

## **CHAPTER II**

### **OIL AND GAS EXPLORATION IN THE TIMOR SEA**

Oil and gas exploration has long been held in Timor Sea territorial waters which contain large amount of hydrocarbon reserve. Exploration and exploitation activities in this area involve Indonesia, East Timor and Australia, the states directly adjacent with this water area. The development of oil and gas field continued held by several International Oil companies from all over the world. However, the wealth of its hydrocarbon reserve has led to overlapping claim among the three states in the absence of clear territorial boundaries in the Timor Sea area. One of exploration zone that had always been fought over its exploration right was the Timor Gap. Currently the zone has been cooperatively developed by East Timor and Australia, after Indonesia lost its right in line with the separation of East Timor from the Republic of Indonesia.

#### **A. The chronology of oil and gas exploration in Cooperation zones and disputed area in Timor Sea**

Almost 70 per cent of the Earth surface consists of ocean. With the development of technology, human capability to explore and exploit natural marine resources has been also already developed. One of them is an activity of oil and gas exploration much developed in offshore area. Nonetheless, most of the difficulties dealing with the border area have arisen in the case of the water border

For many years, the Timor Sea has been the subject of claims between Indonesia, East Timor and Australia concerning the determination of the maritime

boundary among those states. Moreover, since the discovery of hydrocarbon reserves in this water are in the 1970s, there have been long disputes for the ownership and exploitation right over resources resided on part of the Timor Sea known as the Timor Gap. Significant economic activity, particularly for the development of petroleum exploration, is now taking place in an area subject to these claims.

Generally the right of Timor Sea's oil and gas reserve exploration within cooperation zone and overlapping claimed area can be classified into two periods. First is the period of overlapping claim and joining exploration between Indonesia and Australia since the Portugal colonial role in East Timor until the integration of East Timor into Indonesian territory. While the second period refers to the overlapping claim of maritime boundary and oil exploration right between Australia and East Timor after its separation from Indonesia until now.

#### **1. The period since East Timor's integration to Indonesia**

Timor Sea and its potentially oil rich have been the subject of claims between Indonesia, Australia and Portuguese, the colonial role in East Timor before its integration to Indonesia. In this marine area, there was no clear seabed boundary to maintain territorial sovereignty of the states that directly shared their national maritime boundary with this sea.

Furthermore, from 1971 to 1973 Indonesia and Australia negotiated series of treaties which defined certain seabed boundaries that were far north the median line. The Agreed Seabed Boundary (1972) specifies that the border line should follow the counted line starting from the Group of sand islands called Ashmore

Reef and the southern island of Route. Even though that boundary treaty is usually permanent, but it was applied only for both Australia and Indonesia for the Portuguese absence. Portugal, colonial role at East Timor at that time, refused to involve in negotiation, so the treaties did not apply to East Timor as a Portuguese colony. Finally, the rejection of Portuguese government over negotiation had initially led to the unbounded area known as "Timor Gap" located between Australia's northern coast and the eastern part of Timor Island.<sup>13</sup>

Two years after several negotiated treaties between Indonesia and Australia, Indonesia invaded East Timor, a former Portuguese colony, in late 1975 and annexed the territory in 1976 as its 27<sup>th</sup> province. Australian Foreign Minister, Andrew Peacock then met Indonesian Foreign Minister, Mochtar and announced that on December 15<sup>th</sup> 1978 Australia would give a formal and legal jurisdictional recognition against an integration of East Timor land to be part of Indonesian territorial sovereignty as the result of negotiation hold concerning the seabed. After Australian recognition for Indonesian sovereignty over East Timor, disagreement arose whether the boundary line should follow a notional line midway between Australia and East Timor or it should follow the physical features of the Timor Trough. Because of the lack of agreement on the boundary issue then all exploration activities in the disputed area were suspended.

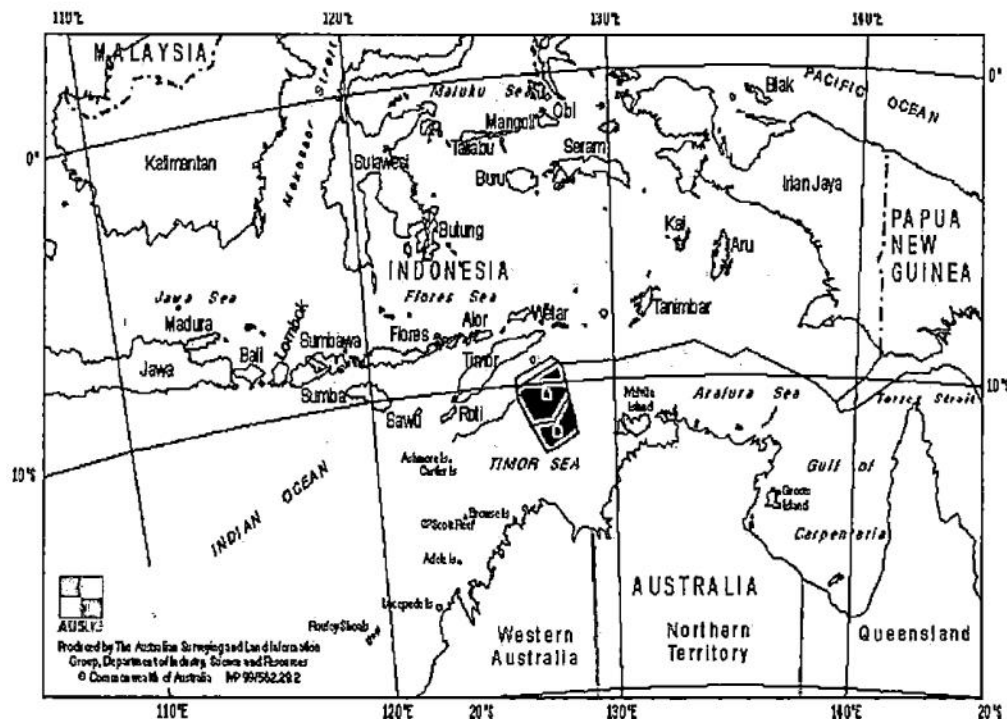
In 1979, Australia and Indonesia negotiated an agreement that finally guided them to come into Timor Gap Treaty in 1989 and divide all natural resources within the Gap with 50-50 shared revenues for both states. That

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<sup>13</sup> Chaudhry, Faisal. Minding the Timor Gap. Dollar and Sense Magazine, August 2006 (online). <http://www.dollarsandsense.org/archives/2006/0706chaudhry.html>  
Retrieved: November 25th, 2010

agreement defined the Zone of Cooperation (ZOC) for Australia and Indonesia in which both countries agreed to split revenues from this cooperation zone inside the gap equally. This Zone of Cooperation was split into three areas: Area A, the area in between the two (joint jurisdiction between Australia and Indonesia administrated by a joint Authority); Area B, the area nearest to Australia (Australian jurisdiction); and Area C, the area nearest to the eastern half of Timor Island (Indonesian jurisdiction). For the Zone A in the middle of ZOC, its resources have been divided evenly between Indonesia and Australia. However, Australia continuously keeps on controlling the eastern and western ZOC based on an agreement of 1972 with Indonesia.

Map 1: The allocation of Australia-Indonesia exploration zones in the Timor Sea.



However, some experts saw the division of exploration zone becomes too detrimental to Indonesia, as Professor Herman Johannes, the former rector of Gadjah Mada University, said:

*"Pembagian zona-zona itu tidak arif, jauh dari realitas dan kondisi di laut Timor berkenaan dengan aturan, baik internasional, regional, nasional dan lokal. Pembagian tersebut justru lebih menguntungkan Australia, dan itu semata karena kelalaian politik dari pihak Indonesia, atau tersebut oleh karena Indonesia meremehkan potensi laut. Padahal berkali-kali Indonesia selalu mengumandangkan ambisinya untuk mengarahkan dinamika pembangunan ke arah laut dengan kata-kata pilihan "Negara Kepulauan"."*<sup>14</sup>

*("The division of zones is not wise, it is far from the realities and condition in the Timor Sea with regard to whether International, regional, national and local rules. The division was actually more profitable for Australia, and it was only because of the negligence on the part of Indonesian politics or probably it is because Indonesia has underestimated the potential natural reserve within this sea. In fact Indonesia has proclaimed many times his ambitions to direct the dynamic of national development into the sea presented by the concept "Archipelagic State".)*

He refused that agreement for considering that the allocation given fictive result for Indonesia from the Zone C that contain barely oil and gas reserves. If the division provides the 50 per cent of Zone A revenues to Australia and Indonesia receive only 1,6 per cent from Zone B, it was the same to provide too large share for Australia that obviously it was really unfair for Indonesia.

Nevertheless, around the injustice determination, the agreement still continued to be applied by both states at that time. After Santa Cruz incident exactly in December 11<sup>th</sup>, 1991, International oil companies immediately began to

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<sup>14</sup> Neonbasu Gregor. Celah Timor: Apakah itu Mimpi di Siang Bolong  
<http://www.timorexpress.com/index.php?act=news&nid=40946> Retrieved: December 17<sup>th</sup>, 2010

sign the contract with Australia and Indonesia for petroleum exploration in the Timor Sea area. Both states have given the contract production toward the US company Phillips Petroleum ( later known as Conoco Phillips), the British company Royal Dutch Shell, the Australian company Woodside Australian Energy ( later became Woodside Petroleum), and many other companies to explore and exploit natural resources lie within Zone of Cooperation in the Timor Gap. Contracts were given continuously and exploration continued running throughout the 1990s. Several oil and gas fields have been discovered on 1994 and 1995, which is a production beginning in 1998 in Elang-Kakatua within JPDA, and in 1999 in Laminaria-Corallina exactly outside the ZOC.<sup>15</sup>

In the Indonesian zone C lays the Bonaparte Basin in deep waters that has attracted a number of companies to come to this oil and gas reserve location. In the late 1996 Pertamina signed exploration and production contracts (PSCs) for the two blocks in this basin with two Japanese companies in Tokyo. The PSCs for Sabo Block located in 4,571 square kilometer was signed with Japex. Whereas the PSCs for Rabe Block located 6, 400 square kilometer was signed with Inpex.

However, those exploration zones did not belong to Indonesian authority anymore, right after East Timor's disintegration from Indonesia. It began legally, when the publication of TAP MPR V/MPR 1999 received the result of East Timor's referendum on August 30, 1999, as well as revoked the TAP MPR VI/MPR/1978 about East Timor's integration into Indonesia territorial authority.

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<sup>15</sup> Kronologi Negosiasi Laut Timor, La'o Hamutuk Bulletin. Vol 7, No.1 April 2006  
<http://www.laohamutuk.org/Bulletin/2006/Apr/LHBv7n1biS.pdf> Retrieved: December 6th, 2010

Then based on the Resolution of United Nations Security Council No. 1272 October 25th, 1999, the East Timor was authorized under the United Nations Transitional Administration on East Timor (UNTAET).

Therefore, the sovereignty and authority of Indonesia over East Timor were considered to be ended as well as the exploration zone area that currently belongs to the new emerging state. After East Timor disintegration through the referendum of August 30<sup>th</sup>, 1999, Australia unilaterally assumed previous cooperation agreement of Timor Gap between Indonesia and Australia on 1989 was illegal.

Until now, the Timor Gap's activists and several local NGO still sound their demands and urge the representative body of East Nusa Tenggara province to continue fight for the interest of NTT's society over oil and gas reserves lying within the Timor Sea. They considered that there was occurring injustice for the allocation and distribution of the Timor Sea' exploration area on previous cooperation agreement between Indonesia and Australia that really was detrimental for NTT's society especially for those who live in western part of the Timor. Therefore, Jakarta and Canberra were urged to review the treaty of Timor Gap exploration that has been signed by Indonesian Foreign Minister Menlu Ali Alatas and Australian Foreign Minister Gareth Evans on December 11<sup>th</sup>, 1989, for that treaty was really detrimental for Indonesian society.

## **2. After the declaration of East Timor's nationhood in 1999**

Territorial area is one of the main manifestations of a state's sovereignty. As the states has the absolute jurisdiction over its territory to maintain and

manage its interest then, a state became the high sovereign holder who has the right to manage and control all peoples and goods lying within its jurisdiction.<sup>16</sup>

In the post-proclamation of its independence, East Timor still passes various problems particularly for their economic and political sectors. By realizing oil and gas as one of important commodities for its income that is really needed for East Timor and its state future development, then the East Timorese government continues to struggle for gaining Timor Gap exploration revenues higher than what have been determined before.

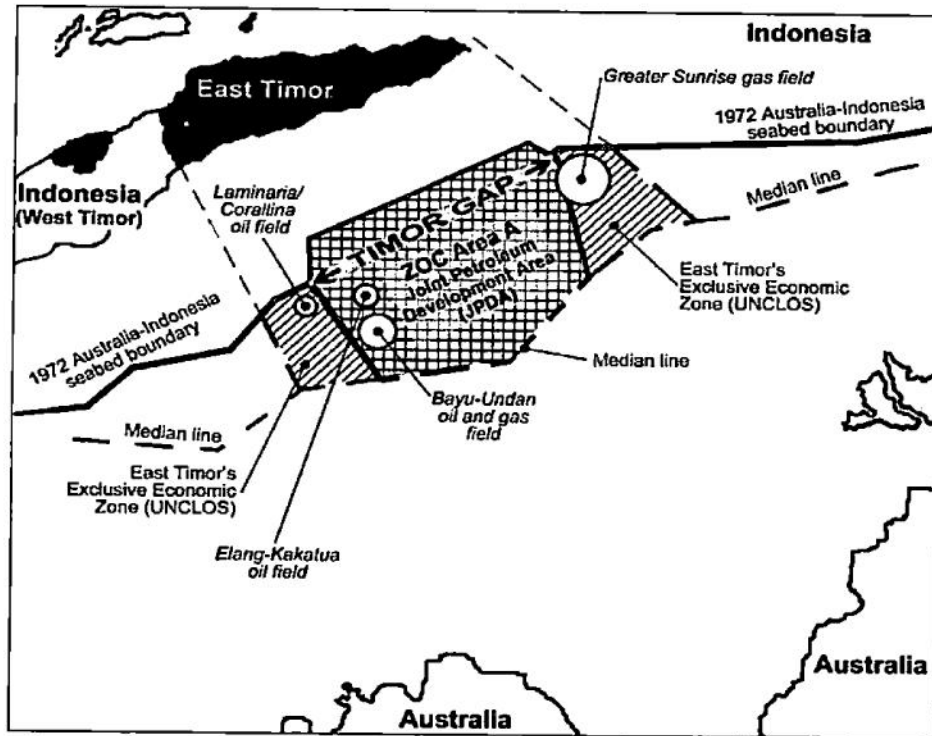
Then, after East Timor's separation and become fully independent in 2002, a series of interim arrangements extended the operation in terms of the Timor Gap Treaty with the United Nations Transitional Administration in East Timor (UNTAET) replacing most of Indonesia's right and obligation. East Timorese government attempts to reach its right for exploring potential hydrocarbon reserve within its jurisdiction around the Timor Sea. Through this time, United Nations Transitional Administration for East Timor (UNTAET) and the East Timorese Prime Minister Mari Alkatiri had reached an Agreement on a new Timor Sea Arrangement to replace the 1989 Timor Gap Treaty relating to the development of hydrocarbon reserves in the Timor Sea.

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<sup>16</sup> J.G.Starke, Pengantar Hukum Internasional, ( 2001).translated by Bambang. Sinar Grafika. Jakarta p.1



Map 2: The allocation of Australia-East Timor's exploration zones in the Timor Sea.



Furthermore, On May 20, 2002 the Prime Minister of East Timor and the Prime Minister of Australia finally signed the Timor Sea Treaty, which entered into force on April 2<sup>nd</sup>, 2003 to replace the 2001 Timor Sea Arrangement, with similar terms. The Treaty provides the basis for the development of the major oil and gas reserves in the Timor Sea between Australia and East Timor in the area covered by area A that is renamed in the Treaty as the Joint Petroleum Development (JPDA). The Treaty states that an authority, Timor Sea Designated Authority (TSDA), established by the Australian and East Timorese government will administrate exploration and production activity in the JPDA.<sup>17</sup>

<sup>17</sup> Plan Fact about Australia & East Timor's Maritime Boundary.  
<http://www.etan.org/issues/tsea/plainfact.htm> Retrieved: December 6th, 2010

The treaty also outlines agreement on a range of issue including the way in which taxation revenues and resources royalty from the petroleum production will be distributed between two countries. However, the Treaty does not address the issue of sovereign rights over the seabed in the Timor Sea and no maritime boundary between the two countries has been established.

The Timor Sea Treaty arranged the JPDA to be administrated jointly by Australia and East Timor that made East Timor immediately replacing Indonesia exploration right in this Area. Two major oil and gas field: Bayu-Undan which is being developed by Conoco Phillip and the Sunrise gas project developed by Shell and several others reserve are encompassed by the limit of JPDA. This agreement allows East Timor to receive approximately 41 % of revenues from Timor Sea, while Australia has taken 59% right of the oil and gas reserves that should legally belong to East Timor.<sup>18</sup> Australia continues to explore oil from this area, receive revenues and sign new exploration contract with oil and gas companies.

Especially for Greater Sunrise field exploration as the single biggest resource in the Timor Sea, Australia and East Timor signed the International Unitization Agreement (IUA) on March 6<sup>th</sup>, 2003 to provide legal and regulatory environment for the development of this gas reserve. Exactly in March 29<sup>th</sup>, 2004 Australia ratified this IUA for the Greater Sunrise exploration arrangement, whereas until this time the East Timorese Parliament has not yet ratified it because it seems contradictory with their national interest. Based on this agreement, East Timor would receive tax revenues 18,1 per cent from the Greater

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<sup>18</sup> Ibid

Sunrise reserve, whereas Australia would receive 81,9 per cent of it.<sup>19</sup> Under international legal principles, most or all of Sunrise would be in East Timor's territory, and the new nation could decide how to sell and process its oil and gas by its own way.

Beside this common injustice, East Timor also did not receive revenue from oil and gas field just outside JPDA like Buffalo and Laminaria-Corallina, although these fields are closer to East Timor territory rather than to Australia. Actually these fields lie in an area of overlapping claims between Australia and East Timor, however Australia unilaterally has continued to issue exploration license to petroleum companies. What has been done by Australia was inviting the protest from East Timorese government, for a boundary drawn by international law should give East Timor a significantly much wider area than the JPDA, probably encompassing the entire Laminaria-Corallina field and most or all of Greater Sunrise field.

Following the Timor Sea Justice Campaign in Australia and the movement against the occupation of the Timor Sea in East Timor to protest Australia's theft of East Timor's resources, then finally Australia and East Timor agreed to sign the Treaty on Certain Maritime Arrangement in the Timor Sea (CMATS) in 2006. CMATS contains 12 articles, 2 attachments and 2 letter of explanation. This treaty changes and incorporates the contents of Timor Sea Treaty 2002 and the International Unitization Agreement Sunrise signed in 2003. One of this treaty provision exactly the Article 3 of this CMATS definitely replaces the text of

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<sup>19</sup> Appendix 2: History of Sunrise Development <http://www.laohamutuk.org/Oil/LNG/app2.htm>  
Retrieved: December 6<sup>th</sup>, 2010

article 22 of the previous Timor Sea Treaty related to the duration of that treaty by the following:<sup>20</sup>

*“This Treaty shall be in force for the duration of the Treaty between the Government of Australia and the Government of the Democratic Republic of Timor-Leste on Certain Maritime Arrangements in the Timor Sea. This Treaty may be renewed by agreement between Australia and East Timor. Petroleum activities of limited liability corporations or other limited liability entities entered into under the terms of the Treaty shall continue even if the Treaty is no longer in force under conditions equivalent to those in place under the Treaty.”*

Generally, this agreement arranges about the exploration and exploitation of oil and gas field in The Timor Sea outside Joint Petroleum Development Area. This treaty divides oil and gas revenue from disputed areas for both states, but delays to decide which state will absolutely own territorial sea and seabed in this Timor Sea area. This treaty mentioned that both party need to neither demanding for sovereign right of maritime boundaries nor involving in any legal process related to maritime borders or territorial jurisdiction.

In addition, according to article 5 of CMATS, both parties will distribute upstream revenues from the Sunrise Unit Area equally. Every state will receive its revenue in accordance with the tax laws and IUA 2003 that allocate 18% Sunrise to East Timor and 82% to Australia, and Australia will pay for East Timor to give an equal share for both states. It means that this arrangement will automatically increase East Timor revenues from Greater Sunrise from only 18% to 50 %. Thus Australia will get all that removed from other areas of the Timor Sea to the south

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<sup>20</sup> Certain Maritime Arrangement in the Timor Sea.  
<http://www.laohamutuk.org/Bulletin/2006/Apr/LHBv7n1biS.pdf> Retrieved: December 6<sup>th</sup>, 2010

border of Australia-Indonesia seabed 1972 and outside of the JPDA that obviously much closer to East Timor, including Laminaria-Corallina, Buffalo and other areas that are still being explored. Actually, before CMATS, East Timor has protested against the Australia's development project in this area, for actually this area should belong to East Timor according to the applicable International Law right now. Unfortunately, this agreement has led to delaying permanent maritime boundary for both states from 30 to 50 years into the future.

#### **B. Oil and Gas Fields in The Timor Sea**

The Timor Sea becomes maritime boundaries of three states in South Asia Pacific: Indonesia, East Timor and Australia. Geographically, the Timor Sea is defined as being one of waters of the East Indian Archipelago by International Hydrographic Organization (IHO). The IHO defined Timor Sea's limits as: on the North becomes the southeastern limit of the Sawu Sea, the southeastern coast of Timor and the Southern limit of the Banda Sea, on the East becomes the western limit of the Arafura Sea, on the South becomes the north coast of Australia from Cape Don to Cape Londonderry, and on the West becomes a line from Cape Londonderry to the Southwest point of Roti Island.<sup>21</sup> Beneath this waters area lie high potential for significant hydrocarbon reserves and a number of reefs. A number of offshore petroleum projects are in operation and there is considerable activity followed by numerous proposed projects in this sea area. Oil and gas exploration projects simultaneously have been developed along with the continued discovery of oil and gas fields in this sea area.

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<sup>21</sup> "Limits of Oceans and Seas, 3rd edition". International Hydrographic Organization. 1953. [http://www.iho-ohi.net/iho\\_pubs/standard/S-23/S23\\_1953.pdf](http://www.iho-ohi.net/iho_pubs/standard/S-23/S23_1953.pdf) Retrieved: December 1<sup>st</sup>, 2010

Currently, Oil and gas fields in the Timor Sea can be classified into three significant zones based on the ownership right of relating states determined by several agreements between states whose maritime boundary is involved and bordered with this waters area. Those zones are: 1) the oil and gas field involved within the Joint Petroleum Development Area, 2) the fields involved within Exclusive Economic Zone (EEZ) of East Timor according to International law, but in fact up to nowadays its revenues are still shared for East Timor and Australia based on the principle of previous Treaty Of Timor Sea (TST), and 3) the oil and gas fields involved within the zone which were undoubtedly belong to Australian territory.

#### **1. The Oil and Gas Field inside the JPDA**

Inside the Joint Development area lies several oil and gas fields that whether has been developed or undeveloped. Several gas and oil field discoveries that have not been developed yet are: Kuda Tasl, Kelp, Jahal, Buller, Krill, Hingkip, and Chudditch. Whereas, some fields that have been developed in this area consist of:

##### **a. Elang-Kakatua**

The Elang-Kakatua is small oil field firstly discovered and explored within Joint Petroleum Development area and containing some 30 million barrels of oil. This field has been explored by Conoco Phillips, United State-based Oil Company. From the field exploration this company had received for about US \$ 50 million of oil revenues that is further divided between Australia and Indonesia when East Timor was still being the part of Indonesian territorial

authority. Furthermore, after East Timor's separation, this new state gained the revenue from Elang-Kakatua exploration replacing Indonesian right in this area. Nowadays approximately 90 per cent of oil reserves in this field had been explored and East Timor received 90 per cent royalty and tax from this oil field.<sup>22</sup>

b. Bayu-Undan

Bayu-Undan is a large gas field located entirely within the Joint Petroleum Development Area. This field is rich with natural gas liquid that known as Liquefied Petroleum Gas (LPG) and its condensate. The project is estimated to contain reserves of 400 million barrels of condensate and 3.4 trillion cubic feet (Tcf) of gas. The Bayu-Undan field was discovered in Early 1995 with the drilling of the Bayu-1 in area 91-13 in the Zone of Cooperation continued by the discoveries of another well Undan-1 that was found in the area 91-12 approximately 6 miles from the previous well. This project involves two phase of development of the field's gas and gas liquid resources.<sup>23</sup> The first phase of development focused on the gas recycle facility to produce and process wet gas which separate and store condensate, propane, butane, and re-inject dry gas back into the reservoir. While the second phase involved installing a natural gas pipeline from the field to Darwin Australia and constructing a new Liquefied Natural Gas (LNG) facility that is located at Wickham Point,

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<sup>22</sup> Opcit: Ladang Minyak dan Gas di Laut Timor

<sup>23</sup> Bayu-Undan

[http://www.subseaiq.com/data/PrintProject.aspx?project\\_id=665&AspxAutoDetectCookieSupport=1](http://www.subseaiq.com/data/PrintProject.aspx?project_id=665&AspxAutoDetectCookieSupport=1) Retrieved: December 6<sup>th</sup>, 2010

Darwin. After receiving the approval from the Timor Gap Joint Authority in 2000, the project began its development in 2001. Further, the production of Bayu-Undan was commenced in 2004 for the field lifetime over 20 years. Conoco Phillips become the biggest shareholder in this exploration projects with 57,2 % interest. While the remainders are: Eni Australia with 11,0%, Santos 11,4%, INPEX 11,3%, and Tokyo Electric and Tokyo Gas aggregate 9,2%.<sup>24</sup>

## **2. The Oil and Gas Field inside East Timor's EEZ refers to International Law**

Actually, if maritime boundary of East Timor in the Timor Sea was determined based on the principle of International Law of the Sea, then this country would get full right over an ownership and exploration of the two oil and gas fields in this area. However, for the unclear sea bed boundary between East Timor and Australia in the Timor Sea, the revenues of this offshore development and exploration in this area are still contested by both states. Then until now oil and gas fields that still being divided for both East Timor and Australia are:

### **a. Greater Sunrise**

The Greater Sunrise field was discovered in 1974. It contains gas twice larger than Bayu-Undan field. This gas field resided only approximately 20 per cent inside the JPDA while 80 per cent of its part lies outside this

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<sup>24</sup> Australia and Timor Leste  
[http://www.conocophillips.com/EN/about/worldwide\\_ops/country/australia/Pages/australia.aspx](http://www.conocophillips.com/EN/about/worldwide_ops/country/australia/Pages/australia.aspx)  
Retrieved: December 6<sup>th</sup>, 2010



cooperation zone and still being ruled by Australia as well as being claimed by East Timor. This field is estimated containing eight trillion cubic feet of gas and 300 million barrels of condensate with projected lifetime over 30 years. The biggest shareholder in the Greater Sunrise project is Woodside Energy with 33,4% interest in this field. While the other three shareholder are: Phillips Petroleum with its 30,0% interest, Shell 26,6 % and Osaka Gas 10,0%.<sup>25</sup>

b. Laminaria-Corallina

The Laminaria-Corallina field was located closer to East Timor's shoreline but falls just outside of JPDA in which its territorial waters also being claimed by both Australia and East Timor. The field was explored by Woodside Energy with 66.67 shareholder right and Talisman Oil and Gas for 33.33%. Laminaria-Corallina has produced 193 million barrels of oil since starting production in late 1999, and now about 95% depleted. However, this field had given more than US \$1 billion for Australia, whereas East Timor had not got even one cent from this oil field.<sup>26</sup>

**3. The Oil and Gas fields resided fully on Australian territorial zone**

Inside its Exclusive Economic Zone, Australia has discovered many oil and gas fields that some of them have not yet been developed. Several fields are lie within Browse Basin, Bonaparte Basin, Carnavon Basin, and Ashmore and Cartier Island area. Several oil and gas fields that have not yet been developed are:

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<sup>25</sup> Sunrise Gas Field, Timor Sea, Australia.

<http://www.hydrocarbons-technology.com/projects/sunrise/> Retrieved: December 6<sup>th</sup>, 2010

<sup>26</sup> Opcit : Tinjauan Ulang Mengenai Minyak dan Gas di Laut Timor

Barnett, Blactive, Tern, Petrel, Cornea, Brewster, Ichthys, Crux, Tahblik, Puffin, Padthaway, Swan, Maple, Brontosaurus, Tenaculous, Oliver, Audacious, Talbot, Prometheus, Bilyara and Montara. While, some fields that have been developed currently are:

a. Jabiru

Jabiru is an oil field located in the Timor Sea approximately 650 km west of Darwin. It was discovered in 1983 and its production started in 1986. The Jabiru oil field is served by the Jabiru Venture FPSO which has an installed capacity of 55,000 barrels of oil per day. Since 1986 this oil field has produced for about 111 million barrels of oil. However, its production rate has declined from its peak production of about 51,600 barrels per day to current production that only about 1500 billion barrels per day. This Jabiru Venture FPSO is participated by PTTEP Australasia Pty Ltd, Santos Offshore Pty Ltd and OMV Petroleum Pty Ltd.

b. Challis

The Challis oil field is located in the Timor Sea approximately 650 km west of Darwin exactly 20 km south of the Jabiru field. This field was discovered in 1984 and its production started in 1989. It is serviced by the Challis Venture FPSO which has an installed capacity of 35,000 barrels of oil per day. Since 1989 this oil field has produced for about 59,5 million barrels of oil. As the same with Jabiru's, Challis' production rate also has declined from its peak production of about 22,500 barrels per day to current production that only about 1360 billion barrels per day. The

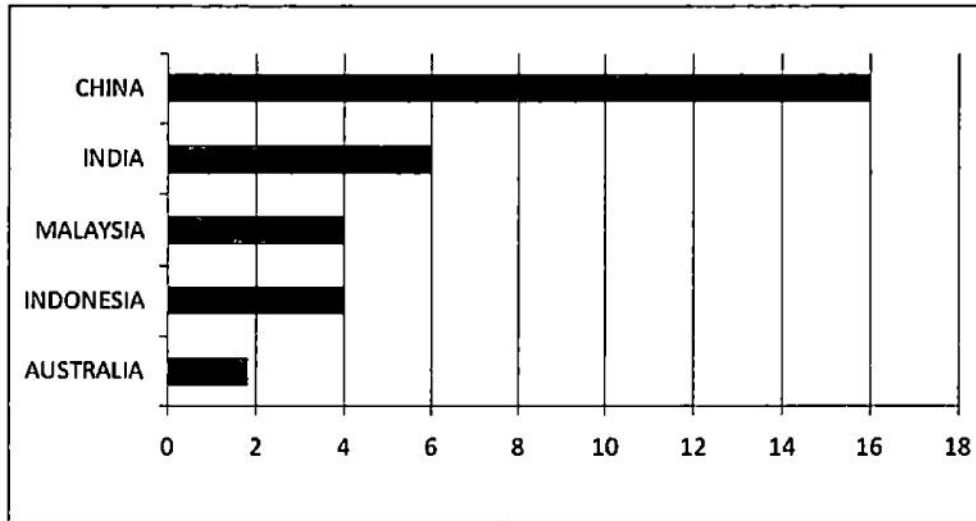
Participant in Challis Venture FPSO is as the same of three companies as involved within Jabiru Venture.

**C. The Oil and gas exploration within Australian full Jurisdiction in the Timor Sea**

Relatively, Australia becomes a country that received most of exploration revenues from oil and gas exploration development in the Timor Sea areas. Beside the revenues from oil and gas field handled together by Australia and East Timor inside the JPDA and several disputed fields outside the JPDA that have been arranged by several treaties of both states, Australia also received a lot of revenues from oil and gas fields lying within its territorial authority in the Timor Sea.

The Significant petroleum and natural gas reserve lying within Australian onshore and offshore area have led this country to be one of the few countries belonging to the Organization for Economic Cooperation and Development (OECD). While it is potential hydrocarbon resources nominated Australia becoming the sixth largest holder of natural gas reserve in Asia after Indonesia, Malaysia, China, India and Pakistan. According to Oil and Gas Journal (OGJ), Australia has 30 trillion cubic feet (Tcf) of proven natural gas reserve as of January 2009. Around 69 percent of those natural gas reserves are located in the Timor Sea exactly in the Carnavon Basin.

Figure 3: Asia-Pacific Proven Natural Gas Reserve Holders,  
January 2009 (measured by: Trillion cubic feet (Tcf))



Source: <http://www.eia.doe.gov/cabs/Australia/pdf.pdf>

Several exploration projects continue to be developed and some contracts have been given to international oil companies around onshore and offshore area of Browse Basin, Carnavon Basin and Bonaparte Basin.

The Browse Basin lies entirely offshore north of Broome and covers approximately 140,000 square kilometre. It is composed by the Leveque Shelf, Yampi Shelf, Barcoo Sub-basin, Caswell Sub-basin, Scott Plateau, Seringapatam Sub-basin. Hydrocarbon explorations in the Browse Basin were commenced in 1967 when Burmah Oil Company Australia acquired 1600 of regional seismic.

Nonetheless the drilling of Scott Reef well in 1971 as the fourth well drilled in this basin had provided potentially Australia's largest gas field.<sup>27</sup>

The Basin actually is proven hydrocarbon province, with major undeveloped gas and oil fields in the outer and central basin and minor oil and gas discoveries on the eastern margin of this basin. The main obstacle to their development caused by its isolated location, for being almost 300 km from the mainland and in 300-500 m of water.

Meanwhile, the Carnarvon Basin encompasses over 1,000 km of the west and northwest coast of Western Australia. The offshore part of this basin covers approximately 535,000 square kilometre with water depth up to 3,500 metres. The basin consistS of the Gascoyne, Merlinleigh, Bidgemia, and Byro sub basin and Barnier Platform. The southern Carnarvon Basin becomes the larges onshore basin on the Western Australia. About 30 explorations well in this southern part of Carnarvon basin have been drilled including just two offshore well.<sup>28</sup>

In addition, the northern part of this basin has numoreus offshore oil and gas field that established the Northern Carnarvon basin as a major hydrocarbon province for Australia. According to Oil and Gas Journal (OGJ), Australia had 1.5 billion barrels of proven oil reserves as of January 1, 2009. The majority of these reserves are located off the coasts of Western Australia, the Northern Territory,

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<sup>27</sup> Government of Western Australia Department of Mines and Petroleum, Browse Basin. <http://www.dmp.wa.gov.au/1878.aspx> Retrieved: 6<sup>th</sup> December,2010

<sup>28</sup> Southern Carnarvon Basin. Geosciences' Australia. [http://www.ga.gov.au/oceans/rpg\\_Carnarvon.jsp](http://www.ga.gov.au/oceans/rpg_Carnarvon.jsp) Retrieved: December 6<sup>th</sup>, 2010

and Victoria. The Carnarvon Basin accounts for 62 percent of Australia's production of crude oil, condensate and liquefied petroleum gas (LPG).<sup>29</sup>

During 2006 there were 46 producing fields, several new fields in development drilling and numerous undeveloped hydrocarbon discoveries. The Dampier Sub-basin received much attention with the success of Gorgon and Wheatstone in this northern Carnarvon basin. Particularly for Gorgon gas field that was discovered in 1980. Gorgon is involved within Greater Gorgon that consists of Gorgon, Chrysaor, Dionysus, West Tryal Rocks and Spar. The field is being developed by the Gorgon Venture, a joint venture of Chevron Texaco, Shell and ExxonMobil. Chevron Texaco becomes the operator of the Gorgon development for its four-sevent interest of Gorgon Venture. The Gorgon field has certified to Provide up to 13.8 trillion cubic feet of hydrocarbon reserves for Australia.<sup>30</sup>

In the other hand, the Bonaparte Basin initially consists of the following structural elements: Ashmore Platform, Vulcan Sub-basin, Londonderry High, Petrel Sub-basin, Darwin Shelf, Malita Graben, Sahul Syncline Nancar Trough, Laminaria High, Flamingo High, Flamingo Syncline, Sahul Platform, Sahul Syncline, Troubadour Terrace, Calder and Graben. Initially, offshore exploration of gas and oil within Bonaparte Basin commenced in 1965. The first offshore exploration wells in the Basin are Ashmore Reef 1 and Sahul Shoals that located on the Ashmore Platform. In the early 1970s, exploration expanded beyond the

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<sup>29</sup> Australia: Country Analysis Brief. <http://www.eia.doe.gov/cabs/Australia/pdf.pdf>  
Retrieved: November 25<sup>th</sup>, 2010

<sup>30</sup>Gorgon, Northern Carnarvon Basin, Australia.  
<http://www.offshore-technology.com/projects/gorgon/> Retrieved: December 6<sup>th</sup>, 2010

limits of the Petrel Basin into the Vulcan-basin and the Londondery High and Sahul Platform.

Several significant petroleum discoveries were made during this period including Puffin and Troubadour. Further, the discovery of Jabiru field in 1983 stimulated further exploration in the offshore part of Bonaparte Basin. This phase of exploration resulted in the discovery of three commercial oil accumulation in the Vulcan Sub-basin including Cassini, Challis and Skua. Furthermore, during 2002-2003s well drilling continued in the Vulcan sub-basin, but no new commercial oil and gas discoveries were found here. However, from 2005 to the mid-2006 there has been a revival in exploration by the discovery of oil and gas reserve within the Katandra 1,1A and Vesta 1 well. Moreover, the development of Puffin 7 and 9 well recovered oil and the extension wells to Montara field by Coogee Resources that successfully discovered more oil reserve at Swift North 1, ST1 and Swallow 1.<sup>31</sup>

For the number of oil and gas field discovered in the Bonaparte and Browse Basin, still a lot of them are not yet coming into exploration production but still limited in the early stage of development. One of fields that is still limited in the development project is Montara oil and gas field that is included on Montara development project. The field that is located in about 80 m of water and consisted of a 10m oil column and 25m gas column is estimated to contain 24

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<sup>31</sup> 2007 Offshore Acreage Release. Australian Government, Department of Industry, Tourism and Resource.

[http://www.ret.gov.au/resources/documents/acreage\\_releases/2007/html/geology/bonaparte/petrel/exp\\_history.htm](http://www.ret.gov.au/resources/documents/acreage_releases/2007/html/geology/bonaparte/petrel/exp_history.htm) Retrieved: December 6th, 2010

million barrel of recoverable reserve and its production life is estimated to be 12 years.

Actually, Montara was first discovered in 1988 by BHP Billiton, But in 2003 Australian oil project developer Coogee Resources, an Australian oil and gas unlisted public company, took over this field as its operator. Montara development projects Coogee planned to use a floating, production, storage and offloading vessel with tie-backs planned to Skua, Swift and Swallow fields. In the other hand, Worley Parsons, an Australian professional services provider for oil and gas industry pointed to design the Montara platform. They had hard thinking in planning this platform for the weak soils at the location of this oil field and the challenge of cyclonic storm in this marine environment. To support this project Sea Drill, a Norwegian-Bermudan offshore drilling company, provided the offshore drilling rig West Atlas to Coogee. The rig was designed and built in 2007 that was able to work at a water depth of 400ft and had a drilling depth of 30,000ft.<sup>32</sup>

Moreover, Coogee planned the development of the Montara project in two phases including on the development of six production wells and one infection well, and in second phase including the development of the three production wells. The phased development of field was initiated to enable inclusion of wells in second phase, on dynamic reservoir results from first phase.

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<sup>32</sup> Montara Oil Field, Timor Sea, Australia

<http://www.offshore-technology.com/projects/montara-oil-field/> Retrieved: December 8<sup>th</sup>, 2010



Actually, production from the phase one was planned in 2008, but was delayed to 2010 because of the change in its ownership. In December 2008, PTT Exploration and Production, a Thailand-based petroleum and natural gas explorer, acquired Coogee and afterwards this company was renamed as PTTEP Australasia (PTTEP AA).

The deal gave PTTEP 100 % control over the Montara development project which included Montara, Skua, Swift and Swallow fields.<sup>33</sup> A total of ten wells, nine oil producers and one gas injection well are part of the Montara development project. Unfortunately, after the previous delay of production for the change of ownership, the Montara development project suffered another delay as oil and gas spills at a drilling well in the Montara field exactly in August 9<sup>th</sup> 2009.

Incident of Montara oil field explosion occurring in Australian territory and its crude oil already spilling over water sea and continue to expand, has potentially created serious treats for the preservation of Timor Sea's environment. Furthermore, the oil spill which causes marine pollution whose large spill continue to widen will affect marine and coastal communities not only in Australia but also in the sates adjacent with this Timor Sea such as Indonesia and East Timor.

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<sup>33</sup> Ibid