J. M. BAXI GROUP

TIDINGS

ISSUE XXV

APRIL - JUNE 2019

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J. M. BAXI GROUP

TIDINGS

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Shreyas ship is berthing at Paradip International Cargo Terminal

* All maps are for representation purpose only

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From the

Quarter Deck

Dear Friends and Colleagues,
The month of February 2019 saw a tragic and heinous suicide bomb attack in Pulwama in Kashmir, in which 40 soldiers of the Indian CRPF lost their lives. In a swift reprisal, an attack was carried out by the Indian Air Force against the concerned terror organization, based in Balakot, Pakistan. These events have led to an escalation of tension between the two nations, which everyone hopes to see reduced, along with the spectre of terrorism. Moving from a sombre note to a slightly sceptical note, the year 2019 seems to be moving in an odd way, with "trade wars" too adding to this conundrum.

Various international economic commentators have also been cautioning about the likelihood of a recession in the Western world, as well as the likely effect of Brexit and the general weakness of the European region and the negative macro-economic fundamentals of the US. Added to this are the challenges to the Chinese economy due to the trade war and its likely overleveraged economy. Against this dismal backdrop, it is heartening to note that most of the container shipping lines have reported healthy earnings and the grapevine is silent of any negative dramatic events. The only ship-owning sector that yet seems haemorrhaging is the offshore oil and gas sector, with drill rigs, offshore support vessels and other types of crafts being beaten down both in price as well as employment. On the technology front, all ship-owners are getting prepared for the 2020 sulphur emission guidelines, with various strategies of either usage of scrubbers, open loop or closed loop, usage of low sulphur fuel, gas-driven engines, or hybrid engines. The other technology-led projects of various shipping companies and ports relate to the delivery of a seamless service to customers on a "live time" basis.

India and its government have very much endeavored to strive and stride in that direction. Between the ports sector and the newly created Department of Logistics at the Ministry of Commerce, major efforts have been made in this direction. The ports sector under the leadership of the Ministry of Shipping has begun rolling out the Port Community System, which is carrying the entire community of stakeholders of our port systems together. This truly promises to be one of the most important initiatives, which will lead to successfully achieving the objective of "Ease of doing business" as well as reduction in cost and time for transactions.

Movement of coal, both coastal (domestic production) as well as imports, has seen a consistent growth on both coasts of India. With the firming up of the steel market and the upward production trend in the steel mills of India, we are seeing enhanced volumes of cargo moving, especially on the east coast of India, as well as increased volumes via coastal shipping. Imports of crude oil remain steady, as do the movements of products both for exports as well as for the domestic coastal routes. LPG volumes have seen steady growth and, in some ports, due to enhanced demands, some amount of congestion and berthing delays are a reality. LNG ships are increasing their trips and volumes as well. With the various rounds of auctions for creating gas grids in various cities, these volumes are expected to rise.

On the container side, once again both on the west and east coasts of India, there has been sustainable growth on a year-on-year basis. As regards our terminals, it is gratifying to see that in the first three months of 2019 we have seen continued growth in volumes with Kandla (KICT) handling 77,911 TEUs, Sonepat (DICT) 20,679 TEUs, Vizag (VCTPL) 103,937 TEUs, Mumbai/ JNPT (MICT) 22,582 TEUs and Haldia (HICT) 44,178 TEUs.

It is with great pleasure and pride that I share with you all the news that, once again, Arya Communication was recognized as one of Motorola's most

valuable partners and was awarded "Distributor of the year 2018".
Well done team Aryacom! With the leapfrogging of technology in our lives as well as in governance and with the increasing requirement of security for the citizenry, communications is one of the pivotal areas of importance. With our partnership with the "Global Best" Motorola, Aryacom is poised to further grow, with several new and existing projects on a pan-India basis.

Continuing from the last few issues of the Quarter deck and TIDINGS regarding the subject of the resolution of non-performing assets of the Indian banking sector a few important headlines...

At long last, the Essar steel plant at Hazira has been cleared to be taken over by ArcelorMittal. This is expected to bring in cheer and good news as reports presently suggest that this plant operates only at 40% capacity.

The next crucial resolution will be that of ABG shipyard. The liquidation process is expected to begin shortly and hopefully, after liquidation and auction the new activity should fully be seen.

Elections in India, which take place every 5 years, have been announced and, by the time you read the new Tidings and Quarterdeck, the results of the elections to the 17th Lok Sabha, will have been declared. It is indeed fascinating to observe elections in the largest democracy in the world, where almost 1 billion people exercise their right to vote and elect their government.

Till then

Krishna B. Kotak
Chairman - J M BAXI GROUP

Agency & Services

The Story Of Edible Oil: An Indispensable Item For Any Meal

(Continued from Issue XXIV)

Current Scenario

Despite the government's avowed policy to usher in self-reliance by decreasing imports of edible oils; during November 2017 to October 2018, the import of vegetable oils (comprising edible oil and non-edible oil) only fell marginally by 2.72% to 15 MMT as against 15.4 MMT in the corresponding period of the previous year. India's oil year runs from November to October. "In last one year, in the international market, prices of edible oils have gone down by 2 to 10 percent due to larger supply, and at the same time rupee depreciation by nearly 5 per cent in one year, nullified the advantage of price reduction, " SEA Said. During November - October period of 2017-18 oil year, SEA said that the overall palm oil import has decreased to 8.7 MMT from 9.29 MMT. Soft Oils (like Soybean) import increased to 8.7 MMT from 5.78 MMT during same period of last year. Also, a parcel of 3,000 tonnes of cottonseed oil from the US had arrived during April 2018.

The industry pegs the country's edible oil consumption at 23.5 million tonnes for 2018-19 and expects to import 15.5 million tonnes, with 60 per cent from Malaysia and Indonesia, followed by soyabean oil from Argentina and Brazil, sunflower oil from Ukraine and Russia and canola oil from Canada.

India imports 60 per cent of its edible oil requirements, largely from Malaysia, Indonesia, Argentina and Ukraine. The duty on crude palm oil from Malaysia, Indonesia and other members of the Association of South East Asian Nations was cut to 40 per cent from 44 per cent, while the tax on refined palm oil was cut to 45 per cent from 54 per cent if imported from Malaysia and to 50 per cent, if purchased from Indonesia or other member-nations of Asean. The duty on crude Soybean Oil and Sun flower oil is unchanged at 35% while refined soybean oil and Sunflower oil remain at 45 %. The effective duty difference between crude and refined palm oil has narrowed to 5.5% from 11% for shipments from Malaysia, which could lead to higher imports of refined palm oil and could be a death knell for the domestic refining industry and halt expansion of palm oil plantations in the country.

About 70% of the domestic requirement is met through imports, and palm oil accounts for 60% of the shipments.

"During 2017-18, imports increased in the first quarter, however imports decreased in the second and the third quarter due to revision of import duty in June, fast rupee depreciation and also credit crunch" the SEA said in a statement.

Imports increased in the fourth quarter as pipelines were dried up due to lesser import in June and July, coupled with improved parity in the import of palm oil due to reduction in spread between palm oil and soft oils, it added. According to SEA, over the last one year in the international market, prices of various edible oils have gone down in the range of 11 to 25% due to excess supply in the world market and reduced demand by India. The rupee depreciating nearly 13% also made the import expensive. Near absence of palm oil cultivation in India has however jinxed the Indian edible oil sector in terms of continued imports, comprising the bulk of the total edible oil imports.

Snapshot of Indian Edible Oil Industry	
Type of Industry	No. Of Units
Vanaspati, Interestified Vegetable Fats	91
Refinery along with Solvent plant & Oil Mills	191
Oil Mill & Blended Edible Vegetable Oil	116
Solvent Extraction Units	110
Total	508

Annual Capacity of Different Manufacturing Plants	
Name of Plant	Capacity (Lakh MT)
Oil Mill expeller	54.9
Solvent Extraction plant	5,037.50
Refinery	1,544.20
Hydrogenation Plant	50
Inter-Esterification Plant	14.9
Margarine / Spreads Plant	6.1
Blended Edible Vegetable Oil Plant	47.2

Sources:

- Euromonitor International
- Solvent Extractor's Association of India
- Rabo Reasearch, Rabo Bank
- Department of Food and Public Distribution

Agency & Services

Demand-Led Imports To Continue

Growing population, economic growth and rising disposable income will drive India's vegetable oil consumption growth, which is expected to grow by three percent annually to exceed 34 million tonnes by 2030. "Increasing income, urbanisation, changing food habits and deeper penetration of processed foods will be key drivers of future consumption growth of edible oil in the country, " as per the Rabo Research report.

The Future Of India's Edible Oil Industry: How Will India's Vegetable Oil Demand Shape Up By 2030.

The country's vegetable oil consumption was at 23 million tonnes in 2017. Because of current stagnant domestic vegetable oil supplies, import volumes will continue to fill the majority of the supply and demand gap over the next decade. Palm oil, soy oil and sunflower oil are expected to penetrate regional markets further in the future, with the packaged edible oil segment leading the way for future growth of the industry. "Domestic oilseed production growth can't keep up with rising demand. Rising demand and stagnant domestic vegetable oil supply, which has been range bound between 6.5 million tonnes and 8.5 million tonnes in the past decade, will push the country's vegetable oil imports to over 25 million tonnes by 2030, from 15.5 million tonnes in 2017" Rabo Bank analyst for Grains and Oilseeds, Mr. Rohit Kumar Dhanda Said

Import of Veg Oil (From Nov-2018 to Feb-2019)

Product Name	Total Qty in MT
RBD Palmolein	647,900
Crude Palm Oil	2,381,583
Sun flower Oil	801,759
Rape Oil (Canola)	44,167
Soybean Oil (Degummed)	695,420
Crude Palm Ker. Oil	40,983
Grand Total	4,611,812

Port Wise Import of Veg Oil (From Nov-2018 to Feb-2019)

Ports	Total Discharge Qty in MT
Tuticorin	114,759
Mundra	246,985
Mumbai	15,310
Mangalore	244,862
Kandla	1,352,154
Kakinada	276,746
JNPT	463,675
Haldia	674,715
Krishnapatinam	579,069
Chennai	479,277
Budge-Budge	96,597
Other ports	67,663
Grand Total	4,611,812

Agency & Services

Port Of GOPALPUR

Introduction

Gopalpur is a tiny village originally on the south-east coast of Odisha, originally equipped with facilities for simple fishing vessels, the adjoining port of the village evolved into a commercial port over 300 years ago. This was developed under the ownership of the local Soraine family and gradually the port became quite prominent in timber trading with Myanmar (then Burma). It also handled a sizeable number of immigrants from India going to Myanmar and the nearby areas for work. The family also built a lighthouse and established hostelry for visitors and travellers at Gopalpur.

By the time the East India Company had penetrated into the remote locations of India, some family feuds and disputes had started plaguing the landlord's family. Eventually, most of the land and assets got transferred to British missionaries. In due course, when the trade with Myanmar picked up, mainly driven by the rice from Yangon, the East India Company created more storage to facilitate the trade.

Gopalpur Minor Port

In the wake of World War II, Myanmar was in total disarray along with most of the Malayan peninsula and trade with Gopalpur had declined. Consequently, the original port at Gopalpur lost its importance in overseas trade and gradually turned into a small port for lighterage operations and fishing. The location's (Latitude: 19°18' N, Longitude: 84° 58' E) vulnerability to strong nautical gales and cyclones prevalent on ECI during monsoons made it seasonal and the port was functional normally from October to March. Over the years, a berth over 200 metres long was built to accommodate multiple lighters concurrently along with fishing vessels. Cargo handling was managed through 5 cranes with Safe Working Load (SWL) ranging from 15 MT to 30 MT. About 3,000 sq. meter of covered storage and 30,000 sq. meter of open storage (paved + unpaved) was also available.

The minor port started foundering largely due its seasonality and inadequacy in combating siltation close to shore that pushed the anchorage point further out to the sea and made navigation difficult in patches. Therefore, in the year 2006, the Government of Odisha decided to augment and convert the port into an all-weather port with berths and contracted the port out to private entrepreneurs.

Ownership, Formation, and Commencement

In 2006, the Government of Odisha signed an agreement with Gopalpur Port Limited (GPL), a consortium promoted by three companies – Noble Group from Hongkong, Sara International from Delhi and Orissa Stevedores Limited of Odisha, awarding the work of augmentation and conversion of the anchorage port into an all–weather port on BOOST (Build, Own, Operate, Share and Transfer) basis.

The development work of the port suffered from very early stages reportedly due to delays in the availability of funds for the expansion plan. Differences among the stakeholders were also reported and in May 2010, one of the stakeholders, the Hong Kong based Noble Group left the consortium. According to newspaper reports, Sara International had also remained a relatively silent equity participant without showing serious intent to contribute to the port's funding. During 2011 - 2013, Jindal Steel & Power Ltd (JSPL) had meanwhile expressed interest to take 49% - 60% of the stake of GPL, but they were turned down by the Government of Odisha due to the limitation of legal provisions of the original concession agreement.

GPL started its commercial operation in July 2013 with a small shipment of 7500 MT, but the port's operations were affected drastically, thereafter, due to the consequences of two back to back tropical cyclones- Phalin and Hud Hud in 2013 and 2014 respectively.

Agency & Services

After renovation and repairs, the port could resume normal commercial operations only by end of 2015 and ramped up to full-scale operations with one berth from April 2016. In 2017, the Government of Odisha agreed to accept induction of Shapoorji Pallonji as the majority stakeholder of GPL with Orissa Stevedores Limited retaining the balance stake. The Concession Agreement is for a period of 30 years with an option for extension by another 20 years.

Port Features: GPL

Location

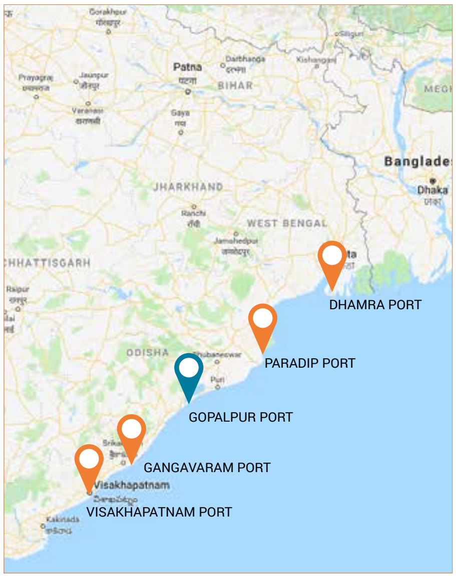
GPL is located about 167 KM to the south of Paradip Port and around 205 KM to the north of Visakhapatnam Port.

Road Connectivity

Provided by NH 16 (previously NH 5) connecting Kolkata and Chennai under the Golden Quadrilateral. The Port is connected to NH 16 by NH 516.

Rail Connectivity

GPL currently uses the siding of Indian Rare Earths Limited for its railway traffic; the siding is served by the station at Chatrapur, the nearest large town is about 6 km away.



Berth And Cargo

GPL has been operating with one multi-purpose berth of 225 M, offering safe draught of 12 M. The declared capacity of the berth is around 3.5 MTPA although the actual throughput so far, is in the region of 1.5 MTPA. Main cargoes handled include Ilmenite Sand, Coking Coal, Iron Ore pellets, Industrial Salt, Steel Plates, Lime Stone and other minerals.

Other Infrastructure

Mobile Harbour Cranes and grabs are available; also available is an automated plant for bagging and stitching of fertilizer. For covered storage, there are 10 warehouses while about 2,000 sq. meter of paved area is available inside GPL.

Navigation

Managed as of now using two Harbour Tugs.

Ship Support And Supplies

- Provisions and stores are available locally to a reasonable extent. Freshwater is available at berth through pipeline although according to reports, it requires treatment before consumption.
- No bunkering facility available although IOCL, Paradip is supplying port crafts with bunkers moved by road tankers. GPL permits bunkering of vessels likewise by IOCL, Paradip. No bunkering facility is available at anchorage.
- Crew embarkation/ disembarkation is allowed on a case to case basis by local authorities.

Hinterland And Business

In the normal course, the port has a natural hinterland in south and western Odisha, northern Andhra Pradesh and Chhattisgarh. However, it has to contend with two very large ports – Paradip and Visakhapatnam on either side of the coast who also command inter alia over the same hinterland.

A major growth prospect of GPL is linked with the Gopalpur Industrial Park being set up by Tata Steel SEZ. Gopalpur Industrial Park is located around 170 Km from Bhubaneswar and it is being developed on a contiguous land parcel of 1202 Ha. The park has different areas for Domestic Tariff Area (DTA) for India centric manufacturing and multi-product Special Economic Zones (SEZ) for export-centric manufacturing; concurrent social infrastructure is being developed for people working in the industries.

Plants And Units

- Tata Steel Limited has already invested USD 80 million and commissioned a 55,000 TPA high carbon ferro-chrome plant.
- Mumbai based Sure Safety Solutions Private Limited in association with Meggitt Corporation, UK, is setting up an aerial target manufacturing facility for the Indian Defence sector.
- Gemini Edibles & Fats India Private Limited (GEF India) has already proposed to set up a vegetable oil refinery at the Industrial Park. The plant is planned to produce 396 KTPA of Refined SFO, Palm Oil and vegetable fats at a total investment of INR 300 crore.
- The most notable among other investors who have shown interest to set up units in the park are a Taiwanese firm for a Naphtha plant, a Russian company for a Steel Downstream unit, a wellness product facility and a cell phone manufacturing hub ■

(To be continued in Issue XXVI)

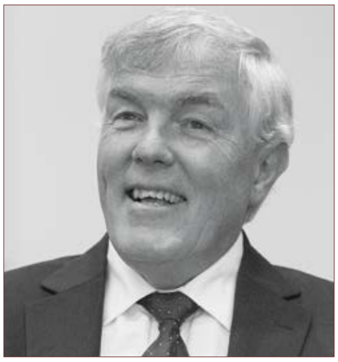
In Conversation

Mr. STUART MUNRO Talks About Marine Insurance

Q: Do you think Global shipping will pick up in the next one or two years?
Ans: Unfortunately, the lows in shipping far outweigh the brief highs. There have been spasmodic pick-ups in freight rates for bulkers and tankers over the last few years but they soon fizzled out. The obvious driver of shipping is worldwide trade which appears to be under attack via a combination of possible trade wars (US and China) and an increase in nationalist and protectionist policies which could seriously impact on shipping volumes. I think that there is a greater chance that shipping will decline rather than pick up over the short to medium term and hope to be proved wrong. It will not be the first time.

Q: What is the effect of the global slump (or, at least very little growth overall) in the marine insurance sector?
Ans: Marine insurance and specifically hull and fixed premium P&I cover have been reducing their rates due to a combination of lower claims (which is good) and overcapacity in the market which leads to new underwriters believing they have the "answer" as to why premiums can get lower every year. Unfortunately, their answers are invariably incorrect and there have been substantial losses that have incurred. This had led to a reduction in capacity and/or consolidation of insurers. Whilst this has halted the decline in insurance rates, it has not led to any great increases either, so if you are a buyer of marine insurance, it is still a great value.

Q: Do you see any improvement in the ship owners' (and charterer's/ operators') community in discharging liabilities to agents and other service providers?



Mr. Stuart Munro is the Chief Executive Officer of International Transport Intermediaries Club (ITIC). He has been associated with ITIC since 1989 and has held key management positions. He has particular expertise in relation to ship management contracts as he was part of the BIMCO Shipman revision committee which finalised the Shipman 2009 contract. Apart from his management responsibilities, Stuart is also the area executive for India, Sri Lanka, Hong Kong, and Monaco. He has also spoken at many loss prevention seminars, ship management conferences as well as to ICS branches worldwide.

Ans: ITIC insures thousands of ship agents, ship brokers and ship managers around the world. The responsibilities passed from the owner or charterer to the service supplier has always been one-sided – i.e. the agent is responsible for as much as the operator can get away with!

ITIC is well used to this and it's our job to try and level that playing field as we robustly protect the agent, broker or manager's position if they are innocent, and settle as fast as possible if they are not!

Q: Arresting vessels or cargoes appear to be shunned as a method for recovery of outstanding dues by governments of almost all countries. Do you have any comment on the subject?
Ans: I suspect that governments don't really understand shipping at all. In the UK, we seem to have a new shipping minister every six months so there is little point remembering their name as they will not be there long. The only time governments get interested in shipping is if there is a pollution incident and then they listen to all the wrong people and invariably make a complete mess when they do respond.

It is not just governments either. We see port authorities increasingly asking for guarantees from a local ship agent for dock damage rather than from the ship and their P&I insurer. ITIC often has to spend time educating those port authorities that the best way to guarantee their claim is from the P&I club of the shipowner and not from the local agent who earns a very modest fee for his services.

Q: We have experienced some cases where owners' offices have been hacked and funds have been remitted to wrong addresses inserted by the hackers. There is a lot of delay in settling these claims because the owners are obviously reluctant to pay. Is there a speedy recourse to address such developments?
Ans: This is the subject that we talk about almost non-stop when we visit our members worldwide. There is ONE simple rule whenever you receive an email requesting a change of bank details, whether that is from a supplier, owner, charterer or even another J M BAXI GROUP

In Conversation

office. It is that you teach your staff to automatically call (by phone) the company from whom you have received this request to check that it is authentic.

- Do not respond to their email as if it is a hacker, you are just corresponding with the thieves
- Do not trust the location of suggested new bank account - ever . There are plenty of crooks in UK, USA, and Hong Kong etc.
- Request for unusual inter-company transfers - check first by calling them
- New bank account of charterer/supplier - always check by calling them
- If you do email, use an email address you used previously - do not hit "reply to all"
- Bank accounts never close during an audit - that is a lie
- The reason why violent crime is down is because more people are getting mugged over the internet - don't let it be you

In the last three months, we have seen claims from such incidents worth US$ 150,000, US$ 510,000 and Euro 250,000 respectively. All the staff that is involved in these mistakes had been told about the automatic call back, but they did not do so.

Q: We have been hearing a lot about BREXIT and its impending execution. What in your opinion would be the effect of this development on European and English Shipping?
Ans: Brexit is not my favourite subject as we have had it as a topic of conversation and news in the UK for almost 2.5 years. It is a subject that cannot be discussed at a social occasion as it is almost impossible for Brexiteers (those wishing to leave the European Union) and Remainers to agree on anything, even the time of day or the colour of their coffee. There are family and inter-generational divides (the young are usually remainers and the grand-parents invariably for Brexit) as well. The politicians are as divided as the country.

As for its impact on shipping, well it will not help the British Flag as any EU-based owner will probably change to another flag state jurisdiction. It might be good news for ferry operators in the UK and even local ship agents as they can charge for customs clearance services on goods that for 40+ years were transported tariff-free. I see very little upside and more downside. Maybe I am being too gloomy as I am not an enthusiast for Brexit, to put it mildly.

Q: How many changes have you noticed in the shipping business in South East Asia - India - Middle East - Africa region during the last few years?
Ans: Singapore seems to be the premier shipping hub in South East Asia due to their tax incentives as nothing drives shipping like not paying any or maybe low taxes. My son is a dry cargo operator-based in Singapore and it's clearly the place to be – close to India and the Asia Pacific with many of the decision makers based in the region. As an outsider, to me, India looks like sleeping giant of shipping which needs to be incentivised so that shipping entrepreneurs think not about setting up in Dubai or Singapore but in Mumbai or Chennai. After all, what bigger market is there locally other than India?

Q: How do you think the marine insurance is doing in India in general? Can you please share some thoughts for improving efficiency and reducing delays?
Ans: I cannot really comment on this as ITIC's speciality is professional indemnity insurance which is very specialised and that has meant that ITIC has a dispensation from the Indian Government to underwrite ship agents in India directly.

Q: What regulatory changes in India do you look forward to?
Ans: Lesser the regulation the better but that is an optimistic request and few countries decrease their regulation on insurance even though it is one of the simplest products to deliver.

Q: Is ITIC planning to launch some new products in the near future? Please share.
Ans: ITIC's primary offering is professional indemnity (or error and omissions) insurance to companies within the transport industry. This is our core and we stick to that as if you start offering cover for risks that you do not really understand that is where you can become unstuck.

We do offer additional ancillary covers such as debt collection cover, Directors' and Officers' cover, Maritime Labour Convention liability cover (to ship managers only), loss of commission insurance to shipbrokers in the event that a marine peril stops them earning their commission and also cash in transit (ship agents) and cash on board (ship managers) covers as well.

These additional covers came about from feedback from the membership as ITIC's members (including the J M BAXI GROUP since 1985) are also its shareholders as we are a mutual and so are owned by the companies we cover ■

Logistics

BOXCO To Commence Barging Operations Between TUTICORIN Port And The Nuclear Power Project Site

Introduction

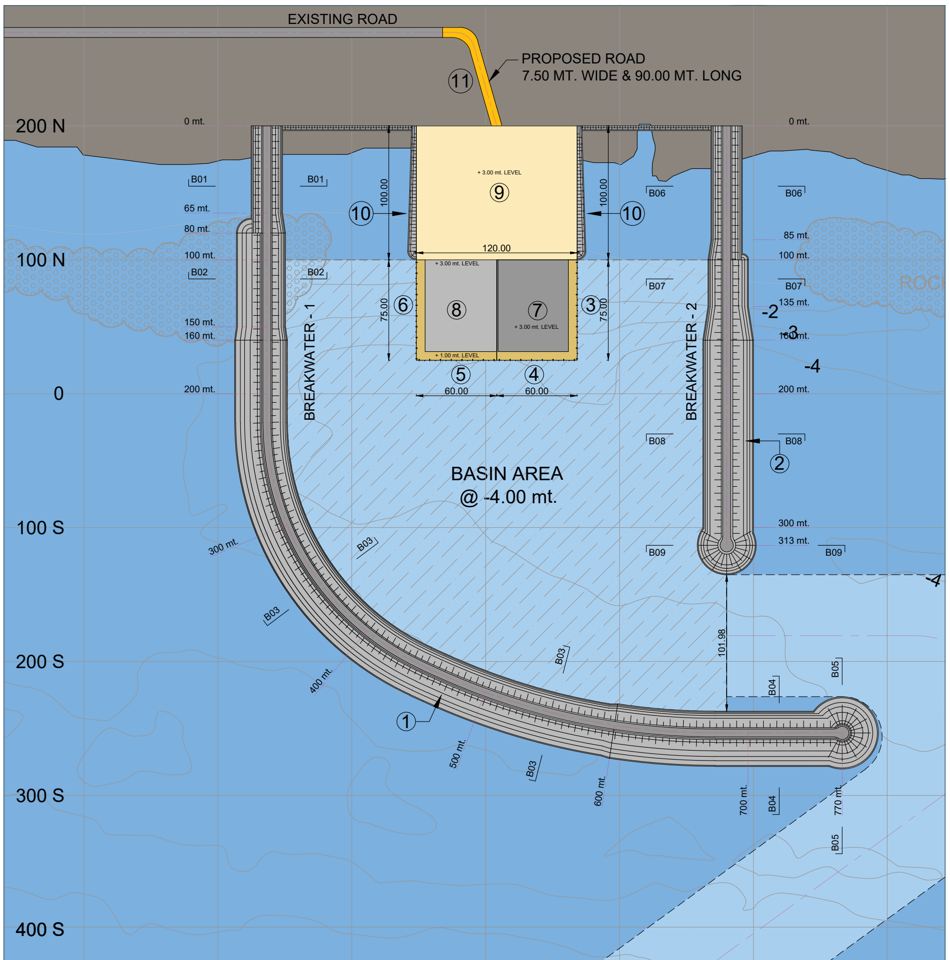
The consortium of Boxco Logistics India Pvt Ltd and Deugro were awarded a contract to build a jetty for Units 3 and 4 of Kudankulam Nuclear Power Plant (KKNPP) for the Nuclear Power Corporation of India Limited. The project is in accordance with the intergovernmental agreement signed between the government of India and the Russian Federation. The equipment is coming from the Russian Federation and other countries by sea to Tuticorin Port (VOC Port). It is then transported using multimodal transport onto the Kudankulam project site. Boxco and Deugro together have so far handled over 60,000 FRT of cargo for this project. Over-dimensional and heavy lift cargo that cannot be transported by road will be loaded onto barges at Tuticorin Port and rolled out or unloaded at the new jetty near the plant site.

Our scope included gathering data to support the design, such as the sub-soil strata, oceanographic data (on waves, tides and currents) and bathymetric survey data. IIT Mumbai checked the design of the jetty and its associated structures, which included a mathematical modeling, and proof checking of the technical parameters.

Construction was divided into four phases

- Breakwater, east arm
- Breakwater, west arm
- RoRo jetty operational area
- LoLo jetty operational area

Boxco designed and constructed the jetty, which is protected by a breakwater, and the associated facilities for the unloading of over-dimensional cargo and heavy lift cargo from the coast near KKNPP



MAP OF THE BASIN SHOWING THE BREAKWATER

PHOTOGRAPH OF THE PORT SITE SO FAR

Logistics

for RoRo and LoLo operations. The jetty was constructed to withstand all weather conditions and its lifespan is 60 years. The design of the jetty and breakwater were approved by IIT Mumbai and certified by Bureau Veritas.

The protective breakwater is approximately 1,150 m long and extends into the open sea. It required 1.7 lakh of rocks of various sizes. The RoRo jetty is a gravity-type jetty with dimensions of 60 × 75 m. Its slope is 1 m, enabling easy negotiation of heavy haulage. The LoLo jetty is also a gravity-type jetty with dimensions of 60 × 75 m. The top of the jetty is flat with no slope.

Unique Challenges

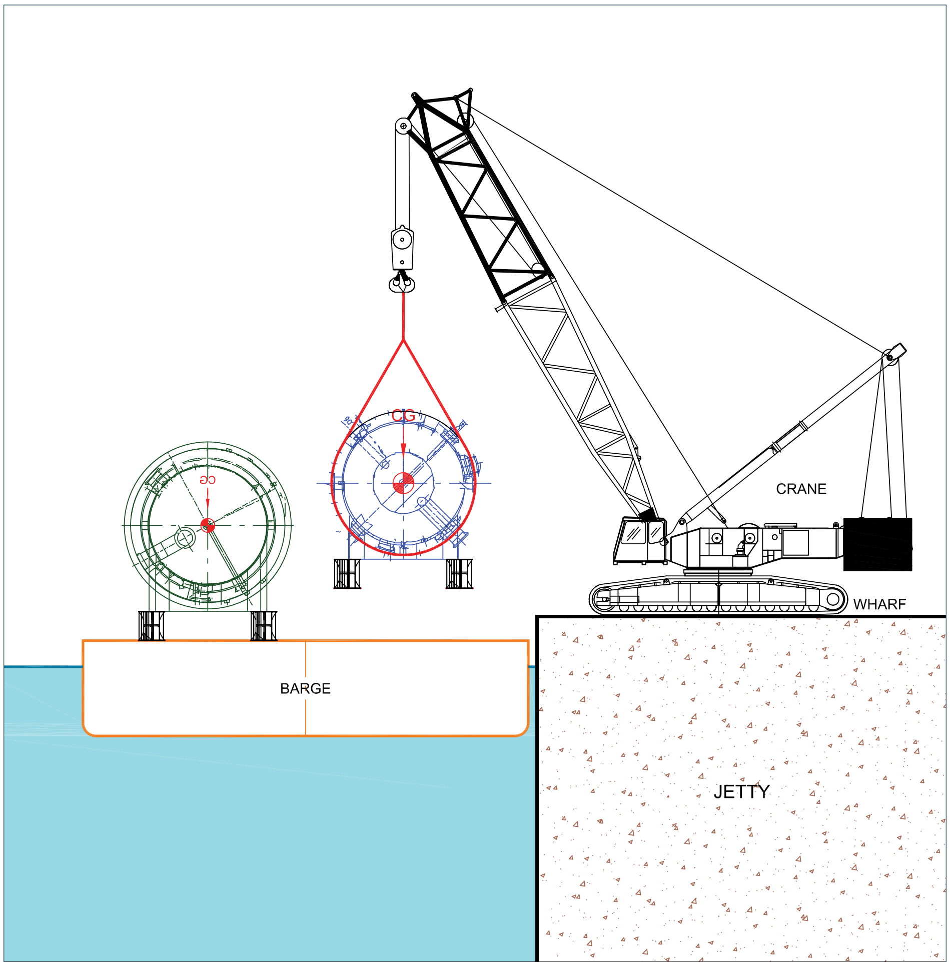
The jetty is at the mouth of Gulf of Mannar and at the meeting point of three oceans. Constructing the breakwater was a complex task, as wind speeds can reach 45 km/hr. The swell rises from 0.75 m to 1.5 m on an average and on occasions it has touched 2.5 m. It was a challenging marine engineering job, extending 750 m out to the sea. Boxco is proud to have successfully completed both arms of the breakwater. During the last monsoon, the jetty was subjected to severe cyclones and it came out with flying colours as it was able to withstand all incursions by the cyclone. Dredging and blasting had to be carried out to produce an even draft of 4 m throughout the channel to allow navigation of vessels with a draft of up to 3 m.

Barge Operations At KKNPP

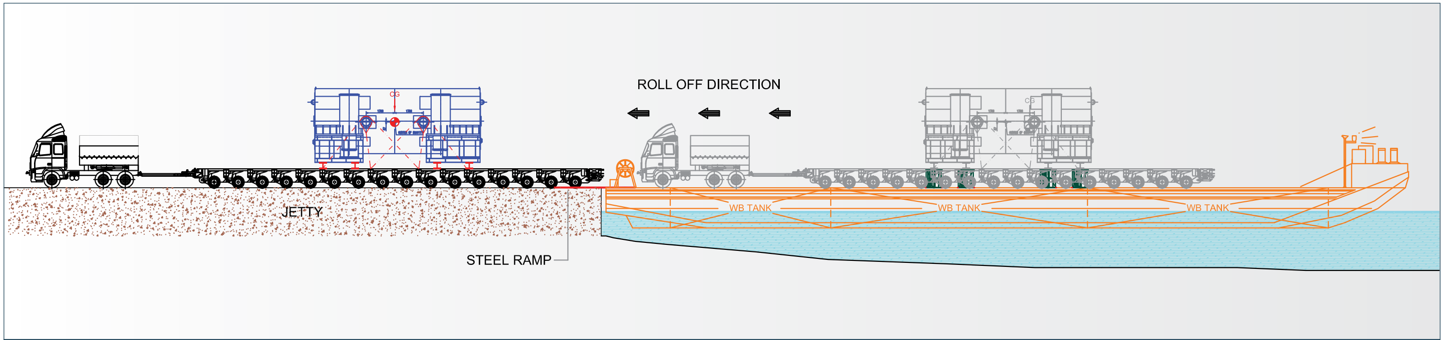
Boxco has mobilised a 1100 ton capacity self-propelled barge named Akua Kuen from Kolkata for barge operations. The barge requires a depth of 4.0 m. It has a length of 57.19 m and a breadth of 16.40 m. It has an automatic self-ballasting and deballasting system to maintain its static position while conducting RoRo operations at the jetty. The barge is IRS certified.

RoRo Operations

The first ro-ro operations at the jetty are planned for March 2019. In each voyage, approximately 600 tons of cargo will be shifted from Tuticorin Port to the KKNPP site. The project cargo will be rolled off from the barge using our axles



SCHEMATIC VIEW OF A TYPICAL LoLo OPERATION. THE BARGE IS ALONGSIDE THE JETTY



SCHEMATIC VIEW OF A TYPICAL RoRo OPERATION. THE BARGE IS IN LINE WITH THE JETTY

Infrastructure

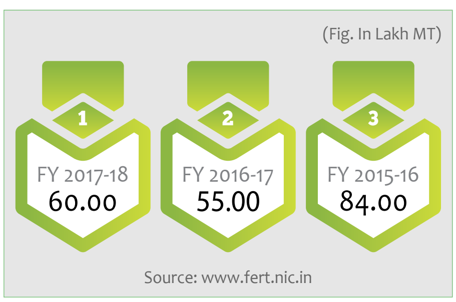
A Cost-Effective Gateway For Handling Imported Urea

India is the world's second-largest consumer of urea, since agriculture makes up about 14 per cent of its economy. Urea is produced domestically for its agronomic requirements and is also imported from China, Iran, Saudi Arabia and Oman to bridge the gap between the indigenous availability and the assessed demand.

Urea is the only fertiliser under a statutory price and partial movement control and its import for direct agriculture use is permitted only through state trading enterprises, namely MMTC and STC.

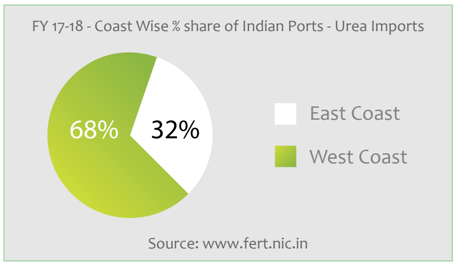
The government also imports urea from a urea-ammonia plant run by the Oman India Fertiliser Company (OMIFCO), which is a joint venture between the government of India and the Sultanate of Oman, under a long-term urea off-take agreement. The import of urea from OMIFCO is done through the Indian Farmers Fertilizer Cooperative and Krishak Bharati Cooperative.

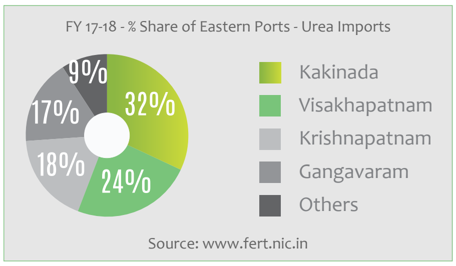
The import of agricultural urea by the government happens through various Indian ports after extensive bidding by various fertiliser marketing entities, like the Indian Farmers Fertiliser Cooperative (IFFCO), Indian Potash Limited (IPL), National Fertilizers Limited (NFL) and Coal India Limited (CIL).



The graphic representation in column 1 bottom shows the amount of urea imported into India for the last three financial years.

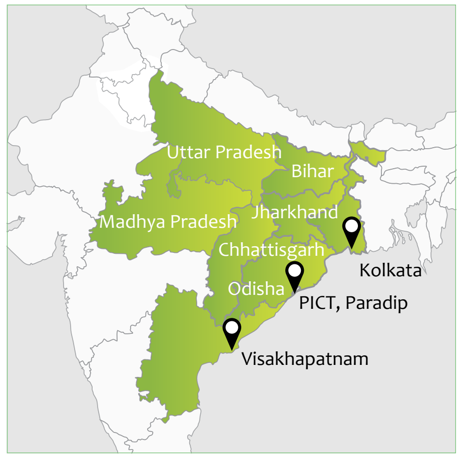
On the east coast of India, ports like Krishnapatnam, Kakinada, Visakhapatnam and Gangavaram are generally preferred for the import of urea to various fertiliser consumption centres across India.





Paradip Port is on the east coast of India, about 210 nautical miles to the south of Kolkata and 260 miles north of Visakhapatnam. The port is in an ideal location to service the demands of various fertiliser consumption centres in Indian states such as Odisha, Chhattisgarh, Jharkhand, Bihar, West Bengal, Madhya Pradesh and Uttar Pradesh compared to other ports handling urea imports on the east coast.

The Department of Fertiliser (DOF) of the government of India floated a tender in September 2018 to appoint a fertiliser marketing entity at various Indian ports to handle and market urea imported by the government. Paradip International



Cargo Terminal (PICT) was included in the list of ports eligible to import urea. NFL emerged as the lowest bidder for PICT and was accordingly awarded the contract to handle and market agricultural urea at PICT by the DOF.

Subsequently, PICT received two vessels with urea in January 2019. The vessels came alongside the berth without any pre-berthing delays. PICT ensured seamless completion of discharging operations and a discharge rate of over 10,000 MT per weather working day was achieved. The bulk cargo was discharged only through hoppers, thereby eliminating jetty dumping.

The cargo was stored in a clean and covered warehousing facility with storage space for the entire 87,000 MT of cargo. During the movement of the cargo to the warehouse, minimal cargo handling loss was observed.

Operations such as coating the urea with neem, bagging it into 45-kg bags and loading them into rakes for final dispatch were carried out at PICT. Bagging was done using mechanised bagging units with a neem coating facility.

Infrastructure

The entire cargo of 90,000 MT was dispatched by rail within 40 days. Each rake was fully loaded in less than 5 hours, within the free period granted by Indian Railways.

NFL was able to reduce the overall cost for railway freight from PICT to the various fertiliser consumption centres in Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Uttar Pradesh and West Bengal compared to other ports.

The table shows the average savings achieved ex-PICT for rail freight compared to other urea-handling ports.

(Fig. In Rs. PMT)

Destination	PICT	Vizag	Kakinada	Gangavaram
Arrah	1431	1900	2176	2176
Sasaram	1431	2038	2038	1900
Warisaliganj	1362	2038	2038	1900
Khagaria	1362	2038	2038	1900
Sarai	1432	2176	2176	1900
Gaya Jn.	1224	1760	1900	2038
Bettiah	1640	2310	2311	2176
Naugachia	1432	2038	2176	2176
Saharsa	1431	2176	2176	1900
Ranipatra	1431	2176	2176	2038
Madhepura	1500	2176	2176	2038
Siwan	1640	2310	2310	2038
Akaltara	943	1064	1274	1064
Bhatapara	1014	923	1135	923
Kharsia	872	1064	1274	1064
Daltonganj	1294	1760	1899	1760
Koderma	1155	1621	1900	1621
Jukehi	1432	1481	1760	1481
Chhindwara	2058	1760	1760	1760
Pipariya	1780	1760	1900	1900
Betul	1920	1900	1621	1760
Deoria Sadar	1641	2176	2311	2176
Nakaha Jungle	1780	2176	2487	2176
Shivpur	1641	2753	2726	2753
Iradat Ganj	1780	2726	2557	2726
Mau	1780	2176	2311	2176
Azamgarh	2048	2753	2726	2753
Faizabad	1920	2753	2726	2753
Krishnanagar	1013	1620	1760	1620
Rangapani	1640	2176	2310	2176
Avg. Freight	**1501**	**1993**	**2071**	**1961**
Avg. Savings –Ex-PICT vs others	-	492	570	460
Overall Avg. Saving-Ex-PICT	**507**			

From the table, it is evident that there is an overall average saving of Rs. 507 per MT ex-PICT compared to other ports. This cost reduction in railway freight has resulted in a saving of approximately Rs. 44 million of DOF for just two shiploads of cargo from PICT. This would translate into a massive reduction in its overall expenditure on freight subsidies for imported urea.

Hence, with its commercial advantage along with its operational excellence, PICT has become the preferred gateway port for the import of urea to the east coast of India.

Paradip International Cargo Terminal (PICT) at Paradip Port is a multipurpose, clean cargo and container handling terminal developed by J M BAXI GROUP. The depth of the berth is about 17.1 m and the quay length is 450 m, making it capable of handling Cape-sized vessels of up to 1,25,000 DWT. The terminal can handle approximately 10 MMT per annum of clean cargo such as fertiliser, food grains, iron and steel, pig iron, and containers ■

FRONT LOADERS ARE USED TO PILE THE CARGO INTO HEAPS

EXCAVATORS ARE USED TO MAKE HIGH HEAPS OF BULK CARGO

BAGGING USING MECHANISED BAGGING UNITS WITH NEEM COATING FACILITY

BULK CARGO IS DISCHARGED INTO HOPPERS

BAGS STACKED INSIDE A RAILWAY WAGON

CARGO FALLS INTO A TIPPER FROM THE HOPPER FOR ONWARD MOVEMENT TO A WAREHOUSE

BAGS MOVED BY CONVEYOR BELT. WAGON LOADERS ARE USED TO LOAD THE RAKES

Infrastructure

DICT Is Expanding To Meet Rising Trade Requirements

Delhi International Cargo Terminal (DICT) is a multi-user logistics park providing end-to-end solutions for customers. It has been able to sustain an average volume of 10,000 TEUs per month in the financial year 2018 - 19.

With its highest volume of 11,474 TEU achieved in January 2019, DICT has become the number one private inland container depot in the national capital region by EXIM volume. With the continuous increase in volume, there is the challenge of maintaining service standards.

DICT has planned the following

New Machinery

One empty and four laden reach stackers have been installed to handle the additional volume. Rubber-tyre gantry cranes are planned to reduce train turnaround times and to speed up the delivery of containers to and from gateway ports.

EXIM Yard

The EXIM yard will be expanded by an additional 10 acres. This space will take containers and will provide adequate space for cargo examination without causing congestion in the yard while maintaining the same turnaround times for vehicles.

Expansion Of The Public Bonded Warehouse

The increase in the size of the bonded warehouse from 1250 to 3000 square metres with a rack stacking facility for storing white goods enables customers to take part-delivery of cargo on payment of partial customs duty.

Expansion Of Customs Area

Additional customs offices to accommodate more customs team members to facilitate trade will be built and handed over to the customs team for smooth and hassle-free working.

Empty Yard Expansion

An empty yard of 8 acres has been developed and made operational for stacking empty ISO containers owned by shipping lines to ensure customers have an adequate inventory of containers at DICT.

Pre-Gate Facility For Customers

A pre-gate facility is available for customers to ensure the congestion-free entry of vehicles into the terminal to avoid delays in loading containers onto vehicles.

Many further initiatives are being taken to serve our customers better, like offering door-to-door solutions, knowledge-sharing sessions with key customers and direct customer interactions with key team members to find optimal solutions.

DICT has also developed a unique service for customers in the north of India: the transport of import reefer containers by train, which has given them the confidence to import temperature-sensitive cargo via DICT.

DICT is serving customers from Delhi, Haryana, Punjab, Uttar Pradesh, Uttarakhand, Himachal Pradesh, and Jammu and Kashmir. With the above developments, it is well poised to provide further unique solutions with exceptional service levels

Technology

ARYA WATER Exports WTP To ZAMBIA

The need for energy security and climate change mitigation have increased blending mandates (in fuels) worldwide. Growing concerns about the future of energy security and global warming have necessitated investments in biofuels—a key renewable energy source. The key drivers of this growth have been: (1) the rise in the number of countries worldwide enforcing blending mandates; (2) high oil prices and (3) incentives and assent to international protocols on global warming mitigation, and availability of climate finance for renewable energy development.

Zambia is poised to become a major contributor to the growth of the biofuels industry in Africa. It has abundant land that can be used for feedstock production, with a land–person ratio of 5.79 hectares (ha), which is relatively large when compared to the industrialized world at 0.01– 4.23 ha per capita. This is complemented by political stability and a climate that is conducive to a wide array of feedstocks that can be grown in tropical and subtropical regions. It's near-central location within Southern Africa offers trade opportunities for feedstock and liquid biofuels. For bioethanol feedstocks, sugarcane, cassava, and maize are produced in large quantities.

Looking at the opportunities in the African nation, Arya Water Technologies (AWT) explored the possibility of venturing into water and wastewater treatment business in Zambia.

AWT Bagged Two Orders Of

i. **Water treatment plant (WTP)** and

ii. **Wastewater treatment plant (WWTP)** at Lusaka, capital of Zambia from **M/S Surya Biofuel Ltd.**

DISTILLERY BIODIGESTER

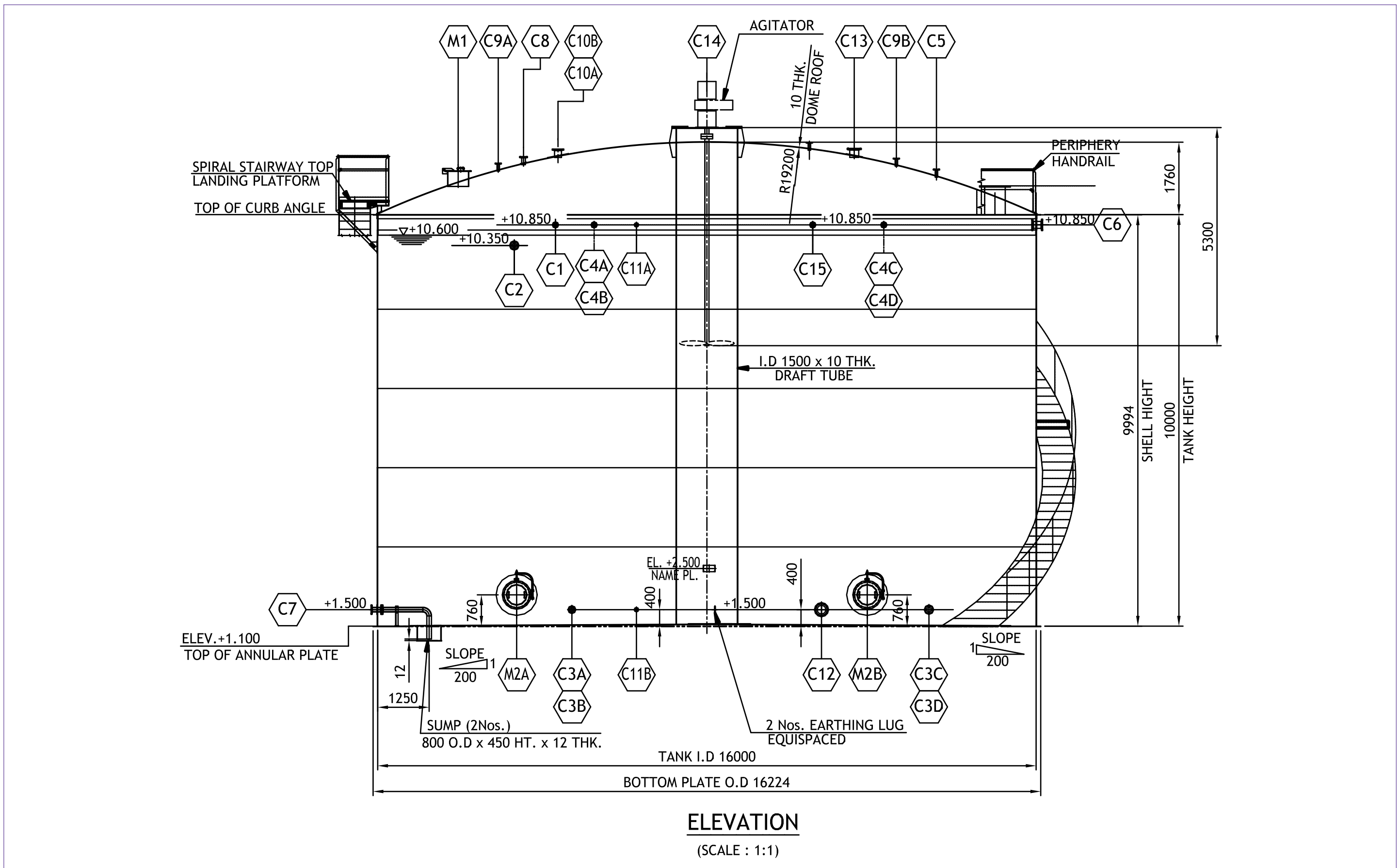
UF MEMBRANES SKID ASSEMBLY

AWT bagged the order by demonstrating complete understanding of client issues and proposed solutions with a combination of conventional and advanced technologies.

In the **WTP** project, AWT provided state of the art Ultra Filtration (UF) membranes, Reverse Osmosis (RO) membranes and Demineralization (DM) plant. The WTP shall produce a water of conductivity < 1μs/cm to be effectively used for ethanol dilution.

The **WWTP** is based on distillery biodigester process, wherein a Continuous Stirred tank reactor (CSTR) is provided. The system shall treat the critical spent wash generated from the molasses/grain-based feed distillation process. The spent wash is categorized as "difficult to treat" organic waste with a Chemical oxygen Demand (COD) value of 2.0-2.5 lakhs ppm.

Technology



CSTR BASED DISTILLERY BIODIGESTER PLANT AND DESIGN DRAWING FOR ELEVATION

The waste water plant shall achieve 60-70 percent reduction in pollutant loads for further usage in bio feed/ sugarcane plantation.

Technology At A Glance

In a distillery, **WTP** is the backbone of distillery throughput, production volumes and revenues. By envisaging a UF -RO -DM based process, AWT have envisaged a best in class system.

In **WWTP**, pollutant loads were earlier removed by conventional processes such as bio composting which leads to higher footprints and lesser treatment efficiencies. By using Biodigester viz. **CSTR**, anaerobic degradation is enhanced which leads to better design and cost savings in downstream process.

Key Features Of The Projects

1. State-of-the-art treatment process
2. Lesser footprint
3. Treated water in WTP shall be conducive for ethanol/spirit dilution
4. Enhanced organic degradation in Biodigester anaerobic treatment.
5. Treated water and sludge from WWTP shall be used as natural fertilizer ■

UF -RO -DM PLANTS

In Focus

The Draft National Logistics Policy

The Draft National Logistics Policy was published by the Ministry of Commerce - Logistics division on 5th Feb 2019, seeking suggestions and comments from various stakeholders which can be examined and reviewed prior finalization of the policy.

The relatively high cost of logistics in India and its effects on the facilitation of domestic and foreign trade has been discussed and debated for a long time now. The present policy has been brought out, accordingly, to address holistically the various challenges beleaguering smooth cargo movement and causing additional costs for Importers and Exporters.

Key Objectives Of The Draft Policy

- Create a single point of reference for all logistics and trade facilitation matters
- Driving logistics cost as a percentile of GDP from current levels (13-14 per cent) to an estimated 10 per cent to align cost with best in class international standards
- Creation of national logistics e-marketplace as a one-stop market place
- Creation of a data and analytics centre to drive transparency and continuous monitoring of key performance metrics
- Enhance efficiency of logistics value chain through increased digitization and technology adoption
- Encourage Industry, Academia, and Governments to create a Logistics Centre of Excellence to drive innovation in the logistics sector
- Creating and managing on an ongoing basis, an Integrated National Logistics Action Plan that is composed of the logistics plans of various stakeholders (like the various modes of transport, customs, ports, respective State Governments) and State Logistics Plans for aligning the National logistics action plan with the priorities of the country and the states concurrently
- Doubling employment and skill development in the logistics sector
- Improve India's ranking in Logistics Performance Index to between 25 and 30 (from 44 in 2018)
- Strengthening the warehousing sector by improving the quality of storage infrastructure
- Reduce losses due to agri-wastage to less than 5 per cent by improving cold chain logistics solutions, improvement of packaging conditions and other post-harvest management techniques
- Promote cross-regional trade on e-commerce platforms to enable a seamless flow of goods
- Encourage adoption of green logistics in the country

The challenges in the logistics industry have been of different nature as evident from the long list of the objectives proposed. However, the major challenges in Indian logistics may be summarized as follows:

A. A large number of stakeholders involved in the process of moving goods from point of discharge at Indian soil to the consignee and similarly from premises of the shippers to points of departure from India. Different sets of documentation governed by different deliverable benchmarks and tariffs always cause a prolonged process of 'permission' or 'clearance' at port/ terminals before the cargo can actually be moved.

B. Not withstanding the ~5.5 million km of road network in India (second highest in the world) less than ~1,32,000 km is of a reasonably good standard (National Highways) and it carries 40 to 50 per cent of the total road bound traffic in India. Only ~23,000/ 25,000 Km of National Highways has four lanes incidentally. Naturally, the average speed of trucks on Indian roads is therefore very poor at about 20 km per hour. Construction of new roads of international standards would pose challenges to land use considering India's population and agriculture land.

C. Railways are probably one of the strongest Government Departments in India in the context of their network and efficiencies. However, till about 10 years ago railways have

In Focus

been unilaterally developing their track network, largely ignoring the potential benefits available in synchronization of their projects with development projects undertaken by Government of India and State Governments in waterways and road sectors to derive optimum benefits.

D. Another key challenge that the policy proposes to address is the optimization of the modal mix. Of late, there has been a lot of thrust in the waterways sector but these initiatives are expensive and will require reforms soon to encourage continuity; Laying railway tracks is an another expensive proposition although a significant part of railway network development is certainly due to materialize through the two Dedicated Freight Corridor (DFC) projects under implementation presently. Never-the-less, the proposals of converting present railway modal share of 31 to 50-55 per cent in future and convert 9 per cent of the present waterways share to 20-25 per cent for waterways are going to be both difficult and challenging objectives in terms of funding and viability. A possible solution is probably to limit the number of modal options in various areas of India.

E. The PCS 1x platform is already providing a common platform to over 25 stakeholders including customs, ports and other stakeholders both in the public and private sector.

F. Improving commercial relationships and developing commercial agreements with various organization/ countries/ regional corporations will help in developing trade connectivity. Accession to the International conventions, strengthening regional cooperation and coordination among various countries and stakeholders and financing cross-border transport projects will help in enhancing the regional maritime connectivity.

Focus Area Identified In The Policy

An integrated and efficient logistics policy developed towards creating efficient and user-friendly ecosystem can boost the economic growth in the country and have the potential to facilitate trade, enhance global competitiveness, improves incomes. The present logistics policy document is a comprehensive document which addresses the majority of challenges faced by the logistics industry today. Effective, successful and well-coordinated implementation of the policy will determine the real impact on the ground ■

Port Statistics

SHIPPING & CARGO PERFORMANCE

QUARTERLY UPDATES ON INDIAN MAJOR & MINOR PORTS (QTY IN MILLION TONNES)

OCTOBER - DECEMBER 2018 (III[rd] QUARTER) 2018 - 2019 / OCTOBER - DECEMBER 2017 (III[rd] QUARTER) 2017 - 2018 (QTY IN MT)

AGRICULTURAL PRODUCTS

	SUGAR		SOYAMEAL		WHEAT		RICE		MAIZE	
	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17
No. of Ships called	26	32	17	19	0	23	26	42	1	0
Total Cargo Handled	0.947	1.052	0.536	0.409	0.000	0.888	0.394	0.581	0.002	0.000
Import	0.678	0.175	0.000	0.000	0.000	0.888	0.004	0.017	0.002	0.000
Export	0.269	0.877	0.536	0.409	0.000	0.000	0.390	0.564	0.000	0.000

FINISHED FERTILIZERS & FERTILIZER RAW MATERIALS

	UREA		SULPHUR		ROCK PHOSPHATE		DAP		MOP	
	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17
No. of Ships called	51	43	17	13	46	48	39	36	33	37
Total Cargo Handled	2.213	1.842	0.355	0.360	1.910	1.943	1.730	1.079	1.012	1.084
Import	2.213	1.842	0.301	0.232	1.910	1.943	1.688	1.052	1.012	1.084
Export	0.000	0.000	0.054	0.128	0.000	0.000	0.042	0.027	0.000	0.000

COAL

	THERMAL COAL		COKING COAL		MET COKE		PET COKE		ANTHRACITE COAL	
	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17
No. of Ships called	264	254	182	241	32	28	38	50	12	13
Total Cargo Handled	15.768	13.621	12.879	11.228	0.847	0.781	1.654	2.232	0.396	0.394
Import	7.164	7.401	12.525	11.000	0.847	0.745	1.107	1.994	0.396	0.394
Export	8.604	6.220	0.354	0.228	0.000	0.026	0.547	0.238	0.000	0.000

STEEL & RELATED ORES

	STEEL PRODUCTS		SCRAP METAL		CHROME		MAGNESIUM ORE		IRON ORE	
	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17
No. of Ships called	309	383	3	1	3	0	22	40	169	294
Total Cargo Handled	3.150	4.646	0.118	0.033	0.017	0.000	0.481	0.815	16.038	16.489
Import	2.096	1.921	0.118	0.033	0.000	0.000	0.481	0..815	8.104	5.509
Export	1.054	2.725	0.000	0.000	0.017	0.000	0.000	0.000	7.934	10.980

INDIAN PORT PERFORMANCE - Q3 & FY 2018 - 19 THROUGHPUT (QTY IN MILLION TONNES)

OCTOBER - DECEMBER 2018 (III[rd] QUARTER) 2018 - 2019 / OCTOBER - DECEMBER 2017 (III[rd] QUARTER) 2017 - 2018 (QTY IN MT)

Ports	Types of Ports	NO. OF SHIPS		LIQUID CARGO		BULK CARGO		CONTAINERS (TEUS)		TOTAL CARGO *	
		III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17	III[rd] Qtr'18	III[rd] Qtr'17
Kandla	■	498	439	3.514	3.148	7.327	5.758	54,769	20,343	10.841	8.906
Mumbai	■	457	466	7.517	8.168	1.559	2.129	-	12,029	9.076	10.297
Nhava Sheva	■	172	172	1.804	1.596	0.282	0.266	1,292,268	1,189,155	2.086	1.862
Mormugao	■	181	161	0.295	0.257	4.420	5.010	-	-	4.715	5.267
Mangalore	■	364	381	7.885	7.930	3.480	3.491	-	25,544	11.365	11.421
Cochin	■	176	180	5.451	4.847	0.386	0.393	148,177	119,760	5.837	5.240
Tuticorin	■	195	234	0.573	0.368	4.881	5.255	178,349	155,672	5.454	5.623
Chennai	■	241	263	4.647	4.175	1.504	2.020	398,078	450,276	6.151	6.195
Ennore	■	230	207	1.153	1.211	7.609	6.335	23,920	-	8.762	7.546
Vishakhapatnam	■	313	308	4.074	2.719	8.218	7.851	113,572	80,571	12.292	10.570
Paradip	■	530	524	11.058	9.505	18.184	18.966	-	-	29.242	28.471
Haldia	■	549	579	3.386	3.383	6.900	6.433	47,234	47,371	10.286	9.816
Kolkata	■	74	84	0.281	0.287	0.071	0.478	158,366	145,048	0.352	0.765
Gangavaram	■	45	5	0.000	0.000	3.100	0.216	-	-	3.100	0.216
Pipavav	■	108	145	0.211	0.349	1.598	1.855	250,711	154,713	1.809	2.204
Mundra	■	648	791	7.800	6.377	11.375	11.308	1,110,722	938,416	19.175	17.685
Dahej	■	195	203	5.715	5.708	3.505	2.716	-	-	9.220	8.424
Hazira	■	190	207	1.037	1.612	4.783	2.245	146,384	103,163	5.820	3.857
Navlakhi	■	57	42	0.000	0.000	3.537	2.482	-	-	3.537	2.482
Kakinada	■	186	196	0.686	0.717	3.290	2.743	3,658	-	3.976	3.460
Total Vessel Calls at all ports		**5409**	**5587**	**67.087**	**62.357**	**96.009**	**87.950**	**78,689**	**3,442,061**	**163.096**	**150.307**

■ Major Port ■ Non-Major Port

* Total Cargo Includes Liquid Cargo , Bulk Cargo and Other Cargoes and Excludes Containers

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