



## **PNG CHAMBER OF MINES AND PETROLEUM**

### **“Community Affairs and Media Workshop”**

Hilton Hotel  
Port Moresby  
4-5<sup>th</sup> August 2021

David Manau  
Secretary



## **DEPARTMENT OF PETROLEUM AND ENERGY**

### **“Reflections on Regulatory Policy Environment for Resources Development in the Petroleum Sector”**

*The Secretary of the Department of Petroleum and Energy Mr. David Manau will make a presentation at the PNG Chamber of Mines and Petroleum, “Community Affairs and Media Workshop” at the Hilton Hotel in Port Moresby from 4<sup>th</sup> – 5<sup>th</sup> August 2021.*

*This information package has been prepared by the Department of Petroleum and Energy (DPE) to give an overall view about the functions and operations of the Department, in particularly reflections on the policy environment for the resources development in the petroleum sector. Some policy suggestions or positions stated or statements made in this information package are only the views and positions of the Department. DPE does not accept any responsibility for any loss or damage directly or indirectly through the use of, or reliance on, the information contained in this Department information package.*

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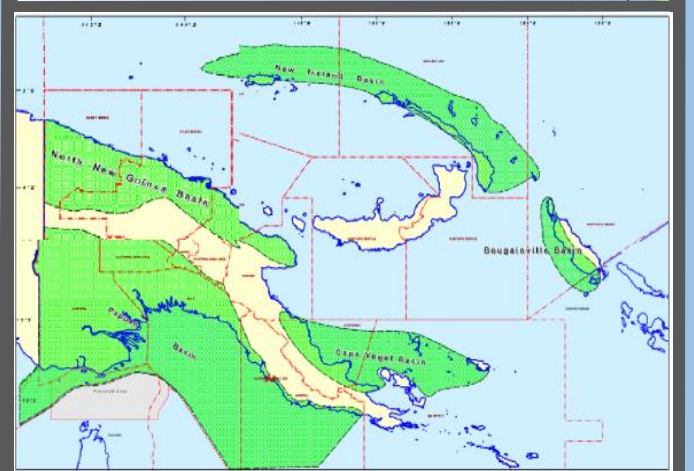
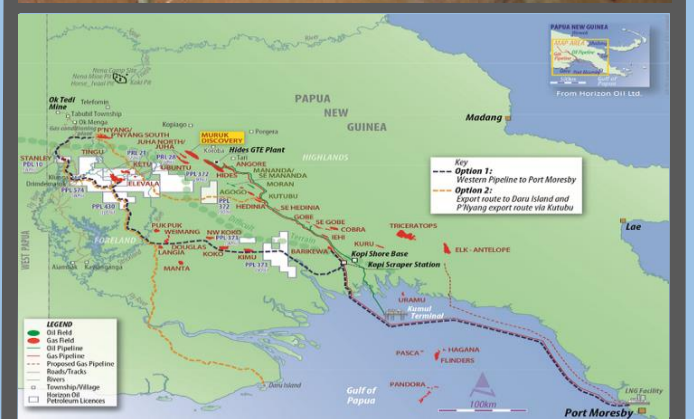
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## 1. OVERVIEW

### 1.1 Policy Objective for Petroleum Resources Development in PNG

The Independent State of Papua New Guinea (PNG) considers the development of the State's petroleum resources to be amongst its highest priorities. The State is committed to the development of these resources in a way, which maximizes the benefits of petroleum production to the people of PNG, while minimising social, environmental and economic costs. At the same time the State recognizes the need to develop its petroleum resources in conjunction with international oil and gas companies. It further recognizes that to attract major overseas investors, it must offer a stable economic and political environment, which allows the investor the opportunity to make a reasonable return on exploring for and developing oil and gas resources in Papua New Guinea.

### 1.2 Ownership of Petroleum Resources in PNG

Ownership of petroleum resources, onshore and offshore, belong to the State, which licenses others to explore for, recover and sell or otherwise dispose of petroleum so recovered (Section 6 of the Oil and Gas Act, 1998).

### 1.3 The Importance of Petroleum Sector in PNG's Social and Economic Development

The petroleum sector in PNG plays a very significant role in the development and sustaining of the country's social and economic welfare directly and indirectly.

- **GDP** - PNG's economy is driven by the extractive sector, mainly mining and petroleum. In 2018, the extractive sector contributed 29%<sup>1</sup> to the GDP of the country, mainly driven by PNG LNG project.
- **Employment** – The extractive sector in PNG provides employment opportunities to PNG citizens both directly and indirectly, from which the government collects personal income tax.
- **Major foreign currency earner (Export)** - The extractive sector in PNG is a major foreign currency earner and one of the country's major exports. In 2018, the extractive sector contributed 89%<sup>2</sup> of PNG's total exports, mainly driven by PNG LNG project.

- **Government revenue** – In 2018, the extractive sector contributed 9.4%<sup>3</sup> of PNG's total revenue from corporate taxes, royalties, dividends, development levy, salary and wage tax, and foreign contractor withholding tax, etc.
- **Community projects** – As part of good corporate citizen obligation, operators build, operate and maintain essential basic services in project impacted landowner communities such as roads, schools, clinics and other services.
- **Infrastructure projects** – Operators are also required to build infrastructure projects under the PNG Government's Credit Scheme.

### 1.4 Policies and Legislation Framework

**Main Legislations** - The Oil and Gas Act 1998 (as amended) is the principal legislation that governs petroleum exploration and development and State Entitlement and Benefits in Papua New Guinea. It spells out the role and purpose of the legislation in key areas including the exploration, development, processing, transportation and makes provisions for grant of benefits to traditional landowners, Local Level Governments and Provincial Governments arising from the production, processing and transportation of petroleum in PNG.

**Other Legislations** – Other important legislations include but not limited to: Income Tax Act 1959 (as amended), Division 10 – Mining, Petroleum and Designated Gas Projects; VAT Legislation and Stamp duty legislation; Environmental Act 2000; Environmental Contaminants Act (Chapter 368); Water Resources Act (Chapter 205); Mineral Resources Pty Ltd. (Privatization) Act 1996; Resource Contracts Fiscal Stabilization Act 2000; and Organic Law on Provincial Governments and Local Level Governments.

**Petroleum and Gas Agreements** - In addition, companies are required to enter into an agreement with the State, called a Petroleum Agreement. Most companies enter into a Petroleum Agreement with the State prior to drilling the first exploration well in the licence area. The Petroleum Agreement must be entered into before the grant of a petroleum development licence. In the case of a gas project, the relevant agreement is a Gas Agreement.

<sup>1</sup>PNG EITI 2018 Final Report

<sup>2</sup> PNG EITI 2018 Final Report

<sup>3</sup> PNG EITI 2018 Final Report

## 2. OPERATIONAL STRUCTURE

### 2.1 The Purpose of DPE

The Department of Petroleum and Energy (DPE) for and on behalf of the Government of the Independent State of Papua New Guinea and its people regulates the development of petroleum and other sources of energy for the long-term benefits of the State in a way which is ethical, socially responsible and environmentally sound. The **Oil and Gas Act 1998** and the **Oil and Gas Regulations 2002** govern exploration for, and production of, petroleum in the State, onshore and offshore. The DPE is responsible for administering and applying the Act and Regulations to deliver the required outcomes for the State and people of Papua New Guinea.

### 2.2 Organizational Structure

The DPE consists of two key functions. Energy Wing and Petroleum Division. The Energy wing deals with all aspects of energy and policy development, especially in the renewable energy subsector. The Petroleum Division deals with the licensing, regulation and development of petroleum resources. The Corporate Services Division supports the administrative functions of the two key functions. The Energy Wing is now a separate authority under National Energy Authority (NEA). Because the development of petroleum involves social, economic, technical, legal, policy and landowner aspects, the

Petroleum Division of the Department is further branched into Registry, Exploration, Engineering, Coordination, Economics, Policy and Legal branches.

**Registry Branch** – Keeps and updates records of all licenses and licensing matters including briefs and outcomes of PAB deliberations on licensing matters.

**Exploration Branch** – Promotes, keep records, updates, and monitor all petroleum exploration activities to ensure all exploration operations are carried out in full compliance with relevant PNG and international laws and international and industry best practices.

**Engineering Branch** – Keep records, updates, and monitor all petroleum drilling and production activities to ensure all operations are carried out in full compliance with relevant PNG and international laws and international and industry best practices.

**Coordination Branch** – As a community affairs function, it manages, coordinates, and handles project area landowner affairs and issues such as Landowner Beneficiaries Identification Determination (LOBID).

**Economics Branch** – Deals with economic issues of the development of oil and gas projects and advises the Department and State on such matters.

**Legal Branch** – Deals with legal issues and challenges of the development of the oil and gas projects and advises Department and State on such matters.

Figure 1: Organizational Structure of DPE



## 3. PETROLEUM LICENSES AND LICENSING SYSTEM IN PNG

The Oil and Gas Act 1998 (as amended) is the principal legislation that governs petroleum exploration and development and State entitlement and benefits in PNG. The processes that govern the petroleum licensing system is outlined in the Oil and Gas Act and basically consist of:

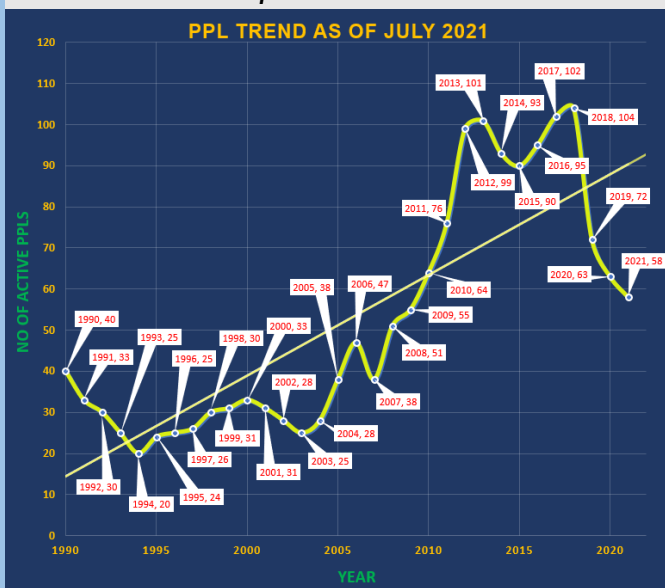
1. application for a petroleum licence;
2. review and recommendation to the Minister by the Petroleum Advisory Board (PAB);
3. award or refusal of a petroleum licence application by the Minister;
4. if awarded, compliance during tenure of licence; and
5. termination of licence at the end of the licence tenure or surrender or cancelation of licence.

There are five types of petroleum licenses in PNG. The status of each of these licenses as of July 2021 are as follows.

### 3.1 Petroleum Prospecting License (PPL)

PPL is primarily an exploration license. A total of 58 PPLs and 25 operators are active in the country as of July 2021. Due to COVID-19, the number of PPLs started dropping in 2018 from 104 to 72 in 2019, and to 63 in 2020 with the surrender of 11 PPLs in 2021. Majority of the PPL licenses are operated by the three major players, namely, Oil Search followed by ExxonMobil and Total. In 2021, 1 PPL application (APPL) was received, 1 PPL was extended and 1 PPL was expired and 7 PPLs were granted. The trend for PPL as of July 2021 is shown on Figure 2 on the next page.

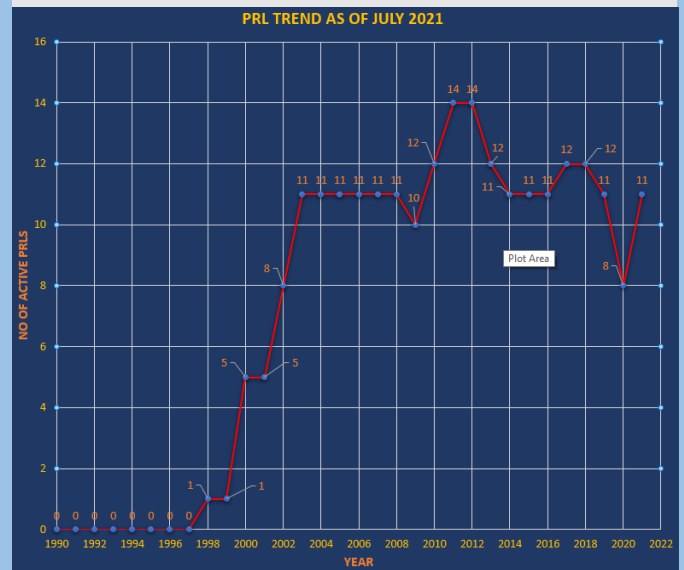
**Figure 2: Graph showing the trend for petroleum exploration in PNG since 1990 to July 2021. The sharp drop since 2018 is due to the impact of COVID-19 on petroleum exploration in PNG.**



### 3.2 Petroleum Retention License (PRL)

A PRL is basically a retention licence that is granted over a certain number of blocks to carry out further appraisal work to fully investigate and prove the commercial and technical viability of a new discovered oil or gas field in a PPL. There are 11 active PRLs in the country with five operators as of July 2021. PRL 21 which contains the Ketu/Elevela gas fields, PRL 15 which contains the Elk/Antelope gas fields (Papua LNG project) and PRL 3 which hosts the P'nyang gas field (P'nyang LNG project) are in their advance development stages. In 2021, 3 PRL applications were received and 3 PRLs were granted. The PRL trend as of July 2021 is shown on Figure 3 below.

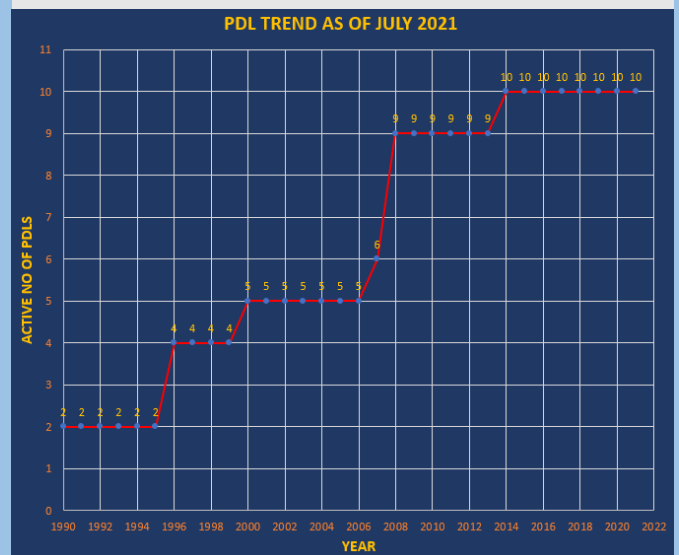
**Figure 3: Graph showing the trend for petroleum appraisal activity in PNG since 1990 to July 2021. Appraisal activity picked up since 1999 with the issue of 4 PRLs.**



### 3.3 Petroleum Development License (PDL)

A PDL is basically a development license to develop an economically and technically proven and viable petroleum discovery. There are currently 10 active PDLs in the country with 3 operators as of July 2021 as shown on Figure 4 below. The three PDL operators are; Oil Search (5 PDLs), ExxonMobil (4 PDLs) and Arran Energy (1 PDL). Recently, Twinza Oil, ExxonMobil and Horizon Oil have applied for a PDL for the development of Pasca gas field in PPL 328 (APDL 14), P'nyang gas field in PRL 3 (APDL13) and Elevela Ketu gas fields in PRL 21 (APDL12) respectively. It is anticipated that Total will follow suit by applying for a PDL for the development of the Elk Antelope gas fields in PRL 15 for the proposed Papua LNG project.

**Figure 4: Graph showing the trend for petroleum development in PNG since 1990 to July 2021. The sharp increase in PDLs in 2008 was due to 3 new PDLs awarded to ExxonMobil for the PNG LNG project.**

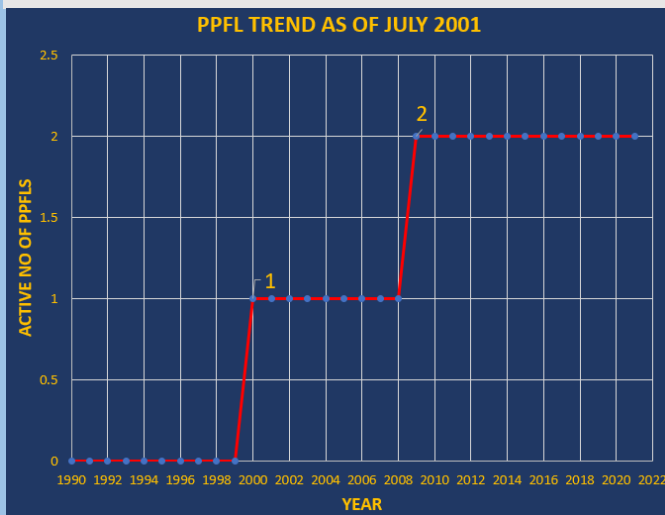


Note that the Stanley gas field over which PDL 10 was granted to in 2014 is yet to be developed due to drop in oil prices at that time. The new Operator for PDL 10 now is Arran Energy.

### 3.4 Petroleum Processing Facility Licenses (PPFL)

A PPFL is basically a petroleum processing facility licence to produce and process hydrocarbon in a standalone petroleum processing facility outside of a PDL. To process

Figure 5: Graph showing the trend for petroleum processing in PNG since 1990 to 2019. One PPFL was issued to ExxonMobil for the PNG LNG plant in Port Moresby in 2009.



petroleum within a PDL does not require a PPFL. Two PPFLs have been issued so far and are active in the country as shown on Figure 5 below. PPFL 1 was granted to InterOil for the Napa Napa oil refinery which since been sold to Puma Energy. PPFL 2 was granted to ExxonMobil for the PNG LNG plant in Port Moresby. For the proposed Papua LNG project, Total will be required to apply for a separate PPFL to build its two 2.7MTA trains within the PNG LNG plant site (PPFL2). ExxonMobil will also be required to apply for a separate PPFL for P’nyang LNG project’s train at the same location. In addition, ExxonMobil will also be required to apply for variations to PPFL2 to allow Papua and P’nyang LNG projects to share common facilities with the foundation PNG LNG project in PPFL2.

### 3.5 Petroleum Pipeline Licenses (PL)

A PL is basically a licence to transport hydrocarbon or its products from a takeoff point to a delivery point. There are currently 13 active PLs operating in the country as of July 2021 as shown on Figure 6. Four new PLs have been recently granted between 2019 and 2020. These include: (1) PL 14 granted to Pacific Energy Aviation (PNG) Limited from Tahira to Jacksons airfield in Port Moresby (Feb. 2020); (2) PL 15 granted to Mobil Oil New Guinea Pty Ltd in Madang (Jul. 2020); (3) PL 16 granted to ExxonMobil PNG Limited from PPFL 2 to Niu Power Plant Site in Port Moresby (Nov. 2019); and (4) PL 17 granted to Dirio Gas and Power Company from PPFL 2 to Dirio Power Plant Site in Port Moresby (Sep. 2020). In addition, two PL applications (APLs) have been received from ExxonMobil for the development of the P’nyang gas fields in PRL 3 and 2 PL applications have been received from Horizon Oil for the development of the Elevela Ketu gas fields in PRL 21 and one extension application have been received from Oil Search for the extension of PL 2 (Kutubu to Kumul Marine Terminal oil pipeline). These applications are currently being reviewed.

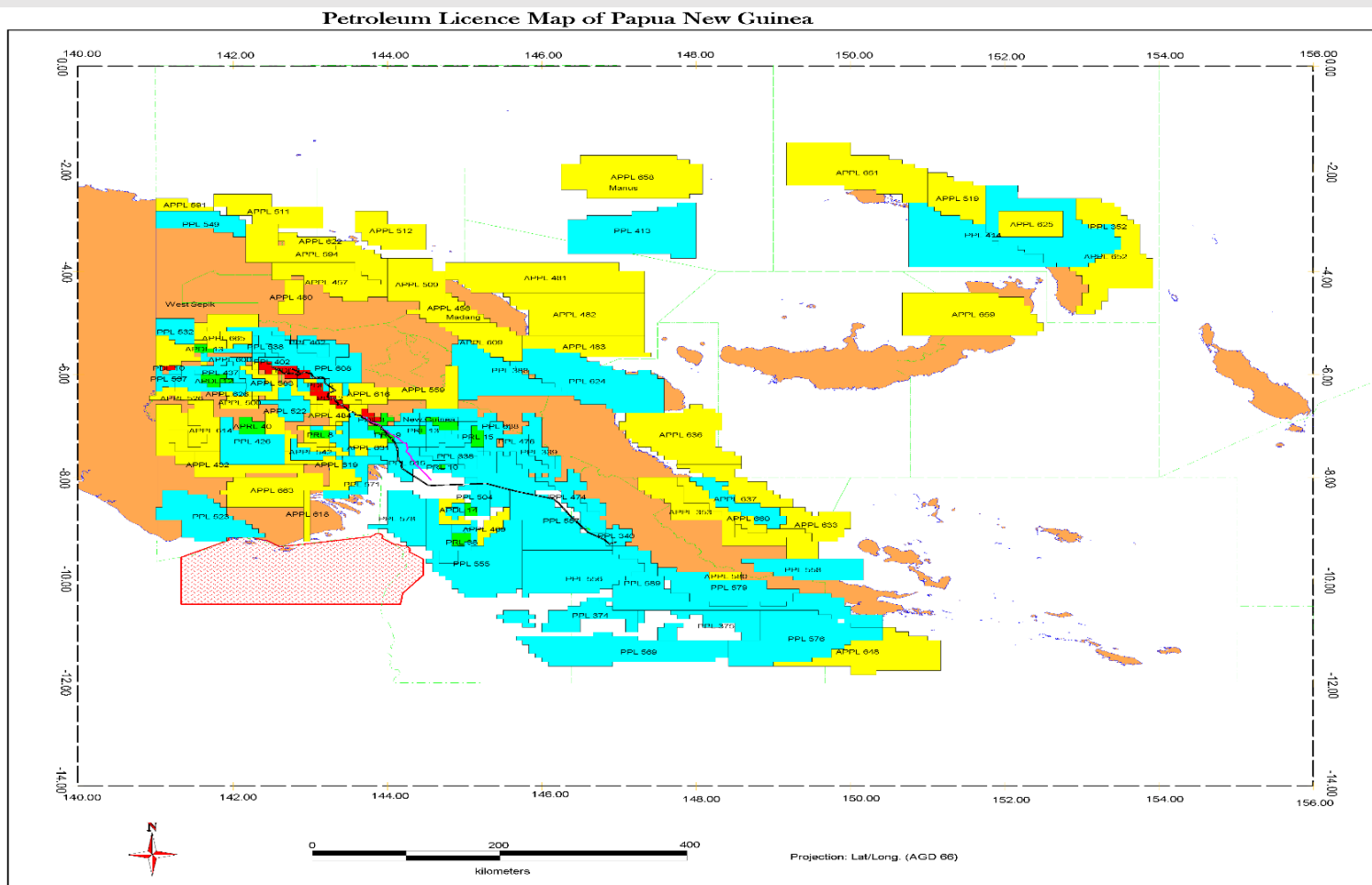
Figure 6: Graph showing the trend for pipeline license since 1990 to 2019. In 2009, five pipeline licenses were granted to ExxonMobil for the PNG LNG project.



Figure 7: Summary of activity in each type of petroleum license in PNG as of July 2021

TYPE OF PETROLEUM LICENSE	NO OF ACTIVE LICENSES	NO OF LICENSE APPLICATIONS IN 2021	EXTENSION APPLICATIONS IN 2021	AWARDS IN 2021
1. Petroleum Prospecting License (PPL)	58	1	1	7
2. Petroleum Retention License (PRL)	11	3	0	3
3. Petroleum Development License (PDL)	10	0	0	0
4. Petroleum Processing Facility License (PPFL)	2	0	0	0
5. Petroleum Pipeline License (PL)	13	0	0	0

**Figure 8: Petroleum Licence Map of Papua New Guinea. Updated to 2020**



#### 4. OIL AND GAS EXPLORATION

Oil was first discovered at Vailala in Gulf province in 1911 but commercial discovery was not until in the 1980s. The first well commenced drilling at Kariava in Gulf Province in 1941. A number of major international oil and gas companies since then entered the country to explore for oil and gas including Oil Search, BP, Chevron and Mobil. A number of discoveries were made since then. Oil production only started at Kutubu in 1991 followed by gas production at Hides with the Hides Gas to Electricity project in 1992 and LNG production in 2014. Figure 9 summarizes PNG’s oil and gas discoveries so far with their reserves. Note that oil reserves stated are only the remaining reserves as of December 2019.

##### 4.1 Exploring for Oil and Gas in PNG

There are a number of international oil and gas companies actively involved in exploration and production of oil and gas in PNG. Currently, there are 25 exploration companies exploring for oil and gas in 58 Petroleum Prospecting Licenses (PPLs) and five companies carrying out appraisal activities in 11 Petroleum Retention Licenses (PRLs). ExxonMobil, Total and Oil Search are

the current major players. BP, Chevron, Mobil and other international oil and gas companies left the country, selling their interests to the current major players.

##### 4.2 Oil and Gas Discoveries

Oil was first discovered at Vailala in Gulf province in 1911 but commercial discovery was not until in the 1980s. The first well commenced drilling at Kariava in Gulf Province in 1941. Most of the commercial oil discoveries made to date such as Kutubu, Agogo, Moran, Gobe Main and South East Gobe have been in production since 1991 and these fields will be depleted soon with only 8% of their recoverable reserves remaining as of December 2019. Many of the gas fields discovered so far are marginal and stranded gas fields, located in some of the remote parts of the country which makes it uneconomical to develop them. The Hides, Juha and Angore gas fields are major gas discoveries and are being developed as part of the PNG LNG project. Other major gas discoveries such as P’nyang field in PRL3, Elk and Antelope fields in PRL15, Eivala and Ketu gas fields in PRL21, Stanley gas field in PDL 10 and Paska gas field in PPL 328 are in their advance development stages. Figure 9 lists the oil and



gas discoveries in PNG so far with their current remaining reserves and current operators.

**Figure 9: Table showing discoveries of oil and gas fields in PNG with their reserves and current operators.**

OIL AND GAS DISCOVERIES WITH THEIR RESERVES					
LIST NOT EXHAUSTIVE					
DISCOVERIES	YEAR	CURRENT LICENSE TYPE	CURRENT OPERATOR	OIL/COND. RESERVES (MMBO)	GAS RESERVES BCF (2P)
Barikewa	1958	PRL 49	KPHL		605
Bwata	1960	PRL 39	ExxonMobil		66
Cobra/lehi	1960	PRL 14	Oil Search		72
Uramu	1968	PRL 50	KPHL		92
Pasca	1968	PPL 328	Twinza	37.7	160
Juha*	1983	PDL 9	ExxonMobil		578
Kutubu*	1986	PDL 2	Oil Search	17,807.0	1,733
Hides*	1987	PDL 1	Exxon Mobil		6,936
Pandora	1988	PRL 38	Repsol		644
Agogo	1989	PDL2	Oil Search	10,289.0	
Angore*	1990	PDL 8	ExxonMobil		1,079
Elevala/Ketu	1990	PRL21	Arran Energy	50.4	1,000
P'nyang	1990	PRL3	ExxonMobil	78.0	4,600
SE Gobe	1991	PDL3	Oil Search	231.0	156
Gobe Main*	1993	PDL4	Oil Search	217.0	159
Paua	1995	PPL378	Gini Energy		
Moran*	1996	PDL2&5	Oil Search	20,329.0	344
Stanley	1999	PDL10	Arran Energy	11.4	44
Kimu	1999	PRL 48	KPHL		361
Douglas	2006	PRL40	Repsol	30.0	800
Pukupuk	2006	PRL40	Repsol	0.1	365
Elk/Antelope	2006	PPL238	Total	64.0	6,200
Flinders/Hagana		PRL41	Oil Search		1,100
Ubuntu		PRL28	Arran Energy		
Triceratops		PRL 39	ExxonMobil	1.5	30
Muruk	2016	PPL 402	Oil Search		
<b>TOTAL</b>				<b>49,146</b>	<b>27,124</b>

*Note: The discoveries list is not exhaustive and reserves of some discoveries are not stated due to lack of data in time for the compiling of this information paper. Marked with asterisk and highlighted in red are current producing oil and gas fields. The reserves indicated for those fields are the current remaining reserves as of December 2019. Only Hides is the producing gas field for the foundation PNG LNG project.*

### 4.3 Oil Reserves

Commercial discovery of oil was not until in 1986 and production started in 1991 at Kutubu. Cumulative oil production as of December 2019 is 537,486 MSTB (92%). The country's producing oil fields are now almost depleted with a remaining recoverable reserve of 48,872 MSTB as of December 2019. No new oil discovery has been made yet. Condensates from the gas fields are the only remaining oil reserves of the country. More effort from the State in terms of policies and incentives are required to encourage exploration in the four underexplored basins to unlock the oil potential in the country.

### 4.4 Gas Reserves

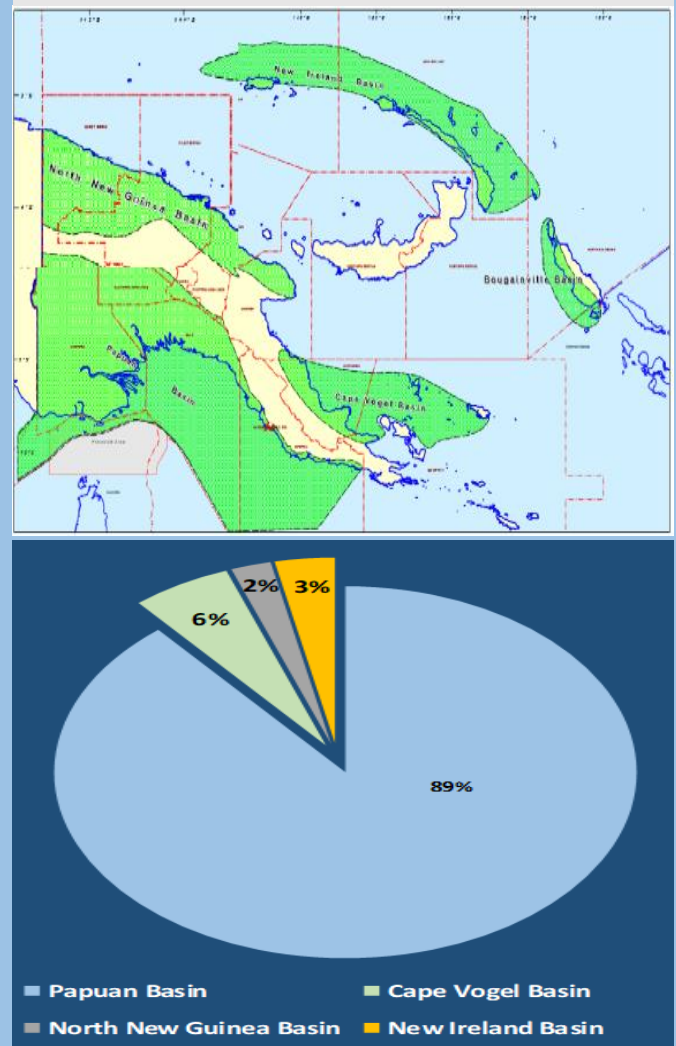
PNG has an estimated total recoverable gas reserves (2P) of more than 25 trillion cubic feet of gas (TCF). Some gas reserves for the discovered fields are stated in Figure 9 above. All discovered gas fields are located in the Papuan Basin and most of them are marginal and stranded gas fields. Currently, only the Hides gas field (5.37TCF) is producing for the PNG LNG project. Angore

(1.079 TCF) and Juha (0.578 TCF) gas fields are part of the foundation PNG LNG project and they will be developed to support LNG production.

### 4.5 Exploration Potential

PNG has five petroleum basins which has the potential to hold hydrocarbon reserves as shown on Figure 10. Namely, the Papuan Basin, Cape Vogel Basin, New Ireland Basin, North New Guinea Basin and the Bougainville Basin. The Papuan Basin is the only petroleum basin system in the country that has been fully explored and currently producing oil and gas with 89% licensed. The other four basins are still largely under explored and there could be potential for oil or more gas discoveries in the future. More effort from the State in terms of policies and incentives are required to encourage exploration in the four underexplored basins to unlock the oil potential in the country.

**Figure 10: The five main Petroleum Basins in PNG and percent of exploration in each basin as of July 2021.**



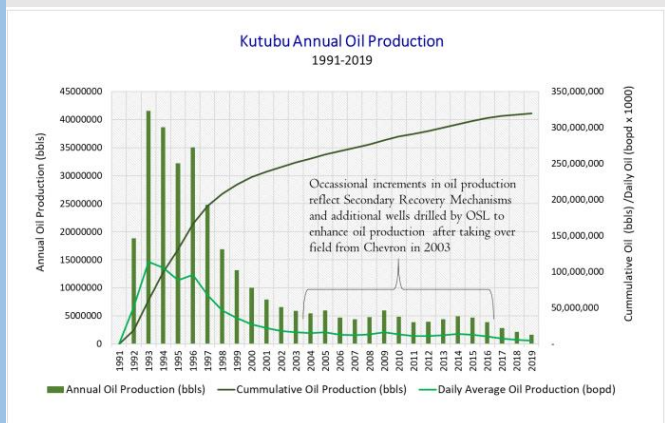
## 5. OIL AND GAS PRODUCTION

PNG's first production started in Kutubu in 1991 followed by Hides Gas to Electricity in 1992. PNG's first oil refinery was commissioned in 2004 to process both local and imported oil. PNG's first LNG cargo was exported in 2014. PNG's oil production has been fast declining since 2000 with a remaining recoverable reserve of 48,872 MSTB (8%) as of December 2019. Without more oil discovery, PNG's future of the petroleum sector lies in gas and LNG production. Only the Hides gas field is producing gas for the foundation PNG LNG project. Cumulative Oil production for all oil fields as of December 2019 is shown on Figure 16 and 17 and cumulative gas production as of December 2019 is shown on Figure 19.

### 5.1 Kutubu

The greater Kutubu oil fields were discovered in 1986 and production started in 1991, producing at an average daily rate of 100,000 barrels per day and at peak performance, 150,000 barrels per day. Cumulative oil production from the Kutubu fields as of December 2019 is 319,77 MSTB (95%). The Kutubu field has a remaining recoverable reserve of 17,807 MSTB (5%) as of December 2019. The associated gas cap is now being produced as part of the PNG LNG project. Figure 11 shows the Kutubu oil production as of December 2019.

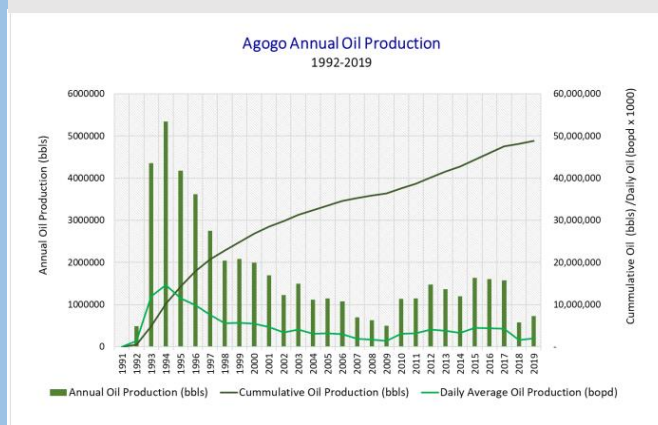
Figure 11: Kutubu Oil production as of December 2019



### 5.2 Agogo

The Agogo oil field was discovered in 1989 and production started in 1991. Cumulative oil production from the Agogo field as of December 2019 is 48,836 MSTBO (83%). The Agogo field has a remaining recoverable reserve of 10,289 MSTBO (17%) as of December 2019. The associated gas cap will be developed as part of the PNG LNG project. Figure 12 shows the Agogo oil production as of December 2019.

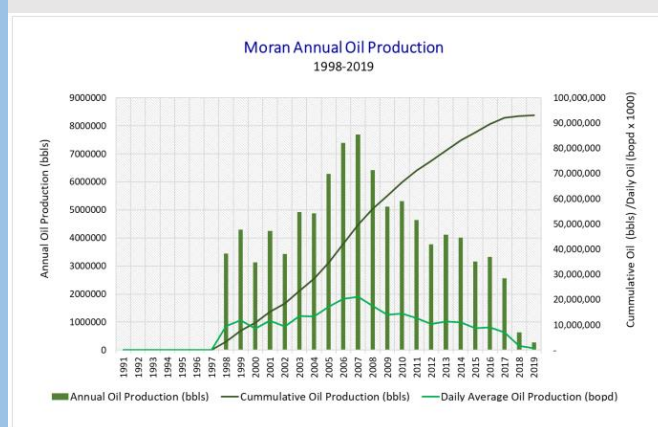
Figure 12. Agogo Oil production as of December 2019



### 5.3 Moran

The Moran oil fields were discovered in 1996 and production started in 1998. As shown on Figure 13, the cumulative oil production from the Moran fields as of December 2019 is 93,035 MSTB (82%). The remaining recoverable reserve of the Moran fields as of December 2019 is 20,329 MSTBO (18%). The associated gas cap will be developed as part of the PNG LNG project.

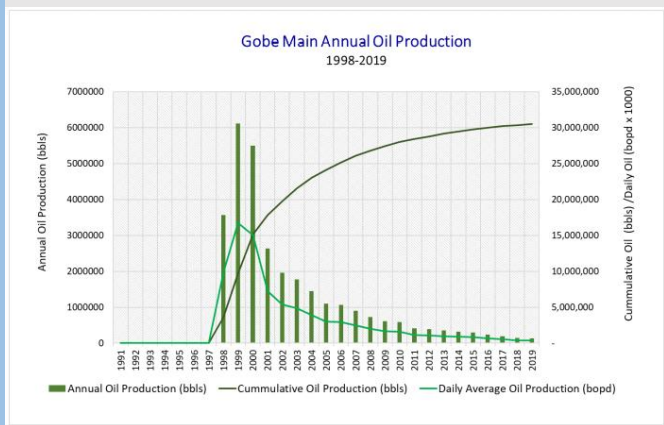
Figure 13: Moran Oil production as of December 2019



### 5.4 Gobe Main

The Gobe Main oil field was discovered in 1993. The field production started in 1998. Cumulative oil production from the Gobe Main field as of December 2019 is 30,476 MSTB (99%) as shown on Figure 14. The field is almost depleted with a remaining recoverable reserve of 217 MSTBO (1%) as of December 2019. The associated gas cap will be produced as part of the PNG LNG project.

**Figure 14. Gobe Main Oil production as of December 2019**



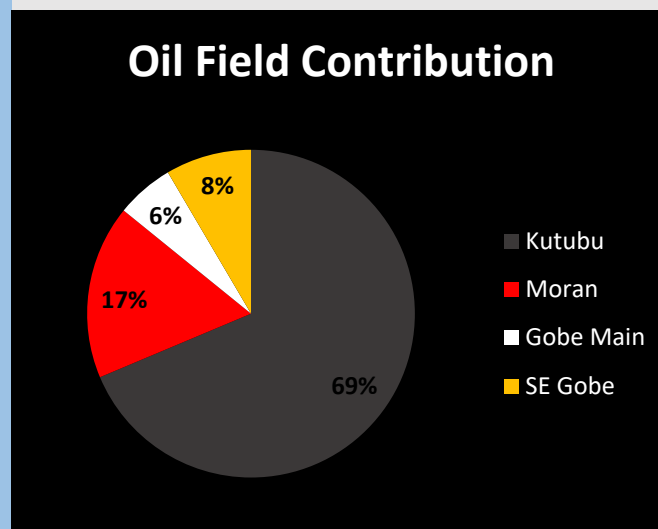
**Figure 16: Cumulative Oil production as of December 2019**

Field	Oil & Condensate in Place (MSTB)	Category	Recovery Factor	Estimated Ultimate Recovery (MSTB)	Cumulative Production As of 31 Dec 2019 (MSTB)	Remaining Recoverable Reserves (MSTB)	Remaining Recoverable Reserves (%)
Kutubu	556,232	1P	60%	334,263	319,777	14,486	4%
		2P	61%	337,584		17,807	5%
		3P	62%	341,877		22,100	6%
Agogo	245,738	1P	23%	56,717	48,836	7,881	14%
		2P	24%	59,125		10,289	17%
		3P	25%	61,694		12,858	21%
Moran	221,047	1P	49%	108,692	93,035	15,657	14%
		2P	51%	113,364		20,329	18%
		3P	54%	120,152		27,117	23%
Gobe Main	69,097	1P	44%	30,556	30,476	80	0%
		2P	44%	30,693		217	1%
		3P	45%	30,771		295	1%
South East Gobe	130,964	1P	35%	45,435	45,361	74	0%
		2P	35%	45,592		231	1%
		3P	35%	45,695		334	1%
TOTAL	1,223,078	2P	48%	586,358	537,486	48,872	8%

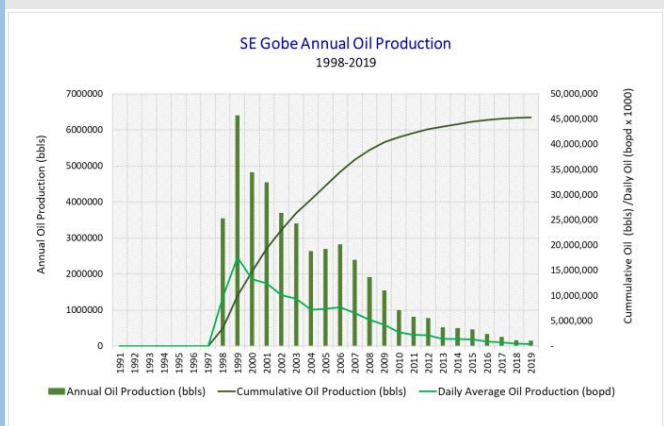
**5.5 South East Gobe**

The South East Gobe oil field was discovered in 1991 and production started in 1998. Cumulative oil production from the South East Gobe field as of December 2019 is 45,361 MSTB (99%) as shown on Figure 15. The field is almost depleted with a remaining recoverable reserve of 231 MSTB (1%) as of December 2019. The associated gas cap will be produced as part of the PNG LNG project.

**Figure 17: Oil field production contribution to PNG's oil production as of July 2021**



**Figure 15: South East Gobe Oil production as of December 2019**



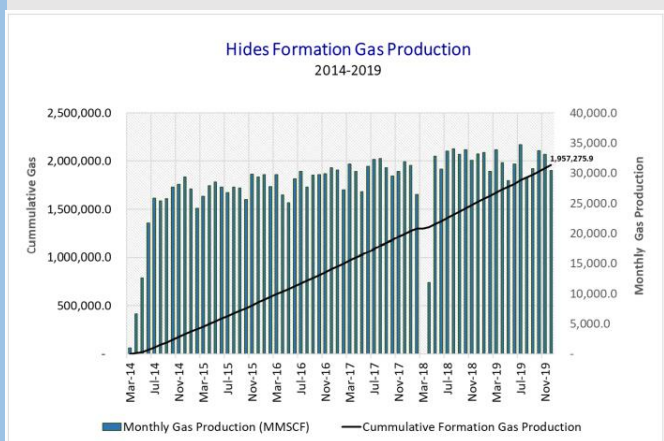
**5.6 Hides**

The Hides gas field was discovered in 1987. The field has a total recoverable 2C reserves of 5.4TCF. Hides is the major gas field underpinning the foundation PNG LNG project, which exported its first LNG cargo in 2014. Total Cumulative Gas (formation gas including the condensate) produced as of Dec 2019 was 1,957,276 MMSCF<sup>4</sup>, which is estimated to be around 28% of the recoverable 2C Hides gas reserves and 25% of OGIP<sup>5</sup>. Estimated end of field life based on Estimated Ultimate Recovery (EUR) is 2034. Hides production profile as of December 2019 is shown on Figure 18.

<sup>4</sup> MMSCF means million standard cubic feet

<sup>5</sup> OGIP means original gas in place.

**Figure 18: Hides Gas production as of December 2019**



## 5.7 Juha and Angore

Angore gas field in PDL 8 and Juha gas field in PDL 9 are part of the greater PNG LNG phased development. Angore was supposed to be developed as part of the phase 2 development but was delayed due to technical (well integrity issues) and certain landowner issues. The Juha gas field will be developed in phase 5 (2024) of the phased PNG LNG development. Currently these two gas fields are not producing. Figure 19 shows PNG LNG gas production as of December 2019.

**Figure 19: Gas production as of December 2019**

Field	Category	OGIP (TCF)	Recovery Factor	Estimated Ultimate Recovery (TCF)	Cumulative Gas Production as at Dec 2019 (TCF)	Remaining Recoverable Reserves (TCF)	Remaining Recoverable Reserves (%)
Hides	1C	7.395	88%	6.48	1.957	4.979	72%
	2C	7.703	90%	6.936			
	3C	8.720	89%	7.788			
Angore	1C	1.354	65%	0.879	0	1.079	100%
	2C	1.546	70%	1.079			
	3C	1.716	75%	1.293			
Juha	1C	0.695	76%	0.528	0	0.578	100%
	2C	0.741	78%	0.578			
	3C	0.814	79%	0.64			
<b>TOTALS</b>		<b>9.990</b>	<b>86%</b>	<b>8.593</b>	<b>1.957</b>	<b>6.636</b>	

## 6. PLANNED GAS PROJECTS

A number of gas projects are in their development stages. These include the Papua LNG Project (PRL15) operated by Total, P'nyang LNG project (PRL3) operated by ExxonMobil, Pasca Gas Project (PPL328) operated by Twinza Oil, and Elevala Ketu (PRL21) and Stanley (PDL 10) gas projects operated by Arran Energy.

## 6.1 Papua LNG Project

The Papua LNG project is operated by Total E&P as the Operator. The project will see the development of the Elk and Antelope gas fields located in PRL 15 in the Gulf Province of Papua New Guinea, approximately 350 km North West of Port Moresby. The Elk and Antelope gas fields were first discovered in 2006 by InterOil. Further appraisal work proved the Elk and Antelope fields to have a combined contingent resource estimate of 6.2 trillion cubic feet (TCF) of gas and 98 million barrels (mmbbls) of condensate.

The current Joint Venture (JV) partners to the project are; Total (Operator), Exxon Mobil, and Oil Search Limited.

The project consists of an upstream development of the Elk and Antelope gas fields and downstream development of LNG production at the existing foundation PNG LNG plant site at Caution Bay near Port Moresby. In general, the proposed upstream development concept comprises production wells, gathering systems and the proposed central processing facility (CPF) to be located within PRL 15 (APDL). The CPF consists of slug handling, separation, gas conditioning and compression equipment to supply dry gas and condensate to the existing PNG LNG plant at Caution Bay near Port Moresby. The dry gas and condensate will be transported in two separate pipelines of different diameters along the same right of way, all the way to the existing foundation PNG LNG Plant site (PPFL2) near Port Moresby to be processed into LNG and exported through the existing LNG export facilities. The downstream facilities will include two LNG trains of each 2.7MTA capacity. However, the Papua LNG project will share common facilities with the PNG LNG project at the downstream such as LNG export facilities and utilities.

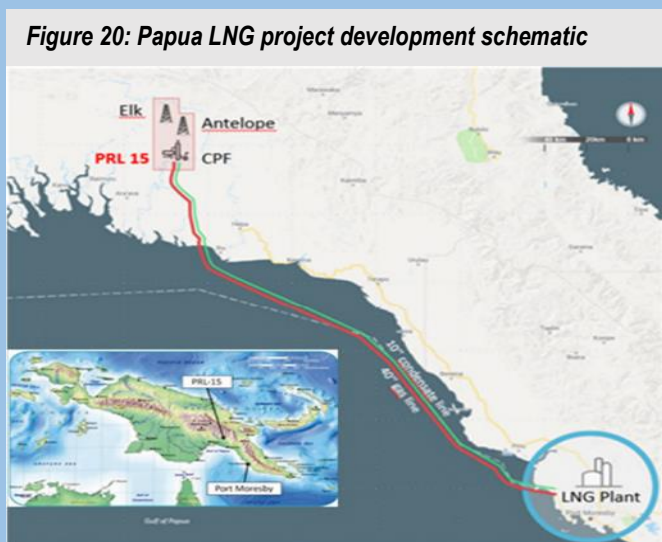
The Papua LNG Gas Agreement was signed on 09th April 2019 defining its fiscal framework. However, a number of key regulatory compliance requirements still remain outstanding. These include: (1) application for a Petroleum Development License (APDL) with supporting technical documents such as the final draft of the field development plan (FDP) and Pre-FEED and FEED<sup>6</sup> documents; (2) environmental permit approval from CEPA with social, economic and environment impact studies; (3) landowner identifications and ministerial determinations; (4) conducting of development forum (5); and grant of a PDL.

The signing of the Gas Agreement will allow the Papua LNG project to proceed with front end engineering and

<sup>6</sup> FEED means front end engineering and design

design related activities and social, economic and environment impact studies. With the Gas Agreement concluded, we are hoping that a decision on FEED and FID<sup>7</sup> will be announced soon, to be followed by an application for a PDL. The proposed pipeline route for the treated gas and condensate is shown on Figure 20.

It is anticipated that the project will enter into front end engineering and design (FEED) and final investment decision (FID) between 2022-2023. Procurement and construction are expected to begin between 2025-2026 with export of first gas between 2028-2029.



Source: Total E&P

## 6.2 P'nyang LNG Project

Esso Highlands (EHL) made an application for a new Petroleum Development Licence (APDL13) pursuant to Section 53 of the Oil and Gas Act, 1998 on 06 February 2015. The Petroleum Development Licence Application is in connection with the proposed development of the P'nyang gas fields in PRL3 in the North Fly District of Western Province. A total of three (3) licence applications; a petroleum development licence (APDL 13), a Gas pipeline (APL12), a Condensate pipeline (APL13) pertinent to the project have been submitted to the DPE for approval.

After the successful drilling of the P'nyang South 2 well, the NSAI certified P'nyang field resource committed to this project is 4.36 TCF of gas (2C).

The project consists of an upstream development of the P'nyang gas and downstream development of LNG production at the existing foundation PNG LNG plant site at Caution Bay near Port Moresby. In general, the

proposed Licence comprises production wells, gathering systems and the proposed P'nyang Gas Conditioning Plant (PGCP) located within PRL3 (APDL). The PGCP consists of slug handling, separation, gas conditioning and compression equipment to supply dry gas and condensate to the existing PNG LNG project infrastructure. The dry gas will be transported to a tie-in point on the existing PNG LNG gas pipeline (PL 4) near Kutubu for transmission to the foundation PNG LNG Plant site (PPFL2) near Port Moresby to be processed into LNG and exported through the existing LNG export facilities. The condensate will be transported to the Kutubu Central Processing Facility (CPF), located within Southern Highlands Province. Condensate will be commercialized through the existing oil export infrastructure at Kumul Marine Terminal.

The first review was conducted in November 2015 resulted in an instrument being issued by the Director Oil and Gas Act on 09th November 2016 requesting the Operator for further written information in connection with the Application. The instrument was issued because of the lack of supporting technical detail information in the original application. The 2nd review was conducted and concluded on November 2019.

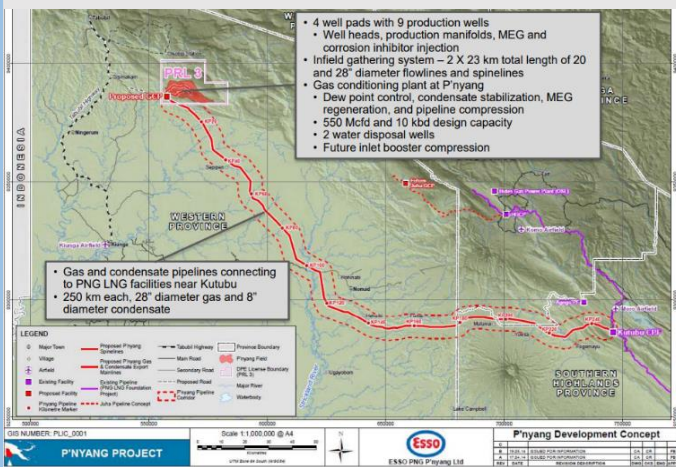
Signing of the Gas Agreement, conducting of the Development Forum and award of a PDL still remain outstanding regulatory compliance requirements before the project is sanctioned for development.

At this stage (2021), a new State Negotiation Team (SNT) is in negotiations with ExxonMobil on the fiscal terms for the P'nyang project Gas Agreement.

After the signing of the gas agreement, it is anticipated that the project will enter into front end engineering and design (FEED) and final investment decision (FID).

<sup>7</sup> FID means final investment decision

**Figure 21: P'nyang LNG project development schematic**



Source: ExxonMobil

### 6.3 Pasca A Gas Project

Twinza Oil (PNG) Limited (the Operator) made an application on the 30th of June 2015 for a Petroleum Development Licence (APDL) pursuant to Section 53 of the Oil and Gas Act in connection with the development of the Pasca Gas field in PPL 328. The Pasca field is located offshore in the Waters of Gulf Province 9km south of Port Moresby. The Pasca Gas A Project will be developed in two phases;

- Phase I: (Gas re-cycling and liquid stripping): Production and sale of condensate and LPG whilst reinjecting dry gas into the reservoir.
- Phase II: (Gas blowdown): Production and export of LNG whilst continuing the production of condensate and LPG.

The Pasca gas field will be developed offshore using floating production, storage and offloading (FPSO) vessel. This production concept has never been used in PNG before. If the project is successfully developed as proposed, Twinza Oil will be the first company to develop an offshore gas field in PNG. In addition, the Pasca project is also the first project in PNG without project area landowners. This means any project benefits due for the landowners will be shared between the provincial government (PG) and local level government (LLGs) instead.

The licensee has submitted a range of technical documents in support of the application for the Petroleum Development Licence (APDL) describing and detailing the facilities to be installed. The Department has conducted technical due diligence on the information submitted to ensure regulatory compliance requirements

are met. The review is still ongoing with FEED to be executed after the signing of the gas agreement.

The Gas Agreement between the State and the Applicant to agree on the fiscal terms of the development of the Pasca A project has been completed in July 2021 and signing is pending. The project will announce FEED and FID after the signing of the gas agreement.

### 6.4 Stanley Gas Project

Arran Energy is now the operator of the Stanley Gas Project, taken over from Repsol by buying the interests of Repsol in PDL10.

The Stanley gas condensate field was discovered in 1998 by Santos Niugini Exploration Ltd after drilling the Stanley-1 well in their exploration permit 157. PRL 4 was subsequently awarded on the 1st September 2000, over the discovered gas resource. The Stanley Gas Condensate field is located 40km northwest of Kiunga Town in the Western Province. Three exploration wells were drilled in the area and results indicated that the field is commercially viable with a certified mean contingent resource of 361 bcf of gas and 11.4mmbbl of condensate.

Horizon Oil Limited, the then Operator of PRL4 made an application for a new Petroleum Development Licence (APDL) pursuant to Section 53 of the Oil and Gas Act for the development of the Stanley Gas-Condensate field on 28 August 2012. The applicant has submitted technical information in support of the application, describing the facilities to be installed and operated.

The development scheme proposed consists of two production wells and two injection wells. A refrigeration-based production facility to be constructed on the existing Stanley-2 well site within the Stanley gas field. Gas will be processed and condensate will be recovered, stabilized, stored and transported via a pipeline to Kiunga for barging down the Fly River to markets. Generally, development plans for the Stanley field development focus on early production of condensate with reinjection of produced gas. The re-injected produced gas would be stored in the reservoir until gas markets mature and gas sales agreements are established. Production facilities have been designed such that they are capable of delivering both product streams (condensate & gas) to market simultaneously if required.

Gas Agreement for the Stanley Gas project was signed in April 2014 and PDL 10 was awarded to Horizon Oil in May 2014. The development of the field was delayed up until now due to drop in oil prices at that time.

With Arran Energy as the new operator, the development concept may change. Arran Energy is looking into condensate stripping and sales, diesel stripping & sales and gas re-injection for future commercial options. An aggregation project with the Elevela Ketu project and nearby stranded gas fields remains a viable option. Figure 22 shows the proposed development scheme of the Stanley project.

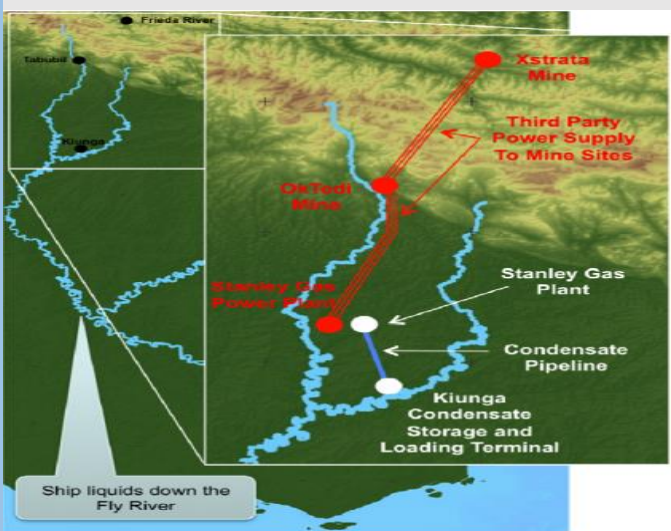
The Department has established a review team in 2020 for the Stanley Gas project to start discussions with the new operator to progress the project.

### 6.5 Elevela Ketu Gas Project

Arran Energy is also the operator of the Elevela Ketu Gas project, taken over from Horizon Oil by buying the interests of Horizon Oil in PRL 21.

Horizon Oil (Papua) Ltd as the then Operator of PRL 21,

**Figure 22: Stanley Gas project development schematic**



**Source: Horizon Oil**

on behalf of its JV partners has made an application for a new petroleum development Licence (APDL 11) and pipeline licences (APL12 and APL13) pursuant to Section 53 and 70 of the Oil and Gas Act respectively on 17 March 2014 to commercialize the Elevela/Ketu gas resources located in PRL 21 in the Western Province of Papua New Guinea.

The proposed development concept is similar to the Stanley Gas project. The project involves gas production from the Elevela, Ketu and Tingu gas reservoirs, and construction/installation of process facilities to produce

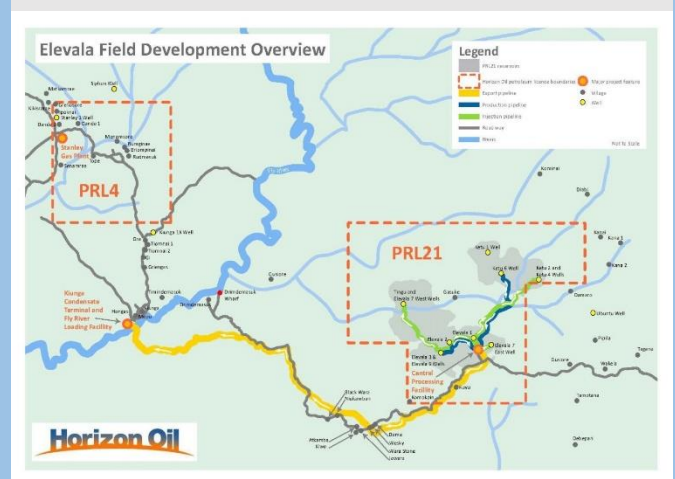
condensate. Dry gas will be re-injected back into the reservoir for future development. The recycled dry gas will be produced later as gas markets mature and gas sales contracts are established. Construction and procurement were planned to begin year-end 2015 and first condensate cargo expected in 2016. The gas resources to underpin this development has been estimated at 1.0 trillion cubic feet of gas and 55 million barrels of condensate.

All statutory compliances and due diligence have been completed including technical review, LOBID, Ministerial Determination, and Environment Permit. Only the Staging of the Development forum in Kiunga and grant of the PDL remain outstanding.

However, with Arran Energy as the new operator, the development concept may change. Arran Energy may be also looking into a similar concept like that of Stanley project with condensate stripping and sales, diesel stripping & sales and gas re-injection for future commercial options. An aggregation project with the Elevela Ketu project and nearby stranded gas fields remains a viable option. Figure 23 shows the proposed development scheme of the Elevela Ketu project.

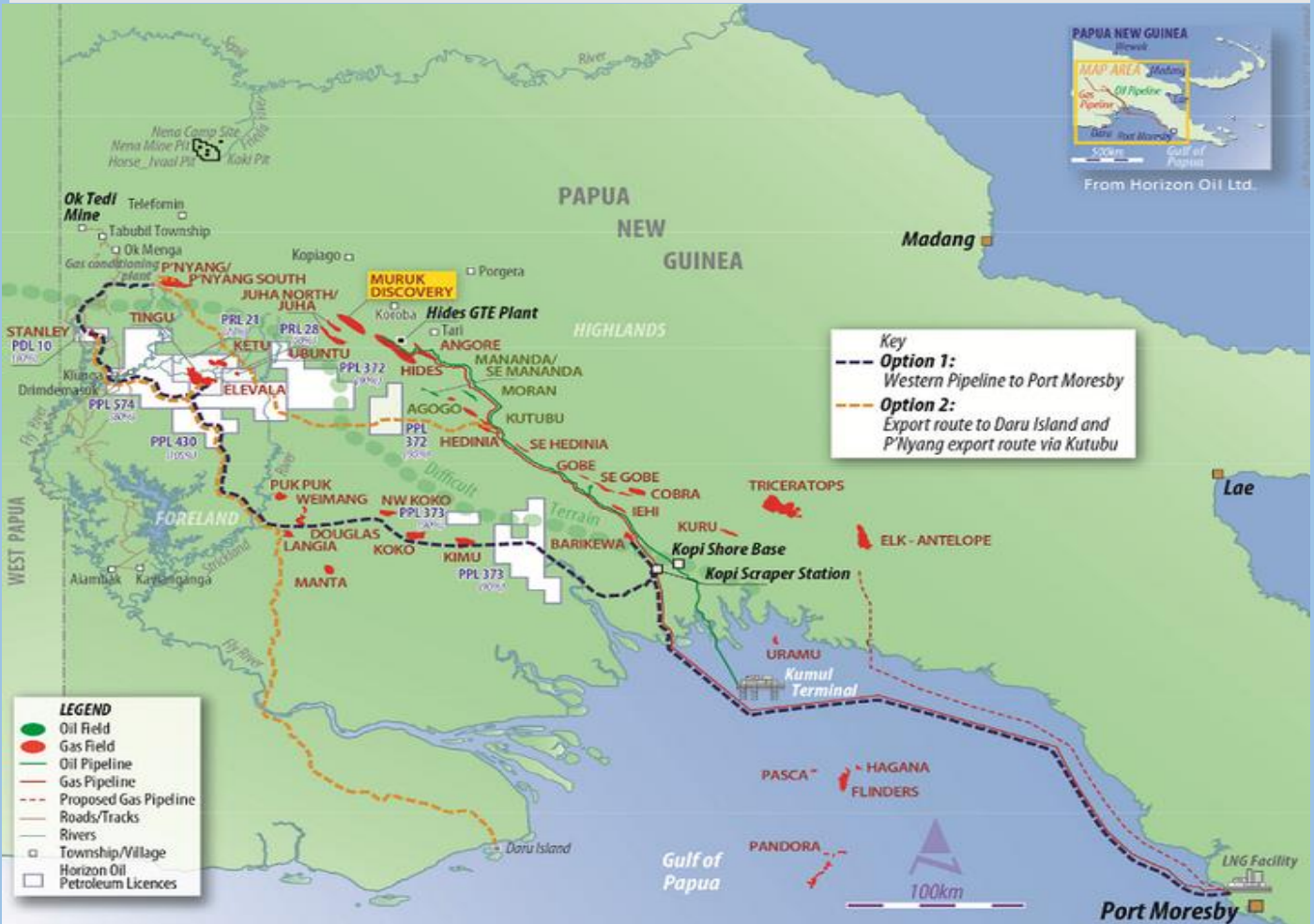
Depending on how the new operator will want to pursue the development of the Stanley and Elevela Ketu projects, the Department stands ready to support and guide them in terms of regulatory compliance for the timely development of these projects.

**Figure 23: Elevela Ketu Gas project development schematic**



**Source: Horizon Oil**

Figure 24: Locations for PNG's major oil and gas discoveries under development



## 7. INHOUSE PROJECTS

The Department has undertaken a number of major inhouse projects (KRAs) in 2020 as briefly discussed below. Despite the COVID 19 which to a greater extent delayed the progress of many of the Department's activities, we managed to ticked off some of our KPIs towards the end of 2020 and there still a number of outstanding tasks to achieve our targeted KRAs.

### 7.1 Office Space

The Department is planning to relocated its office to the newly constructed Grand Columbia Building at Waigani at the end of this year 2021. The lease agreement was signed in mid-November 2020 on a "Lease Buy Back" arrangement. Because the building was not partitioned, the Department had to secure funding to partition six floors of the new building. This has delayed in relocating as initially planned.

## 7.2 Corporate Plan

The Department drafted its first Corporate Plan in 2020 to align the operations of the Department under Medium Term Development Strategic Plan 2010-2030 and Vision 2050. Further reviews of the draft corporate plan continued towards the end of 2020. The final draft was completed and sent to DPM on 18<sup>th</sup> December 2020 for official recognition before its launching. The formal launching will happen before the end of the year after official notices are sent to key Government Agencies especially DPM, PMs Office, Treasury and Finance.

## 7.3 Fees and Charges

The review on the existing fees and charges has given the DPE the opportunity to review the existing fees and charges, its structure, taken into consideration new developments such as LNG developments, long distance pipelines and other areas, those were not adequately covered under the existing fees and charges structure.



Section 71A of the Public Finances (Management) Act, 1995 (as amended 2016) provides the legal authority for the Department of Petroleum and Energy (“the DPE”) to charge statutory fees and charges on a range of matters relating to the activities and operations of the Petroleum industry in Papua New Guinea. The review exercise was carried out in line with the Marape-Basil government’s overall drive to maximise non-Tax revenue to the State. This is outlined in the government’s Medium-Term Revenue Strategy (MTRS), 2018-2021. A number of government departments and agencies have been taking part in this activity, organized and coordinated by the Department of Finance. The fees and charges are subject to annual review according to CPI increases but for the Department of Petroleum, they were long overdue since 1978. Hence, the increases were calculated, taken into consideration CPI increases since 1978.

As the Department of Petroleum and Energy (“the Regulator”) operates on public funding from the Government, the objective of the revised fees and charges is to ensure that adequate funding is made available to meet the administrative and regulatory functions of the department, through increased budget support to the Department.

To further improve and enhance the efficiency and effectiveness of the regulatory functions of the department, the department is moving into a new “Petroleum Authority”, which will be independent and self-funded by charging a fee for service to sustain its operations. The Department moving into a new Petroleum Authority is already a firm commitment by the Government contained in the Organic Law on Papua New Guinea’s Ownership of Minerals and Petroleum and Commercialisation of State Business 2020. In that Organic Law, National Petroleum Authority is a prominent feature as an independent and self-funded entity, which will charge and collect fees to sustain its operations.

The Gazettal of the fees and charges is planned at the end of this month August 2021.

#### **7.4 Local Content Plan**

The NEC Decision 112/2016 directed the Department of Commerce and Industry to work with Department of Petroleum and Energy (DPE) to draft the proposed National Content Plan and Local Purchase Obligation Policy. Other relevant State agencies were also required to work with DPE to implement the proposed National content Plan and Local Purchase Obligation Policy. Since then, DCI and DPE worked together with other

stakeholders to ensure NEC decision NO 112/2016 is fully implemented.

With the facilitation of the Gas Project Coordination Office, a draft petroleum sector local content policy was developed with the objective to maximize benefits for nationals through contracts, employment and training and other opportunities in the development of petroleum resources and provide local content plan and guidelines for the different phases of a project’s life starting from early works, construction, operation and decommissioning.

A draft NEC submission is being prepared to set up a working committee purposely to set specific policy guidelines in relation to oil and gas projects.

A number of meetings and consultations are planned for this year to further progress the implementation of the Local Content Plan. A State stake holder consultation on the Draft petroleum sector Local Content Policy is planned at the end of August 2021. Another consultation workshop with industry and non-government agencies is planned at the end of September 2021. The NEC submission of the Petroleum Sector Local Content Policy white paper is planned at the end of November 2021.

#### **7.5 Amendments**

**Oil and Gas (Amendment) Act 2020 (No.11 of 2020) –** The Department has amended certain sections of the Oil and Gas Act, 1998 to improve the current legislation and regulatory framework of the petroleum sector in consistent with the Marape government’s overall drive to maximize the State’s benefits of the development of petroleum resources in the country. A number of changes has been made to the Oil and Gas Act, 1998 and these changes have been enacted by the National Parliament into law in its May-June 2020 session and has been certified on the 26 June 2020. The changes include: new Section 54(3), new Section 56(5), New Section 56A, New Section 56B, New Section 56C, New Sections 57A and 57B. Sections 83 (Petroleum Agreements), 84 (Gas Agreements) and 85 (Agreements by the State) were amended slightly to provide more clarity of the signing power of the Minister and the matters to be contained in such agreement. In addition, we are also proposing amendments to Section 169 to make clan vetting or LOBID mandatory in law as well as proposing amendments to Section 47 to include Social Mapping as a regulation.

## 7.6 MOA Reviews

All oil project MOA reviews are outstanding including the PNG LNG License Based Benefit Sharing Agreements (LBBSA). The Department is working closely with relevant State agencies to identify possible solution to address these tasks. In February 2012, the Department attempted to hold the Kutubu MOA review in Moro, Kutubu. However, due to a leadership tussle and various court cases on the issue of the forum and State commitments, the review was deferred indefinitely. Also, in April 2012, the Department attempted the Moran DA review in Mount Hagen but it also failed due to infighting amongst landowner leaders themselves. The Department is currently assessing whether it should pursue the Gobe MOA. The Department is working closely with relevant State agencies to identify possible solutions to address these issues. The outstanding MOA reviews are listed in Figure 25 below.

**Figure 25: Outstanding MOA Reviews**

NO.	LICENSE AREA.	MOA STATUS.	COMMENTS.
1	Hides GTE Project.	Due for review	Last MOA review was held in 2003.
2	Kutubu PDL 2	Due for review	Last review held in 2008.
3	Moran PDL 5	Due for review	Last Development Agreement review held in 2006.
4	NWM PDL 6	Due for review	DA not reviewed yet.
5	Gobe PDL 3 & 4	Under LTC	Project to be decommissioned in 2020.

## 7.7 License Review

The Department has undertaken full and comprehensive review on the petroleum licenses from 15th June – 2nd July, 2020. The objective of the review was to audit all petroleum licenses and where necessary, improve the licensing systems and standards in the country. The review has resulted in a number of findings and recommendations and policy suggestions to better manage and administer the licensing process in the country.

<sup>8</sup> SMLIS refers to social mapping and landowner identification studies

## 8. LOBID – SPECIAL PROJECT

### 8.1. What is LOBID?

To differentiate between the SMLIS<sup>8</sup> process and LOBID<sup>9</sup> process, SMLIS is a fundamental component stipulated under Section 47 of the Oil and Gas Act, undertaken by the Developer as prerequisite of the APDL process while the LOBID exercise is an ongoing administrative process undertaken by DPE to fulfill the requirements of Sections 169 and 170 of the Oil and Gas Act, 1998. Its objective is to verify, authenticate and finalize the major beneficiary tribes/clans by utilizing all relevant data including, Social Mapping and Landowner Studies (SMLIS), Land Court Decisions, Land compensation records, Rental payment records, etc., for the purposes of disbursing Royalty and Equity benefits to the affected beneficiaries.

### 8.2. Background

Following the signing of the UBSA in May 2009 and the respective LBBSAs in December 2009 in Kokopo, there remained outstanding task of verifying and confirming the legitimate impacted clans along the footprint of the PNG LNG Project. There was a need to develop a workable benefit distribution mechanism for the purpose of disbursing Royalty and Equity benefits earmarked for the affected project area landowners as per Sections 167 & 168 of the Oil & Gas Act. 9. In 2013, the Department of Petroleum and Energy, being the Regulator, was tasked to implement the LOBID process for the PNG LNG Project. Other key stakeholders were also part of the LOBID exercise, including, MRDC, KPHL, Departments of Treasury, Finance, National Planning & Monitoring, Lands & Physical Planning. All field logistics support were facilitated by the Project - ExxonMobil PNG Ltd and Oil Search Ltd. The results of the 2013 LOBID exercise for all the license areas of the PNG LNG Project were published in the Interim Ministerial Determination Gazette No. G192 dated 19th May 2014.

### 8.3. LOBID Status for each Petroleum License Area

The Status of the LOBID exercise undertaken by the Department of petroleum and Energy since 2013 are outlined as follows:

- The LOBID process for the PNG LNG Plant site areas were successfully completed in 2015 with the publication of the final Ministerial Determination Gazette No. G692 of 23rd October 2015.

<sup>9</sup> LOBID refers to landowner benefit identification determination

- Total of 83 major clans from Porebada, Boera, Papa and Rearea villages were confirmed as affected beneficiary clans of the PNG LNG Plant site area.
- So far more than K50 million being Royalty and Equity benefits were paid already to the affected beneficiaries of the PNG LNG Plant site – PPFL 2.
- The LOBID process for the PNG LNG Pipeline segments one to eight were successfully completed in 2017 with the publication of eight separate Ministerial Determination Gazettes.
- Total of 300 major clans from the PNG LNG Pipeline areas were confirmed as beneficiaries.
- The first batch payment of Royalty and Equity benefits for segments one, four, five, seven and eight were done in 2020. The other remaining segments will be paid this year.
- The LOBID process for Hides PDL 1 and Hides PDL 7 were successfully completed in 2019 with the publication of separate Ministerial Determination Gazettes.
- Total of 150 clans were confirmed as beneficiaries of Hides PDL 1 whilst 280 clans were confirmed for Hides PDL 7.
- Certain individuals decided to file for Judicial Review challenging the results of the LOBID exercise in Hides PDL 1 and Hides PDL 7.
- Total of 14 Judicial Review cases were filed of which six cases were successfully dismissed by the State Legal Team whilst the others are still pending.
- MRDC has completed the establishment of Clan Bank Accounts for all the beneficiary clans of Hides PDL 7 and has successfully conducted the election of Directors for the Gas Resources Hides 4 Ltd.
- Hides PDL 7 will be the first from the green field area to receive their Royalty benefits this year.
- The LOBID process for Juha PDL 9 was completed already but pending Legal clearance

before the publication of the Ministerial Determination Gazettes.

- Angore PDL 8 is under the ADR process therefore LOBID was not conducted however the Ministerial Determination Gazette will be published based on the ADR completion reports.
- For the existing PDL areas (brown fields) such as Kutubu, Moran and Gobe, the beneficiary clans were identified already and they have been receiving Royalty and Equity benefits from the Oil projects. The same shall be applied to the PNG LNG benefits.

## **9. KEY CHALLENGES**

### **9.1. Landowner Issues**

Landowner issues have consumed a lot of time and resources, especially the LOBID exercise which often has been delayed due to different landowner factions fighting among themselves over leadership, resulting in certain landowner groups taking out court injunctions to frustrate the LOBID exercise. Also, landowners have been frequenting the Department's headquarters for outstanding Infrastructure Development Grants (IDGs) and ministerial commitments by former Ministers. Lack of political action and timely funding by the government has compounded the landowner issues.

### **9.2. Lack of Capacity and Funding Constraints**

One of the key constraints the Department has been facing is the lack of technical capacity such as specialized softwares used for simulations by the petroleum industry and qualified skilled technical officers to fast track the timely review of the applications for petroleum licenses. Lack of timely funding support to address these critical issues have intensified the challenges. These have caused long delays in the turnaround time for timely regulatory approvals. The unnecessary delays in regulatory approvals are factored negatively into the calculating of the competitiveness and ease of doing business rankings of the country by the World Bank.

### **9.3. Lack of Data and Information for Public Access**

Lack of data and information for public access about the petroleum sector in the country is also one of the key challenges for the Department to promote the petroleum potential of the country to attract potential investors. There are five petroleum basins in the country. The Papuan Basin is the only basin that has been fully

explored and currently producing oil and gas. But the four other basins remain largely underexplored due to lack of data and funding to promote their potential for oil and gas exploration. In addition, the Department has no servers and data storage and management softwares to store and manage its vast petroleum data in digital libraries or convert paper files into digital files to easily store and manage them. The Archives Branch which stores and manages petroleum data and information is poorly resourced and staffed to store and manage files and data about the petroleum industry of the country.

#### 9.4. Lack of Policies and Policy Guidelines

Lack of appropriate policies and policy guidelines are among the key challenges the Department faces in dealing with a lot of the issues as well as promoting, administering and regulating the Petroleum sector of the country. The lack of clear policies and policy guidelines also affects potential investors exploring for potential opportunities to invest in the petroleum sector of the country. The Department has been working hard to address those key policy areas as further discussed below in Section 10 of this information package.

#### 9.5. PNG LNG Legacy Issues

There still remain a number of PNG LNG project related legacy issues that haunt the Department since the signing of the UBBSA<sup>10</sup> and LBBSA<sup>11</sup> in Kokopo in 2009.

- **LBBSA Review** – The review of LBBSA is still outstanding since 2015 after signing in 2009 due to lack of sufficient funding and political support.
- **PG & LLG Benefits Sharing** – The sharing of benefits from the PNG LNG project such as development levy, royalty and equity among the PGs and LLGs still remaining outstanding. The Department had planned on conducting a mini-forum in March 2013 in Kokopo to resolve these outstanding issues but failed due to the Governor for Hela took out a Supreme Court reference on who was actually entitled to all these benefits. Until this exercise is completed, the PGs and LLGs will not receive their share (if any) of the PNG LNG project benefits.
- **UBBSA and LBBSA Service provider claims** – The Department has been dealing with a number

of claims resulted from the Kokopo UBBSA and LBBSA forums in 2009. Most claims under category A and B have since been paid while Category C claims were referred to Department of Treasury to hold onto and pay if a claimant successfully gets the courts to authenticate their claim.

- **Ministerial Commitments** - Ministerial Commitments made by former Ministers of the Department and sanctioned by NEC were paid out in 2011, 2012, and 2013. The Department is doing a full reconciliation and will shortly establish if there are any outstanding commitments and will recommend how these will be addressed. The State Solicitor's Office has advised that Ministerial Commitments are unlawful.

### 10. POLICY WORK IN PROGRESS

Having the required legislation and policy framework in place is essential to the effective and better regulation of the petroleum sector in the country. The Department has been working on a number of policies to enhance and improve the regulatory framework of the petroleum sector.

#### 10.1. Downstream policy

The current policy framework of the petroleum sector mainly deals with the upstream exploration, drilling and production of petroleum resources. It does not cover the downstream operations of refining of crude oil and processing of natural gas as well as marketing of products derived from the processing of crude oil and natural gas.

#### 10.2. Gas Flaring Policy

Gas flaring refers to the combustion or burning of gas during oil and gas recovery or in production process of oil and gas or in petrochemical process. Uncontrolled flaring of gas can result in waste of gas resources or can be very harmful to the environment which is a major concern for greenhouse gas emission and global warming. Therefore, controlling the flaring of gas in a controlled manner using appropriate policies and guidelines is very important to ensure oil and gas operations in the country are carried out in manner not wasting gas through flaring or polluting the environment.

<sup>10</sup> Umbrella Benefit Sharing Agreement - An agreement signed between the State and PNG LNG Project landowners in 2009 in Kokopo establishing the mechanism on how to share the benefits derived from the PNG LNG project.

<sup>11</sup> License Based Benefit Sharing Agreement – An agreement signed between the State and PNG LNG Project landowners

### 10.3. Decommissioning Policy

Decommissioning is the process of ending oil and gas production operations and returning the environment including the ocean and sea floor to its original condition after the oil and gas production facilities reaches end of its production life. It is a complex process that involves time, resources, expertise and a lot of money. There is no policy to provide policy guidelines for decommissioning of the oil and gas facilities built in PNG, most of which have already reached their end of life.

### 10.4. Local Content Policy

The World Bank defines local content as “the extent to which output of the extractive sector generates further benefits to the economy beyond the direct contribution of its value- added through its link to other sectors”. The idea of local content is enshrined into our constitution, laws and other regulations, however, the implementation of it has been lacking. Thus, the importance for local content policies for each revenue sector cannot be ignored.

### 10.5. Project Benefit Sharing Policy

Lack of clear policies and policy guidelines have proved to be a difficult challenge for the Department with many of the project area landowner issues resulting from the sharing of oil and gas project benefits such as royalty, equity and other benefits. It is very important that such policies are in place to provide clear guidelines and mechanisms on how oil and gas project benefits can be shared among different landowner groups, LLGs and PGs.

### 10.6. Domestic Market Obligation (DMO) Policy

In recent times during the negotiations of the PNG LNG project Gas Agreement, Stanley project Gas Agreement and Papua LNG project Gas Agreement, the State has been negotiating hard to retain a certain percentage of the gas for State’s own use such as gas to electricity or for other purposes such as providing feed gas to support the establishment of a local petrochemical industry. A policy on DMO under Section 67 of the Oil and Gas Act, 1998 has been lacking to provide clear policy guidelines for the State to retain a certain percentage of the oil and gas resources for its own use.

### 10.7. Offshore Operational Policy

The waters in PNG are warm and hosts 5% of the world’s biodiversity. In Kimbe bay in West New Britain Province, for instance, is an important biodiversity hotspot. 60

percent of the coral species of the entire Indo-pacific region live there. PNG has gas discoveries in the offshore. The Kumul Marine Terminal is also built offshore. The PNG LNG gas pipeline runs offshore at Kopi to Port Moresby. Because the Oil and Gas Act and Oil, 1998 and Oil and Gas Regulation, 2000 mainly covers onshore and upstream oil and gas exploration and development, the need for a specific offshore policy and policy guidelines and regulations to guide offshore oil and gas exploration and development is important.

## 11. GOVERNMENT POLICY DIRECTION

The State considers the development of petroleum resources as import to social and economic development of the country. The State also recognizes that to develop its petroleum resources requires extensive capital investment from international oil and gas companies. Therefore, to attract major international investors, the State must offer a stable economic and political environment for investors to invest in the petroleum sector.

### 11.1 Production Sharing Contract (PSC)

The Marape Government’s general policy direction with respect to the petroleum and mining sectors is to reform the current mining and petroleum fiscal regime from the current concession system to an appropriate production sharing arrangement system. This will involve reform of the Organic Law on Papua New Guinea’s Ownership of Minerals and Petroleum to provide the Constitutional basis for resources ownership as well as legislative reform to set out the details of the accepted Production Sharing Arrangement. The government will always consider a balance approach to the development of its petroleum resources for investor to make a reasonable return on exploring for and developing oil and gas resources in Papua New Guinea.

### 11.2 Organic Law on Resources Development and Enabling Legislations

**Organic Law** – the Marape government has undertaken reform on the Organic Law on Papua New Guinea’s Ownership of Minerals and Petroleum resources to provide the Constitutional basis for resources ownership, transfer, commercial arrangements, and involving of Kumul Companies, as well as establishing the new Petroleum Authority. That law is already in its final draft stages, awaiting Certificate of Correctness from the First Legislative Council before it is passed onto Parliament for parliamentary process of Gazettal and distribution to

Members of Parliament in preparation for its First Reading.

**Enabling Legislations** – The reform on the Organic Law on Papua New Guinea’s Ownership of Minerals and Petroleum will also involve legislative reform. This includes amendments to the Oil and Gas Act, 1998 and enacting the law that will establish the Petroleum Authority as well as setting out the details of the accepted Production Sharing Arrangement. Work on this is in progress.

## 12. RESTRUCTURE OF DPE

The Department of Petroleum and Energy administers and regulates one of the important and key economic sectors in the country. To that end, it is important that the Department is well structured and positioned to effectively carry out its mandated responsibilities and functions.

### 12.1 Restructure of Petroleum Division

The current structure of the Department, especially the Petroleum Division is outdated and needs immediate restructure to be parity with the industry and other government organizational structures. The Department employs some highly qualified, capable and experienced technical officers in various technical fields such as geology, engineering, accounting, economics and law. But the pay structure is so outdated that most of them are employed below Grade 10 level positions. To retain highly skilled and experienced technical officers, restructure is imminent to upgrade the current positions and also create new positions in key technical areas currently lacking.

### 12.2 National Petroleum Authority (NPA)

To further improve and enhance the efficiency and effectiveness of the administrative and regulatory functions of the Department, the Department is moving into a new “Petroleum Authority”, which will be independent and self-funded by charging a fee for service to sustain its operations. The Department moving into a new Petroleum Authority is already a firm commitment by the Government contained in the Organic Law on Papua

New Guinea’s Ownership of Minerals and Petroleum and Commercialisation of State Business 2020. In that Organic Law, Petroleum Authority is a prominent feature as an independent and self-funded entity, which will charge and collect fees to sustain its operations.

The proposed changes in fees & charges are part of the overall efforts to position the Department before moving into a new Authority.

## 13. CONCLUSION

- The Department will work closely with project area landowners, LGs, PGs and stakeholders to complete the LOBID exercise while at the same time carefully manage and address the landowners’ issues and concerns through workable mechanisms and policies;
- The Department will continue to work where required to improve the policy gaps and also improve the regulatory framework in a balanced and acceptable approach, taken into account the State’s aspirations of the benefits of the petroleum resources as well as the interests of the investors taking the risk to invest in capital intensive petroleum projects to make a reasonable return on their investment;
- Receiving the required resources and funding support from the National government on a timely manner will not only address the challenges faced by the Department but will also instill confidence in the Department and government by the petroleum industry and key stakeholders; and
- The Department recognizes that to addresses the short comings and challenges it faces, the need for immediate restructure of the Petroleum Division and establishment of the proposed National Petroleum Authority (NPA) as a self-funded entity by charging a fee for its services are necessary prerequisites of the future and effective regulation of the petroleum sector.