

Two LNG Projects - Ichthys and Abadi

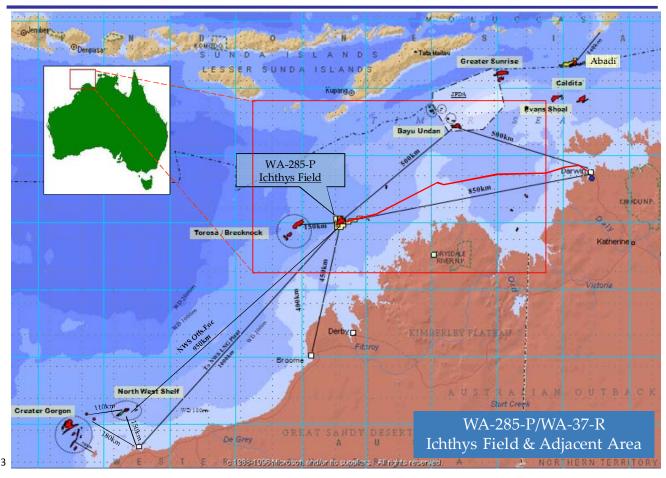
May 12, 2011



Ichthys LNG Project

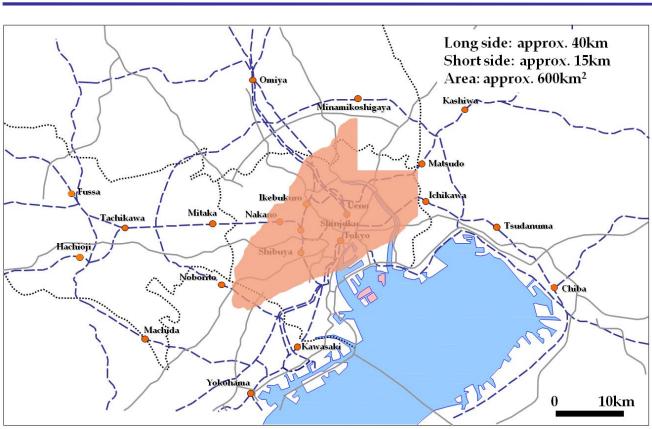
Ichthys Project Location





Extent of Ichthys Field





Brief Summary of Permit



■ Permit Holders: INPEX Browse, Ltd. (76%) TOTAL E&P Australia (24%)

■ Exploration Term: Initial grant for WA-285P in 1998. Renewal for 2nd term, 5 years from July 8, 2010.

■ Retention Lease (WA-37R): 5 years from September 21, 2009. Currently working towards obtaining Production License for WA-37R.

■ Permit Area: 2,074km² (5,049km² at commencement in 1998)

■ Minimum Work Obligations: (Already done)

Primary Term		
Year	Minimum Work Obligations	
1	4500km 2D Seismic/G&G	
2	2 wells/G&G	
3	1 well/G&G	
4	1 well/1,200km ² 3D Seismic/G&G	
5	1 well/G&G	
6	G&G	

1 st Extension Period	
Year	Minimum Work Obligations
1	G&G
2	G&G
3	250km ² 3D Seismic/G&G
4	G&G
5	1 Well/G&G

2 nd Extension Period		
Year	Minimum Work Obligations	
1	G&G	
2	250km ² 3D Seismic/G&G	
3	G&G	
4	G&G	
5	1 Well/G&G	

G&G: Geological and Geophysical Studies

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Exploration History



1998

March: WA-285-P offered in the Australian Government's 1997 Offshore

Exploration acreage gazette.

August: Obtained Exploration Permit for the WA-285-P (Share 100%).

December: Acquired 2D seismic with line length approx. 4,700km.

March 2000 - February 2001

1st Drilling Campaign of 3 wells (Dinichthys-1, Gorgonichthys-1, Titanichthys-1) encountered gas and condensate pools in each well.

May-October 2001:

The structure was named 'ICHTHYS GAS AND CONDENSATE FIELD' after the 3D Seismic data acquisition / processing / interpretation.

June 2003 - February 2004:

2nd Drilling Campaign, 3 wells (Ichthys-1A, Ichthys Deep-1, Ichthys-2A/ST1) confirmed areal extension of the reservoir and its hydrocarbon pool.

April 2007 - June 2008:

Drilled Dinichthys North-1, Ichthys West-1 and examined further areal extension of the Ichthys Gas and Condensate pool.

Note: Current reserve volume of Ichthys Field is estimated to be <u>12.8TCF Gas and 527</u> MM barrels of Condensate

Outline for Development Concept



■ LNG Production: 8.4 million ton per year

■ Condensate Production: approx. 100,000 barrel per day(Peak Rate)

LPG Production: 1.6 million ton per year

■ Subsea Production Wells: 30 wells at Brewster, 20 wells at Plover

■ Reservoir Depth: approx. 3,900m - 4,600m

Subsea Production Facilities: Flow Lines, Flexible Risers

 Offshore Production Facilities: CPF (Semi-submersible Type) + FPSO (Condensate Storage and shipping)

■ Gas Export Pipeline: 42 inch

■ At Darwin Onshore Facilities: produce, storage, and ship LNG, LPG and Condensate

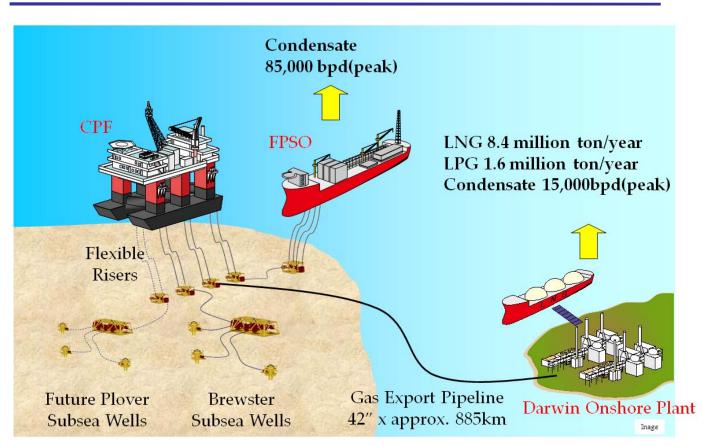
Onshore Storage Tank capacity:

LNG Tank
 C3 Tank
 C4 Tank
 C4 Tank
 C4 Tank
 C4 Tank
 C4 Tank
 C5 x 165,000m³
 1 x 85,000m³
 1 x 60,000m³
 2 x 60,000m³

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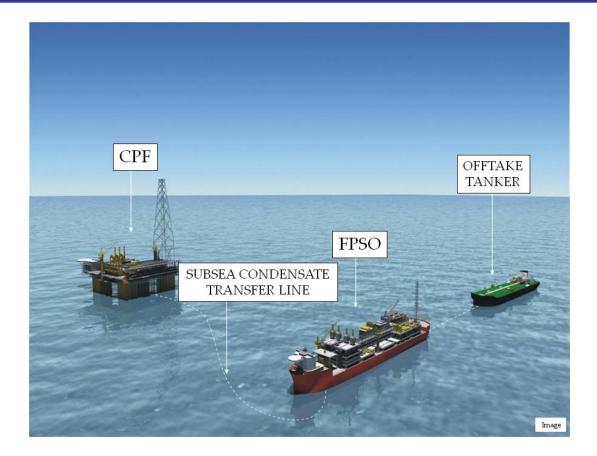
Overall Development Image





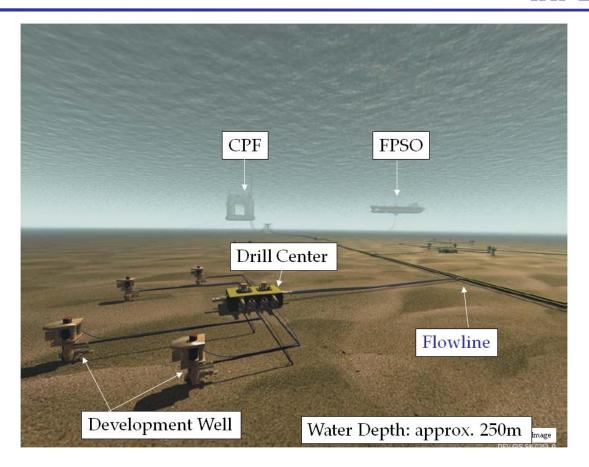
Offshore Facility Layout





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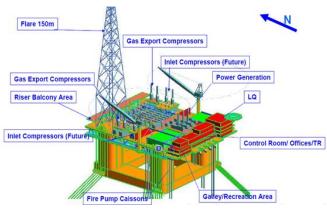
Subsea Well and Infield Flowlines INPEX



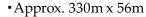
CPF/FPSO







- Hull size approx. 110m x110m. One of the biggest in the world similar size to GOM Thunder Horse.
- •Living Quarters (150 personnel capacity) will be installed on South side
- •Flexible Riser will be installed on North side.



- •Liquid from CPF will be transferred through Turret
- •Storage Capacity: 1.2 million barrel
- •Gas will be backed to CPF upon re-pressurized
- •Living Quarters (150 personnel capacity) will be installed



Gas Export Pipeline



■ Specification

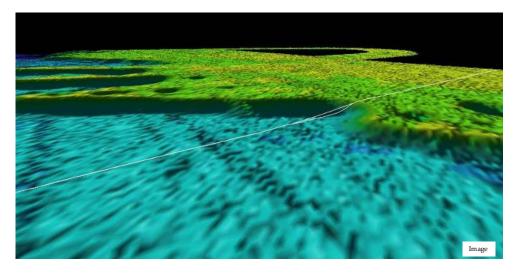
- Size and Thickness : 42"x31mm

– Length : approx. 885 km

Allowable Pressure : 200 Bara

- Material : X65

Total Weight : approx. 800,000 tonWater Depth at Route : approx. 250m - 0m



LNG Plant Site Location



- Decided Onshore LNG Plant Site at Darwin
 - Announcement was issued at Darwin date on September 26, 2008
 - Messrs. Martin Ferguson, Australian Resources Minister and Paul Henderson, Chief Minister NT attended





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LNG Plant Site Location









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Module Offloading Facility





GHG (Greenhouse Gas) Management (1)

Situation in Australia

- Carbon Capture and Storage (CCS) Law (Offshore Petroleum Amendment (Greenhouse Gas Storage)) became effective in November 2008
- CCS acreages released in March 2009
- Carbon Pollution Reduction Scheme (CPRS: emissions trading scheme) bill passed the Australian House of Representatives on Jun. 4, 2009 and was sent to the Senate. The bill was rejected by Senate twice (August 2009 and December 2009)
- On April 27,2010, Prime Minister of Australia Kevin Rudd announced the CPRS scheme would be deferred until 2013 at the earliest.
- On February 24,2011, Prime Minister of Australia Julia Gillard announced the Climate Change Framework would introduce fixed carbon price from July 2012.

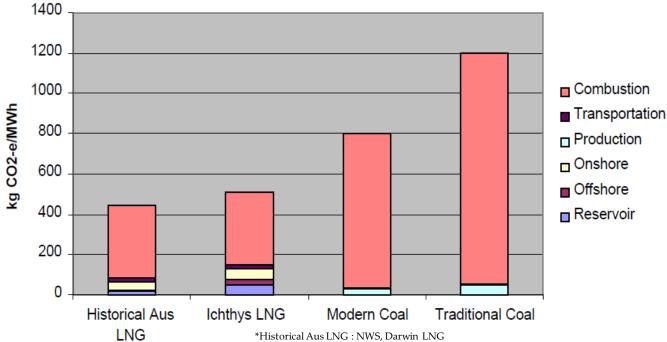
■ INPEX Efforts

- Reduction of GHG emissions by optimizing the energy efficiency of Offshore / Onshore facilities. e.g. less flaring etc.
- Study the measures to reduce or offset GHG emissions
 - Biosequestration, Geosequestration, Australian or international emissions permits.
- As for Biosequestration, we are carrying out a reforestation assessment project (700ha, South West of WA).

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GHG (Greenhouse Gas) Management (2) MPEX

■ The graph below shows CO₂ emission in kg per 1MWh electric generation



Sources: adapted from APPEA 2009, J.P. Morgan Equity Research 2008, and Pace 2009

Contribution to Local Community





Djarindjin Signing Ceremony (April 2009)



Larrakia Trade Training Centre Opening Ceremony (April 2011)



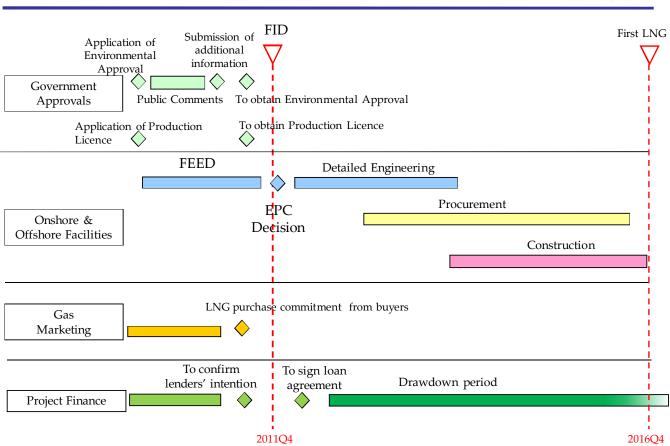
Fred's Pass Rural Show (May 2009)



Larrakia Trade Training Centre

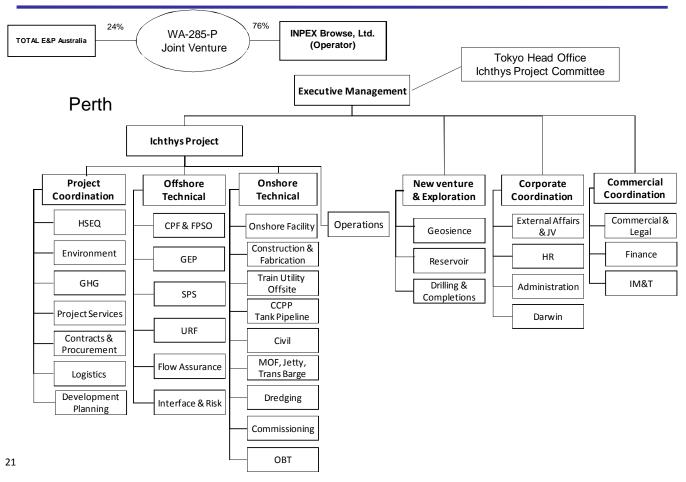
Development Schedule





Project Organization Chart





LNG Market



- Market:
 - Asia, North America, Europe
- Buyers: In Asian region, Electric/Power companies and City Gas companies in Japan, South Korea, China, Taiwan, Singapore, Thailand, Indonesia etc.
- Price:
 - Asian LNG Prices are generally linked to JCC (Japan Crude Cocktail)
 - Indonesian LNG Prices are basically linked to ICP (Indonesian Crude Price)
 - There is a time lag between the movement of crude oil and LNG prices: LNG prices are normally linked to JCC a few months before the date of LNG sales.
- Contract Type (typical): Long-term (e.g. 20 years)
- Contract Terms (typical): LNG is marketed to buyers by the operator jointly with project partners, unlike equity lifting in oil sales.

Condensate Market



■ Market:

- Condensate production of 3.18 million barrels per day (2011E) and condensate splitter capacity of 1.66 million barrels per day in the entire Asian region (2011E)
- Condensate production of 99 thousand barrels per day (2011E) and condensate splitter capacity of 0.67 million barrels per day in Asia excluding the Middle East (2011E)
- 22 thousand barrels per day imported to Japan (2010)
- Surplus condensate is mainly exported to U.S.A and Europe.
- Buyers: Refining companies and traders in Japan, South Korea, China, Taiwan, Singapore, Thailand, Indonesia etc.
- Use: Petrochemical feedstock, Refinery material
- Price: Linked to price of Dated Brent, Dubai, and similar crude oils produced in the nearby areas
- Contract Type: FOB or CFR
- Contract Term: Annual term and Spot

LPG Market



Market

- U.S. is the largest LPG consumer in the world, while in Asia-Pacific, China,
 India and Japan are the main consumers in the order of consumption.
- Japan is the world largest LPG importer importing about 12 million ton per year. It accounts for approximately 80% of total consumption in Japan. (2009)
- Main exporters are countries in the Middle East, while main importers are countries in the East Asia including Japan. About 27 million ton of LPG is supplied to East Asian countries, which corresponds to a half of world sea traded LPG volumes. (2009)

Buyers

 LPG wholesalers and some of Electric/Power companies and City Gas companies are directly importing LPG in Japan.

■ Price

Saudi CP (Contract Price) is the extensively-used benchmark for world exported LPG Prices, made available in the beginning of each month by Saudi Aramco, national oil company of Saudi Arabia. Argus FEI (Far East Index, the averaged spot price in Far East) monthly announced by Argus is becoming another benchmark price for LPG in East-Asian market.

Source: Poten & Partners

Taxation Scheme in Australia for Ichthys Project



*The content may be changed

Sales

⇒ (Oil/Gas sales price) × (Sales volume)

Operating expense

⇒ OPEX incurred in relevant years (+Exploration cost) +CAPEX depreciation

Depreciation ⇒ Diminishing balance Method (effective life: 15 years for Production Facilities; 20 years for Pipelines)

PRRT (Petroleum Resource Rent Tax) =(Upstream Revenue-Upstream Capex & Opex- Expl. Cost-Abandonment Cost- undeducted carried forward PRRT expenditure) × 40% •PRRT deductions are made in the following order: Upstream Capex, Opex, Expl. Cost, Abandonment Cost. Note: Exploration cost is subject to mandatory transfer between Projects/members of same group of entities. •Upstream Revenue = Revenue from Oil and Gas sales or GTP × Sales volume %GTP (Gas Transfer Price) → Average of "Cost Plus Price" and "Net Back Price" ※Cost Plus Price → identify value based on Upstream costs Corporate Tax Net Back Price → identify value based on LNG FOB sales price less Downstream costs (In Australia) •Undeducted PRRT Expenditure: non-utilised PRRT deductible expenditure can be carried forward to the following year(s), which is subject to augmentation at the rates set out below: Development cost: LTBR+5%; Expl. Cost: LTBR+15%; Abandonment cost: LTBR *GDP Factor applies to all expenditure incurred more than 5 years before the Production Licence application is made. *LTBR = Long Term Bond Rate *GDP Factor = GDP Deflator of Australia Corporate Tax = (1-2-3-1) Interest paid $\times 30\%$

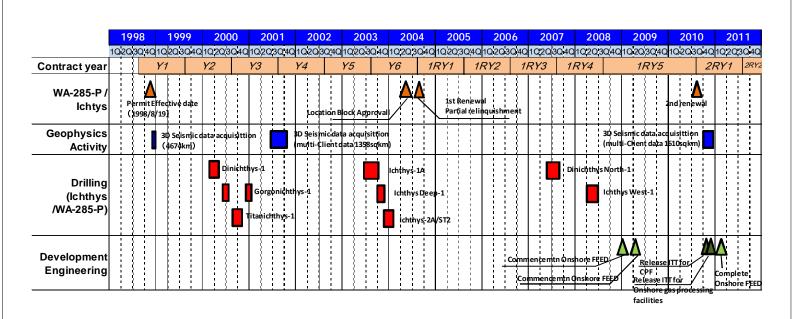
Note: Gas Transfer Price

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"Gas Transfer Pricing" rules prevent taxpayers from setting arbitrary upstream gas sales price where both upstream and downstream interests are held by the same entity (or entities).

Ichthys Project History





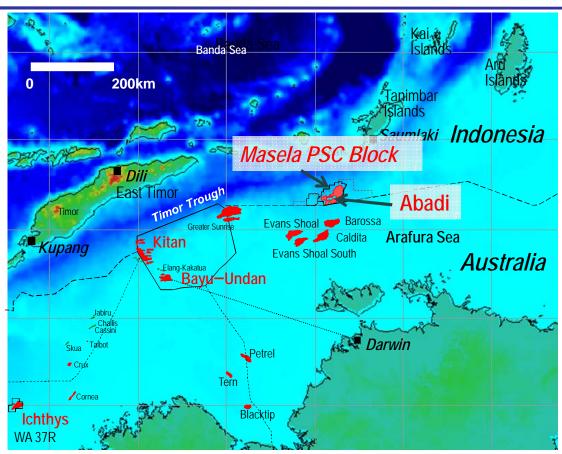
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Abadi LNG Project

Masela PSC Block





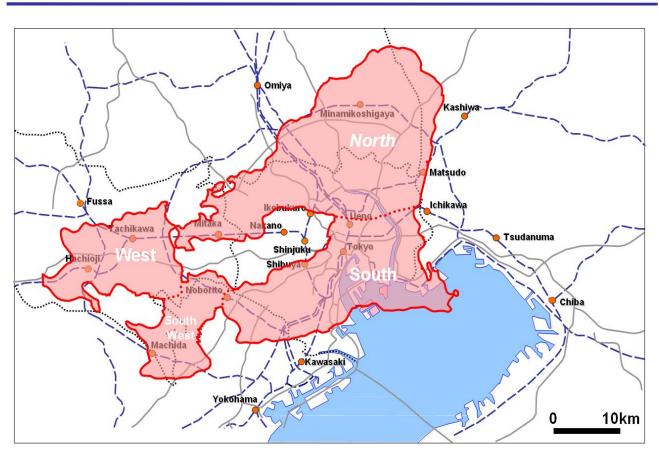


- Abadi Gas/Condensate Field
 - Water Depth: 400 800m
 - Reservoir Depth: 3,700 3,900m
 - Areal closure: more than 1,000km²
- Discovered gas and condensate in Abadi-1 exploration well in 2000
- Drilled 6 additional appraisal wells, and confirmed the extension of gas and condensate pools in the Abadi structure
- The gas reservoir pressures are plotted on the same line in the pressure v.s. depth plot which demonstrate the communication of the pressure between wells

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Abadi Gas Field (2)





Production Sharing Contract



■ Contractor: INPEX Masela, Ltd. (90%)

PT EMP Energi Indonesia (10%)

■ Effective Date: November 16, 1998

■ Contract Period: 30 years

■ Exploration Period: 10 years (proceed to Development and

Production Period in case of commercial

discovery)

■ Contract Area: 3,221.3km² (already partially relinquished twice

from the original 5,725km²)

■ Indonesian Participant: a 10% Participating Interests will be offered to an

Indonesian company designated by Indonesian

Government

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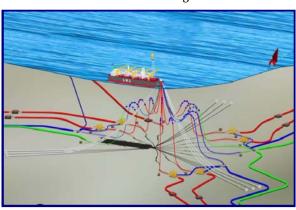
Plan of Development (POD-1)



- Indonesian Government (BPMigas) approved the POD-1 in Dec. 2010.
- Development Concept as approved in the POD-1
- Floating LNG
- Initial development focusing on the North block
- LNG production of 2.5MMt/y for more than 30 years
- Condensate production of 8,400 bbl/d
- Subsea Production System
- Advantages of the FLNG development Option
- Minimum environmental impact
- Reduction in CAPEX, OPEX and abandonment work & cost
- Possibility to reduce project lead time
- Schedule
- Preparation of FEED works and AMDAL (Environment & Social Impact Assessment Process) are on going
- Further Study for Future Subsequent Developments according to gas reserves



FLNG 3D Imaga



SUBSEA Image

Development Concept



Development Facilities

Development Scheme: Subsea Production System + Floating LNG

Development Well : Max 6 production wells (Directional Wells from 1 Drilling Center) Floating LNG : Loading LNG Plant, LNG Storage Tank, and Loading facility on

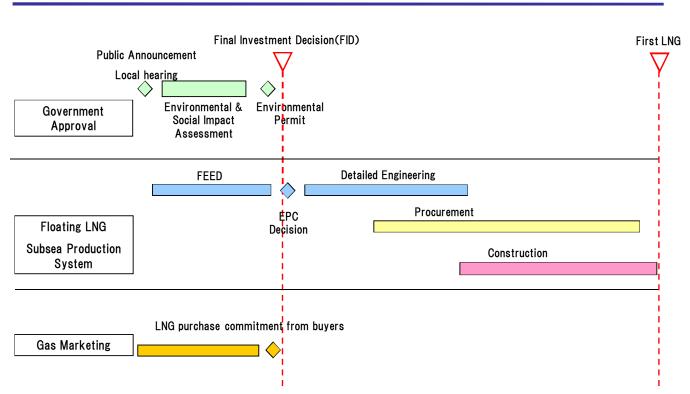
conventional FPSO



FLNG image

Development Schedule

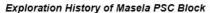


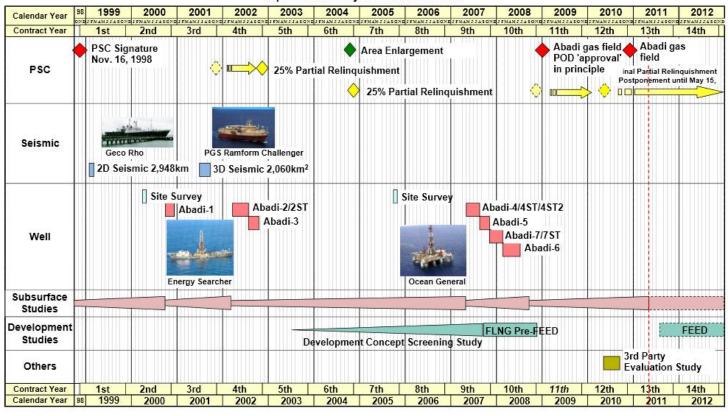


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Abadi Project History







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Current Status of FLNG(LNG-FPSO) undertaken by other Companies

■ Shell: LNG-FPSO (3.5 MMTPA)

- Signed a master agreement with Technip/Samsung consortium for the design, construction and installation of multiple floating liquefied natural gas (FLNG) facilities over a period of up to fifteen years in July 2009.
- Signed FEED contract with Technip/Samsung consortium for the Prelude FLNG project in Mar. 2010. Received EIS Approval from Australian Government in Nov. 2010.
- Shell's FLNG technology was selected as the Sunrise Joint Venture's preferred option for developing the Greater Sunrise
 gas fields, and the Sunrise project would be the second deployment following Prelude FLNG development. However, it is
 still waiting for Approval from East Timorese Government.
- Petrobras: LNG-FPSO (2.5 3.0 MMTPA)
 - Started triple FEED for Floating LNG project for associated gas in the Brazilian pre-salt offshore Santos basin in Dec 2009. (FEED Contractor: Saipem, SBM/ Chiyoda, Technip/ JGC/ MODEC)
- FLEX LNG: LNG-FPSO (1.7 1.95 MMTPA)
 - Awarded Samsung a contract to build 4 Hulls in Sep 2008.
 - Completed FEED of Generic Design LNGP (LNG Producer) in the 1Q of 2009.
 - Samsung/FLEX executed agreement with Interoil to construct a 2mtpa FLNG vessel (for Papua New Guinea) in Apr. 2011.
 (FEED start in May 2011and FID target 2011)
- SBM: LNG-FPSO (2.5 MMTPA)
 - Completed FEED of Generic LNG-FPSO in the 2H of 2008, reviewing applicable gas field.
 - Pre-FEED for PTTEP will be completed in 2011. FEED plans in 2012 and FID will likely be by 2012.
- Höegh LNG: LNG-FPSO (1.6 MMTPA)
 - Completed FEED (May, 2008 March, 2009) of Generic LNG-FPSO, reviewing applicable gas field.
 - Höegh LNG, DSME E&R, a subsidiary of Daewoo Shipbuilding & Marine Engineering Co., Ltd and Petromin PNG Holdings. Ltd, in Papua New Guinea, signed a cooperative development agreement in July 2010 to evaluate the potential for the development of gas fields in the sea near Papua New Guinea by FLNG.
- GDF Suez: LNG FPSO (2.0 MMTPA)
 - Awarded Pre-FEED contract for Bonaparte FLNG to Granherne, KBR subsidiary for upstream and Doris Engineering for midstream in January 2011.
- Petronas: LNG FPSO (1.0 MMTPA)
 - Awarded FEED contract to Technip/DSME in January 2011. Completion of FEED is planned 2nd half of 2011.