Indian Minerals Yearbook 2017

(Part- I : GENERAL REVIEWS)

56th Edition

PORT FACILITIES

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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6 Port Facilities

1. GENERAL

1.1 Growth

Ports are economic and service provision units of a remarkable importance because they act as a place for the interchange of two transport modes, maritime and land, whether by rail or road. India has a long coastline of about 7,517 km spread across the western and eastern shelves of the mainland and also along the islands. It is a strategic geographical asset for country's trade. There are twelve major ports in India out of which six are located on the east coast and six on the west coast. In addition, there are about 205 notified intermediate/minor ports in the country. Shipping plays an important role in the economic development of the country, especially in India's International Trade. The Indian Shipping Industry also plays an important role in the energy security of the country, as energy resources, such as coal, crude oil and natural gas are mainly transported or received by ships. Approximately, 95% of the country's trade by volume and 68% in terms of value are being transported through sea route. Though India has one of the largest merchant shipping fleets among the developing countries, it is ranked 18th in the world in terms of world tonnage ownership with a share of only 1.21% as on 01.01.2016. In comparison, China ranked 3rd with a share of 8.87%. The Ministry of Shipping encompasses within its fold major ports and inland water transport among others. All major ports in the country presently have both rail and road connectivity.

1.2 Sethusamudram Corporation Ltd (SCL)

The project is kept in abeyance in view of the litigations filed in the Supreme Court of India.

1.3 Private Sector Participation in Major Ports

The Private Sector is envisaged to fund projects under Public-Private-Partnership (PPP) mode through Design-Build-Finance-Operate-Transfer (DBFOT) or Build-Operate-Own- Transfer (BOOT) models. As per the report of Indian Port Association, the details of projects awarded during 2015-16 are as follows:

Table-1: PPP Projects Under Implementation/ Operation in Major Ports

Sl. No.	Projects/Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
Projects under Implementation: (As on 31.01.16)			
Chennai Port			
1.	Development of Barge jetty at Bharathi Dock	27.29	1.35
JLN Port			
2.	Development of standalone container handling facility with a quay length of 330 m North of NSICT Terminal	600.00	9.60
3.	Development of Container Terminals of 2000 m Length at JNPT (4th Container terminal)	7915.00	60.00
4.	Special Economic Zone	4000.00	6.00
Kamarajar Port Ltd (Ennore)			
5.	Upgradation of the existing Non-TNEB Coal Terminal developed by M/s Chettinad International Coal Terminal Pvt. Ltd	351.08	8.00
6.	Development of LNG Terminal by IOCL	4512	5.00
7.	Development of Container Terminal	1270.00	16.80
8.	Development of Multi-Cargo Berth	151.00	2.00
Kandla Port Trust			
9.	Development of Oil Jetty to handle liquid cargo ship bunkering Terminal	233.50	3.39
10.	Development of SPM in OOT	448.00	25.00
11.	Construction of Oil Jetty No.7 on BOT basis for liquid cargo.	72.00	2.00
Kolkata Port Trust			
12.	Development of Haldia Dock II (North)	821.40	11.70
13.	Floating Storage & Regasification Unit (FSRU)	3500.00	4.00

(Contd.)

(Contd.)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
	Mumbai Port Trust		
14.	Construction of Offshore Container Berths and Development of terminal on BOT basis at Mumbai Harbour	2098.56	9.60
15.	Facilities for handling & storage of Bulk Cement and Bagging Plant at Petroleum Godown Plot at Sewree	95.00	1.25
16.	Bunkering Terminal	50.00	2.00
	Paradip Port Trust		
17.	Construction of Deep Draft Coal Berth at Paradip	479.01	10.00
18.	Development of Clean Multi-cargo Berth in Southern Dock	387.31	5.00
19.	Development of Deep Draft Iron Ore Berth	740.19	10.00
20.	Supply, installation of 3 Nos. of 100 tonnes HMC	117.00	3.00
	Visakhapatnam Port Trust		
21.	Development of EQ-1A in East Docks	313.39	7.36
22.	Installation of Mechanised handling facilities for fertilizers at EQ 7 in the Inner Harbour	217.58	3.33
23.	Installation of Mechanised Iron Ore handling facilities at WQ-1 in the northern arm of Inner harbour of VPT for handling Dry bulk cargo and Modernisation of Ore Handling Complex	940.00	23.70
24.	Container Terminal expansion	633.11	7.56
25.	Multi Modal Logistic Hub	400.00	0.00
26.	Establishment of Container Freight Station through existing BOT operator by VCTPL	100.00	0.90
	VOC Port Trust, Tuticorin		
27.	Construction of Coal Berth at NBW for NLC-TNEB	49.50	6.30
28.	Construction of North Cargo Berth-II	332.16	7.15
29.	Construction of Shallow draft berth for handling cement	84.08	2.67
30.	Development of NCB-IV for handling thermal coal & copper concentrate	355.00	9.15
31.	Development of NCB-III for handling thermal coal & rock phosphate	420.00	9.15
32.	Development of facilities for handling thermal coal for SPIC Electric Power corpn. Pvt. Ltd (SEPC)	214.50	2.50

(Contd.)

(Contd.)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
33.	Mechanisation of cargo evacuation from 9th Berth to Coal Yard at the existing Coal Yard	76.25	3.67
34.	Mechanisation of cargo to transfer from VOC wharf-4 Berth to Wagon/ Truck loading system and mechanisation	24.68	3.19

Projects under Operation:(As on 15.01.2016)

	Chennai Port Trust		
1.	Container Terminal-1	788.18	6.00
2.	Development of 2nd Container Terminal	495.00	9.60
3.	Supply, Operation and Maintenance of 2 nos. of 100 T Mobile Harbour Cranes on Revenue Share Basis	62.57	5.00
	Cochin Port Trust		
4.	Crude Oil handling facilities	720.00	13.00
5.	Vallarpadam Container Terminal ICTT	2118.00	40.00
6.	LNG Terminal	4150.00	5.00
7.	Facilities for cement bagging plant by M/s Zuari cement (on Land Lease Model)	147.00	-
	JLN Port		
8.	Container Terminal, NSICT	750.00	13.20
9.	BPCL Jetty (Captive)	200.00	5.50
10.	Third Container Terminal	1078.00	15.60
	Kamarajar Port Ltd (Ennore)		
11.	Marine Liquid Terminal	252.00	3.00
12.	Development of an Iron Ore Terminal on BOT basis	480.00	12.00
13.	Development of Coal Terminal for users other than TNEB on BOT basis	399.00	8.00
	Kandla Port Trust		
14.	Development of 13th Berth other than liquid and container cargo berth	188.87	1.50
15.	Development of 15th Multipurpose Cargo berth at Kandla	188.87	1.50
16.	Oil Jetty for IOCL (Captive)	20.70	2.00
17.	Container Freight Station	41.07	3.00
18.	Oil Jetty related facilities at Vadinar (ESSAR) (Captive)	750.00	13.50
19.	Fifth Oil Jetty (IFFCO) (Captive)	27.67	2.00
20.	Dry Bulk Terminal off Terka near Tuna on BOT basis (Outside Kandla Creek)	1060.00	14.11

(Contd.)

(Contd.)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
21.	Setting up of Captive Barge Jetty at Old Kandla (IFFCO)	27.00	1.50
Kolkata Port Trust			
22.	Multipurpose Berth No.12	35.00	1.12
23.	Multipurpose Berth No.4A	150.00	2.00
Mormugao Port Trust			
24.	Development of Coal Handling Terminal at Berth No.7	406.00	4.61
25.	Bulk Cargo berths No. 5A & 6A	250.00	5.00
New Mangalore Port Trust			
26.	Setting up of Bulk Cement Handling facility for M/s Ambuja Cement Ltd (Captive)	98.00	1.00
27.	Construction of Captive Jetty for handling Coal by M/s NPCL	230.00	3.00
Paradip Port Trust			
28.	Captive fertilizer Berth to PPL	20.00	4.00
29.	Captive fertilizer Berth to IFFCO	26.17	4.00
30.	Construction of SPM Captive Berth	500.00	15.00
31.	Mechanisation of Cargo Handling Project-1	37.32	2.00
32.	Mechanisation of Cargo Handling Project-2	25.13	2.00
33.	Mechanisation of Central Quay-III Berth	40.00	6.00
Visakhapatnam Port Trust			
34.	Multipurpose Berths-EQ-8 & EQ-9	320.29	6.47
35.	Container Terminal, Outer harbour	86.35	5.60
36.	Establishment of Multi Modal Logistic Park	372.00	1.00
37.	Development of Western Quay (WQ-6) in the northern arm of inner harbour of VPT for handling dry bulk cargo	114.50	2.00
38.	Development of WQ-10 in inner harbour for handling liquid cargo	55.38	1.84
39.	Mechanised Coal handling facilities at General Cargo Berth (GCB) in the outer harbour	444.10	10.18
40.	Single Point Mooring - Captive facility developed by H.P.C.L.	643.46	8.00
41.	Development of EQ-1 in East Docks	323.18	5.25
VOC Port Trust, Tuticorin			
42.	Development of 7th Berth as Container Terminal	135.00	5.00
43.	Berth No.8 Container Terminal	54.00	2.23
44.	Grant of license for deployment of floating cranes V.O. Chidambarnar port water limits for handling the cargo in the vessel	70.71	2.49
45.	Upgradation of Mechanical handling equipment in Berth No.1 to Berth No.6 and Berth No.9	49.20	8.72

(Concld.)

Source:- *Indian Port Association*

1.4 Inland Water Transport (IWT)

India is a country of rivers and most of the cities and towns were developed alongside the river system. It has large number of inland waterways consisting of rivers, canals, backwaters, crecks, lakes, etc., which have the potential for development of efficient waterways transport network. IWT is reffered to as operationally cheaper, high in fuel efficiency and environmentally friendly mode of transport. Inland Waterways Authority of India (IWAI) came into existence on 27.10.1986 for development and regulation of inland waterways for the purpose of shipping & navigation. The Authority primarily undertakes projects for development and maintenance of IWT infrastructure on National Waterways through grant received from Ministry of Shipping.

Inland Water Transport is cost effective, fuel efficient and climate-friendly mode of transport for bulk cargo, over dimensional cargo and hazardous goods. This mode of transport is a potential supplement to the overburdened rail and that of congested roads and efforts are underway to develop this mode of transportation and to operationalise it.

Waterways declared as National Waterways by the Act of Parliament come under the purview of Central Government, while other waterways remain under the respective State Government's domain.

1.4.1 National Waterways

The Government of India has so far declared six waterways as National Waterways. These are:

National Waterway-1: Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hooghly River System (Total length- 1,620 km declared in 1986) in the States of Uttar Pradesh, Bihar, Jharkhand and West Bengal.

National Waterway-2: Dhubri-Sadiya stretch of Brahmaputra River (Total length- 891 km declared in 1988) in the State of Assam.

National Waterway-3: Kottapuram-Kollam stretch of West Coast Canal along with Udyogmandal and Champakara Canals (Total length- 205 km declared in 1993) in the State of Kerala.

National Waterway-4: Kakinada-Puducherry stretch of the canal along with designated stretches of Rivers Godavari and Krishna (Total length- 1,095 km declared in 2008) in the States of Andhra Pradesh, Tamil Nadu and the Union Territory of Puducherry.

National Waterway-5: Designated stretches of East Coast Canal, River Brahmani and Mahanadi Delta (Total length- 623 km declared in 2008) in the States of West Bengal and Odisha.

National Waterway-6: Lakhipur to Bhanga at River Barak in Assam (Total length - 121 km declared in 2013).

2. MAJOR PORTS

There are twelve major ports in the country, viz, Kolkata-Haldia, Paradip, Visakhapatnam, Chennai, Kamarajar and V.O.Chidambaranar (formerly Tuticorin) on the East Coast and Cochin (in Kochi), New Mangalore, Mormugao, Jawaharlal Nehru, Mumbai and Kandla on the West Coast. Of these, Paradip, Visakhapatnam, Chennai, New Mangalore and Mormugao ports were the five leading iron ore handling ports having mechanical ore handling system. Out of the total 647.39 million tonnes traffic handled at major ports, Jawaharlal Nehru Port Trust (JNPT) continued to be the leading container handling port in the country with a share of about 44% followed by Chennai (24%) and the remaining share of 32% being handled by other major ports.

2.1 Cargo Handling Capacity and Cargo Handled

The cargo handling capacity in Major Ports at the end of December 2016 was 1005.00 million tonnes as compared to 965.36 million tonnes during 2015-16. The major ports, therefore, continued to maintain a favourable capacity-cargo equation during the year.

The major ports handled a total traffic of 647.39 million tonnes during 2016-17 against 606.48 million tonnes during 2015-16. Traffic handled by major ports during 2015-16 and 2016-17 is given below:

Traffic Handled at Major Ports

2015-16 & 2016-17

(In million tonnes)

Sl. No.	Ports	2015-16	2016-17
1A.	Kolkata	16.78	16.81
1B.	Haldia	33.51	34.14
2.	Paradip	76.39	88.95
3.	Visakhapatnam	57.03	61.02
4.	Kamarajar (Ennore)	32.20	30.02
5.	Chennai	50.05	50.21
6.	V.O. Chidambaranar (formerly Tuticorin)	36.84	38.46
7.	Cochin	22.09	25.00
8.	New Mangalore	35.59	39.94
9.	Mormugao	20.78	33.18
10.	Mumbai	61.11	63.05
11.	JNPT	64.02	62.02
12.	Kandla	100.05	105.44
	Total	**606.44**	**648.24**

Source: *Annual Report 2016-17, Ministry of Shipping, Government of India, Indian Port Association*

Figures rounded off

The selected commodity- wise traffic handled at twelve major ports during 2015-16 and 2016-17 (Up to Dec.,2016) is as below:

(In million tonnes)

Sl.No.	Commodity	2015-16	2016-17 (Up to Dec.2016)
1.	P.O.L (Crude & Products)	195.94	158.25
2.	Iron ore	15.35	32.46
3.	Fertilizer Raw material (Dry)	15.90	11.60
4.	Thermal Coal	125.96	106.38
5.	Containerised cargo	123.12	92.13
6.	Other/cargo	130.20	80.38
	Total	**606.47**	**481.20**

Source: *Ministry of Shipping, Annual report-2016-17*

3. PORT-WISE REVIEW OF MAJOR PORTS

EAST COAST

3.1 Kolkata-Haldia

Kolkata Port is the oldest (established in 1870) and the only riverine major port in India. The port catering to the Traffic of the entire Eastern India and the two landlocked neighbouring countries, Nepal and Bhutan. Kolkata Port Trust (KPT) has twin dock system, viz, Kolkata Dock System (KDS) on Eastern bank of River Hoogly and Haldia Dock Complex (HDC) started in 1971 on the Western bank of the River Hoogly.

Handling capacity of the port as on 31.3.2016 was 25.61 million tonnes at Kolkata and 49.75 million tonnes at Haldia.

Salient Features of Kolkata - Haldia Port

Port	Draught (m) min.	Draught (m) max.	No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
Kolkata	5.4	8.3	35	24	5	134722 (Transit Shed) + 10794 Warehouse)
Haldia	5.9	8.3	17*	–	–	25040 (Transit shed) 892840 (open area)

** Including three oil jetties and two barge jetties*

Both Kolkata Dock System and Haldia Dock Complex of Kolkata Port have been awarded ISO-9001:2000 certification. The port is also ISPS compliant. For promotion of Inland Water Traffic and River Tourism, New Inland Water Transport Terminal (IWT) and renovation of port-owned riverside jetties are underway. Kolkata Port handled tonnes of 36.49 million tonnes (MT) traffic in 2016-17 (up to December, 2016). While KDS handled traffic of 11.65, HDC handled 24.84 million tonnes (MT).The port has 50 berths (KDS – 33 and HDC –17) handling various types of cargoes including containers with a capacity of 86.99 MTs.

The traffic in mineral/ore/mineral-based commodities handled at Kolkata Port in 2015-16 and 2016-17 was as under:

(In '000 tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Thermal coal	1552	1818	-	-
Coking coal	-	-	6019	5543
Iron ore	59	1160	822	-
Sand/Silica sand	92	83	30	31
Rock phosphate	-	-	-	-
Silico Manganese ore	-	-	-	-
Sulphur	-	-	16	-
Mica	98	95	-	-
Metallurgical coke	-	-	711	381
Limestone	-	-	1639	1983
Raw Petroleum coke	-	-	245	125
Gypsum	-	-	96	183
Magnesite	-	-	-	-
Dolomite	-	-	20	49
Ferro-chrome	-	-	-	-
Non-coking/Steam coal	-	-	8090	5349
Manganese ore	-	-	1260	896
Bitumen	-	-	-	-
Carbon black	-	-	-	-
Silicon	-	-	-	-
Cement clinker	15	3	199	725
Salt	-	-	30	39

Source: *Kolkata Port Trust return/information received 2015-16. Annual Report 2016-17, Ministry of Shipping, Government of India*

Wharfage

Wharfage on foreign Cargo landed/shipped at Kolkata Port Trust as available w.e.f. 17.3.2011.

(In ` per tonne)

Sl. No.	Item	Rate
	Cargo handled through Mechanical system	
1.	Crude oil	91.80
2.	Export Iron ore	38.88
3.	Export Thermal Coal	43.74
4.	All other types of coal not specified, Fertilizer, Fertilizer raw materials, soda ash, and all other dry bulks	87.48
	Cargo handled other than through Mechanical system	
1.	Salt, Fly ash	23.33
2.	Iron ore, sand	23.30
3.	Limestone, Bitumen, Pig iron, sponge iron and other ferrous metals, All types of coal/coke/ore/other dry bulk cargo not specified	46.66
4.	Cement, Clinkers, Gypsum, Slag	48.60
5.	Magnesite, granite, all types of Scraps, fire bricks and other refractory materials, mica block/flake/splittings/waste/scrap/ powder mica, non-ferrous metals of all kinds except ingot of zinc/aluminium/copper, lead, goods, rock phosphate, sulphur, other fertilizer raw materials, fertilizers, lead conc., asbestos.	68.04
6.	Iron & steel, pipes & tubes	69.98
	Wharfage on coastal cargo landed/shipped at/ from Kolkata Port Trust	
1.	Crude oil, Thermal coal, Iron ore and Iron ore pellets	Same as Foreign cargo.
2.	All other cargo	60% of the rate for foreign cargo as specified for foreign cargo.

3.2 Paradip

It is one of the premier Maritime gateways on the East Coast of India based on its core strengths like deep draft, proximity to reach mineral bearing areas, vicinity to the large hinterland and land locked regions.

Salient Features of Paradip Port

Draught (m) min	Draught (m) max	No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
11.0	14.5	14	1	–	–

The port handled 64.92 million tonnes of cargo during 2016-17 (up to December 2016) compared to 76.39 million tonnes in 2015-16. The Port has 16 berths/jetties (including SPM, RO-RO Jetty) for handling different types of cargoes with a capacity of 126.94 MT.

3.3 Visakhapatnam

It is a natural harbour. Visakhapatnam Port handled 45.96 million tonnes traffic in 2016-17(up to December, 2016). The largest size vessel that can be handled in the inner harbour is 14.50 metres draught vessels, while the outer harbour is capable of handling vessels up to 2,00,000 dwt having draught up to 18.10 m.

Handymass vessels up to 12.5 m draught and Panamax vessels up to 10.90 m draught are handled at inner harbour.

Salient Features of Visakhapatnam Port

	Draught (m) min.	Draught (m) max.	No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
Inner harbour	10.00	14.50	18	–	NA	Exclusive for Iron ore 412910 sq m
Outer harbour	14.00	18.10	5	1	NA	

Selected commodities handled by Visakha-patnam port in 2015-16 were as follows:

(In tonnes)

Commodity	Quantity
POL & Crude Products	14139472
Iron ore	6085971
Fertilizer	2607000
Thermal Coal & Coking Coal	8500000

Following are the development activities that were undertaken in the port during 2015-16.

1. Development of West Quay North (WQ7 & 8) berth in inner harbour by port.

2. Development of multipurpose terminal by replacement of EQ.2 to EQ.5 berths to cater to 14.0 m draft vessel by Port.

3. Extension of existing container terminal in outer harbour by M/s Visakha Container Terminal Pvt. Ltd (DBFOT).

4. Development of new berth EQ1A by M/s SEW Vizag Coal Terminal on DBFOT.

5. Replacement of one MHC in inner harbour.

6. Phase -II Multi Modal Logistic hub Vizag Port by CONCOR.

7. Implementation of ERP; RFID Gate Management System.

8. Connectivity of Vizag Port Road to HN-16 Phase-II.

9. Development and Improvement of railway system.

10. Environmental upgradation works.

Future Development Plan

• Improvement in ore handaling facility.

•Upgradation of the existing facility (OHC) Phase-I is in progress and creating new faciltiy (WQ.1) Phase-II is slated to be taken up after achieving the threshold limit of handling 12.5MT at OH iron ore handling by M/s Essar Vizag terminal Limited on DBFOT.

3.4 Kamarajar Port Ltd (formerly Ennore)

(A mini Ratna Govt. of India Undertaking)

Kamarajar port is situated on the Coromandal coast about 24 km north of Chennai port along the coastal line in Tamil Nadu.

The facilities available at Kamarajar port are detailed below:

1. Berth	2 (Thermal Coal)	one berth automobile (GCB) one POL/chemicals (MLT1) and one coal (other than TNEB)
Max. permissible Length	240 metres each	
Max. permissible Draught	13.5 metres	
Capacity of berth CB1	8 MTPA	
Capacity of berth CB2	4 MTPA	
Capacity of berth GCB	1MTPA	
Capacity of berth MLT1	3MTPA	
Capacity of berth CICT	8MTPA	
2. Size of vessels that can be accommodated	65,000/70,000 dwt (For CB1&CB) >70,000 dwt (For GCB) up to 150000 dwt (For MLT1 & CICT)	
3. Breakwater		
South	1,070 metres	
North	3,080 metres	
Type	Rubble mound with accropode armour protection.	

(Contd.)

(Concld.)

4. Approach Channel	
Length	3,775 metres
Width	250 metres
Depth	16 metres BCD
5. Equipment profile	
i) Conveyors (2 nos - 400 TPH each)	
ii) Unloading equipment (2 nos-200 TPH each)	
iii) Mobile Hopper (1 No.)	
iv) Temporary hoppers (6 Nos.)	
6. Connectivity	1) Excellent road connectivity to NH4, NH5 & NH45 2) linked to Chennai-Kolkata BG main line. 3) Connectivity to Chennai airport.

The port in 2016-17 (up to December, 2016) reported a total handling capacity of 22.18 million tonnes.

Salient Features of Kamarajar Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min.	max.				
-	16	3	–	–	

Wharfage

Wharfage levied by Kamarajar Port during 2015-16 was as follows:

(In ` per tonne)

Commodity	2015-16
Coal	13.00

The traffic handled during 2015-16 and 2016-17 is furnished below:

(In million tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Coal	-	-	25.61	23.10

3.5 Chennai

The port at Chennai is an artificial harbour situated on the Coromandal coast in south-east India. The total traffic handling capacity of the Chennai port during 2016-17 was 93.44 million tonnes. The largest size vessel that can be received at the port is in the range of 1,65,000 dwt, having a maximum 17.4 m draught and maximum 280 m overall length.

Salient Features of Chennai Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq.m)
min.	max.				
8.5	16.5	24	-	-	-

Development Plans

(a) (i) Development of a JD (East) berths as Coal Terminal (Through PPP) Estimated Cost ` 360 crore & Capacity 5MTPA (ii) Development of Bharathi Dock-II (BD-II) as Coal Terminal (Through PPP_ Estimated Cost ` 180 crore & Capacity of 5MTPA. (b) Construction of Bunker berth at Bharathi dock. (Estimated Cost ` 44 crore) (c) Development of paved storage yards at Chennai port for handling export cargoes (Estimated Cost ` 54 crore)

Following are the development activities that were undertaken in the port during 2015-16.

(i)Providing concrete road along shore protection works from suraj agro to south tower of old entrance.

(ii) Construction of Exim Godown -2 Nos for storage of Export & Import Cargo along with allied structure at Chennai Port.

The traffic in mineral/ore/mineral-based commodities handled by the port (excluding commodities handled in containers) during 2015-16 and 2016-17 is given below:

(In '000 tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Barytes	417	577	-	-
Dolomite	-	-	609	572
Limestone	-	-	1648	1957
Iron ore pellets	-	-	-	-
Gypsum	-	-	340	361
Bauxite	-	-	-	-

Wharfage

Cargo related wharfage charges levied by Chennai Port Trust were as follows:

(In ` per tonne)

Item	Rate (Foreign)
i) Asbestos, cement, clinker, sand and silica sand	45.00
ii) Crude oil	57.00
iii) Granite blocks, dressed marbles and slabs	78.00
iv) Ingots & billets, sheet & plates, bars, rods, angles, pipes,	90.00
v) Ores and minerals of all kinds in bulk for import.	46.00
vi) Ores and minerals of all kinds in bulk for export.	26.00

3.6 V. O. Chidambaranar (formerly Tuticorin)

V.O. Chidambaranar Port is situated in Thoothukudi (formerly Tuticorin) on the eastern coast of Tamil Nadu. It has two operating wings viz, Zone A, comprising new major port and Zone B, representing old anchorage port. The largest size of vessel that can be received at the port is 75,000 dwt. The port in 2016-17(up to December, 2016) reported a total handling capacity of 28.97 million tonnes.

Salient Features of V.O. Chidambaranar Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min.	max.				
5.85	12.80	14	–	–	3 Warehouses of 14,940 sq m. 2 Transit sheds of 10,800 sq. m open area of 5,53,000 sq.m

The traffic in mineral/ore/mineral-based commodities handled by the port during 2015-16 and 2016-17 is as under:

(In tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
1. Garnet sand	51826	35511	-	-
2. Ilmenite sand	238869	198315	42214	19903
3. Copper (concentrate)	-	-	1241244	1229382

Wharfage

Wharfage levied by V.O. Chidambaranar Port during 2016-17 was as follows.

(In ` per tonne)

Sl.No.	Commodity	2016-17
1.	Garnet sand	24.26
2.	Ilmenite sand	24.26
3.	Copper concentrate	70.24
4.	River sand	22.99

WEST COAST

3.7 Deendayal Port Trust (formerly Kandla Port Trust)

This port is a protected natural harbour situated on the western coast of Gujarat in the Kandla Creek and is 90 km from the mouth of the Gulf of Kachchh.

Salient Features of Kandla Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
Dry cargo 9.10	12.00	2*	–	12	There is no special stacking area for mineral commodities
Liquid cargo 10.00	10.70	6	5	6	–

** Includes 2 cargo berths operated by private operator*

In the port there are maintenance jetty for floating dry docks and maintenance of port craft, three single buoy moorings to handle very large crude carriers for import of crude oil, two Essar product jetties to handle POL carriers for export at Vadinar and a minor port Tuna, 24 km south of Kandla for handling country crafts. Barge handling operations for coal and fertilizer vessels are undertaken. A Bunder basin for handling barges and country crafts is in operation.

The total traffic handled by the Kandla port during 2016-17(up to December, 2016) was 80.97 million tonnes.

Wharfage

Wharfage levied by Kandla Port Trust as on 31.3.2015 was as follows:

(In ` per tonne)

Commodity	Coastal Rate	Foreign Rate
Liquid cargo		
i) Crude oil	12.00	12.00
ii) LPG (per cu m)	60.00	100.00
iii) POL products (bulk)	26.20	26.25
Fertilizer and raw material including sulphur	14.40	24.00
Cement & clinker	10.80	18.00
Ores and minerals (in all forms)	8.10	13.50
Granite and marbles	10.80	18.00
Metal (ferrous/non-ferrous) (including pipes, plates, pig iron, coil, sheet)	18.00	30.00
Metal scrap	21.60	36.00
Construction materials and sand	8.10	13.50
Coal and coke	10.80	18.00
Salt	1.80	3.00
Dry chemicals including soda ash	10.80	18.00

Note: *In addition to the above rates, cargoes other than bulk; i.e., break-bulk and non-containerised shall be charged @ `18.00 per tonne for foreign and `10.80 per tonne for coastal cargo.*

3.8 Mumbai

Mumbai port is a natural deepwater multi-purpose port that handles all types of cargo-liquid bulk, dry bulk, break bulk and container. Salient features of Mumbai port are as follows:

Salient Features of Mumbai Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
8.84	14.30	32	-	NA	No dedicated area earmarked for storage of mineral

The total traffic handling capacity of the Mumbai port during 2016-17 (up to December 2016) was 47.66 million tonnes. The traffic in mineral/ ore/mineral-based commodities handled in 2015-16 and 2016-17 was as under:

(In million tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Rock Phosphate	-	-	210	-
Sulphur	-	-	-	-
Coal	-	-	3.45	2.44
Soapstone	0.001	-	-	-
Limestone	-	-	380	-
Silica Sand	-	-	2	-
Iron ore	-	-	3690	-
Dolomite	-	-	298	-
Magnesite	0.007	-	-	-

Figures rounded off

Wharfage

Wharfage levied by the Mumbai Port in 2015-16 was as below:

(In ` per tonne)

Sl. No.	Commodity	Export	Import
1.	Soap stone	0.36%	-
2.	Silica sand	-	55.17
3.	Magnesite	55.17	-
4.	Other Minerals	-	-

3.9 Mormugao

Mormugao port is one of the country's oldest ports on the west coast of India with modern infrastructural facilities and with one of the finest natural harbours in the world.

The entire output of iron ore from Goa and considerable quantity of iron ore from Ballari-Hosapete is exported through this port. Maximum exports of iron ore take place through this port.

The total traffic handling capacity of the Mormugao port during 2016-17 (up to December 2016) was 22.58 million tonnes. The largest vessel that can be received at Berth No. 9 of this port is about 2,75,000 dwt.

Salient Features of Mormugao Port (2015-16)

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
-	14.00	-	6	-	1) 80,000 sq m (Berth No.9) for iron ore (attached to Berth No. 9) 2) 42,000 sq m (at berth Nos. 5 & 6) for coal & coke 3) (Approx. 35,641sq m . at berth No 7 for coke and coal.

The demand for mooring dolphins, particularly during monsoon period is heavy and also for export of iron ore through this facility.

Ore ships are also loaded in mid-stream by transhippers and floating crane which are operated by private parties. Ore ships are also loaded by ship's gears. At West of Break Water (WOB), there is no draught restriction to load ore vessels. At times, large size vessels requiring higher draughts are initially loaded at MOHP (Berth No.9) up to permissible limit and then at outer anchorage (WOB) by transhippers. Six Mooring Dolphins capable of accommodating Panamax size vessels are also available for handling ore, coke and coal and other cargo using ship's own gear. Ore loaded at these facilities is brought by barges from hinterland through inland waterways. Import cargo at this position is unloaded in barges.

Development of the port as undertaken during 2015-16 is detailed as below:

Marmugao Port has taken up the work of "Capital dredging of the approach channel, turning circle, berth 5,6,7 and approaches to handle cape size vessels. The scope of the work is to deepen outer channel from (-) 14.4 m depth from CD to (-) 19.8 m depth from CD and inner channel from (-) 14.10 m depth from CD (-) 19.8 m depth from CD. The capacity addition will be 2.00 MMTPA.

Development Plans:-

Redevelopment of Berth nos. 8, 9 and Barge Berths at the Port of Mormugao Goa.

The existing MOHP dedicated for iron ore export is more than 35 years old. There was a ban for iron ore export from the year 2012 which has been lifted few moths back with a cap on production of 20 MMTPA in the State of Goa. In the mean time, Port has changed its traffic profile for handling of multi commodity cargo which includes Coal, Steel Coils, Woo Chips and other bulk cargo. The existing berth nos. 8, 9 and barge berth will be developed to handle multi commodity. The berth length to be developed is 1,050 m. The estimated project cost of the project is about A 1,145 crore and capacity will be 19.22 MMTPA. The Concession Agreement is signed with M/s Goa Sea Port Pvt. Ltd on 22.09.2016. These berths will be modernised in Phase-I and Phase-II.

The total traffic handled by the Mormugao Port during 2015-2016 and 2016-17 was as follows:

(In tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Iron ore	3569863	14722851	394806	330282
Bauxite	209745	-	56618	-
Coke	-	-	734626	1774107
Coal	-	-	11535102	10979563

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) rate levied by Mormugao Port Trust in 2016-17 was as below:

(In ` per tonne)

Sl. No.	Commodity	Foreign Rate	Coastal Rate
1.	Iron ore	24.00	24.00
2.	Iron ore pellets	27.00	27.00
3.	Bauxite	27.00	16.20
4.	Cement/clinkar /Limestone/ Gypsum /Nickel/Alumina /Bentonite	42.00	25.20
5.	Pig iron/ Slag	48.00	28.80
6.	Thermal coal and its variants	55.00	55.00
7.	Coke of all types	55.00	33.00
8.	Fertiliser and fertiliser raw material	50.00	30.00
9.	Metal Scrap of all types	55.00	33.00

Iron Ore and pellets handling charges (exported through MOHP at Berth No. 9) in 2016-17 are as under:

(In ` per tonne)

Sl. No.	Description of Goods	Import/ Export rate per tonne or part thereof	Remarks
1.	Iron ore	118	At MOHP B.No.9
2.	Iron ore pellets		
	(i) During the period	127	During June to Aug.
	June to August each year	223	During Sep. to May

3.10 New Mangalore

The port has a modern all weather artificial lagoon situated at Panambur, Mangalore in Karnataka on the west coast of India.The port handled 29.09 million tonnes of cargo during 2016-17 (up to December 2016). In 2015-16, the total capacity of the port was 68.88 million tonnes. The largest vessel that could be received at this port was 90,000 tonnes.

Salient Features of New Mangalore Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
7.0	14.0	15	–	-	58391 open

The traffic in mineral/ore/mineral-based commodities handled in 2015-2016 and 2016-17 was as follows:

(In tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Iron ore fines	-	-	128940	1482944
POL	5683060	5735912	18247727	19368702
Rock phospahte	-	-	53320	37200
Laterite	17664	-	-	-
Gypsum	-	-	330178	79060
Limestone	-	-	-	93550
Coal	92180	80824	6276894	6838840
Sulphur	26000	425000	-	-

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) levied by New Mangalore Port was as follows:

(In ` per tonne)

Commodity	Foreign Rate	Coastal Rate
Iron ore (fines)	32.38	32.38
POL	68.89	68.89
Thermal Coal	24.61	24.61
Coal (other than thermal coal) & coke	24.61	14.77
Gypsum	29.53	17.72
Limestone	34.45	20.67
Bauxite	34.45	20.67
Rock Phosphate	39.37	23.62
Sulphur	59.05	35.43

3.11 Cochin

The traffic handling capacity of the port in 2016-17 was 73.6 million tonnes. The largest size vessel that can be received at this port is 1,15,000 dwt at berth and 3,25,000 at SBM.

Salient Features of Cochin Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
9.14	14.50	19	1	2	1.25 lakh

The port handled 18.23 million tonnes of cargo during 2016-17 (up to December 2016).

The total traffic handled by the Cochin port during 2016-17 was as under:

(In '000 tonnes)

Sl.No.	Mineral/ore	Exports		Imports	
		2015-16	2016-17	2015-16	2016-17
1.	Crude	65	50	10669	12028
2.	Bauxite	-	-	12	12
3.	Zinc concentrate	-	-	-	-
4.	Sulphur	-	-	105	149
5.	Rock phosphate	-	-	125	85
6.	Salt	-	-	105	105
7.	Ilmenite sand	-	-	41	-

Figures rounded off

The port is fast emerging as a cement hub having cement handling terminals.

Wharfage

Wharfage levied by the Cochin Port was as follows:

(In ` per tonne)

Sl. No.	Commodity	Foreign Rate	Coastal Rate
1.	Construction and building materials-		
	(a) Sand, stones, Granites & marbles	52.00	31.20
	(b) Cement, clinker, clay, chalk	72.80	43.70
2.	(a) Coal/coke	56.00	33.60
	(b) Thermal coal	56.00	56.00
3.	Fertilizer and fertilizer raw material at Q 10 Berth		
	(a) Sulphur	62.00	37.20
	(b) Rock phosphate	57.00	34.20
	(c) Finished fertilizers	57.00	34.20
4.	Metals and metal products	112.00	67.20
5.	Metal scrap	90.00	54.00
6.	Liquid Cargo, acids-		
	(a) Phosphoric acid	109.20	65.50
	(b) Liquid ammonia	119.00	71.40
	(c) POL products at Port Berth	65.00	65.00
7.	Minerals & ores	72.80	43.70
8.	Salt	14.00	8.40

3.12 Jawaharlal Nehru Port Trust (JNPT), Nhava-Sheva, Navi Mumbai

JNPT does not have any facility to handle ore/mineral separately. JNPT has become a world class international container handling port. The traffic handling capacity of JN Port Trust as on 2016-17 was 88.00 million tonnes.

Salient Features of Jawaharlal Nehru Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min.	max.				
10	14	12	Nil	Nil	No area ear marked for minerals inside port

About 15,15,002 tonnes and 14,19,618 tonnes of crude oil was handled during the year 2015-16 & 2016-17, respectively. However, the Port does not have storage facility for crude oil.

4. NON-MAJOR PORTS

The available information on traffic handled by non-major ports during 2014-15 and 2015-16 is furnished in Table-2 and that of facilities for handling and transporting minerals from selected non-major ports are furnished in Table-3.

There are 205 notified non-major ports in the country controlled by State Governments and Union Territories. These are in Gujarat (46), Maharashtra (48), Goa (5), Karnataka (9), Kerala (17), Tamil Nadu (16), Andhra Pradesh (12), Odisha (13), West Bengal (1), Daman & Diu (2), Lakshadweep (10), Puducherry (3) and Andaman & Nicobar Islands (23). In 2015-16, only 70 non-major ports were reported to have handled cargo traffic.

Minor Port Survey Organisation (MPSO), a subordinate office of Ministry of Shipping, Government of India, located at Mumbai, carries out the task of Hydrographic Survey in minor and major ports and inland waterways. The Governments of Gujarat, Maharashtra and Andhra Pradesh have taken several initiatives for development of their ports through private investments.

Gujarat Maritime Board (GMB), a statutory body of Government of Gujarat, is responsible for management, control and administration of 46 ports in Gujarat state. These ports under jurisdiction of GMB are grouped into 10 ports.

In Maharashtra, the State Government has encouraged development of its Port Sector and adopted an investor-friendly port policy. To meet the requirements of India's growing economy and to address the need of its Industry, Maharshtra Maritime Board (MMB) has entered into six concessions agreements for development of minor ports, namely, Rewas-Awaare Port, Dighi Port, Jiagad Port (Lavgan), Vijaydurg Port, Redi Port, etc.

In addition, Andaman Lakshadweep Harbour Works (ALHW) (a subordinate office of Department of Shipping, Government of India) has been entrusted with the responsibility of providing port and harbour facilities in Andaman & Nicobar and Lakshadweep Islands.

Table-2: Traffic Handled at Non-major Ports 2014-15 and 2015-16

(In '000 tonnes)

Commodity	2014-15	2015-16
i) POL	167280	180640
ii) Iron ore	26790	17380
iii) Building material	14220	14170
iv) Thermal Coal &Coking Coal	156740	141870
v) Fertilizers (including Raw Materials)	13950	16950
vi) Others	91900	94850
Total	**470880**	**465860**

Source: *Update on Indian Port Sector (31.03.2016), Transport Research Wing, Ministry of Road Transport & Highways, Government of India.*

Table – 3: Facilities for Handling & Transporting and Mineral Commodities Handled at Selected Non-major Ports, 2015-16 and 2016-17

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handled ('000t)	Draught max. (m)	No. of wharves	No. of berths (sq m)	Stacking capacity received ('000 dwt)	Largest vessel	Commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
WEST COAST GUJARAT											
Bhavnagar	2500	3.5	1	1	225000	79710	Coal	-	-	1180166	539790
							Limestone	-	-	930372	997602
Bedi	337	14	-	-	10000	206030	Bauxite	3100658	337741	-	-
Dahej Harbour and Infrastructure Ltd	NA	13.0	-	1	62500	70000	Coal	-	-	438000	304367
							Rock-phosphate	-	-	590000	427826
							Copper-concentrate	-	-	1437000	1269294
							Copper slag	22000	151320	-	-
Jafarabad	40	9	-	1	-	56512	Cement-clinker	3196438	3596628	-	-
							coal	-	-	104065	325407
Magdalla Surat	NA	12	01	11	30129	188627	Coal	49500	-	6729385	6020940
							Iron ore	-	-	5667945	8659148
							Limestone	-	-	859150	1414410
							Iron ore fines	-	-	348127	258589
Navalakhi	4000	5.0	-	5	205742	179937	Salt	449025	1020387	-	-
							Coal	-	-	6253386	6141839
							Cement	-	-	62474	85394
Okha	4469	8.0	2	2	5000	-	Bauxite	2921750	1599088	-	-
							Limestone	-	-	1025759	924635
							Coal	-	-	8319177	695564
Pipavav	NA	14.5	-	5	-	90000	Fertilizer	-	-	1233285	1003353
							Others	168740	22964	1324050	1375674
Porbandar	NA	7.5	NA	2	-	145512	Coal	-	-	4190000	4520000
							Bauxite	16960000	5570000	88-	
Adani Hazira Port	NA	14	1	3	-	-	Gypsum	-	-	282598	147300
Alang Bhavnagar	-	-	-	-	-	-	Clinker	-	-	5219	-
Adani Dahej	8190	15.4	-	2	-	70000	Coal	-	-	12276000	-
							Rock phosphate	-	-	300000	-
							Silica sand	-	-	NA	-

(Contd.)

Table - 3 (Contd.)

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handled ('000t)	Draught max. (m)	No. of wharves	No. of berths (sq m)	Stacking capacity received ('000 dwt)	Largest vessel	commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
Mandvi Port	NA	4.0	1	1	-	63446					
Jakhau Port	NA	6.0	-	4	-	71549	Cement	146592	174401	-	-
							Coal	-	-	385641	277928
							Salt	1866608	1922051	-	-
Mundra	NA	7.30	1	1	-	-	-	-	-	-	-
KARNATAKA											
Karwar	380	NA	NA	NA	NA	NA	-	-	-	-	-
Kundapura	NA	4.50	700	2	1200	2000	-	-	-	-	-
MAHARASHTRA											
Dahanu	NA	6.0	-	1	-	-	Coal	-	-	455561	NA
Dharamtar	9890	5.5	NA	9	160000	NA	Iron ore	-	-	NA	NA
							Iron ore pellets	-	-	NA	NA
							Limestone	-	-	NA	NA
							Coal	-	-	NA	NA
							Rock Phosphate	-	-	NA	NA
							Dolomite	-	-	NA	NA
							Bauxite	NA	-	-	-
Dighi	NA	9	NA	2	4000	NA	Bauxite	213553	-	-	-
Jaigad	NA	14	NA	2	2000	NA	Bauxite	280100	-	-	-
							Iron ore	1002558	-	NA	NA
							Limestone	-	-	NA	NA
							Coke	-	-	NA	NA
							Coal	NA	NA	NA	NA
Kelshi	NA	15	NA	NA	NA	NA	Bauxite	NA	-	NA	NA
Ratnagiri	710	5	NA	1	NA	NA	Clinker	NA	-	NA	NA
Redi	NA	4	NA	NA	NA	NA	Iron ore	1513789	-	-	-
Revdanda	1340	4	NA	4	NA	55000	Iron ore	52499	NA	NA	NA
Bankot	NA	NA	NA	NA	NA	NA	Bauxite	-	NA	-	-
EAST COAST ANDHRA PRADESH											
Kakinada # (Anchorage Port)	2070				NA		NA	NA	NA	NA	NA

(Contd.)

Table - 3 (Concld.)

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handling ('000 t)	Draught max. (m)	No. of wharves	No. of berths	Stacking capacity received (sq m)	Largest vessel ('000 dwt)	commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
EAST COAST											
ANDHRA PRADESH (Concld.)											
(Kakinada 3 ships Deep water Port)	17960	NA	NA	NA	NA	NA		NA	NA	NA	NA
Krishnapat-anam	40740	18	-	9	2560000	200	Iron ore	NA	NA	-	NA
							Gypsum	-	-	NA	NA
							Barytes	NA	NA	-	-
							Clinker	-	-	-	-
							Feldspar	NA	NA	NA	
Rawa	1300	-	-	-	-	-	-	-	-	-	-
TAMIL NADU											
Cuddalore	260	@	-	-	80000	@@	-	-	-	-	-

Source: *Basic Port Statistics of India,2016-17.*

@ not applicable being a roadstead port.

@@ Any size being an anchorage port.

 # Two ports, namely, 1. Kakinada Anchorage Port under Govt. of Andhra Pradesh and 2. Kakinada Deep water Port under private organisation M/s Kakinada Sea Port Ltd, in East Godavari district at Kakinada, Andhra Pradesh .

5. PRIVATE PORTS

5.1 Major Development Projects International Container Trans-shipment Terminal (ICTT) at Vallarpadam

The International Container Trans-shipment Terminal (ICTT), Vallarpadam is India's first dedicated International Container Trans-shipment Terminal. It was developed by Cochin Port Trust and M/s India Gateway Terminal Pvt. Ltd (IGT), a subsidiary of M/s Dubai Ports World (DPW) through a Public-Private Partnership on Build-Operate-Transfer (BOT) basis. It was dedicated to the nation on 11th February, 2011. Container handling charges at nearby Vallarpadam terminal are likely to go down with stakeholders deciding that all terminal related charges will be billed directly to the exporter or importer by M/s DPW from 1st January 2015.

A decision in this regard was reportedly taken at a meeting of various stakeholders held in October 2014 convened by the Cochin Port Trust.

5.2 Adani Ports and Special Economic Zone Limited (APSEZ)

Mundra Special Economic Zone (Mundra SEZ) is located on the western coast of India in the Gulf of Kachchh, within the State of Gujarat. Mundra Port is the gateway for cargo to the Northern hinterland and has increasingly become the gateway for Indian exports.

Mundra SEZ is India's largest notified, operational multi-product SEZ with state-of-the-art infrastructure and is planned to be spread over 15,000 ha. Currently, notified multi-product SEZs are spread over an area of 6,473 ha. The zone also has in addition a Free Trade and Warehousing Zone (FTWZ) spread over 168 ha. Leveraging the advantage of the robust port infrastructure, Mundra SEZ offers the best investment opportunity for diversified industries.

Mundra SEZ has the potential to offer developed industrial clusters for small/medium projects as well as facilitate the mega projects with the desired land parcel, along with an excellent logistic connectivity, power reliability and other utilities.

Infrastructure being the key to the SEZ development, emphasis has been to develop/ augment core infrastructure facilities to attract investments.

Special features of Mundra SEZ are:

(1) India's Largest, Port - based, Notified and Functional, Multi-product SEZ

(2) An integrated self-sustained zone with modern infrastructure and facilities

(3) Mundra SEZ's multi-modal connectivity offers competitive logistic advantage with:

- In-zone Multi-purpose Port with Container Terminals
- Fully mechanised efficient port with one of the lowest turnaround time in India.
- In-zone Road & Rail connectivity.
- Well connected with National & State Highways.
- 64 km Private Rail line connects Mundra to National Railway Network at Adipur near Gandhidham, Kachchh.
- 210 km rail network within the Zone.
- In-zone private Airstrip.
- Proposed International Air Cargo Hub.
- Integrated Infrastructure and Utilities.
- Well-developed commercial & social infrastructure for Living, Learning, Healthcare & Recreations.

5.3 Essar Ports

Essar Ports Ltd is one of India's largest Private Sector Port and Terminal Company by capacity and throughput.

The Company through its subsidiaries develops and operates ports and terminals for handling liquid, dry bulk and general cargo with an existing aggregate cargo handling capacity of 104 MTPA across the facilities located at Vadinar and Hazira in the State of Gujarat on west coast of India and Paradip in the State of Odisha on east coast of India. The facilities of Vadinar, Hazira and Paradip are used primarily for receipt of raw material, such as, crude oil, iron ore pellets, limestone, dolomite, coal and finished goods, such as, petroleum products and steel products.

Essar Ports has an existing aggregate capacity of 104 MTPA. The Company is in process of increasing its aggregate ports capacity to 194 MTPA. In addition, Essar has plans for 32 MTPA iron ore export terminal consisting of three berths at Visakhapatnam in the State of Andhra Pradesh.

5.4 Ongoing Private Sector/Captive/Joint Venture Port Projects (Non-Major Ports)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (million tonnes)	Project Cost (` in crore)
1.	Development of Mundra Port	Mundra (Gujarat)	160	12305
2.	Hazira Port Pvt. Ltd (HPPL)	Hazira (Gujarat)	2.50 (MMTPA)	1180
3.	Development of BGCT under phase IB at Hazira	Hazira (Gujarat)	24.6	267.6
4.	Development of Solid Cargo Port Terminal	Dahej (Gujarat)	15	84
5.	Captive jetty by Cairn Energy India Pvt. Ltd Bhogat Dist. Jamnagar	Bhogat (Gujarat)	7	1285
6.	Captive jetty by J.P. Associates Ltd, Jakhau Port	Jakhau Port	3	140

(Contd.)

(Contd.)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (Million Tonnes)	Project Cost (` in crore)
7.	Captive jetty by Essar Salaya Bulk Terminal Ltd	Salaya (Gujarat)	7	600
8.	Captive jetty by ABG Cement Ltd	Hazira Mora (Gujarat)	2	100
9.	Captive jetty by M/s Essar Bulk Terminal Ltd - 1100 m (3rd Expansion)	Hazira (Gujarat)	25	2621
10.	Captive jetty by M/s Ultra Tech Cement Ltd - Expansion of Captive jetty at Kovaya	Kovaya Pipavav (Gujarat)	5	200
11.	Captive jetty by M/s Godrej - Ro Ro jetty for handling of ODC cargo at Dahej SEZ	Dahej	1	5.9
12.	Captive jetty by M/s ISGEC - Ro Ro jetty for handling of ODC cargo at Dahej SEZ	Dahej	1	55
13.	Demolition and reconstruction of Capt. of Ports jetty at Panaji	Panaji-Port, Goa	-	15.01
14.	Demolition of old existing jetty and reconstruction of new Capt. of Ports jetty at old Goa	Panaji-Port, Goa	-	20.36
15.	Establishing a captive port at Parangipettai by M/s IL&FS Ltd	Parangipettai, Tamil Nadu	13 MMTPA	1349
16.	Meghwaram Port	Meghwaram, Andhra Pradesh	Captive Port 4.70 MMT	600
17.	KSEZ	KSEZ, Andhra Pradesh	Captive Port 15.00 MMT	2500

(Concld.)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (Million Tonnes)	Project Cost (` in crore)
18.	Phase-2-Development of Krishnapatnam Port	Krishnapatnam, Andhra Pradesh	44.30 (Bulk & Gen Cargo) 3.30 MTEU (Container)	6600
19.	7th Berth	Kakinada Deep water Port, Andhra Pradesh	2.5	90
20.	Dhamra Chandbali Port Project	Dhamra Port, Odisha	25 MMT	3639
21.	Development of Karaikal Port through private investment on BOT basis	Karaikal, Puducherry	Phase-2A 21.5 Phase-2AE 6.5	1600 500
22.	Development of Puducherry Port through private investment on BOT basis	Puducherry	Phase-1 16.2 Phase-II 10.8	2785 NA
23.	Construction of Captive jetty at Manki in Honnavar Taluka of U.K District by M/s Shree Renuka Energy Ltd, Belagavi	Manki, Karnataka	2.0 (3.5 in Future)	46
24.	Anchorage operations at Honnavar Port by M/s Honnavar Port Pvt. Ltd, Hyderabad.	Honnavar, Karnataka	4.99	511.3

5.5 Maritime Agenda 2010-20

In the Maritime Agenda, a target of 3,130 million tonnes Port capacity has been set for the year 2020. More than 50% of this capacity is to be created in the Non-major Ports. The Non-major Ports are expected to play a major role and by the year 2020, the traffic handled by Non-major Ports is expected to increase to 1,280 million tonnes. The objective is not only creating more capacity but to bring out ports at par with the best international ports in terms of performance. This will reduce the transaction cost considerably for our trade, thus making them globally competitive. The total proposed investment in Major and Non-major Ports by 2020 is expected to be around ` 2,77,380 crore. Most of this investment has to come from the private sector. Public Funds will be mainly deployed for common user infrastructure facilities like deepening of port channels, rail and road connectivity from ports to hinterland, etc. Foreign Direct Investment up to 100% under automatic route is permitted for construction and maintenance of ports.

The Ministry of Shipping is continuously engaged in designing and implementing various projects for development of Port Sector. To increase the pace of growth and to improve the efficiency of the delivery system, the Ministry of Shipping has come out with a Maritime Agenda 2010-20 for the next ten years. The Agenda is an effort to identify the areas for attention during 2010-11 to 2019-20.

The agenda for the Ports are:

- Develop two New Major Ports one each on east and west coasts.
- Full mechanisation of cargo handling and movement.
- Major Ports to have draft of not less than14 metres and hub ports 17 metres.
- Identification and implementation of projects for rail, road and inland waterway connectivity to ports.
- Development of two hub ports on each of the West and the East coasts.

FUTURE OUTLOOK

India's port facilities are in for a major overhaul as development of ports and augmentation of capacities are significant for economic vibrancy and growth. The projected capacity during the terminal year of 12th Five Year Plan for the major ports would be 1,229.24 MT, which is nearly 1.76 times of the existing capacity. The expected demand by the end of 12th Five Year Plan in terms of cargo handling at major port would be 943.06 MT with an estimated annual growth of 10.98%. The total plan outlay projected to augment the capacity by 532.71 MT is ` 67,295.54 crore. Most of the investment is expected to flow from Private Sector i.e. ` 51,036 crore (76%) and the remaining share of 24% is anticipated from internal resources and budgetary support of the Government.