

## 2. Management Discussion and Analysis of Operating Results for the Second Quarter of 2013

### 2.1 PTTEP Performance

**Global macroeconomic overview for 2013:** The International Monetary Fund (IMF) revised its global GDP growth estimate from 3.3% p.a. to 3.1% p.a. due to slower growth from developing countries. Europe remains in recession, and the United States economy is showing signs of recovery.

**Regional macroeconomic overview for the Second Quarter of 2013:** The US economy is showing signs of recovery. The rating agency, Standard & Poors (S&P) revised its credit outlook for the US economy from negative to stable, reflecting the increased confidence in the US economy's recovery during the first quarter of 2013; the US GDP grew at an annualized rate of 2.4%. The Meeting of the Federal Reserve Board of Governors, in June, resolved that the Quantitative Easing (QE) program would be continued with the expectation for the unemployment rate to decline to approximately 6.5 -7%, before the QE program to be ended in mid-2014.

There is still no sign of recovery in sight for the European economy who's GDP continued to decline by 0.1% in the first quarter of 2013. The unemployment figures, at 12.2% in Europe, are still at their highest levels with Greece at 27%. Eurozone public debt to GDP ratios continued to increase, while the European Central Bank (ECB), in May, reduced its policy rate from 0.75% to 0.50% to help stimulate the economy and ensure sufficient liquidity for commercial banks within the Eurozone, and implemented policies to enable access to credit and liquidity by small businesses. The ECB projects that the Eurozone economy will begin to show signs of recovery towards the end of 2013.

The Japanese economy during the first quarter of 2013 grew at a rate of 4.1% year-on-year, higher than previous forecasts of 3.5%. Japan's export industry is showing signs of recovery with an annualized growth rate of 3.8% which is a result of the Japanese central bank's (the BOJ) quantitative easing program which led to the rapid depreciation of the Japanese Yen. Combined with fiscal stimulus from the government, private demand and consumption grew at an annualized rate of 0.9%.

In China, economic growth during the first quarter slowed down to an annualized rate of 7.7% from 7.9% during the previous quarter. Moreover, there are concerns about a slowdown in exports, a credit crunch resulting from the Peoples Bank of China (PBOC) curbing and controlling the rapid credit expansion, and the increasing number non-performing loans (NPL) over the previous 5 years.

In Thailand, the Office of the National Economic and Social Development Board (NESDB) announced first quarter GDP growth at 5.3% annualized, which is lower than the previous forecast of 7% p.a. The NESDB also revised down the GDP growth forecast for 2013 from 5% p.a. to 4.7% p.a. since the Thai economy is affected by slow recovery of global economy, decline in agricultural exports and slower growth of private consumption. The Monetary Policy Committee (MPC) meeting held in May resolved to decrease the policy rate by 25 basis points to 0.25% p.a. after considering the following factors: first quarter growth rates coming in below expectations, significant appreciation of the Thai Baht against the USD during the middle of the second quarter, exports not having recovered, and inflation figures still within targeted band.

Private domestic investment which showed signs of gradual and consistent increase, and the increased fiscal spending on projects such as infrastructure investment will help drive the Thai economy in the second half of 2013. However, the economy still faces risks from the slowdown of the Chinese economy, Japanese economic policy, and the recovery of the US economy and of the Eurozone countries which may not achieve expectations. Levels of private investment which have significantly slowed down, the international movement of capital and the slowdown of exports are factors which also pose risks to the Thai economy.

The rest of 2013 is characterized by uncertainties and volatility in economic conditions and oil prices, driven by factors such as the slowdown of large emerging market economies which consume enormous amounts of energy such as that of China, and the recovery of the US economy which is the largest importer of energy in the world. This unpredictable environment impacts energy costs and Thailand's domestic economy. The volatility of the Thai baht as a result of fund flows, affects the overall imports and exports and particularly the cost of energy imports to Thailand. PTTEP closely monitors the economic and oil price conditions and reviews its operating and investment plans accordingly, such that they are aligned with the strategic plan. PTTEP also continuously carries out improvements for the organization's quality and capabilities to achieve sustainable growth in exploration, development and production.

In terms of exploration, PTTEP has continued to carry out its activities in various domestic and international projects to assess for the potential of the fields and to increase petroleum reserves. On the development side, PTTEP has accelerated the development of several projects to ensure start-up as planned. For production, despite having less-than-planned production levels in the second quarter, PTTEP has readied action plans in key projects, such as in S1 and those in the Gulf of Thailand, for the second half of 2013 to meet the planned production level.

PTTEP has operations in Thailand and internationally, altogether summing up to 45 projects in 12 countries. The following are the highlights of activities from key projects.

**Project Activity Highlights in Thailand:** PTTEP has 18 projects in Thailand which are mainly projects in the production phase located in both the Gulf of Thailand and onshore. The following section highlights the key activities of projects in Thailand.

**S1 Project:** The project is able to maintain its crude oil production rate from the first quarter of 2013, producing at an average rate of 33,900 Barrel per day (BPD) during the second quarter of 2013. The accomplishment is a result of initiatives continued from the first quarter such as drilling of new production wells, Artificial Lifting and Waterflooding.

**Bongkot Project:** The project, consisting of the Greater Bongkot North and the Greater Bongkot South fields, produced natural gas at an average rate of 886 Million Standard Cubic Feet per Day (MMSCFD) and condensates at an average rate of 32,810 BPD during the second quarter of 2013. The natural gas production from this project represents 20% of Thailand's natural gas demand.

**Project Activity Highlights in South East Asia:** PTTEP has 16 projects in this region with the following as key highlights:

**Myanmar Zawtika Project:** The project is located in the Gulf of Moattama, in the Republic of the Union of Myanmar and is in the process of constructing Phase 1A. The project has completed the installation of 3 wellhead platforms, the laying of intra-field gas pipelines and the main offshore gas export pipeline. The central production platform as well as the onshore and offshore gas export and distribution system is being constructed. The drilling of a production well is also in progress, with expected commercial production to commence in the first quarter of 2014.

**Myanmar M3 Project:** During the second quarter of 2013, the project completed drilling 3 of the 4 appraisal wells planned in 2013. The fourth appraisal well is currently being drilled to continue assessing the commerciality of the project. PTTEP International Limited (PTTEPI), which will continue to be the operator and hold 80% participating interest in the project, is awaiting approval from the government of the Republic of the Union of Myanmar to divest 20% participating interest to Mitsui Oil Exploration Co. Ltd (MOECO).

**Myanmar M11 Project:** M11 is a deep water block, and the project has been granted a 1 year extension to its exploration period, from October 2013 to

October 2014. The project is in the process of preparation for drilling an exploration well. The drilling is expected to begin in the second half of 2013.

**Myanmar PSC and EP-2 Project:** The project is located onshore, north of Yangon, and is currently progressing with its 2D seismic program of 1,870 kilometers for block PSC-G and 640 kilometers for block EP-2. The project expects to complete the 2D seismic acquisition in the third quarter of 2013.

**Vietnam 16-1 Project:** During the second quarter of 2013, the project produced crude oil at a rate of 46,293 BPD and natural gas at a rate of 28.3 MMSCFD. The project also successfully tested the production capability of the FPSO (Floating Production Storage and Offloading) unit at a rate of 60,000BPD and plans to continue testing the production capability at a rate of 70,000BPD during the third quarter of 2013.

**Project Activity Highlights in Australasia:** PTTEP has 3 projects in this region with the following as key highlights:

**PTTEP Australasia Project:**

**Montara Field:** In early June 2013, the production process from the Montara field began through the introduction of hydrocarbons to the Montara Venture FPSO. Steady production was achieved on 12 June 2013. The company expects production to initially ramp up to a rate of 21,000BPD before achieving a rate of 30,000BPD following the completion an additional production well scheduled for the second half of 2013. The first crude oil sales off take is expected in August this year.

Regarding the compensation claim, as of the second quarter of 2013, PTTEP has received a total compensation claim of USD 212 million. The remaining compensation claims are in progress and PTTEP expects to receive the remaining claims during the second half of 2013. With respect to the claim submitted by the Government of Indonesia for compensation for oil leakage from the Montara incident, PTTEP continues to assess the case with the Indonesian government through the use of scientific evidence to determine the impact (if any).

**Cash Maple Field:** The project is progressing with geological and geophysics engineering studies and the analysis of commercial feasibility for the development of the Cash-Maple field. The drilling of additional exploration and appraisal wells are planned in late 2013 or early 2014.

**Project Activity Highlights in North America:** PTTEP has one project in this region with the following as key highlights:

**KKD Oil Sands Project:** The Leismer field produced bitumen at an average rate of 14,000 BPD during the second quarter of 2013. In June 2013, for Well Pad 5, the project completed the drilling of well pairs, comprised of steam assisted gravity drainage and production wells. The construction is in progress, and scheduled to be complete followed by production start-up in the first quarter of 2014.

The project has completed the design for the Leismer Expansion, which is aimed at increasing the production rate of the Leismer field to 40,000 BPD. The project is currently in process of awarding the Front End Engineering Design (FEED) contract and expects to receive approval within the third quarter of 2013.

For the Corner Field, the Front End Engineering Design (FEED) process for the production capacity of 40,000 BPD is scheduled for completion in September 2013. PTTEP, together with the operator, is working towards delivering a suitable project development plan and project budget.

**Project Activity Highlights in Africa and the Middle East:** PTTEP has 7 projects in this region with the following as key highlights:

**Algeria 433A and 416B:** In February 2013, the project completed drilling 5 of 12 total production wells according to the initial plan. The project continues to progress with the construction of processing and pipeline facilities (EPC1), as well as the construction of living quarters and utility facilities (EPC2) in the development area. Production is scheduled to begin in the second half of 2014.

**Algeria Hassi Bir Rekaiz Project:** The project completed the drilling of 9 exploration wells in the first exploration phase. Crude oil and natural gas were discovered in 8 wells. The project is currently in the second exploration phase (May 2013 to May 2015), and plans to conduct 3D seismic acquisition as well as to drill additional exploration and appraisal wells.

**Mozambique Rovuma Offshore Area 1 Project:** The project is currently progressing with the development of offshore natural gas fields, and is planning the development of onshore Liquefied Natural Gas or LNG facilities construction in the industrial zone at Cape Afungi, in Cabo Delgado province in northern Mozambique.

The project continues to carry on with exploration and appraisal drilling to assess the petroleum potential of the fields. During the second quarter of 2013, the project completed drilling 2 exploration wells, namely, Orca-1 and Linguado-1, with natural gas

discovery in Orca-1, but no potential for commerciality from Linguado-1. The project plans to continue drilling additional appraisal wells during the rest of 2013 to further assess the amount of reserves.

**Portfolio Management:** PTTEP carries out portfolio management activities to ensure appropriate investments and risk management while adding value to projects. For example, in early 2013, PTTEP agreed for partners to farm-in to its Myanmar M3 and M11 projects. To keep pace with the changing social, economic and political landscape, PTTEP, on a regular basis, studies and analyzes pertinent investment factors as well as impacts of investments to incorporate into its investment considerations and decisions. Additionally, the company reviews its target countries for expansion of its investments (Focused Countries) by grouping the countries according to the opportunities available, appropriateness and consistency with the company's direction and goals. The analysis is based on factors such as petroleum potential, geography, government sharing of interests, business and political risks, and PTTEP's competitive advantages.

## 2.2 Results of Operations

Since 1 January 2011, PTTEP has determined the USD to be its functional currency in accordance with Thai Accounting Standard No.21 (revised 2009) “The Effects of Changes in Foreign Exchange Rates”. However, in submission of its financial statements to the Stock Exchange of Thailand and the Department of Business Development, the Company is also required to convert the financial statements from USD to the presentation currency, which is Thai Baht.

Detailed discussion of financial results by quarter are as follows:

### 2.2.1. Results of Operations - Quarterly Comparison

Earnings summary (Unit : Millions of USD, excepting USD per share amounts)	1 <sup>st</sup> Quarter 2013	2 <sup>nd</sup> Quarter 2013	2 <sup>nd</sup> Quarter 2012
Total Revenues	1,907	1,851	1,667
Total Expenses	(937)	(989)	(982)
<b>Operating Income</b>	<b>970</b>	<b>862</b>	<b>685</b>
Share of gain from associates	1	2	1
<b>Profit before income taxes</b>	<b>971</b>	<b>864</b>	<b>686</b>
Income taxes expenses	(291)	(503)	(436)
<b>Profit for the period</b>	<b>680</b>	<b>361</b>	<b>250</b>
Diluted earnings per share	0.17	0.09	0.08
<b>Profit from normal operations</b>	<b>585</b>	<b>535</b>	<b>461</b>
Gain (Loss) from non-recurring items	95	(174)	(211)
<b>Profit for the period</b>	<b>680</b>	<b>361</b>	<b>250</b>

  

Earnings summary (Unit : Millions of Baht, excepting Baht per share amounts)	1 <sup>st</sup> Quarter 2013	2 <sup>nd</sup> Quarter 2013	2 <sup>nd</sup> Quarter 2012
Total Revenues	56,824	55,326	52,164
Total Expenses	(27,913)	(29,544)	(30,786)
<b>Operating Income</b>	<b>28,911</b>	<b>25,782</b>	<b>21,378</b>
Share of gain from associates	47	42	42
<b>Profit before income taxes</b>	<b>28,958</b>	<b>25,824</b>	<b>21,420</b>
Income taxes expenses	(8,700)	(15,160)	(13,687)
<b>Profit</b>	<b>20,258</b>	<b>10,664</b>	<b>7,733</b>
Diluted earnings per share	5.08	2.67	2.33

## **Second Quarter of 2013 compared with Second Quarter of 2012**

For the results of operations in the second quarter of 2013, PTTEP and subsidiaries' net profit amounted to USD 361 million (equivalent to 10,664 million baht), or USD 0.09 per share-diluted (equivalent to 2.67 baht per share-diluted), an increase of USD 111 million or 44% against the second quarter of 2012, which was USD 250 million (equivalent to 7,733 million baht), or USD 0.08 per share-diluted (equivalent to 2.33 baht per share-diluted). The returns on shareholders' equity for the second quarter of 2013 were 22.38%.

However, PTTEP and subsidiaries' net profit amounted to USD 361 million for the second quarter of 2013, comprising the recurring net profit for this period, which amounted to USD 535 million, and the loss from non-recurring items, which amounted to USD 174 million.

For the results of recurring operations in the second quarter of 2013, PTTEP and subsidiaries' recurring net profit was USD 535 million, an increase of USD 74 million or 16% against the second quarter of 2012, which was USD 461 million. The returns from normal operations on shareholders' equity for the second quarter of 2013 were 23.17%.

For the second quarter of 2013, the total revenue was USD 1,851 million (equivalent to 55,326 million baht), an increase of USD 184 million or 11% against the second quarter of 2012, which was USD 1,667 million (equivalent to 52,164 million baht). The increase was mainly due to an increase of sales revenue of USD 214 million, caused by the following:

(1) There was a higher average sales volume in the second quarter of 2013, which increased to 292,721 barrels of oil equivalent per day (BOED) against the second quarter of 2012 which was 263,441 BOED. This average sales volume increased mainly as a result of;

- Bongkot project: Sales volume of natural gas and condensate increased because Greater Bongkot South started its production as required by the Gas Sales Agreement in June 2012. Sales volume of natural gas and condensate of Greater Bongkot North also increased, resulting from no production shutdown in the second quarter of 2013, while a planned shutdown occurred in the second quarter of 2012.
- S1 project: Crude oil sales volume increased because of higher production volume produced from new wells and higher beam pump activities.

However,

- Arthit project: Sales volume of natural gas and condensate decreased, resulting from a planned shutdown in the second quarter of 2013.



- Contract 4 project: Sales volume of natural gas decreased resulting from a shutdown for pipeline maintenance in the second quarter of 2013.

(2) There was a higher average petroleum sales price for the second quarter of 2013, which rose to USD 65.16 per barrel of oil equivalent (BOE) against the second quarter of 2012 which was USD 64.17 per BOE

PTTEP and subsidiaries' revenue from pipeline transportation from proportionate revenue in Moattama Gas Transportation Company (MGTC) and Taninthayi Pipeline Company (TPC) increased.

In the second quarter of 2013, PTTEP and subsidiaries had other revenues of USD 12 million, a decrease of USD 48 million against the second quarter of 2012, when the figure was USD 60 million. The decrease mainly resulted from the recognition of a downward adjustment to the purchase price of the Canada Oil Sands KKD project amount of USD 17 million, and insurance claims received from the Montara incident totaling USD 31 million in the second quarter of 2012; whereas, there was no recognition of such transactions in the second quarter of 2013.

PTTEP and subsidiaries incurred expenses amounting to USD 989 million (equivalent to 29,544 million baht) in the second quarter of 2013, an increase of USD 7 million against USD 982 million (equivalent to 30,786 million baht) for the second quarter of 2012. This increase was mainly driven by the net effect of the following:

- (1) Depreciation, depletion and amortization expenses escalated, amounting to USD 58 million, mainly from an increase in the completed assets and production volume of the Bongkot and S1 projects. However, depreciation, depletion and amortization expenses from the Arthit project decreased due to lower production volume and higher proved developed reserves revision.
- (2) Operating expenses increased, amounting to USD 48 million mainly from increased cost of diluent of the Canada Oil Sands KKD project, operating expenses of Bongkot project from Greater Bongkot South due to production starting as required by the Gas Sales Agreement in June 2012, and higher production expenses of contract 4.
- (3) Loss on foreign exchange increased amounting to USD 29 million mainly because due to an increase in loss on foreign exchange from Thai Baht transactions.
- (4) Petroleum royalties and remuneration increased amounting to USD 18 million in line with higher sales revenue.

However,

- (5) Impairment loss on assets of PTTEP Australasia project decreased amounting to USD 109 million due to no recognition of impairment loss of Montara assets in the second quarter of 2013, while there was recognition of this impairment loss in the second quarter of 2012 due to the increase of project cost and the delay of the first oil production.
- (6) Exploration expenses decreased amounting to USD 28 million, primarily due to:
  - Exploratory well write-off costs decreased amounting to USD 16 million. The exploratory well write-off costs of the second quarter of 2013 amounting to USD 12 million were driven by the Kenya and the Mozambique Rovuma Offshore Area 1 projects; while, there were USD 28 million exploratory well write-off costs in the second quarter of 2012, principally from the Bahrain 2 and Algeria Hassi Bir rekaiz projects
  - Exploration expenses decreased amounting to USD 12 million, mainly from lower seismic cost of the PTTEP Australasia Project

In the second quarter of 2013, PTTEP and subsidiaries incurred income tax expenses of USD 503 million, an increase of USD 67 million, against that of the second quarter of 2012 of USD 436 million. The increase was mainly due to petroleum income tax and deferred income taxes affected by the functional currency, which are the non-recurring items.

For the second quarter of 2013, PTTEP and subsidiaries' recognized a loss from non-recurring items of USD 174 million, a decrease loss of USD 37 million, against that of the second quarter of 2012, which was USD 211 million, primarily stemming from the following:

- (1) Impairment loss on assets of PTTEP Australasia project decreased amounting to USD 109 million due to no recognition of impairment loss of Montara assets in the second quarter of 2013, while there was recognition of this impairment loss in the second quarter of 2012 due to the increase of project cost and the delay of the first oil production.

Whereas,

- (2) Loss from effect of foreign exchange increased amounting to USD 60 million mainly from;
  - For the second quarter of 2013, income tax expenses affected by the functional currency increased, amounting to USD 34 million against the second quarter of 2012. The increase was mainly due to higher deferred income tax liabilities, because of a decrease in net assets after they were translated into USD on 30 June 2013,

compared with net assets after they were translated into USD on 31 March 2013, given the Baht depreciation against the USD. The decrease of net assets resulted in a decrease of depreciation expenses in USD and an increase of future income tax amounted of USD 101 million; whereas, income tax expenses affected by the functional currency for the second quarter of 2012 caused an increase of income tax expenses in the future of USD 67 million.

- Loss on foreign exchange increased amounting to USD 29 million. In the second quarter of 2013, recognition of loss on foreign exchange amount of USD 72 million was mainly from Thai Baht transactions and from the USD loans of PTTEP Canada Limited, given the CAD depreciation against the USD. While, there was loss on foreign exchange totaling USD 43 million in the second quarter of 2012.

### **Second Quarter of 2013 compared with First Quarter of 2013**

For the results of operations in the second quarter of 2013, PTTEP and subsidiaries' net profit amounted to USD 361 million (equivalent to 10,664 million baht), or USD 0.09 per share-diluted (equivalent to 2.67 baht per share-diluted), a decrease of USD 319 million or 47% from the first quarter of 2013's net profit of USD 680 million (equivalent to 20,258 million baht), or USD 0.17 per share-diluted (equivalent to 5.08 baht per share-diluted). Return on shareholder's equity for the second quarter of 2013 was 22.38%.

However, PTTEP and subsidiaries' net profit amounted to USD 361 million for the second quarter of 2013 comprising the recurring net profit for this period, which amounted to USD 535 million, and the loss from non-recurring items, which amounted to USD 174 million.

For the results of recurring operations in the second quarter of 2013, PTTEP and subsidiaries' recurring net profit was USD 535 million, a decrease of USD 50 million or 9% against the first quarter of 2013 which was USD 585 million. The returns from normal operations on shareholders' equity for the second quarter of 2013 were 23.17%.

For the second quarter of 2013, the total revenue of PTTEP and subsidiaries was USD 1,851 million (equivalent to 55,326 million baht), a decrease of USD 56 million or 3% from the first quarter of 2013's total of USD 1,907 million (equivalent to 56,824 million baht), which was chiefly due to lower gain on foreign exchange, which is the non-recurring item, amount of USD 42 Million and lower sales totaling USD 17 million.

Total sales for the second quarter of 2013 decreased USD 17 million compared with that of the first quarter of 2013 resulting from the net effect of:

(1) The average petroleum sales price for the second quarter of 2013 went down to USD 65.16 per BOE compared with the first quarter of 2013's price of USD 67.03 per BOE.

While,

(2) There was a higher average sales volume in the second quarter of 2013, which increased to 292,721 BOED against the first quarter of 2013, when the figure was 291,476 BOED. This average sales volume increased mainly as a result of;

- MTJDA-B17 project: Sales volume of natural gas in the second quarter of 2013 increased against that of the first quarter of 2013 resulting from a shutdown for pipeline maintenance in January 2013
- Vietnam 9-2 project: Sales volume of crude oil increased as a result of higher crude loads

However,

- Arthit project: Sales volume of natural gas and condensate decreased, resulting from a planned shutdown in the second quarter of 2013
- B8/32 & 9A project: Sales volume of natural gas and crude oil decreased, resulting from a planned shutdown in the second quarter of 2013
- Bongkot project: Sales volume of natural gas decreased due to a planned shutdown of Greater Bongkot South in the second quarter of 2013

PTTEP and subsidiaries' revenue from pipeline transportation from proportionate revenue in Moattama Gas Transportation Company (MGTC) and Taninthayi Pipeline Company (TPC) increased.

PTTEP and subsidiaries incurred expenses of USD 989 million (equivalent to 29,544 million baht) in the second quarter of 2013, an increase of USD 52 million or 6% from the first quarter of 2013, which was USD 937 million (equivalent to 27,913 million baht). This increase stemmed from the net effect of:

- (1) In the second quarter of 2013, there was loss on foreign exchange amounting to USD 72 million; while, in the first quarter of 2013, there was gain on foreign exchange amount of USD 42 million which was presented as other income. Loss on foreign exchange in the second quarter of 2013 was mainly from loss on foreign exchange from Thai Baht transactions and from the USD loans of PTTEP Canada Limited.

However,

- (2) Depreciation, depletion and amortization expenses decreased, amounting to USD 13 million, mainly from higher proved reserves and proved developed reserves revisions of Vietnam 16-1 project in the second quarter of 2013, and from Arthit project due to higher proved developed reserves revision. However, depreciation, depletion and amortization expenses increased from Bongkot project due to an increase in the completed assets, and from S1 project due to an increase in the completed assets and production volume.

In the second quarter of 2013, PTTEP and subsidiaries incurred income tax expenses of USD 503 million, an increase of USD 212 million or 73%, against that of the first quarter of 2013 of USD 291 million, mainly due to an increase of income tax expenses affected by the functional currency which are non-recurring items.

For the second quarter of 2013, PTTEP and subsidiaries recognized a loss from non-recurring items of USD 174 million. An increased loss of USD 269 million, against a gain from non-recurring items of the first quarter of 2013 of USD 95 million. The increase loss resulted from an increase in loss from effect of foreign exchange amounting to USD 280 million which is mainly from;

- (1) For the second quarter of 2013, income tax expenses affected by the functional currency increased, amounting to USD 153 million against the first quarter of 2013. The increase was mainly due to higher deferred income tax liabilities, because of a decrease in net assets after they were translated into USD on 30 June 2013, compared with net assets after they were translated into USD on 31 March 2013, given the Baht depreciation against the USD. The decrease of net assets resulted in a decrease of depreciation expenses in USD and an increase of future income tax amount of USD 101 million.

Whereas, income tax expenses affected by the functional currency for the first quarter of 2013 caused a decrease of income tax expenses in the future of USD 52 million.

- (2) Loss on foreign exchange increased amounting to USD 114 million. In the second quarter of 2013, the recognition of loss on foreign exchange amount of USD 72 million was mainly from Thai Baht transactions and from the USD loans of PTTEP Canada Limited, given the CAD depreciation against the USD. While, in the first quarter of 2013, there was a gain on foreign exchange amount of USD 42 million.

### 2.2.2. Results of Operations – First half year of 2013 Comparison

Earnings summary	Millions of USD		Millions of Baht	
	2013	2012	2013	2012
Total Revenues	3,716	3,260	110,909	101,534
Total Expenses	(1,884)	(1,745)	(56,216)	(54,399)
<b>Operating Income</b>	<b>1,832</b>	<b>1,515</b>	<b>54,693</b>	<b>47,135</b>
Share of gain from associates	3	3	89	89
<b>Profit before income taxes</b>	<b>1,835</b>	<b>1,518</b>	<b>54,782</b>	<b>47,224</b>
Income taxes expenses	(794)	(679)	(23,860)	(21,203)
<b>Profit for the period</b>	<b>1,041</b>	<b>839</b>	<b>30,922</b>	<b>26,021</b>
Diluted earnings per share	0.26	0.25	7.75	7.84

<b>Profit from normal operations</b>	<b>1,120</b>	<b>999</b>
Gain (Loss) from non-recurring items	(79)	(160)
<b>Profit for the Period</b>	<b>1,041</b>	<b>839</b>

#### For the 6-month period of 2013 compared with the 6-month period of 2012

Regarding the results of operations for the first half of 2013, PTTEP and its subsidiaries' totaled a net profit of USD 1,041 million (equivalent to 30,922 million baht) or USD 0.26 per share-diluted (equivalent to 7.75 baht per share-diluted), an increase of USD 202 million or 24% compared with the first half of 2012's net profit of USD 839 million (equivalent to 26,021 million baht) or USD 0.25 per share-diluted (equivalent to 7.84 baht per share-diluted). Return on shareholder's equity for the first half of 2013 was 22.38%.

However, PTTEP and subsidiaries' net profit amounted to USD 1,041 million for the first half of 2013, comprising the recurring net profit for this period, which amounted to USD 1,120 million, and the loss from non-recurring items, which amounted to USD 79 million.

For the results of recurring operations in the first half of 2013, PTTEP and subsidiaries' recurring net profit was USD 1,120 million, an increase of USD 121 million or 12% against that of the first half of 2012 which was USD 999 million. The returns from normal operation on shareholders' equity for the first half of 2013 were 23.17%.

For the first half of 2013, the total revenue of PTTEP and subsidiaries was USD 3,716 million (equivalent to 110,909 million baht), an increase of USD 456 million or 14% from the first half of 2012's total of USD 3,260 million (equivalent to 101,534 million baht), which was chiefly due to higher sales, totaling USD 487 million or 16%. Reasons for these higher sales are detailed below:

(1) A higher average sales volume in the first half of 2013, which increased to 292,102 barrels of oil equivalent per day (BOED) against the first half of 2012, when the figure was 258,426 BOED. This average sales volume increased as a result of;

- Bongkot project: Sales volume of natural gas and condensate increased because Greater Bongkot South started its production as required by the Gas Sales Agreement in June 2012. Sales volume of natural gas and condensate of Greater Bongkot North also increased, resulting from no production shutdown in the first half of 2013, while a shutdown occurred in the first half of 2012
- S1 project: Crude oil sales volume increased because of higher production volume produced from new wells and higher beam pump activities
- Vietnam 16-1 project: Crude oil sales volume increased because of higher production volume produced from new wells

However,

- Arthit project: Sales volume of natural gas and condensate decreased, resulting from a planned shutdown in the first half of 2013

(2) Higher average petroleum sales price for the first half of 2013, which rose to USD 66.09 per barrel of oil equivalent (BOE) against the first half of 2012 when the price was USD 64.47 per BOE.

In the first half of 2013, other income decreased by USD 55 million against the first half of 2012. The decrease mainly resulted from the recognition of a downward adjustment to the purchase price of the Canada Oil Sands KKD project amount of USD 17 million, and insurance claims received from the Montara incident totaling USD 32 million in the first half of 2012; whereas, there was no recognition of such transactions in the first half of 2013.

PTTEP and its subsidiaries incurred expenses for the first half of 2013 amounting to USD 1,884 million (equivalent to 56,216 million baht), an increase of USD 139 million or 8% compared with USD 1,745 million (equivalent to 54,399 million baht) for the first half of 2012. This increase was due to the net effect of:

- (1) Depreciation, depletion and amortization expenses escalated, amounting to USD 124 million, mainly from an increase in the number of completed assets and production volume of Bongkot, S1 and Vietnam 16-1 projects.
- (2) Operating expenses increased amounting to USD 76 million, mainly from increased cost of diluent of the Canada Oil Sands KKD project, higher operating expenses of Greater Bongkot South due to production first starting in June 2012, higher production expenses of the contract 4 project, and pipeline maintenance of the MTJDA-B17 project.

- (3) Petroleum royalties and remuneration increased amounting to USD 49 million in line with higher sales revenue

However,

- (4) Impairment loss on assets decreased amounting to USD 109 million due to no recognition of impairment loss from Montara assets of PTTEP Australasia project in the first half of 2013; while, there was recognition of this impairment loss amount of USD 109 million in the first half of 2012 due to the increase of project cost and the delay of the first oil production.

For the first half of 2013, PTTEP and subsidiaries incurred income tax expenses, totaling USD 794 million. The increase of USD 115 million of 17% comparing to the first half of 2012 amounted to USD 679 million, mainly from an increase in petroleum income tax.

For the first half of 2013, PTTEP and subsidiaries' recognized a loss from non-recurring items of USD 79 million. A decreased loss of USD 81 million, against that of the first half of 2012 of USD 160 million, stemmed from the net effect of the following:

- (1) Impairment loss on assets decreased amounting to USD 109 million due to no recognition of impairment loss from Montara assets of PTTEP Australasia project in the first half of 2013; while, there was recognition of this impairment loss amount of USD 109 million in the first half of 2012 due to the increase of project cost and the delay of the first oil production.
- (2) Decommissioning costs decreased amounting to USD 43 million due to no recognition of decommissioning costs for Jabiru and Challis fields in the first half of 2013; whereas, there was recognition of such decommissioning costs amount of USD 43 million in the first half of 2012

However,

- (3) Loss from effect of foreign exchange increased amounting to USD 59 million mainly from;
  - For the first half of 2013, income tax expenses affected by the functional currency increased, amounting to USD 30 million against the first half of 2012. The increase was mainly due to higher deferred income tax liabilities, because of a decrease in net assets after they were translated into USD on 30 June 2013, compared with net assets after they were translated into USD on 31 December 2012, given the Baht depreciation against the USD. The decrease of net assets resulted in a decrease of depreciation expenses in USD and an increase of future income tax amounted of USD 49 million; whereas, income tax expenses affected by the



functional currency for the first half of 2012 caused an increase of income tax expenses in the future of USD 19 million.

- Loss on foreign exchange increased amounting to USD 20 million. In the first half of 2013, recognition of loss on foreign exchange amount of USD 30 million was mainly from the USD loans of PTTEP Canada Limited, given the CAD depreciation against the USD as of 30 June 2013. While, in the first half of 2012, PTTEP and subsidiaries recognized loss on foreign exchange amounted to USD 10 million.

### 2.2.3. Financial position

	Unit : Millions of USD		Unit : Millions of Baht	
	Jun 30, 2013	Dec 31, 2012	Jun 30, 2013	Dec 31, 2012
<b>Total Assets</b>	<b>19,844</b>	<b>19,637</b>	<b>617,680</b>	<b>601,513</b>
Current Assets	3,341	4,031	104,003	123,483
Non-current Assets	16,503	15,606	513,677	478,030
<b>Total Liabilities</b>	<b>8,540</b>	<b>8,926</b>	<b>265,816</b>	<b>273,409</b>
Current Liabilities	2,001	2,375	62,269	72,749
Non-current Liabilities	6,539	6,551	203,547	200,660
<b>Shareholders' Equity</b>	<b>11,304</b>	<b>10,711</b>	<b>351,864</b>	<b>328,104</b>
<b>Total Liabilities and Shareholders' Equity</b>	<b>19,844</b>	<b>19,637</b>	<b>617,680</b>	<b>601,513</b>

As of June 30, 2013, PTTEP and subsidiaries commanded total assets of USD 19,844 million (equivalent to 617,680 million baht), an increase of USD 207 million higher than the total on hand as of December 31, 2012 at which point total assets were USD 19,637 million (equivalent to 601,513 million baht). This increase was mainly from the net effect of ;

(1) An increase of USD 897 million in non-current assets mainly from:

- An increase of USD 848 million in exploration and production assets was mostly from production assets of the Bongkot, Zawtika, and PTTEP Australasia projects.
- An increase of USD 73 million in intangible assets was primarily from the additional investment in exploration projects such as in Myanmar M3 and Mozambique Rovuma Offshore Area 1 Projects.

While,

(2) A decrease of USD 690 million in current assets mainly from cash and cash equivalents. A decrease of USD 534 million of cash and cash equivalents was mainly from cash outflow in investing in exploration and production assets, payment of dividend for the second half-year operations of 2012 and redemption of Baht bonds, offset with cash inflow from operating activities.

Most current assets of PTTEP and subsidiaries as of June 30, 2013, were cash and cash equivalents; account receivable-parent company; trade accounts receivable; and materials and supplies. A large proportion of the non-current assets were assets used in joint-venture exploration and production, presented under Property, Plant, and Equipment; goodwill; intangible assets; and deferred income tax assets. PTTEP and subsidiaries' Current Ratio as of June 30, 2013, was 1.67 times.

As of June 30, 2013, PTTEP and subsidiaries had total liabilities of USD 8,540 million (equivalent to 265,816 million baht), a decrease of USD 386 million lower than the total on hand as of December 31, 2012, when total liabilities were USD 8,926 million (equivalent to 273,409 million baht), principally due to

(1) A decrease of USD 374 million in current liabilities mainly from a decrease in income tax payable amount of USD 376 million primarily due to payment of income tax for the year 2012 in May 2013, and from a decrease of accrued expenses amount of USD 229 million mainly from a decrease in accrued expenses in the construction of production assets of PTTEP Australasia and Zawtika projects. However, current portion of long-term debts increased of USD 212 million from net effect of the reclassification of a portion of Baht bonds of USD 376 million (THB 11,700 million) with maturity within one year from non-current liabilities to current liabilities, offset with the redemption of Baht bonds of USD 166 million (THB 5,000 million) in the second quarter of 2013.

(2) A decrease of USD 12 million in non-current liabilities mainly from Bath bonds amount of USD 385 million from the reclassification of a portion of Baht bond with maturity within one year to current liabilities (current portion of long-term debts) of USD 376 million (THB 11,700 million), offset with an increase in provision for remuneration for the renewal of petroleum production of Bongkot Project amount of USD 382 million.

## **Capital Structure**

### **Bill of Exchange**

PTTEP maintains the Short-term Financing Program ("PF") which involves the issuance of Bills of Exchange (B/Es) via Public Offerings to institutional and high net-worth investors in Thailand. B/Es are issued on a revolving basis with the total revolving credit of up to Baht 50,000 million. The B/Es facility was approved by the Resolution of the Board of Directors' meeting in February 2009 and in November 2010.

As of June 30, 2013, there is no outstanding B/Es.

## **Bonds**

No bonds issuance in the 2nd quarter of year 2013

## **Subordinated Capital Debentures**

No subordinated capital debentures issuance in the 2nd quarter of year 2013

## **Short-term loans from financial institutions**

In February 2012, PTTEP entered into an unsecured, unsubordinated revolving credit facility agreement Baht 20,000 million. During the availability period of 5 years, the loan has a floating interest rate of THBFIX + 1.10%. The outstanding principal of the loan as of the end of the availability period may, subject to negotiation between the parties, be converted into a term loan to be repaid within 5 years after the end of the availability period. This revolving credit facility will be used for general corporate purposes.

The Board of Directors' meetings in year 2010 and 2011 approved the Company's entering into loan agreements, whose approved amount remaining was Baht 68,250 million.

As of June 30, 2013, there is no outstanding loan.

## **Long-Term Loans**

### **Long-term loans from financial institutions**

In March 2012, PTTEP Canada International Finance Limited (PTTEP CIF) entered into a CAD 300 million unsecured, unsubordinated loan agreement fully guaranteed by PTTEP. The loan has a floating interest rate of CDOR + 1.7% per annum and is repayable within 5 years of the first drawdown. The entire loan amount was drawn down in May 2012. The proceeds from the loan were utilized for debt refinancing, capital expenditure and/or general corporate purposes. The Board of Directors' meeting in the year 2011 approved the Company's entering into loan agreements, whose approved amount remaining was Baht 48,250 million. The total outstanding loan as of June 30, 2013 is CAD 300 million.

In April 2012, PTTEP Canada International Finance Limited (PTTEP CIF) entered into a CAD 75 million unsecured, unsubordinated loan agreement fully guaranteed by PTTEP. The loan has a floating interest rate of CDOR + 1.9% per annum and is repayable within 5 years of the first drawdown. The entire loan amount was drawn down in May 2012. The proceeds from the loan were utilized for debt refinancing, capital expenditure and/or general corporate purposes. The Board of Directors' meeting in the year 2011 approved the Company's entering into loan agreements, whose approved amount remaining was Baht 38,950 million. The total outstanding loan as of June 30, 2013 is CAD 75 million.

In August 2012, PTTEP Canada International Finance Limited (PTTEP CIF) entered into a CAD 100 million unsecured, unsubordinated loan agreement fully guaranteed by PTTEP. The loan has a floating interest rate of CDOR + 2.1% per annum and is repayable within 7 years

of the first drawdown. The entire loan amount was drawn down in September 2012. The proceeds from the loan agreement were utilized for general corporate purposes. The Board of Directors' meeting in the year 2011 approved the Company's entering into loan agreements, whose approved amount remaining was Baht 36,625 million. The total outstanding loan as of June 30, 2013 is CAD 100 million.

In March 2013, PTTEP Offshore Investment Company Limited (PTTEPO) has signed an Amendment Deed relating to a USD 500 million Facility Agreement dated November 24, 2010. The Amendment Deed is to extend the final maturity of the Facility Agreement from November 2015 to November 2017. The total outstanding loan as of June 30, 2013 is USD 500 million.

In March 2013, PTTEP Offshore Investment Company Limited (PTTEPO) has signed an Amendment Deed relating to a USD 75 million Facility Agreement dated December 1, 2010. The Amendment Deed is to extend the final maturity of the Facility Agreement from December 2015 to December 2017. The total outstanding loan as of June 30, 2013 is USD 75 million.

## **Commitment and Guarantee**

### **Commitment from loans agreements**

PTTEP has a subordinated loan agreement with Energy Complex Company Limited (EnCo), with the loan limit of Baht 1,250 million. The agreement shall continue for 13 years and 6 months effective from April 2, 2009.

As of June 30, 2013, the outstanding loan to EnCo was Baht 580 million.

### **Loan guarantee**

PTTEP has guaranteed the unsecured and unsubordinated loan agreements of PTTEP Offshore Investment Company Limited (PTTEPO) with the total amount of USD 575 million.

PTTEP has guaranteed the unsecured and unsubordinated loan agreements of PTTEP Canada International Finance Limited (PTTEP CIF) with the total amount of CAD 475 million.

### **Bond guarantee**

PTTEP has guaranteed the unsecured and unsubordinated bonds of PTTEP Australia International Finance Pty Ltd (PTTEP AIF) with total amount of USD 700 million.

PTTEP has guaranteed the unsecured and unsubordinated bonds of PTTEP Canada International Finance Limited (PTTEP CIF) with total amount of USD 1,200 million.

## **Cash Flows**

For the period of 6 months ending on June 30, 2013, PTTEP and subsidiaries had a net cash flows from operations of USD 1,624 million, chiefly due to the cash received from sales revenue offset with cash payments of expenses and tax expenses.

PTTEP and subsidiaries had a net cash flows used in its investing activities of USD 1,495 million, mainly resulting from additional investment in exploration and production assets as well as intangible assets, principally from the Zawtika, PTTEP Australasia, Bongkot, Canada Oil Sands KKD, and Arhit projects.

PTTEP and subsidiaries had a net cash flows used in financing activities of USD 663 million as below:

- Dividend payments amounting to USD 399 million
- Payment of debentures amounting to USD 166 million
- Interest payments for loans / subordinated capital debentures amounting to USD 91 million
- Financial costs payments amounting to USD 7 million

As of June 30, 2013, PTTEP and subsidiaries held cash and cash equivalents of USD 1,758 million, a decrease of USD 534 million from that of December 31, 2012 at which point cash and cash equivalents totaled USD 2,292 million.

### **2.3 Major Factors with Potential Impact on Operations**

The overall oil price environment during the second quarter of 2013 is characterized by oil price volatility due to a number of factors. Dubai crude prices averaged 100.7 USD/bbl, which is a decrease versus both the previous quarter's average of 108.2 USD/bbl, and the previous year's second quarter average of 106.6 USD/bbl. The decrease is a result of first quarter economic figures released from leading global economies which came in lower than estimates. Key examples from China include the Chinese Manufacturing PMI which came in below estimates coupled with fears of increased amounts of non-performing loans and a credit crunch. In Germany, the consumer price index (CPI) decreased to a two-and-a-half-year low, against a dismal backdrop of a weak European economy which, in 2013, is projected to contract even more than previously anticipated due to unemployment rates in the region which are expected to continue rising. As a result, the concerns of an extended slowdown in the global economy weighed down on the demand for crude oil. When coupled with inventory supplies of crude in the second quarter of 2013 in the United States increasing to the highest levels last seen in 1931, oil prices were depressed.

However, upside factors to oil prices higher during the second half of 2013 include the unrest in the Middle East which risks straining supplies to the rest of the world. Recent examples include the confrontation between the Syrian opposition and the Syrian government related to the Syrian government's use of chemical weapons against rebels, the attack in Yemen on an oil pipeline, the bombing of an oil producing area of Southern Sudan, the protest in Egypt's capital, Cairo, calling for the president to step down, and negotiation issues between the International Atomic Energy Agency (IAEA) and the Iranian government concerning Iran's nuclear program, specifically related to uranium enrichment. Moreover the recovery of the US economy during the second half will also be a likely factor which drives oil demand and oil prices upward.

PTTEP closely monitors global economic conditions and energy demands given the uncertainty and volatile conditions of the global economy and oil prices, and has developed the following guidelines for management of operations amidst the changing economic conditions.

**Responding to the increase in energy demand:** During the second quarter of 2013, PTTEP produced at an average rate of 331,114 barrels of oil equivalent per day (BOED) which is relatively stable compared to the previous quarter's average production rate of 331,895 BOED. Thailand's domestic energy demand, according the Ministry of Energy, in May 2013, was approximately 2.06 Million BOED, a year-on-year increase from 1.97 BOED or approximately 4.6%, driven by energy requirements for development of the economy. The Ministry Energy has established the direction of energy policies for 2013-2014 with emphasis on balancing the need for energy security and the development of renewable energy for the future, for example the production of ethanol, bio-plastics, and bio-diesel. The Ministry has also established policies geared towards energy conservation and efficient usage of energy as well as restructuring energy prices to accurately reflect the actual costs.

PTTEP has reviewed the supply plan and improved production in order to meet the rise in energy demand. PTTEP has been cooperating with the related government agencies to collectively outline the optimal supply plan and forecast future energy demand from both domestic and neighboring countries, in both short term and long term. PTTEP has continuously been reviewing and adjusting its production plan as well as project development plans, including developing various technologies in exploration and production. Additionally, PTTEP is constantly seeking for investment opportunities in order to increase its reserves, with the purpose of meeting the nation's demand.

**Improving the efficiency and cost optimization:** PTTEP together with PTT Public Company Limited and PTT Group companies have embarked on the PTT Group Operational Excellence Transformation project aimed at the development of a management system for operational excellence (PTT Group Operational Excellence Management System – OEMS). During the second quarter of 2013, an OEMS Maturity Assessment was completed and

concluded that PTTEP was the group leader in excellence in the area of Security, Safety, Health and Environment (SSHE) as well as in the area of Performance Management. Thus, PTT Group bestowed the Center of Excellent Awards to PTTEP. PTTEP will use the results of the assessment for further development and continue to strive for excellence in 2013.

PTTEP also benchmarks its operations with peers for learning and development purposes. In 2013, PTTEP selected the S1 Project to participate with the Juran Institute to benchmark its processing facilities with the objective of improving operational efficiency. For drilling operations, PTTEP has considered partnering with Rushmore to carry out a Drilling Performance Review with the objective to compare drilling results with leading oil companies and apply the results for improvement and more efficient drill-program budgeting.

PTTEP manages its operational costs efficiently and transparently by continuing to adhere to its established Supply Chain Management policies. Additionally, the company implemented the Supply Chain Plus project aimed at reducing operating costs by twelve million US Dollars. In the first half year, the project achieved its planned cost reduction target of four million US Dollars, and expects a further eight million US Dollar cost reduction during the second half, achieving the full year target. To enable itself to achieve the cost reduction target, the company has organized a committee to create an Approved Manufacturing List (AML) in order to more efficiently procure materials from Low Cost Countries (LCC).

**Managing Risks on oil price volatility:** PTTEP enters into derivative contracts, using Brent crude as its reference price, to hedge pricing risks of the petroleum products related to the company. PTTEP continues to closely monitor events and economic conditions which have potential impact on oil prices. Moreover, PTTEP simulates scenarios of various oil price levels to assess and prepare operating plans for each scenario.

**Capability Development:** PTTEP realizes the urgency required in developing the organization's capabilities to prepare for business expansion into overseas territories which are increasingly challenging. PTTEP, therefore, has been developing a Center for Excellence, and has set out clear plans with emphasis on enhancing knowledge in seven key areas which are important and aligned with the company's strategy for rapid growth. The seven areas for knowledge development include, Exploration; Production; Frontier; Capital Project Management; Unconventionals; Merger & Acquisitions; and Health, Security and Environment. Together with the establishment of a Technology Center, which will be the center of research for new technologies, PTTEP aims to develop knowledge and capabilities for the organization and its people.

**Safety, Security, Health and Environment (SSHE):** PTTEP strives to be a Lost Time Injury free organization by 2013 through effective management of SSHE. PTTEP ranked in the top quartile of Lost Time Injury Frequency (LTIF) amongst the members of the International Association of Oil and Gas Producers (OGP).

At the end of the second quarter of 2013, PTTEP achieved an LTIF of 0.10 and a Total Recordable Incidence Rate (TRIR) of 0.87. If PTTEP maintains its current LTIF and TRIR at the current levels, it will again stand in the top quartile of OGP members. The hydrocarbon spill rate of PTTEP is at 1.2 which is better than the average of 7.94 of OGP members. Moreover, PTTEP has organized a campaign to reduce accidents through analysis of the root causes of accidents and through guidelines for accident prevention. The campaign involves the usage of shirts and the promotion of the culture of awareness towards safety so that risks of accidents are reduced to a minimum and the work place is safe.

PTTEP realizes the importance of safety for its employees at all levels and has communicated news related to safety and security risks from natural disasters, epidemics and social unrest. Since the beginning of 2013, PTTEP has implemented SSHE alerts for all employees across the organization. For example, it has alerted employees about the H7N9 virus in China, the hazardous levels of smog in Singapore and Malaysia as well as provided hygiene recommendations in response to the flood in Western Canada.

**Sustainable Development (SD):** PTTEP manages its strategy, direction and long-term objectives for sustainable growth with attention to economic, social and environmental governance. In the second quarter of 2013, PTTEP's 2012 Sustainable Development Report was given a GRI Application Level rating of A+. The GRI, or Global Reporting Initiative, is a standard framework for reporting on sustainable development, and encourages companies to measure and report on performance results of economic, social and environmental governance. The GRI standard promotes transparency and confidence in the sustainable development report. This is the first time that PTTEP's SD report is recognized at the highest level of the GRI standard. To further underscore PTTEP's commitment to sustainable development, particularly with respect to climate change and global warming, PTTEP has set a target to reduce greenhouse gas (GHG) emissions from its operations by 20% by the year 2020. This emission reduction target has been revised to be in accordance with the criteria set in the Carbon Disclosure Project (CDP) and the Dow Jones Sustainability Index (DJSI).

**Corporate Social Responsibility (CSR):** PTTEP focuses on the mutual development of the organization as well as of communities. During the second quarter of 2012, PTTEP continued to study and evaluate the outcomes of the Royal Navy Ship HTMS Prad and the Royal Navy Ship HTMS Sattakud which were submerged to the bottom of the ocean floor at Chumpon province and at Koh Tao in Surat Thani province. This project aims to revive marine ecosystem and become an educational resource as well as a diving spot for tourists. Also, PTTEP together with the Department of Coastal Marine and Resources promote the Artificial Coral Reefs project in Koh Tao. The goal is to instill a sense of preservation of marine ecology and biology into students and tourists. In addition, PTTEP encourages employee interaction with communities. For example, at Baan Talay Nork, a community of Muslims neighboring the Songkhla Petroleum Support Base, PTTEP helps improve the surroundings of the Child Development Center and supports the center with educational supplies.



PTTEP in cooperation with Department of Marine and Coastal Resources (DMCR), Department of National Parks, Wildlife and Plant Conservation (DNP) have agreed to jointly promote the conservation of the Irrawaddy Dolphins of Songkhla Lake. The project includes promoting and educating the community to ensure community participation in Irrawaddy Dolphin conservation. PTTEP also carries on its reforestation project in conjunction with the DNP and Department of Forest with the objective to offset its carbon dioxide production and support as a source of revenue for the communities around the areas and allows them to participate in forest preservation. Participants of the project are given an induction course on reforestation and forest preservation. The project instills a sense of social responsibility into PTTEP employees. PTTEP also initiates 'PTTEP Green Up' to encourage employees to engage in reforestation activities, such as cultivation of seedlings, growing other types of plants such as mangroves and feed crops.