

## Inpex Browse Ichthys Gas Field Development

<b>Project Location :</b>	Western Australia
<b>Project Manager :</b>	Inpex Browse Ltd
<b>Project Owner :</b>	INPEX Browse Ltd and Total E&P Australia
<b>Constructor :</b>	TBA
<b>Construction Period :</b>	1st / 2nd Qtr 2009 - 4Q2012
<b>Project Value :</b>	TBA
<b>Project Status :</b>	Concept Definition



INPEX Browse Ltd. as operator of offshore permit area WA-285-P, propose to develop the Ichthys gas field by exporting two phase hydrocarbons via a subsea pipeline to a processing facility on the Maret Islands in the Bonaparte Archipelago off the north-west coast of Australia.

The processing facility would primarily produce Liquefied Natural Gas (LNG), with Liquefied Petroleum Gas (LPG) and condensate by-products, which would be transported to markets via sea.

The licence for WA-285-P is held jointly by INPEX Browse Ltd and Total E&P Australia, a subsidiary of Total S.A. INPEX is a Japanese oil and gas company headquartered in Tokyo, which has substantial interests in Australian and international oil and gas projects. Total S.A. is a French oil and gas company with operations in over 130 countries.

The Ichthys Field lies in the Browse Basin in North Western Australia (Permit Area WA-285P), approximately 440 km north of Broome and 800 km south west of Darwin (See Map 1). INPEX plans to develop the Ichthys Field to produce LNG (separate propane and butane) and condensate. First LNG Shipment targeted by end of year 2012



**Map 1: Click on Map to Enlarge**

The project comprises of Offshore Central Processing Facilities (CPF) supplying two phase gas to Onshore Facilities on Maret Islands. The facilities on Maret Islands include gas receiving, LNG process plant (2 x 3.8Mtpa trains), product storage and export facilities. Maret Islands are located approximately 200km south-east of the Ichthys Field.

At this point, it is proposed that the Project will be undertaken in two phases:

Phase 1 - initial field development and onshore development

- LNG: 2 x 3.8 Mtpa (+/- 10%) trains
- Condensate: 88,000 bopd
- LPG: 5,300 tonnes per day

Phase 2 - debottlenecking and expanding the capacity Condensate

- LNG: 2 x 3.8 Mtpa trains to 2 x 5.5 Mtpa (+/- 10%) production capacity (up to a maximum of 12 Mtpa)
- Condensate: 127,000 bopd
- LPG: 7,700 tonnes per day

The commencement of operations with 2 x 3.8 Mtpa trains and subsequent upgrade to 2 x 5.5 Mtpa is reflective of the anticipated production profile and the ability of the two initially installed LNG trains to be upgraded to accept increased throughput without triggering the need for an additional train.

The operating life of the Project is expected to extend beyond 30 years.

## Key Project Components

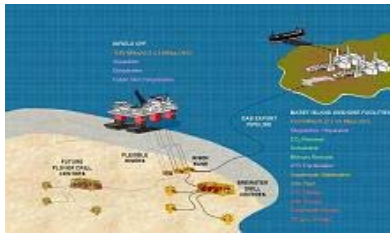
The Project proposal includes the transport of two-phase gas from the Ichthys Field via a subsea pipeline to the onshore processing facilities proposed to be located on the Maret Islands, off the Kimberley coast. The exact route of the subsea export pipeline is yet to be determined, but will approximate a direct route from the offshore facility to South Maret Island and accommodate any subsea obstructions found during the route survey. The proposed subsea pipeline route from the field to South Maret Island is illustrated in Map 2.



Map 2: Click on Map to Enlarge

Subsequent to Phase 2, the onshore processing capacity may need to be further expanded to process additional gas discoveries.

The offshore development concept consists of a number of drilling centres (subsea wells and manifolds), with infield flowlines and flexible risers for submarine transfer of the reservoir fluid to an offshore semi-submersible Central Processing Facility(s) (CPF). Dehydrated two-phase gas will be exported to the Maret Islands via a subsea pipeline. The offshore development concept is illustrated in Map 3



Map 3: Click on Map to Enlarge

The preferred location for the onshore facilities of the proposed development is the Maret Islands (North and South) in the Bonaparte Archipelago of the Kimberley Coast.

The proposed onshore processing facilities consists of the slug catcher, gas treatment plant (condensate and LPG extraction, CO<sub>2</sub> removal) and LNG plant, with the slug catcher and gas treatment plant being integrated upstream of the LNG plant. The current proposed capacity of the phase 1 LNG Plant will extend up to 7.6 Mtpa comprising two trains each with a capacity of 3.8 Mtpa (+/- 10%). The proposed site plan for the onshore facilities is illustrated in Map 4.



Map 4: Click on Map to Enlarge

The main components of the Ichthys Field Development include:

- Subsea wells and manifolds tied back to the CPF
- Subsea export pipeline to shore (approximately 200 km)
- Onshore pipeline
- Onshore processing facilities
- Phase 1 – 2 x 3.8 Mtpa (+/- 10%)
- Phase 2 – expansion of capacity to 2 x 5.5 Mtpa (+/- 10%)
- Onshore storage for condensate, LPG and LNG
- Potential near-shore LNG storage facility
- Materials offloading facility (MOF)
- Product offloading jetty(s) (POJ)

- Port
- Airstrip
- Accommodation and associated infrastructure
- Interconnect between South and North Maret Islands.

#### Estimated Project Development Schedule

Development Stage	Start	End
Concept Selection	2Q 2006	1Q 2007
FEED	1Q 2007	3Q 2008
FID	4Q 2008/1Q 2009	
Initial Development Drilling	1Q 2010	3Q 2011
Construction and Commission	1Q 2009	3Q 2012
Production	4Q 2012	TBA

#### Maret Islands

The geology of the Maret Islands is characterised by a lateritic cap averaging 15 m to 20 m thickness over a basalt base. The laterite is undifferentiated with the upper 10 m weathered and hardened, and the lower 5 to 10 m typically softer as evidenced by the eroding cliff faces. The basalt layer is a part of the Kimberley Carson Volcanics and is grey green to black in an angular blocky formation. There is virtually no soil on North Maret Island and very little on South Maret Island. The surface of both islands is very rocky with broken laterite exposed at ground level. Interspersed between broken laterite is massive unbroken laterite at the surface. North Maret has large open spaces of spinifex hummock grassland with some pockets of woodland in the centre (and wider) part of the island.

#### The Kimberley Region

The major regional towns are Broome and Derby in the west, Kununurra and Wyndham in the north-east, and Halls Creek and Fitzroy Crossing in the central Kimberley. The current population of Broome is approximately 14 000 people and peaks during the tourist season. The majority of the Kimberley region is very remote with little accessibility to goods and services other than those established in townships. Despite much of the Kimberley region remaining undeveloped, the regional economy continues to grow, and is supported by increasingly reliable communications and transportation infrastructure. Visit the Kimberley Development Commission website at [www.kdc.wa.gov.au](http://www.kdc.wa.gov.au) for additional information.

#### Contractors & Buyers

The Industry Capability Network (ICNWA) will be assisting the project identify Australian industry capability. The contact at ICNWA is Mr David Kobelke, Phone (+61 8) 9365 7604, e-mail: [kobelke.icn@cciwa.com](mailto:kobelke.icn@cciwa.com)