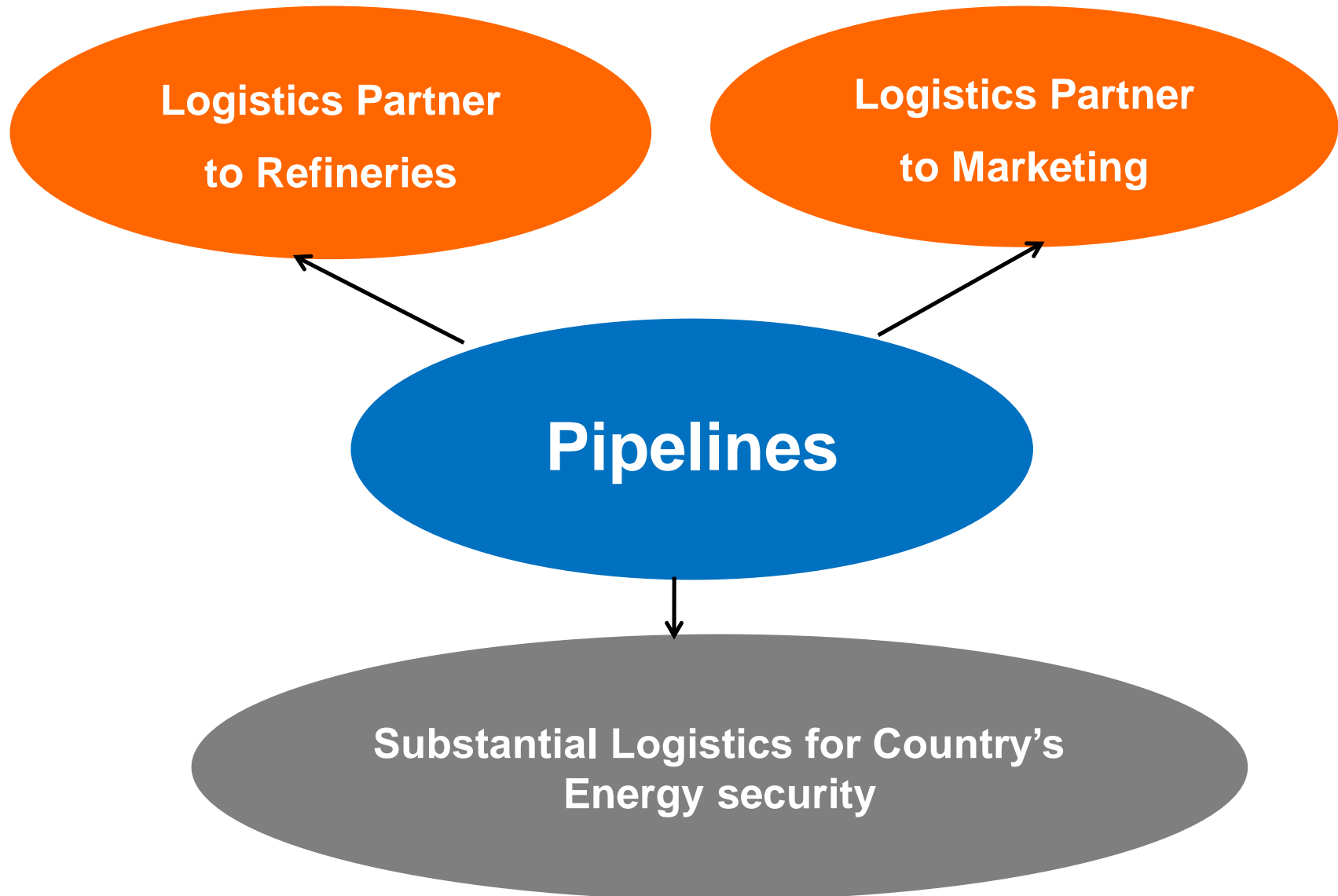
### Legend

- Crude Oil Pipeline
- Product Pipeline
- - - Ongoing Product Pipeline
- Gas Pipeline
- Refinery



IndianOil

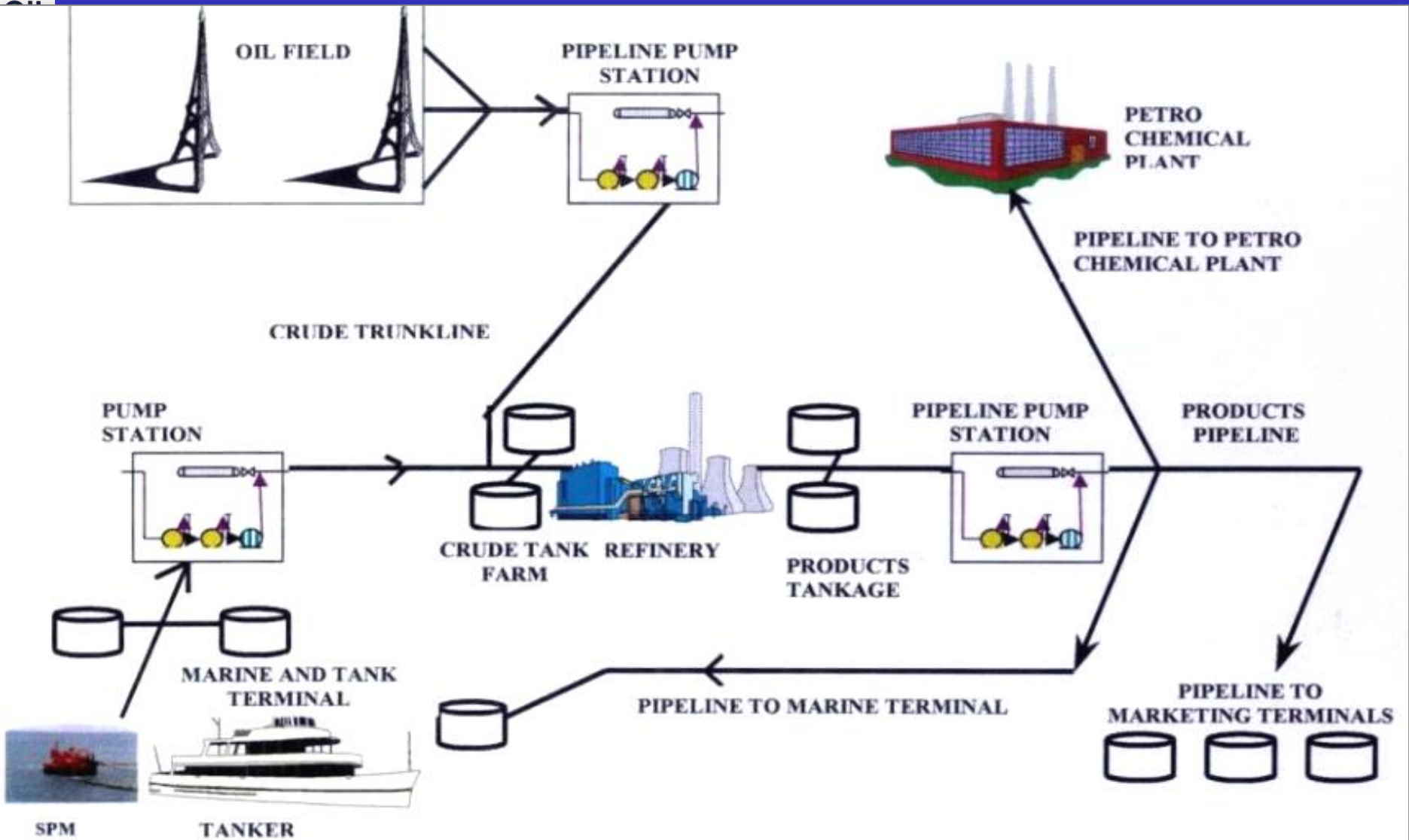
# Pipelines – as a Logistics Partner





# Typical Pipeline Network

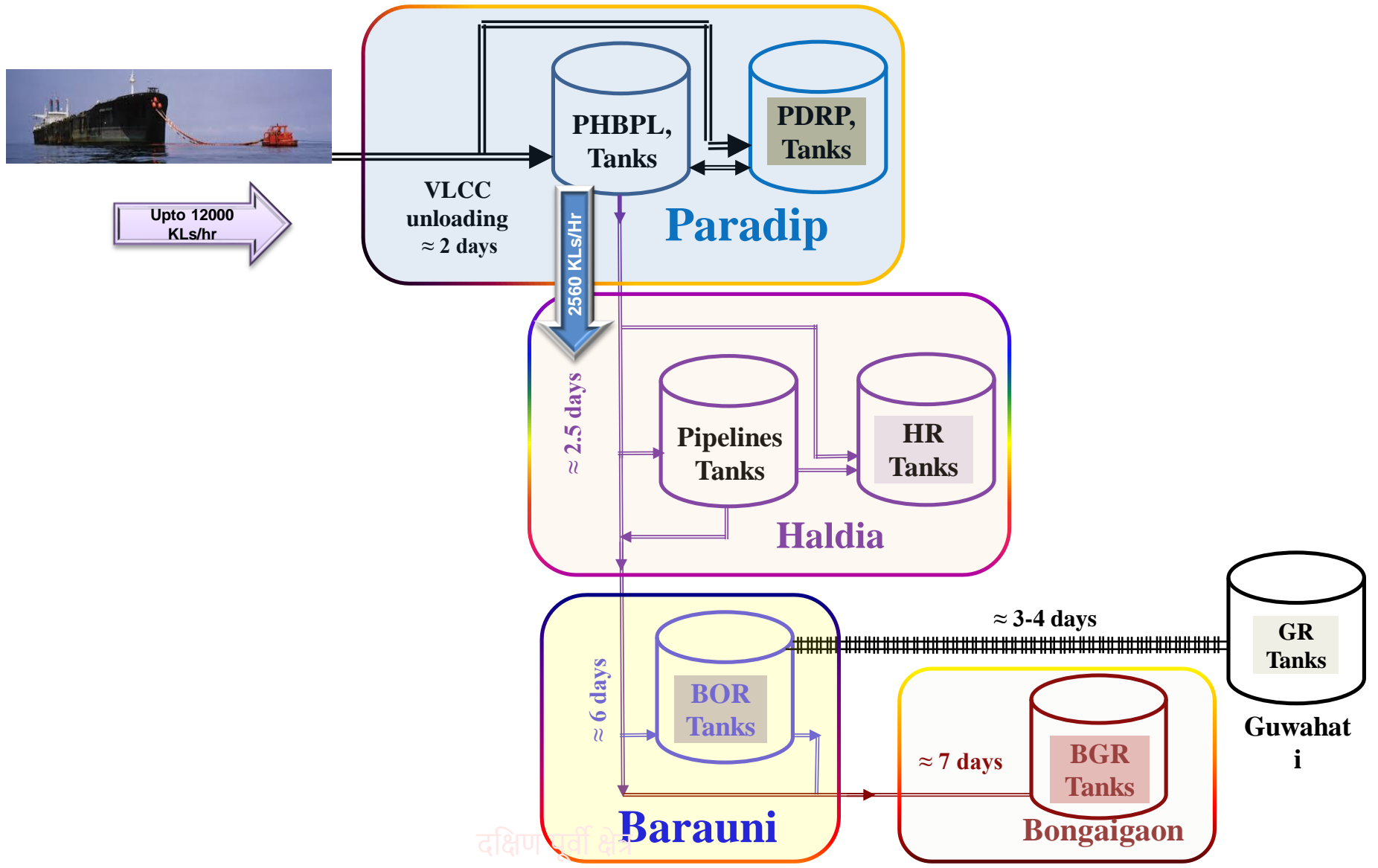
India





# PHBPL Process Flow Diagram

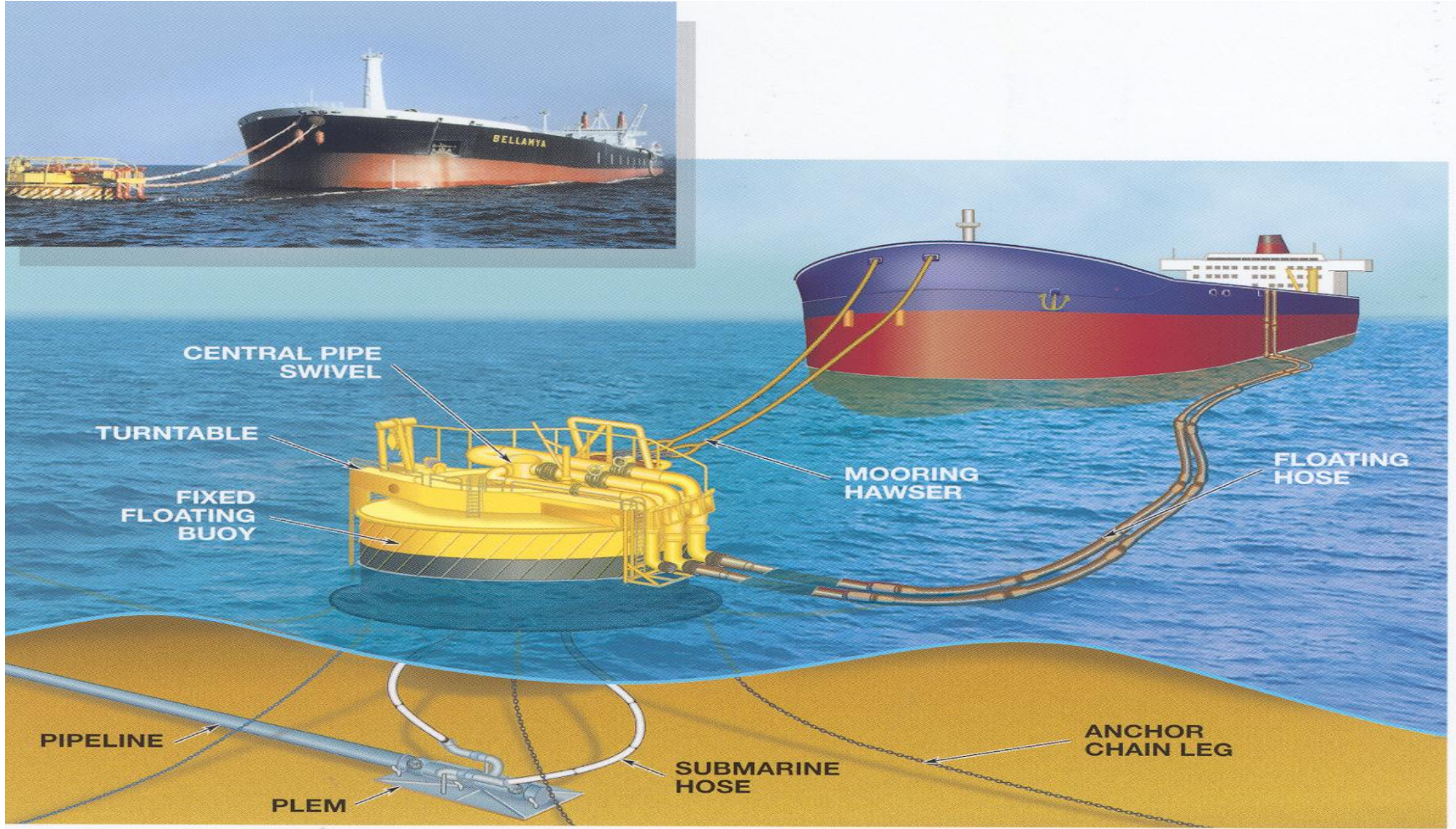
IndianOil





IndianOil

# Single Point Mooring (SPM) System





IndianOil

# SPMs of IOCL



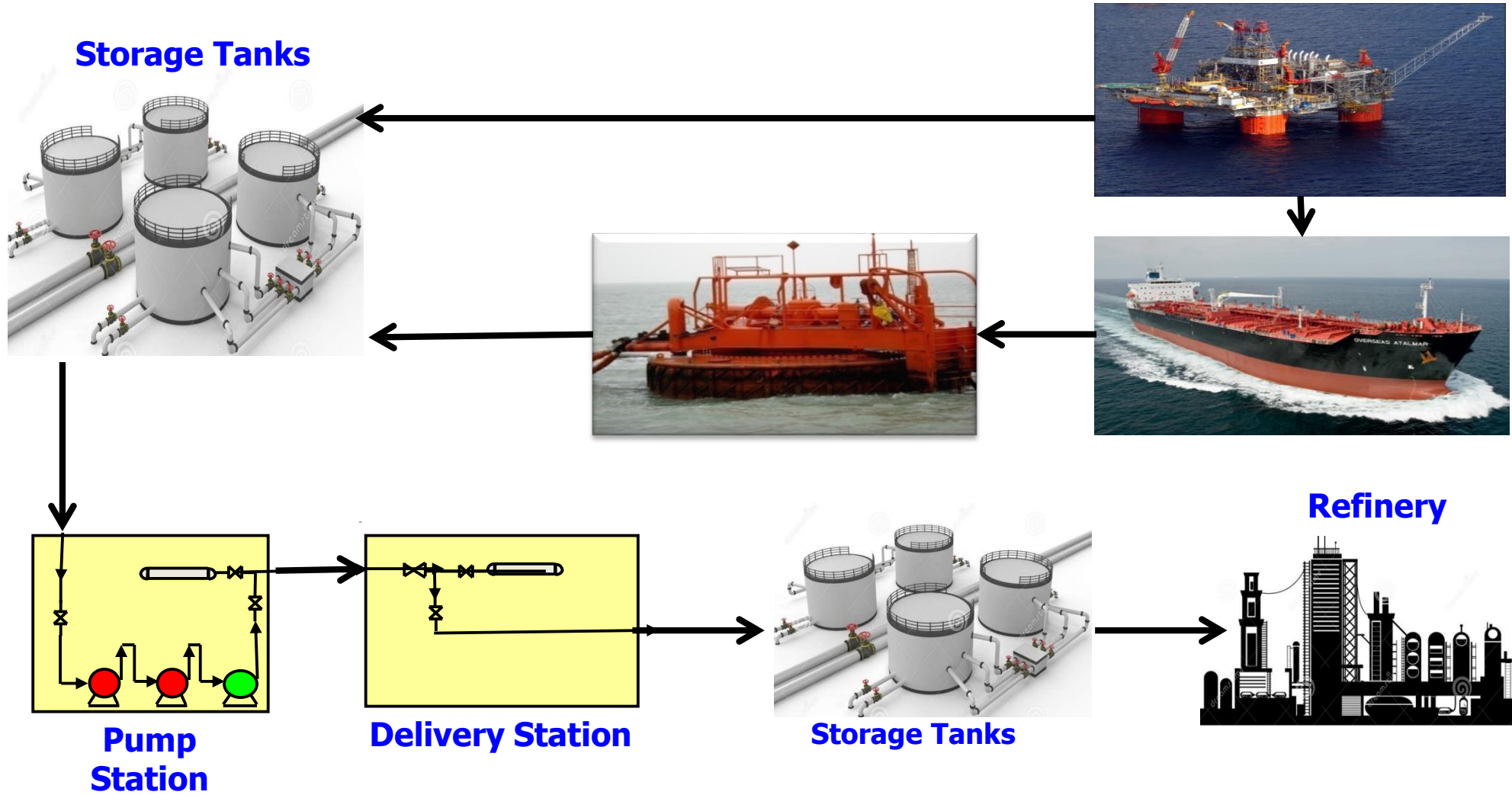
- ❖ India's 1<sup>st</sup> SPM was by IOCL at Vadinar in 1978
- ❖ Vadinar SPM in use for more than 40 years
- ❖ IOCL commissioned 1<sup>st</sup> SPM at Paradip in open waters on east coast of India for VLCC berthing in 2008 and additional 2 nos of SPMs in 2012.
- ❖ Successfully operating SPMs at Paradip in all weather conditions





IndianOil

# Typical Supply Chain : Crude Oil





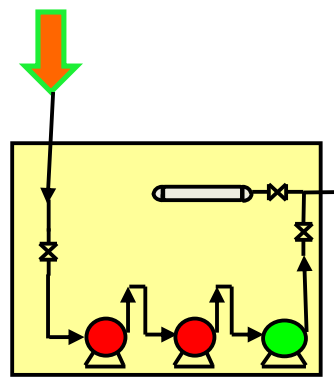
# Pipeline Supply Chain- Petroleum Products



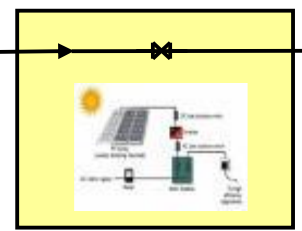
Storage Tanks



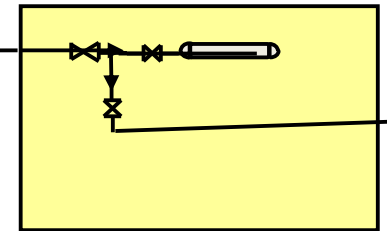
Refinery



Originating PS



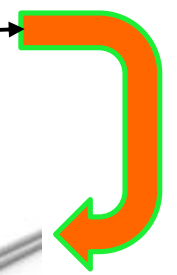
SV Station



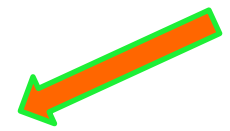
Delivery Station



Storage Tanks



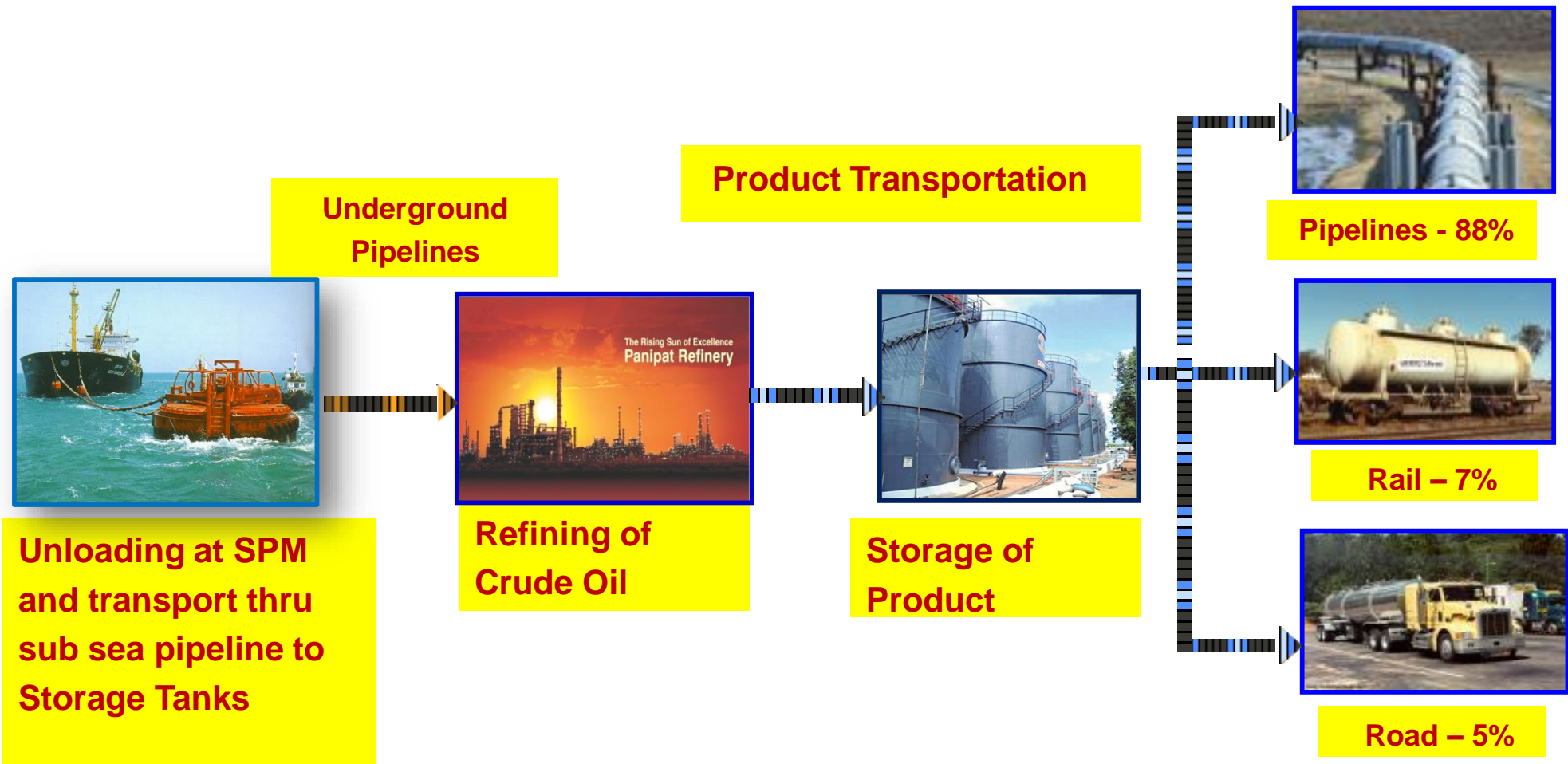
Delivery to Retailers





IndianOil

# Supply Chain-Product





IndianOil

# IOCL's Crude Oil Source

Importing Crude from Across the Globe



Total crude oil import : 63.79 MMT (including 7.74 MMT for CPCL)

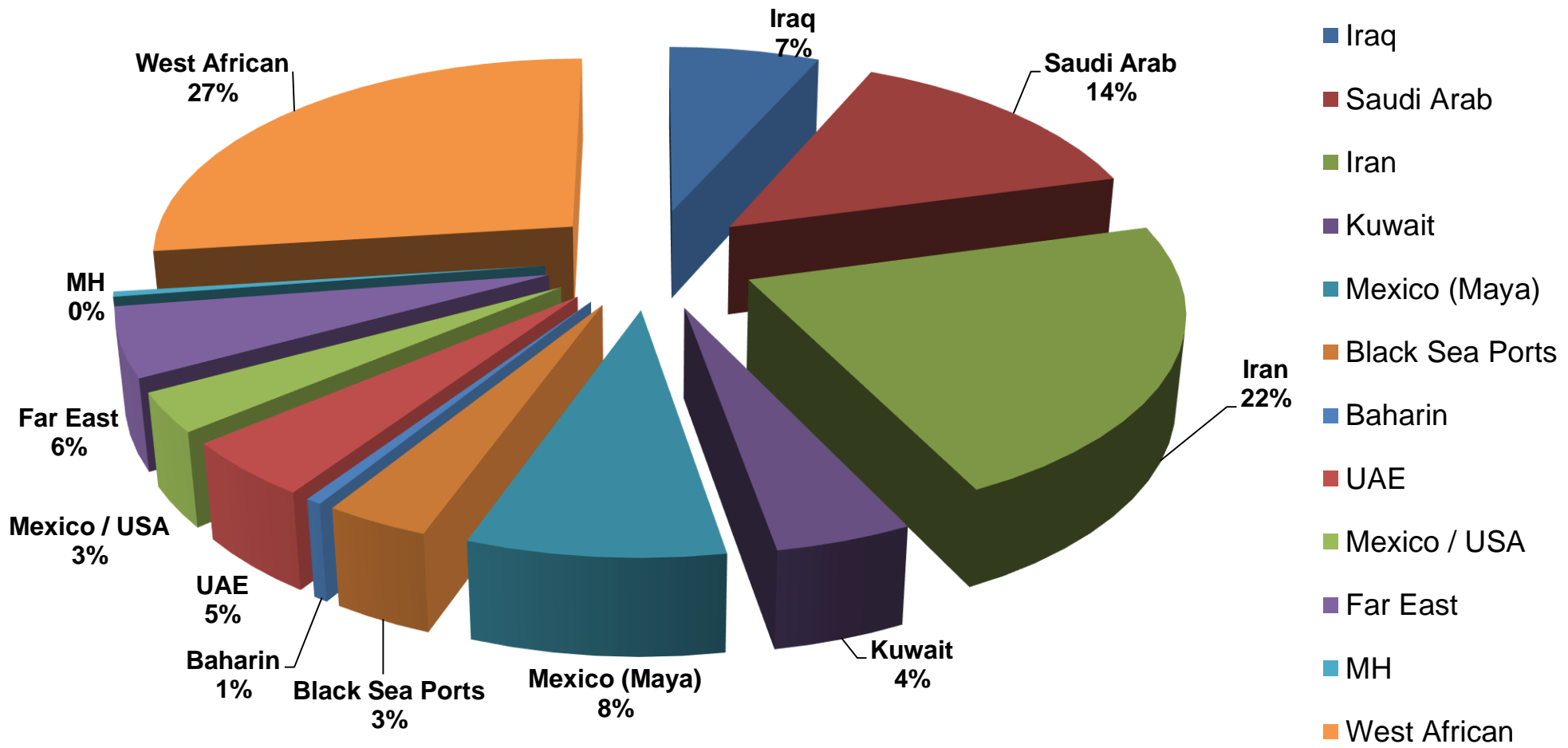
Figures for FYE 2017

Source: Company Filing



# Paradip Crude Oil Basket - 2018-19

IndianOil



New crude types like West Midlands, LLS, Eurofisk from USA have been handled at Paradip



# Crude Oil Transportation

➤ In 2017, 42 million barrels of crude oil moved each day out of which 4.4 million barrels to India

Such large volume requires significant logistics strategies to minimize cost of transportation :

Bulk transportation of crude oil over long distance is normally done by Tankers as cost of ocean transport is the lowest

To minimize cost of Transportation of crude oil over long distance, Very Large Crude Carriers (VLCC) is preferred wherever draft permits

VLCCs can carry about 270 TMT of crude oil during a laden voyage

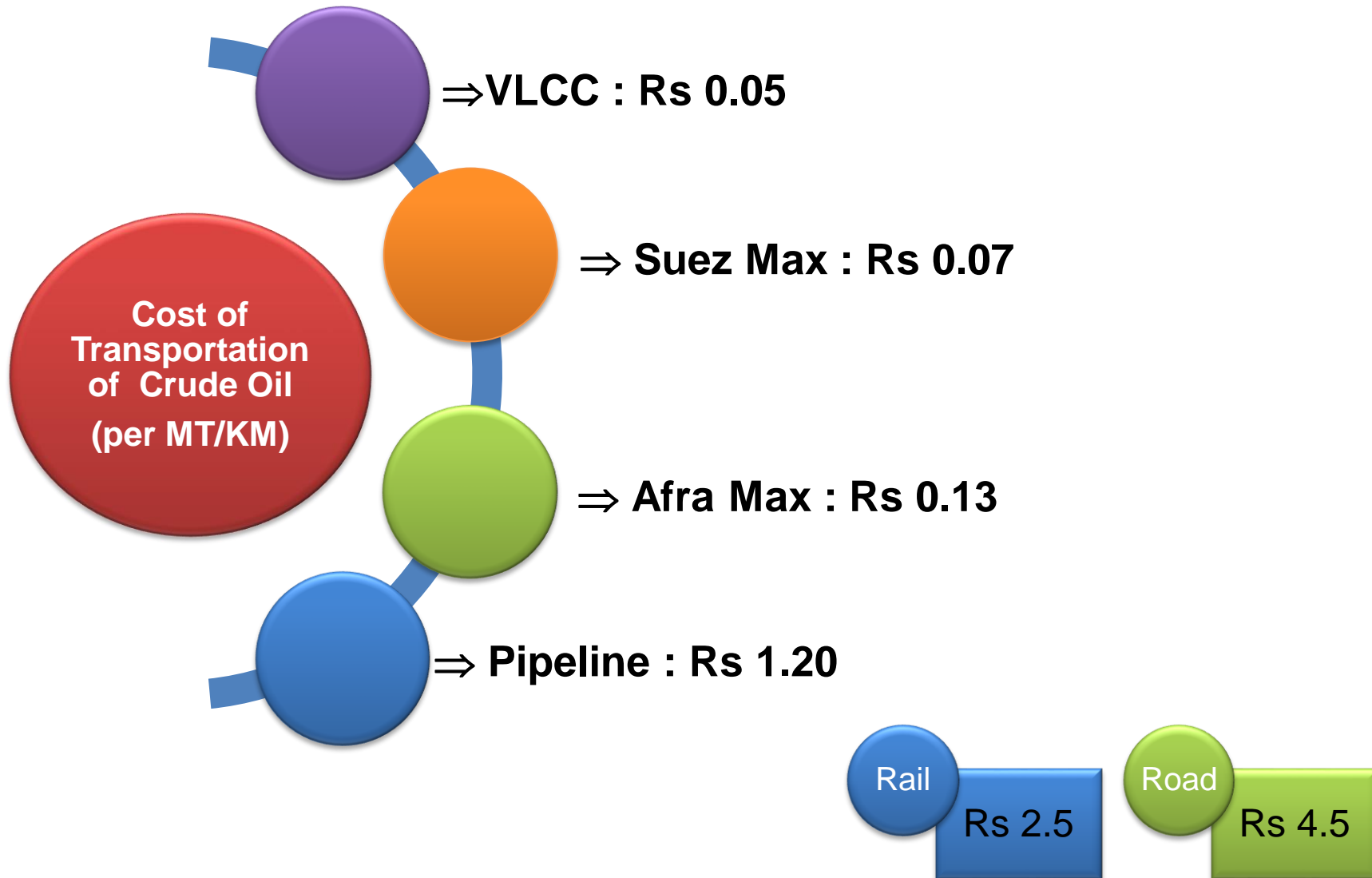
Laden VLCCs have draft of about 21 m and required  $> 28$  m for maneuvering

Single Point Mooring (SPM) system located at water depth of  $> 30$  m can be used for berthing of VLCCs



IndianOil

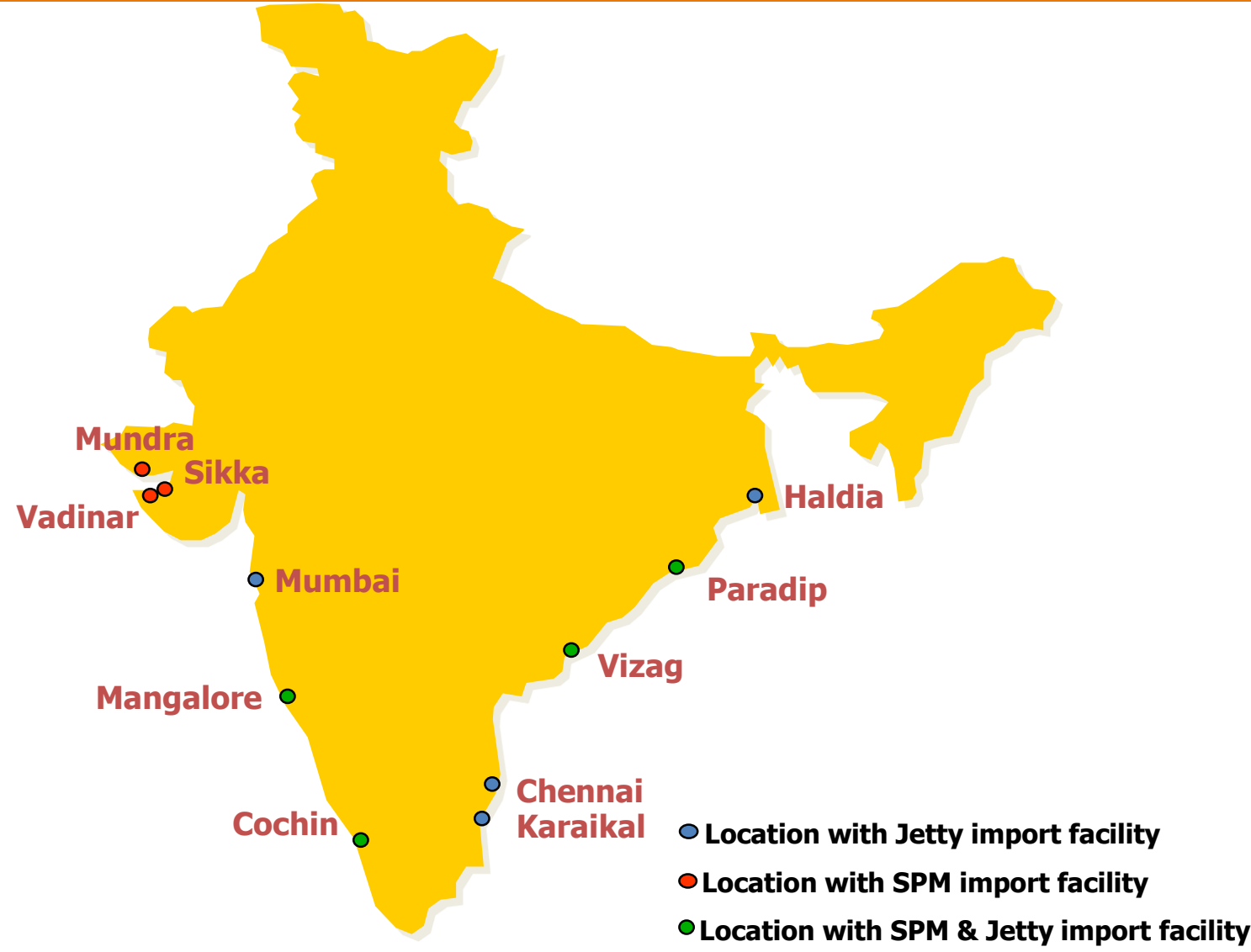
# Crude Oil Transportation – Cost Economics





IndianOil

# Crude Oil Receipt Locations - India



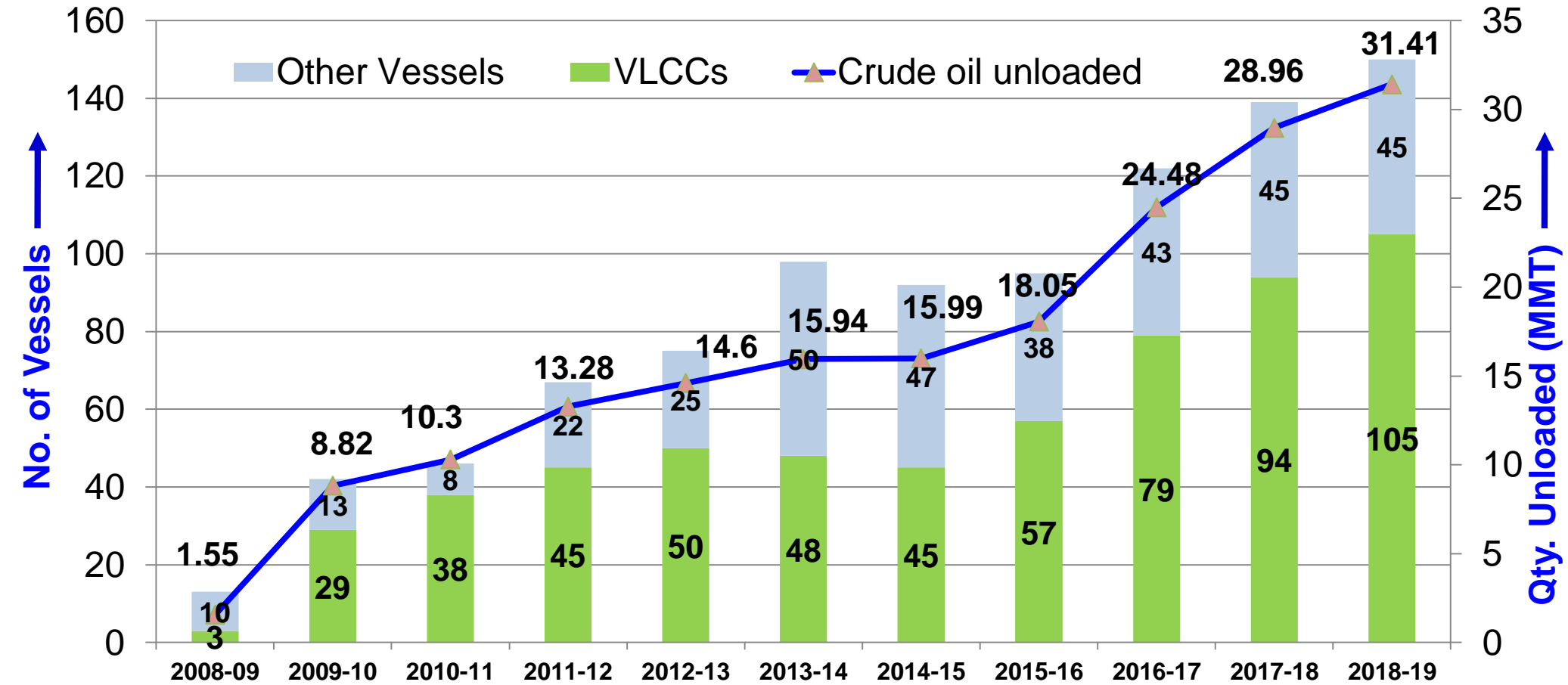




# Operational Performance

IndianOil

## Tankers handled at Paradip





IndianOil

# Paradip Operation

**Crude oil import at Paradip has increased from 1.5 MMT in 2008-09 to about 31MMT in 2018-19**

**The VLCC share in terms of quantity is more than 82%, which is one of the best in the industry**

**Lighterage at sea and Jetty add significant cost to the crude oil input cost**

**Use of smaller vessels (MR, LR II) for bulk crude oil transportation is costly**

**Energy gateway to eastern, north eastern and central India**

**Meeting crude oil requirement of Paradip, Haldia, Barauni, Bongaigaon and Guwahati refineries**



IndianOil



THANK  
YOU

