

The Punj Lloyd Magazine

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**The world's largest
wheat-based
bioethanol plant
nears completion**





A Greener Future

The world's largest wheat-based bioethanol plant nears completion in the UK

Martin Dronfield

Vice President - Global Strategy
& Business Development, Simon Carves Ltd.

Simon Carves, leaders in polymers and petrochemicals, will soon be completing Europe's largest wheat refinery and the world's largest wheat-based bioethanol plant at Wilton on Teesside in North East England for its customer, The Ensus Group.

The Ensus project has seen Simon Carves leverage its long established capability in the design and construction of process facilities to develop a leading position in the delivery of capital projects in the rapidly emerging renewables sector.

Having been involved in the project since the conceptual stage in 2006, when it carried out the initial FEED (front end engineering design), the Simon Carves team began development of the £ 250 million plant on an EPC basis in April 2007, working closely with technology partner Katzen from the outset.

Meeting environmental targets

The Ensus plant is being developed in support of an ambitious EU target to reduce greenhouse gas emissions



which requires that 20 per cent of total energy supply within member countries must come from renewable energy sources by 2020 in order to reduce the impact of carbon emissions from road transport and to combat global warming.

The UK alone requires that a proportion of all petrol and diesel sold should come from renewable

sources and this target will rise to 5 per cent over the next few years.

Creating sustainable energy

The new plant will use locally grown animal feed wheat to process over 1.2 million tonnes of grain and produce over 400 million litres of bioethanol, 350 thousand tonnes of



high protein animal feed, and 300 thousand tonnes of carbon dioxide for use in soft drinks and food production each year. Power will be supplied by a combined heat and power plant with surplus electricity used by other plants on the Wilton site, reducing wastage to a bare minimum.

The plant has been designed

Engineering design was delivered right across the Simon Carves network of global centres of excellence, with work carried out in India and Singapore as well as the UK



The plant has been designed according to strict sustainability criteria to meet one third of the UK's bioethanol demand





according to strict sustainability criteria to meet one third of the UK's bioethanol demand, equivalent to taking 300,000 cars off the road. The 350,000 T of high protein animal feed produced by the plant will reduce European demand for soy meal imports that contribute to high levels of deforestation in South America.

World-class plant World-scale project

The sheer size of the plant has required a truly international effort from the UK-based Simon Carves' team and its American technology licensor, Katzen.

Engineering design was delivered right, across the Simon Carves network of global centres of excellence, with work carried out in India and Singapore, as well as the UK.

Plant and materials, which included cooling towers, grain silos, undercover stores for animal feed, distillation plant with associated heat exchangers, molecular filters, fermentation plant with associated tanks and coolers, drier plant with rotary kiln driers and electrical substations, were sourced from as far afield

Key project statistics

◆ Pipe work	- 30 km, including 8.5 km of ethanol product export line
◆ Steel	- 3,600 T
◆ Concrete	- 55,000 m ³
◆ Electrical cabling	- 220 km
◆ Instrument cabling	- 130 km
◆ Instruments	- 2,000 nos.
◆ Mechanical equipment	- 4,000 T
◆ Valves	- 2,500 nos.
◆ Crane	- 750 T lifting capacity for largest & tallest lifts



as Belgium, France, Ireland, Korea, Spain, UK and US.

Safety and community

The Simon Carves' team is committed to maintaining the world-class safety and quality standards of the Punj Lloyd Group. Since 2007, over 1,025,000 hours have been worked by a 1,000 strong workforce with only 1 lost-time injury (LTI).

The project completed 600,000 clear hours without a further LTI in November 2008.

An on-site incentive scheme designed to promote safety awareness was due to pay out a £ 20,000 cash reward to the workforce in recognition of this performance. However rather than accept a cash sum individually, they collectively agreed to donate

this sum to a local children's charity which works with terminally ill children, demonstrating that team spirit and community awareness are clearly evident on this Simon Carves' site. ♦

The future

Mark Leggett

CEO & President, Simon Carves, comments on the project

"The successful completion of the Ensus project is important, not just for Simon Carves but for the European energy industry as a whole, as it demonstrates the significance that biofuels and other greener, renewable energy sources will increasingly play in producing fuels for the future and alternative sources of power.

We expect the number of renewable energy projects in Europe to grow exponentially over the coming years in line with EU carbon reduction regulations, and look forward to utilising our unique experience and skills in the renewables arena to deliver many world-scale biofuels facilities."

Inform-Perform-Transform

Punj Lloyd launches manifold Training Initiatives

“Knowledge has to be improved, challenged and increased constantly, or it vanishes”

– Peter Drucker

Moushumi M Rana

Manager - HR

Rajesh Seth

Deputy General Manager - HR
Punj Lloyd Ltd.

We at Punj Lloyd believe in the famous quote of prominent management consultant, Peter Drucker.

Adaptive as we are, having worked in different geographies, impossible terrain of every land, the unknown has never intimidated us. We anticipate changes and are ready to learn and develop.

Punj Lloyd has seen phenomenal growth in the last few years. From an EPC Group, we have evolved into a diversified conglomerate, exploring opportunities in defence, aviation, marine, upstream, besides our core competence in engineering and construction. To keep pace with this swift growth, we focus on training and skills development.

The key initiatives of the Group range from addressing the skill shortage of the nation to empowering its manpower into becoming better

managers. From creation of a project management academy to developing a project management and leadership competency framework, creation of a readiness dashboard for critical roles across the group and e-learning platforms, the Group is focusing on people development and cutting edge tools to build a competitive organisation.

Punj Lloyd gears up

Craftsmen Training Institutes (CTI) in Banmore, Chhindwara and Belgaum address the skill gap.

India, though on its way to becoming an urban powerhouse, is suffering from a chronic shortage of skilled and semi-skilled labourers, which could pose a threat to the nation's economic growth.

Punj Lloyd requires 8,000 skilled labour for its current projects. The company has embarked on setting up Craftsmen Training Institutes to train welders, fitters, operators and mechanics to hone their skills. Through these institutes, Punj





Lloyd will be providing skill training of 54,000 man-days per annum.

Training Centre at Belgaum

Our training centre in Belgaum has boarding & lodging facilities and provides training to 50 welding and fitting craftsmen at a time.

Chhindwara Institute takes shape

Honorable Commerce and Industry Minister, Kamal Nath, inaugurated a training institute in Chhindwara, Nagpur in September 2008, for 40 welding, grinding and fitting craftsmen. Punj Lloyd has partnered with Confederation of Indian Industry (CII) to set up the National Centre for

Skill Development (NCSD), which will house our craftsmen institute.

Banmore, Gwalior

Craftsmen Training Institute (CTI), yet another institute with a capacity of 200 people, has both boarding & lodging facilities and is nearing completion in Banmore, Gwalior.

Punj Lloyd provides 54,000 man-days skill training per annum under the supervision of qualified and experienced professionals





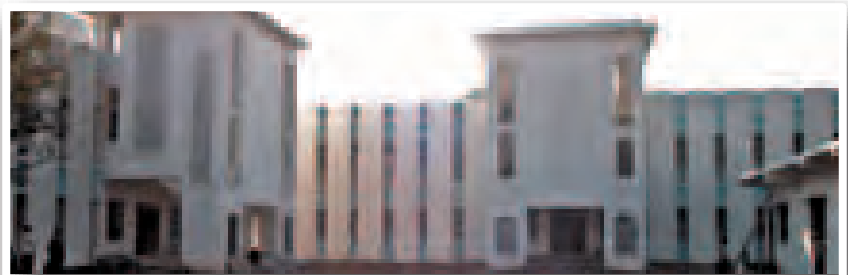
Executive Development Centre at Banmore, Gwalior

Our manpower is our greatest asset and people development strategies play a vital role in providing the company a competitive edge to sustain its growth. The Executive Development Center (EDC) is our dream project. Inaugurated in July 2008, the EDC is a landmark training initiative which provides 60 junior executives - Graduate Engineer Trainees (GETs) and Engineering Diploma Holder Trainees (EDHTs) training of 21,600 man-days each per annum, thus enabling their smooth transition into ongoing projects.

EDC was envisioned to cater to the large portfolio of global projects which require skilled engineers. All new trainees undergo an intensive, mandatory 4-6 weeks residential training cum foundation program at the EDC. The programs are comprehensive, comprising

It will commence training very shortly. In addition to welding and fitting, the institute at Banmore will also cater to upgrading skills of operators, mechanics, masons and carpenters.

We have hired the services of Nettu Technical Training Foundation (NTTF) at our Belgaum craftsmen Training Institute. At Banmore, we have a Memorandum of Understanding with Construction Industry Development Council (CIDC) to be our training facilitator. We are also in talks with ITI at Madhya Pradesh for the institute at Chhindwara under the Modular Employable Skills (MES) development programme, under The National Council of Vocational Training (NCVT) of the Union Labour and Employment Ministry.





presentations, assignments, site visits, practice exposure, etc. Inter-disciplinary in nature, the training covers diverse areas such as finance, IT, marketing, operations management and strategy, giving them a better understanding of the Group.

The sprawling green campus of the institute is located in a picturesque setting with the Central Workshop of Punj Lloyd as its backdrop. 22 km from Gwalior on the Agra-Mumbai highway, the institute is far from the hustle-bustle of city life. The serene environment provides the ideal atmosphere for training, learning & people development.

EDC is a Wi-Fi enabled campus. Well designed air conditioned training and syndicate rooms, 150 capacity auditorium with video conferencing facility, accommodation and guest rooms provide a congenial ambience for learning to the budding Punj Lloyd engineers. The faculty guest rooms are well furnished with grand

interiors. The engineers' hostel is equipped with modular kitchen and recreational facilities. A new hostel with accommodation for 100 people is proposed in the coming season.

The EDC is an excellent platform that hones the technical and managerial skills of employees, creating cohesive multinational teams.

GETs have had a memorable experience at EDC. They are overwhelmed by the indepth and intense training they received. Other than induction, quarterly and bi-yearly departmental training are also held at the EDC. Besides the in-house trainers, many external guest speakers from companies like TWI Cambridge, Volvo, Caterpillar etc are invited to give trade, technical and equipment specific presentations. Flagship programs like 'seven habits of highly effective people', are implemented across the company.

The EDC campus has added a new dimension to the exponential

The EDC campus has added a new dimension to the exponential growth of Punj Lloyd





growth of Punj Lloyd. The EDC has successfully completed 8560 mandays of training till October 2008, and the journey has just begun....

The Management Development Institute (MDI) advantage

In conjunction with the prominent B-school of India – Management Development Institute, Gurgaon, Punj Lloyd managers who play a key role in project execution are trained on the commercial and financial aspects of business through a ‘Financial and Commercial Skills Management Training Program’.

The training addresses:

- ◆ improving understanding of the criticality of management decisions in projects on the top line and bottom line of the business
- ◆ analysing the implications of financial/commercial project management decisions on stakeholders
- ◆ developing understanding of the usage of cost information in cost

estimation, performance review and decision-making

- ◆ developing appreciation of modern tools and techniques in financial decisions made in a dynamic environment
- ◆ providing opportunity for managers to network and share experiences with peers and senior executives from across the Punj Lloyd Group

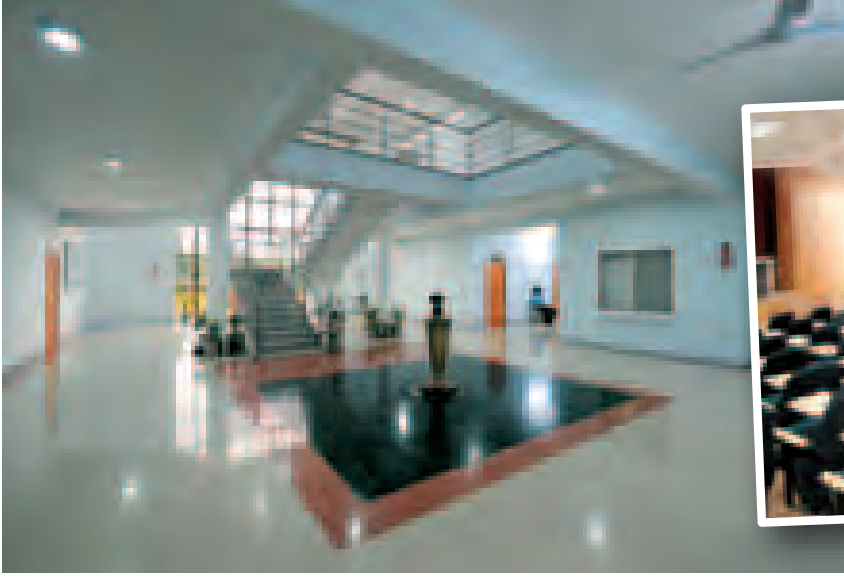
A 5 day residential program conducted at the MDI campus in Gurgaon, the training has already benefitted as many as 122 participants from the Group.

Promoting Education

Establishing the Indian School of Business at Mohali, Punjab.

In another landmark move, Punj Lloyd has shown its commitment towards enhancing the nation’s management resource by partnering with Indian School of Business (ISB) to set up its new centre at Mohali.

Punj Lloyd is among the four Founder Supporters who have contributed towards the



development of ISB Mohali.

The campus will have four Centres of Excellence amongst which will be Punj Lloyd Institute of Physical Infrastructure Management.

A Holistic Approach

With these manifold initiatives in human resource development, Punj Lloyd aims to holistically address issues related to manpower in India and in the industry globally.

Our training initiatives at state-of-the-art-facilities will enable our people to become capable managers and develop into thought leaders who can contribute to nation building. Our association with industry bodies for craftsmen training institutes will hone skills of craftsmen,

increasing their employment opportunities and playing a critical role in the infrastructure development of the nation, besides addressing the acute skilled labour shortage.

Our partnership with prominent business school, ISB is unique as management courses in infrastructure will be available to students the first time in India. ISB, with its associate schools, The Wharton School of Pennsylvania, The Kellogg School, Northwestern University and London Business School, will bring in a global perspective and groom young leaders with its innovative programmes and outstanding faculty.

The learning philosophy of Punj Lloyd will be to strengthen

the managerial and technical capabilities of our workforce who have successfully managed and set benchmarks within the EPC industry.

Over the years, we would like to evolve into a critical meeting point for business leaders, subject experts, thought leaders across the diverse businesses and academia. This would be the place which would enable nurturing of several innovative ideas and practices for enhancing our business competitiveness.

We believe in the learning Mantra "Inform - Perform - Transform". ♦

Announcement of the ISB Campus at Mohali



Laying the Foundation for the First Integrated Resort in Singapore



Tan Liang Seng

Assistant Vice President - Bids & Submissions,
Sembawang Engineers & Constructors

Ground Breaking

We are proud to be the sole builder to lay the foundation for Resorts World at Sentosa which is the first integrated resorts development in Singapore. The S\$ 233 million mega project commenced on June 7, 2007 and has been successfully completed on October 15, 2008.

The S\$ 6 billion resort will welcome 15 million visitors in 2010 with six hotels, shopping mall, Universal Studios theme park and a full range of meeting and conference amenities.

Excavation

The excavation started on the 24 ha land after demolition of the existing structures, including one monorail station. The big challenge was to protect the existing 'live' monorail tracks, which were running across the whole site, while carrying out the construction work. The total volume of earth excavated was 4.6 million m³. Types of soil found at site varied from hard silt to soft marine clay. The maximum depth of excavation reached 29 m below ground level.

4,034 soil nails and 56 ground anchors were installed to stabilise the open cut slopes.

Underpinning

The underpinning to monorail tracks was carried out at night when the trains stopped operation. 66 new bored piles were painstakingly installed to replace the existing foundation via a laborious method of construction. In addition, massive steel bracings were also put in place to control the piers' movement during excavation. A real-time instrumentation monitoring system was implemented to ensure the safety of the monorail system and slope stability of the basement.

Raft construction

The whole substructure consisted of raft panels with thickness ranging from 0.8 m to 3 m. A total of





271,639 m³ of concrete and 47,000 T of steel reinforcement were used to form the 234,000 m² of raft foundation, which is equivalent to the size of 33 football fields. 4,100 car parking spaces will be created in the basements.

Interfacing with other contractors

At the peak of construction, we had 600 workers led by three section managers working round the clock to undertake this fast track project. With the handing over of completed raft panels in stages to other main contractors, the combined workforce at site increased to 2,000. We were required to share the limited space by allowing access to superstructure contractors. Proper site planning and logistics management were necessary to ensure timely delivery of materials and efficient, safe use of construction equipment. We managed to clock 1.8 million Accident Free Man-Hours until substantial completion of the project, which is a landmark milestone for the project.

Environmental Control Measures

A total catchment area of 23.4 ha was created after the formation of

the raft foundation. To avoid pollution to the adjacent seawater, a treatment plant with capacity of 648 m³/hr was installed to purify water from site, to the stringent standard stipulated by the authorities before discharging into the sea. We registered the record of no environmental violation for the entire 16 months' construction period.

Timely Completion

The last raft panel was successfully completed on October 31, 2008 as scheduled. This fast track project was made possible with the dedicated and committed workforce and full support of the management. ♦



Punj Lloyd-A Strong Partner in the Development of Qatar



Bhupendra Gupta
General Manager - Marketing
Punj Lloyd, Qatar

Punj Lloyd is the largest Indian Engineering & Construction Company in Qatar, currently executing major EPC projects in the hydrocarbon sector. Qatar has proven reserves of approximately 25 trillion cubic meters of natural gas, about 15 per cent of the world's total and third largest in the world.

The country is the world's top LNG exporter in 2007. With substantial investments in Gas to Liquid (GTL) projects, Qatar is perceived to be the LNG and GTL capital of the world.

With a population of approximately a million people, Qatar has one of the fastest growing per capita income and a GDP growth of US\$ 8 billion in 1995 to a forecast of US\$ 62 billion by 2011.

On November 10, 2008, Punj

Lloyd was privileged to welcome the Indian Prime Minister, Dr Manmohan Singh and accompanying delegates

in Qatar, a reflection of the close relationship the two nations share.

Punj Lloyd is executing three cross country pipeline projects along with associated station work in Qatar, the most recent being 'Strategic Gas Transmission Project' valued at US\$ 800 million. The other two pipeline projects, Multi-Product Pipeline for Qatar Petroleum and the Ethylene Cross Country Pipeline Project for Ras Laffan Olefins Company, are at an advanced stage of completion. Punj Lloyd is also the EPC contractor for the Fuel Handling System for New Doha International Airport.

Punj Lloyd employs in excess of 2,500 workmen and staff in Qatar. We have people from six different nationalities working with us in Qatar alone, including Europeans, Chinese, Indians and Qataris, among others. Punj Lloyd maintains three major camps in different locations in Qatar. Besides major bids in the onshore hydrocarbon projects, Punj Lloyd offers solutions for offshore hydrocarbon projects as well. Through its infrastructure division, Punj Lloyd can execute Ports and Highway projects. ♦



World AIDS Day

1st December 2008

Merlo C. Marciano
HSE Manager, Punj Lloyd

The World AIDS Day was celebrated across the Group's sites and offices during the first week of December 2008 to reaffirm our commitment to HIV/AIDS, the greatest health challenge of our generation.

The theme of this year, 'Stop AIDS, Keep the Promise' was communicated to all staff and workers of Punj Lloyd through the use of intranet, site toolbox meetings, HSE meetings, safety stand down and posting of banners which were translated into four languages - Arabic, Hindi, Russian and English. In addition to this, communication material was posted on bulletin boards and personally distributed to all personnel by the Punj Lloyd Health, Safety and Environment team.

Workshops were conducted at various locations, detailing

the basic steps on how to stop the spread of this deadly disease.

All employees pledged to sustain their commitment to the cause, not just on the World AIDS Day but throughout the year.

Besides the campaigns of World AIDS Day, our Naphtha Cracker site in Panipat, Delayed Coker Unit in Vadodara and Hydrocracker Unit in Haldia are also involved in a holistic 'Life Enrichment Programme', seeking safe sexual and reproductive health behaviour through the collective involvement of workers, management and project teams. Along with SNS Foundation and the support of International Finance Corporation (IFC), these sites have implemented the programme focusing on an enabling environment for the prevention of HIV/AIDS and fostering the well being of workers. ♦



Uran-Trombay Gas Pipeline

The project scope included 20" dia pipeline of 24 km length and terminal work. The line passed through land, marsh, shallow water and offshore areas.

Basab Acharya

General Manager – Pipelines, Punj Lloyd Ltd

The Uran-Trombay Gas Pipeline Project was awarded in the year 2007 to the consortium of Punj Lloyd and PT Punj Lloyd Indonesia on EPC basis.

Punj Lloyd, a global EPC services provider in the energy,

petrochemical and infrastructure sectors has a multicultural team of 15,000 working on challenging projects spanning the globe, from Kazakhstan to Libya and Indonesia to the United Kingdom. Punj Lloyd has been associated with success on tough terrain projects from LOT C of the Baku-Tbilisi-Ceyhan pipeline in Turkey to the hopping island pipeline in Indonesia, with a rocky seabed and shallow waters.

From the Caucasian mountains of Georgia to the rocky deserts of Oman, Punj Lloyd has earned for itself the title of *All Terrain Specialists*.

The Uran Trombay Gas pipeline was laid to transport natural gas from Oil and Natural Gas Corporation (ONGC's) Uran Terminal to Trombay for further distribution to customers.

It was to replace the existing line which was laid in 1977-78 and had completed its design life.

The project scope included 24 km (20" dia) pipeline and terminal work. The line passed through congested land, marsh, shallow water and offshore areas. The contractual completion date was May 31, 2008 and Punj Lloyd had planned to complete the work ahead of schedule.


The pre engineering survey and engineering work started immediately. Two different teams were engaged in the engineering part of the pipeline and terminals respectively. It took around one month for the pre engineering survey and thereafter engineering was completed in four and a half months as scheduled.

The engineering work was prioritised for long delivery items and sequential orders were placed as the engineering work

Plan to complete the work ahead of schedule

S No.	Chainage	Methodology	Crew
1	3.99 to 6.23	Surface floatation from land	Crew 1
2	6.45 to 8.35	Surface floatation from land	Crew 2
3	11.77 to 13.2	Surface floatation from land	Crew 1
4	13.2 to 16.0	Surface floatation from barge	Crew 3
5	16.0 to 22.2	Conventional lay by pipelay barge	Crew 4
6	22.2 to 24.0	Surface floatation from barge	Crew 3





Our team of experienced manpower, expertise of working in shallow and offshore waters, the large, specialised, amphibian equipment base, and meticulous planning at each stage, ensured that the project was completed before time

progressed. Dedicated expeditors were positioned at critical vendors' works, which helped to meet the supply deadlines.

The pipes were API 5L, Grade 52 with 3LPP, 3LPE and CTE + concrete weight coating. The line passed through environmentally sensitive areas and stretches under the purview of various authorities.

On completion of the survey it was established that only 6 km out of the total 16 km marine section, in different stretches, could be executed by a Lay Barge, due to draft restrictions. A shallow draft barge was mobilised, the construction methodology revised and operation from four fronts was planned for the marine sections, to meet the schedule.

The trench was prepared by dredging with cutter suction and backhoe dredgers. There were some rocky stretches which were dealt with by using rock breakers and drop chisels. Due to a live pipeline in the vicinity, blasting which would have made the job faster could not be considered.

For all the above stretches except Serial No. 5, the floated pipe needed to be protected from tidal currents and thus piles were driven on either side of the pipe's central line, using vibro hammers. Long stretches of all the sections, except Serial No. 6 towards the land fall point, were very shallow and for the most part dry during low tide. The situation became worse with spring tides. The pushing of sections could only be done during the high tide.

For the sections

ONSHORE SECTIONS			
S No.	Chainage	Methodology	Crew
1	0.00 to 3.99	Conventional pipelaying	Crew 1
2	6.23 to 6.45 (HILL)	Conventional pipelaying	Crew 2
3	8.35 to 11.77	Conventional pipelaying	Crew 1

under Serial Nos. 1, 2 and 3, the pipe sections were prepared on land, with floaters tied on them. As the sections were welded together, they were pushed into the water between the piles. On land, the sections were lifted by pipelayers, while midstream, a barge mounted winch provided sufficient tension to the pullhead to maintain straightness in the line and ensure there was no buckling in the pipestring. At locations where the route was curved, additional barge mounted excavators were used to maintain the curve. Such was the meticulous attention to detail that the pipe curve was held within its elastic limit and negotiated the curve without the use of any cold or hot bends.

In the section under Serial





From the Caucasian mountains of Georgia to the rocky deserts of Oman, Punj Lloyd has earned for itself the title of 'All Terrain Specialists'

No. 4, Chainage 15 to 16 was a channel of 10 m depth, with daily vessel movement. Punj Lloyd was not permitted to keep the pipeline floating in this stretch as it would hinder the movement of vessels. We were only permitted to block the channel for one day.

A one km long floating section was prepared between Chainage 14 and 15 and the section was pulled across the channel. Since driving of piles was also not allowed in the channel, barges were placed on both side of the pipe's central line, to protect the floating pipeline from tidal currents. Careful analysis of weather data identified the most appropriate time of work in shallow

waters and shore approach, as the water current is high during changes in tide. A suitable timing of minimal tidal variation was selected and the entire section was pulled, using big tugs and small boats to maintain the alignment. The pulling of this section took about four hours, after which all floaters were cut and the pipeline was allowed to settle down in the trench. All the barges were cleared immediately from the channel. The entire operation was completed within 15 hours, followed by a survey with echo sounder and divers to confirm the clear route. Soon the channel was re-opened for vessel movement.

With additional manpower, equipment and close monitoring, the pipes were laid within 15 days, followed by the offshore tie-ins which were accomplished by using flexi-floats. By this time all onshore sections, were buried and tied in, using two crew.

Hydrotesting of the pipeline was completed, dewatering done, swabbing accomplished and sectionalising valves installed. All terminal work was completed and the project was finally ready for gas-in.

May 26, 2008 was a red letter day when six days ahead of schedule, the line was



successfully commissioned.

At the peak, a total of 233 items of equipment were deployed, which included barges, support vessels and other land based equipment. Manpower at the peak touched a figure of 710.

All safety measures were adhered to. The total Safe Man-hours at the Uran Trombay pipeline project were 0.16 million. All those working on the barges were given survival at sea training. The project was executed in the coastal regulation zone without any disruption to coastal environment and fishing activity and was completed without any mishap.

Punj Lloyd's team of experienced manpower, expertise of working in shallow and offshore waters, the large, specialised, amphibian equipment base and the meticulous planning at each stage, ensured that the project was completed before time, to the client's entire satisfaction. ♦



High Performance in High Seas

Punj Lloyd installs the South Utility Platform for TOTAL in Indonesia





Sudhakara

AGM-Projects, PT Punj Lloyd Indonesia

Anyone who has witnessed the installation of a gigantic platform at sea will tell you what an amazing experience it is.

The sheer size of the platform and the fragility of the critical operation, leaves you spellbound. We can truly say, to successfully install a platform over 1000 T in weight is a heavy weight off one's shoulders. Today PT Punj Lloyd Indonesia can claim to have achieved this feat.

In December 2006, PT Punj Lloyd Indonesia was awarded a contract by TOTAL E&P Indonesia for the engineering, procurement, construction, load-out, transportation, installation, pre-

Tunu is a gas and condensate field of TOTAL E&P Indonesia located on Indonesia's East Kalimantan on the outer margin of the Mahakam delta, partially onshore in swamp areas and partially offshore in shallow waters

commissioning and commissioning of South Utility Platform (SUP) of the Tunu 11 project.

For Punj Lloyd, which has executed many projects for TOTAL E&P, this repeat contract was significant of the trust and confidence reposed by TOTAL in Punj Lloyd.

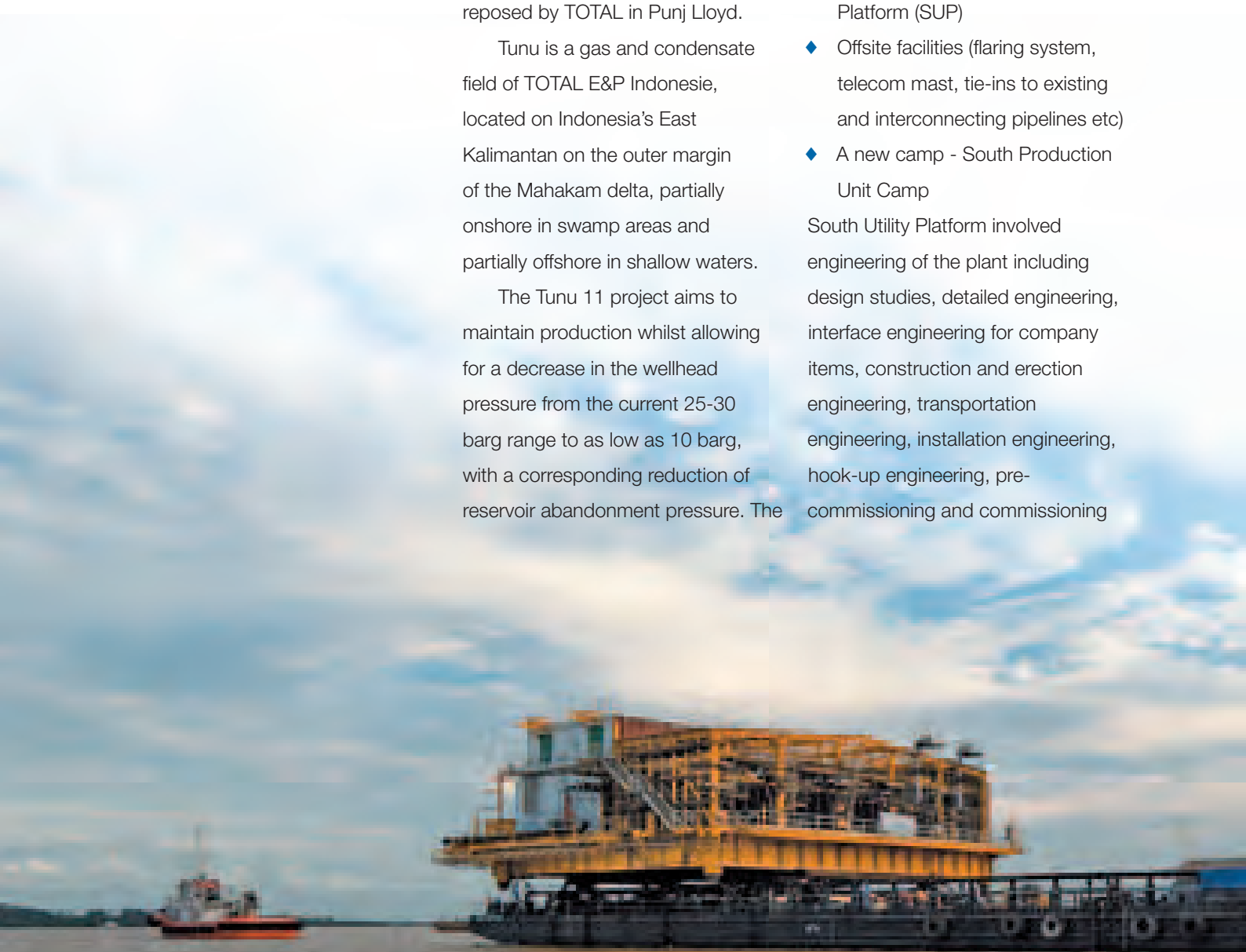
Tunu is a gas and condensate field of TOTAL E&P Indonesia, located on Indonesia's East Kalimantan on the outer margin of the Mahakam delta, partially onshore in swamp areas and partially offshore in shallow waters.

The Tunu 11 project aims to maintain production whilst allowing for a decrease in the wellhead pressure from the current 25-30 barg range to as low as 10 barg, with a corresponding reduction of reservoir abandonment pressure. The

southern part of Tunu 11 consists of :

- ◆ A compression platform - South Compression Platform (SCP)
- ◆ A manifold platform - South Manifold Platform (SMP)
- ◆ A utilities platform with a new control room - South Utility Platform (SUP)
- ◆ Offsite facilities (flaring system, telecom mast, tie-ins to existing and interconnecting pipelines etc)
- ◆ A new camp - South Production Unit Camp

South Utility Platform involved engineering of the plant including design studies, detailed engineering, interface engineering for company items, construction and erection engineering, transportation engineering, installation engineering, hook-up engineering, pre-commissioning and commissioning



Major Milestones

- ◆ December 2006 - PT Punj Lloyd Indonesia awarded EPC contract of South Utility Platform (SUP) at Tunu 11
- ◆ January - June 2007 - Installation of skid way at Punj Lloyd Indonesia's Sungaipurun yard and construction of a permanent jetty
- ◆ August 2007 - SUP Platform built
- ◆ August 2008 - SUP loaded out from jetty, transported to site and installed

engineering, support to maintenance engineering, procurement and supply of all materials and equipment necessary for the work, including inspection, test co-ordination, transportation, forwarding and including transportation of reconciliation materials and surplus to company's assigned warehouse.

Scope of work

- ◆ Primary structure including the main deck for fire water pumps, emergency diesel generators with associate transformer and for the air-conditioned two-floor technical building on deck
- ◆ Secondary structures including the second floor, walkways, stairs, access, platforms, platforms for vessels, supports, handling, roof and other appurtenances
- ◆ All piping and related supports
- ◆ All mechanical hoisting systems
- ◆ All utility and related facilities such as but not limited to :
 - Emergency and essential diesel generator and day tank systems
 - Open drain and disposal caisson systems
 - Potable water system
 - Fire water pumping and distribution systems
 - Waste water treatment system
 - Other vessels and pumps
- ◆ Technical building and associated HVAC (1st floor for control and electrical room with office, 2nd floor for instrument and telecom room)
- ◆ Electrical transformers
- ◆ Safety and fire fighting equipment
- ◆ Instrumentation, telecomm-

Dredging of 250,000 m³ was done around Punj Lloyd's jetty for movement of barge





PLATFORM

ARITON CON





unications & electrical equipment

- ◆ Mobilisation/demobilisation of construction equipment including marine spread
- ◆ Weighing, load-out, sea-fastening and transportation of the plant components from construction yard to site
- ◆ Installation on site
- ◆ Hook-up work
- ◆ On-site pre-commissioning,

commissioning and start-up of utilities

The construction, load out, transportation and installation of SUP involved installation of a 64 m long and 3000 T capacity skid way at Punj Lloyd Indonesia's Sungaipurun yard and construction of a permanent jetty 200 m long, which was started in January and completed by June 2007.



Dredging of 250,000 m³ was done around Punj Lloyd's jetty for movement of barge.

The 1000 T SUP was constructed in Punj Lloyd's Sungaipurun yard on a skid way frame for load out purpose, starting August 2007. The frame was fabricated using the scrap pipes and material available at our yard.

Preparation of transportation barge with fabrication and installation of skid way beam, transition bridge, ballasting/de-ballasting system/rigging arrangement etc. were completed in one month.

A closed loop ballasting - deballasting system was arranged with the help of locally available pumps with interconnected piping network, to water and dewater 10 active tanks for the load out operation, 12 additional active tanks for stalled condition and 6 tanks to

adjust ballast in non-active tanks to achieve draft for the installation.

Local manpower was trained for carrying out this complex ballasting/deballasting operation.

The SUP was loaded out from Punj Lloyd's Sungaipurun jetty on August 7, 2008, transported on a barge to site on August 14, 2008. A meticulously planned operation, every step was a careful interplay of ballasting/deballasting the barge to successfully install the platform at low tide on the August 15, 2008 on pre driven piles.

A 1,000 T platform was built for the first time on a skid way, loaded out on a barge and installed by float over method.

It was a proud moment for PT Punj Lloyd Indonesia to be the first contractor to erect the SUP among the other TUNU 11 EPSC (South Compression Platform SCP and South Manifold Platform SMP) contractors.

A complex operation but executed with ease, owing to the careful planning and hard work of the entire team! ♦

For Punj Lloyd, it was the first time that a 1,000 T platform built on a skid way was loaded out on to a barge, transported and installed by float over method





Did you know?

Punj Lloyd Group gets Global Ranking

Engineering News - Record (ENR) 2008 survey has ranked Punj Lloyd in two categories - the Top International Contractors and the Top Global Contractors.

Under the Top 225 International Contractors, Punj Lloyd ranked 55. Here the companies were rated according to the construction revenue generated outside of each company's home country in 2007 in US\$ millions.

In the Top 225 Global Contractors, Punj Lloyd ranked 107. Here companies were assessed by their total 2007 construction contracting revenue, both at home and abroad.



Punj Lloyd awarded 'Best Infrastructure Company'

Punj Lloyd has received the 'Best Infrastructure Company' award at the NDTV Profit Business Leadership Awards 2008.

In an august gathering comprising the who's who of India Inc., Atul Punj, Chairman - Punj Lloyd Group, received the award from the Finance Minister, P Chidambaram at the Taj Palace in New Delhi.

The Second Largest Construction Company and One of the Most Admired!

Construction World, a prestigious construction business magazine has felicitated the achievers of the construction industry at their 6th Annual Construction World Awards 2008.

At a glittering ceremony in Mumbai, Punj Lloyd received the award for being one of India's most admired companies and the second largest construction company in India.



Punj Lloyd signs Memorandum of Understanding with Thorium Power of USA for Nuclear Power

Punj Lloyd Group has signed a Memorandum of Understanding (MOU) with Thorium Power, making it the first Indian company to partner with an American nuclear company after the 123 agreement. Thorium Power is the leading developer of non-proliferative nuclear fuel technology and provider of comprehensive advisory services for emerging nuclear programs.

The MOU establishes a framework to explore the strengths and deployment of Thorium Power's nuclear fuel designs in India, Southeast Asia and other territories; to expand consulting activities for the development of nuclear power generation regionally and worldwide; and to pursue the establishment of a joint venture between Thorium Power

and Punj Lloyd to best capitalise on the emerging nuclear renaissance.

In a press conference in New Delhi, Seth Grae, President and CEO of Thorium Power stated, "I am honored to enter into this relationship. Punj Lloyd, is one of the most dynamic and successful companies in India and has a solid reputation for quality, value and on-time delivery of services. Through this collaboration we will explore the full range of options available to both our companies in areas as diverse as marketing our non-proliferative fuel designs, providing advisory services to emerging national nuclear programs and exploring development and investment opportunities in the nuclear industry. Atul Punj is a prime example of India's great visionary business leaders, and I look forward to working with him."

Present on the occasion, Atul Punj, Chairman - Punj Lloyd Group, said, "The Indo-US civil

nuclear deal has opened up investment opportunities which will make the Indian industry robust and competitive. The nuclear space is very promising and with this partnership we aim to take forward India's long-standing commitment to the thorium fuel cycle, notwithstanding the opening up of trade in conventional uranium technology. India has the second largest deposit of thorium in the world and the successful launch of thorium technology will make India self reliant with its own fuel in the long run."

"With immense opportunities in the Engineering, Procurement and Construction (EPC) space, it is a privilege for us to be working with the nuclear energy pioneer Thorium Power. Continuing our expansion in high-growth areas, we believe that this MOU will play a vital role in strengthening our expertise", he further added. ♦



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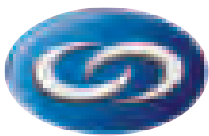
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