

Supplemental Information on Petroleum Exploration and Production Activities (Unaudited)

(A) PTTEP and Our Subsidiaries' Petroleum Reserves Report as of December 31, 2018

The total Proved Reserves of PTTEP and our subsidiaries as of December 31, 2018 are shown in the attached table. The Proved Reserves are reviewed annually by Company's earth scientists and reservoir engineers to ensure rigorous professional standards. The Proved Reserves are reported on a gross basis, which includes the Company's net working interest and related host country's interest.

Furthermore, in order to improve efficiency, check and balance of the reserves estimation, reporting and disclosure, the company maintains a Reserves Committee which has the following roles and responsibilities:

- Review and endorse the Company's Annual Reserves
- Review and approve Major Changes of Reserves, and Reserves for Newly-Acquired Project
- Ensure that all activities that related to reserves estimation and disclosure of reserves information conform to regulatory and legal requirements as well as to corporate and international standards
- Approve Annual Reserves Audit Plan, appoint Reserves Auditor, as well as approve Reserves Audit Report to ensure compliance with Company's framework and continual process improvement

As of December 31, 2018, the total amount of Proved Reserves of PTTEP Group's projects was 164 million stock-tank barrels (MMSTB) of crude oil and condensate¹, and 3,286 billion standard cubic feet (BSCF) of natural gas or 513 million barrels of oil equivalent (MMBOE). The total amount of Proved Reserves in terms of oil equivalent in consolidation was therefore 677 MMBOE. Proved Reserves of crude and condensate are approximately 24% while, for gas, are 76% of the total Proved Reserves in terms of oil equivalent.

In 2018, the total production of PTTEP Group was 131 MMBOE, consisting of 34 MMSTB of crude oil and condensate¹ and 612 BSCF or 97 MMBOE of natural gas. This was equivalent to the production rate of approximately 359,386 barrels of oil equivalent per day (BOED), which was approximately 11,878 BOED or 3.4% increase from the previous year. The increase was mainly due to the acquisition of the additional 22.2222% participating interests in the Bongkot Project and high nomination from buyer in MTJDA and Contract 4 projects.

¹ Include the proved reserves and production of LPG

PTT Exploration and Production Public Company Limited

Crude Oil and Condensate and Natural Gas Proved Reserves ⁽¹⁾

| | Crude Oil and Condensate ⁽²⁾ | | | Natural Gas | | | Barrel of Oil Equivalent | | |
|---|---|---------|-------|-------------|---------|-------|--------------------------|---------|-------|
| | (MMSTB) | | | (BSCF) | | | (MMBOE) | | |
| | Domestic | Foreign | Total | Domestic | Foreign | Total | Domestic | Foreign | Total |
| Company's share of reserves of consolidated companies | | | | | | | | | |
| As of December 31, 2016 | 108 | 62 | 170 | 2,018 | 1,353 | 3,371 | 438 | 257 | 695 |
| 1) Revision of previous estimates | 11 | (0) | 11 | 77 | (50) | 27 | 24 | (7) | 17 |
| 2) Improved recovery | 2 | 1 | 3 | 9 | 0 | 9 | 4 | 1 | 5 |
| 3) Extensions and discoveries | 4 | 3 | 7 | 109 | 111 | 220 | 22 | 19 | 41 |
| 4) Purchases/Sales of Petroleum in place | - | - | - | - | - | - | - | - | - |
| 5) Production | (26) | (9) | (35) | (389) | (189) | (578) | (90) | (37) | (127) |
| As of December 31, 2017 | 99 | 57 | 156 | 1,824 | 1,225 | 3,049 | 398 | 233 | 631 |
| Company's share of reserves of consolidated companies | | | | | | | | | |
| As of December 31, 2017 | 99 | 57 | 156 | 1,824 | 1,225 | 3,049 | 398 | 233 | 631 |
| 1) Revision of previous estimates | 19 | 5 | 24 | 108 | 51 | 159 | 36 | 14 | 50 |
| 2) Improved recovery | 5 | 0 | 5 | 57 | 13 | 70 | 14 | 2 | 16 |
| 3) Extensions and discoveries | 14 | 1 | 15 | 368 | 3 | 371 | 72 | 1 | 73 |
| 4) Purchases/Sales of Petroleum in place | 6 | (8) | (2) | 249 | - | 249 | 47 | (9) | 38 |
| 5) Production | (27) | (7) | (34) | (425) | (187) | (612) | (97) | (34) | (131) |
| As of December 31, 2018 | 116 | 48 | 164 | 2,181 | 1,105 | 3,286 | 470 | 207 | 677 |

(1) The Proved Reserves are reported on a gross basis which includes the Company's net working interest and the related host country's interest.

(2) LPG Included

(B) Capitalized Costs Relating to Oil and Gas Producing Activities

Capitalized costs represent cumulative expenditures for proved and unproved properties together with related accumulated depreciation, depletion, amortization and allowance for impairment.

Proved properties include exploration wells, development wells, transportation pipeline, producing facilities and decommissioning costs. Unproved properties represent amounts associated with capitalized cost of projects which have not yet found proved reserves.

| (Unit: Million US Dollar) | 2018 | 2017 |
|--|-----------------|-----------------|
| Proved properties | 26,731 | 27,120 |
| Unproved properties | <u>4,956</u> | <u>5,098</u> |
| Gross capitalized costs | 31,687 | 32,218 |
| Accumulated depreciation, depletion, amortization and allowance for impairment | <u>(20,218)</u> | <u>(20,929)</u> |
| Net capitalized costs | <u>11,469</u> | <u>11,289</u> |

(C) Costs Incurred in Oil and Gas Property Acquisition, Exploration, and Development Activities

Costs incurred in oil and gas property acquisition, exploration and development activities represent amounts both capitalized and charged to expense during the year.

Property acquisition costs include costs to purchase proved and unproved properties.

Exploration costs include geological and geophysical expenses, exploratory drilling cost as well as reservation fee for exploration blocks.

Development costs include costs associated with drilling and equipping development wells, improved recovery systems, facilities for extraction, treating, gathering and storage, producing facilities for existing developed reserves, and costs associated with transportation pipeline.

| (Unit: Million US Dollar) | 2018 | | | 2017 | | |
|---------------------------|--------------|------------|--------------|------------|------------|--------------|
| | Domestic | Foreign | Total | Domestic | Foreign | Total |
| Acquisition of properties | | | | | | |
| - Proved | 1,314 | - | 1,314 | - | - | - |
| - Unproved | - | 26 | 26 | - | - | - |
| Exploration costs | 1 | 75 | 76 | 6 | 31 | 37 |
| Development costs | <u>718</u> | <u>273</u> | <u>991</u> | <u>779</u> | <u>417</u> | <u>1,196</u> |
| Total | <u>2,033</u> | <u>374</u> | <u>2,407</u> | <u>785</u> | <u>448</u> | <u>1,233</u> |

(D) Results of operations for producing activities

Results of operations from oil and gas producing activities for the year 2018 and 2017 are shown in the following table.

Operating expenses include lifting costs incurred to operate and maintain productive wells and related equipment.

Exploration expenses consist of geological and geophysical costs, and exploratory well write off expenses.

General administrative expenses are expenses directly related to oil and gas producing activities.

Depreciation, depletion and amortization expenses relates to capitalized costs incurred in acquisition, exploration and development activities, transportation pipeline, including amortized decommissioning costs.

Other expenses (income) mainly include impairment loss on assets, foreign exchange gains and losses directly related to oil and gas producing activities and other income.

Income tax expenses are based on the results of operations from petroleum producing activities.

General corporate overhead and finance costs are excluded from the results of operations for petroleum producing activities.

| (Unit: Million US Dollar) | 2018 | | | 2017 | | |
|--|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|
| | Domestic | Foreign | Total | Domestic | Foreign | Total |
| Gross revenues | | | | | | |
| Sales – Related parties | 3,745 | 1,085 | 4,830 | 2,929 | 1,066 | 3,995 |
| Sales – Third parties | 304 | 465 | 769 | 228 | 390 | 618 |
| Total sales | 4,049 | 1,550 | 5,599 | 3,157 | 1,456 | 4,613 |
| Expenses | | | | | | |
| Operating expenses | 436 | 497 | 933 | 372 | 511 | 883 |
| Exploration expenses | 2 | 43 | 45 | 25 | 27 | 52 |
| General administrative expenses | 35 | 76 | 111 | 49 | 62 | 111 |
| Petroleum royalties and remuneration | 470 | - | 470 | 368 | - | 368 |
| Depreciation, depletion and amortization | 1,371 | 459 | 1,830 | 1,092 | 537 | 1,629 |
| Other (income) / expenses | <u>(14)</u> | <u>83</u> | <u>69</u> | <u>(18)</u> | <u>538</u> | <u>520</u> |
| Total expenses | 2,300 | 1,158 | 3,458 | 1,888 | 1,675 | 3,563 |
| Results before income taxes | 1,749 | 392 | 2,141 | 1,269 | (219) | 1,050 |
| Income tax expenses | <u>573</u> | <u>237</u> | <u>810</u> | <u>367</u> | <u>63</u> | <u>430</u> |
| Net results of operations | <u>1,176</u> | <u>155</u> | <u>1,331</u> | <u>902</u> | <u>(282)</u> | <u>620</u> |

(E) Standardized Measure of Discounted Future Net Cash Flows (SMDCF) Relating to the Proved Oil and Gas Reserves

The standardized measure of discounted future net cash flows related to the above proved oil and gas reserves, is computed by applying 12-month average prices* (with consideration of price changes only to the extent provided by contractual arrangements), to the estimated future production of year-end remaining proved oil and gas reserves less estimated future expenditures (based on year-end costs) to be incurred in developing and producing the proved reserves.

Future income taxes are calculated by applying the appropriate year-end statutory tax rates to the future pre-tax net cash flows and deducted by applicable tax deductions or tax credits.

Net Cash flows are discounted using a rate of 10% per year to reflect the estimated timing of the future cash flows.

The estimation of discounted future net cash flow shown below is not intended to represent the fair value of oil and gas properties. The fair value should take into account of several factors, such as probable and possible reserves which may turn into proved reserves in the future, anticipated future oil and gas prices, interest rates, changes in development and production costs and risks associated with future production. Therefore the fair value will subject to the view and perception of analyst.

* Twelve-month average prices are calculated as the unweighted arithmetic average of the first-day-of-the-month price for each month.

Standardized Measure of Discounted Future Net Cash Flows Relating to Prove Oil and Gas Reserves

| (Unit: Million US Dollar) | Domestic | | Foreign | | Total | |
|--|----------------|----------------|----------------|--------------|----------------|----------------|
| | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
| Future cash inflows | 16,164 | 12,220 | 6,759 | 6,463 | 22,923 | 18,683 |
| Future production costs | (2,660) | (2,335) | (1,251) | (1,710) | (3,911) | (4,045) |
| Future development costs | (6,048) | (4,552) | (933) | (1,301) | (6,981) | (5,853) |
| Future income tax expenses | <u>(2,288)</u> | <u>(1,721)</u> | <u>(945)</u> | <u>(723)</u> | <u>(3,233)</u> | <u>(2,444)</u> |
| Future net cash flows | 5,168 | 3,612 | 3,630 | 2,729 | 8,798 | 6,341 |
| 10% annual discount | <u>(818)</u> | <u>(93)</u> | <u>(1,169)</u> | <u>(849)</u> | <u>(1,987)</u> | <u>(942)</u> |
| Standardized measure of discounted future net cash flows (SMDCF) | <u>4,350</u> | <u>3,519</u> | <u>2,461</u> | <u>1,880</u> | <u>6,811</u> | <u>5,399</u> |

Changes in Standardized Measure of Discounted Future Net Cash Flows Relating to Proved Oil and Gas Reserves

| (Unit: Million US Dollar) | 2018 | 2017 |
|--|--------------|--------------|
| Present value at beginning of year | 5,399 | 5,653 |
| Sales and transfers of oil and gas produced, net of production costs during period | (3,767) | (3,386) |
| Development costs incurred during the period | 1,145 | 1,320 |
| Net changes in prices and production costs | 3,216 | 335 |
| Net changes in development costs | (564) | (149) |
| Extensions, discoveries and improved recovery | 1,412 | 837 |
| Revisions of previous quantity estimates | 579 | 384 |
| Purchases / sales of petroleum in place | 1,225 | - |
| Accretions of discount | (1,045) | 45 |
| Net changes in income taxes | (789) | 360 |
| Present value at the year end | <u>6,811</u> | <u>5,399</u> |

(F) Other Information

Productive Oil/Condensate and Gas Wells

The numbers of productive wells at December 31, 2018 were as follows:

| | Oil/Condensate | | Gas | |
|----------------|----------------|-----|-------|-----|
| | Gross | Net | Gross | Net |
| Thailand | 677 | 438 | 1,515 | 699 |
| Foreign | | | | |
| Southeast Asia | 39 | 10 | 251 | 124 |
| Others | 14 | 5 | - | - |
| Total | 730 | 453 | 1,766 | 823 |

Drilling in Progress of Oil/Condensate and Gas Wells

The numbers of wells in progress at December 31, 2018 were as follows:

| | Gross | Net |
|--------------------|-------|-------|
| <u>Exploratory</u> | | |
| Thailand | - | - |
| Foreign | | |
| Southeast Asia | 1 | 0.78 |
| Others | - | - |
| Total | 1 | 0.78 |
| <u>Development</u> | | |
| Thailand | 21 | 11.10 |
| Foreign | | |
| Southeast Asia | 4 | 2.09 |
| Others | - | - |
| Total | 25 | 13.19 |

Net Oil/Condensate and Gas Wells Drilled Annually in 2018

| | Net Productive well drilled | Net dry well drilled |
|--------------------|--------------------------------|-------------------------|
| <u>Exploratory</u> | | |
| Thailand | - | - |
| Foreign | | |
| Southeast Asia | - | - |
| Others | - | - |
| Total | - | - |
| <u>Development</u> | | |
| Thailand | 228.82 | 1.20 |
| Foreign | | |
| Southeast Asia | 41.52 | - |
| Others | - | - |
| Total | 270.34 | 1.20 |

Gross wells include the total number of wells in which PTTEP Group has an interest excluding utility wells.

Net wells are the sum of the PTTEP Group's fractional interests in gross wells.

Quarterly Information in 2018 and 2017 for the consolidated financial statement are as follows:

Unit: US Dollar

| <u>Year 2018</u> | <u>4thQ</u> | <u>3rdQ</u> | <u>2ndQ</u> | <u>1stQ</u> |
|--|----------------------|----------------------|----------------------|----------------------|
| Revenues | | | | |
| Sales | 1,411,017,765 | 1,337,321,462 | 1,293,593,282 | 1,160,877,348 |
| Revenue from pipeline transportation | 29,190,306 | 29,987,855 | 25,367,013 | 23,018,560 |
| Other income | | | | |
| Gain on foreign exchange | - | - | - | 25,062,316 |
| Interest income | 22,703,516 | 19,802,410 | 20,873,464 | 19,973,276 |
| Gain on financial derivatives | 71,955,087 | - | - | - |
| Other income | 21,530,874 | 10,632,882 | 7,900,369 | 10,719,935 |
| Total Revenues | 1,556,397,548 | 1,397,744,609 | 1,347,734,128 | 1,239,651,435 |
| Expenses | | | | |
| Operating expenses | 168,808,730 | 166,176,601 | 168,992,974 | 141,105,849 |
| Exploration expenses | 9,022,944 | 18,637,627 | 15,277,426 | 2,747,477 |
| Administrative expenses | 104,706,341 | 69,634,574 | 58,439,352 | 57,453,370 |
| Petroleum royalties and remuneration | 133,659,700 | 121,414,377 | 110,641,320 | 103,947,632 |
| Depreciation, depletion and amortization | 484,519,932 | 496,344,211 | 459,708,136 | 407,938,260 |
| Other expenses | | | | |
| Loss on foreign exchange | 7,386,463 | 6,059,895 | 30,248,049 | - |
| Loss on financial derivatives | - | 6,808,271 | 7,553,864 | 43,626,319 |
| Other expenses | 20,745,077 | 37,022,924 | - | - |
| Finance costs | 66,885,106 | 57,421,070 | 57,212,601 | 57,046,118 |
| Total Expenses | 995,734,293 | 979,519,550 | 908,073,722 | 813,865,025 |
| Share of profit of associates and joint ventures | 1,699,603 | 2,285,467 | 1,848,770 | 2,098,428 |
| Profit (loss) before income taxes | 562,362,858 | 420,510,526 | 441,509,176 | 427,884,838 |
| Income taxes | (294,011,392) | (105,156,779) | (328,480,261) | (5,009,755) |
| Profit for the year | 268,351,466 | 315,353,747 | 113,028,915 | 422,875,083 |
| Basic earnings per share | | | | |
| Continuing operations | 0.07 | 0.07 | 0.03 | 0.10 |

Unit: US Dollar

| <u>Year 2017</u> | <u>4thQ</u> | <u>3rdQ</u> | <u>2ndQ</u> | <u>1stQ</u> |
|--|---------------|---------------|---------------|---------------|
| Revenues | | | | |
| Sales | 1,202,119,165 | 1,063,670,938 | 975,323,588 | 1,040,091,549 |
| Revenue from pipeline transportation | 22,172,556 | 24,884,575 | 17,488,758 | 13,259,364 |
| Other income | | | | |
| Gain on foreign exchange | 13,906,376 | 23,129,564 | 10,803,831 | 3,561,976 |
| Interest income | 18,474,470 | 12,994,974 | 15,236,804 | 12,872,725 |
| Gain on financial derivatives | - | - | - | 6,244,406 |
| Other income | 14,089,489 | 9,164,581 | 13,467,704 | 16,550,749 |
| Total Revenues | 1,270,762,056 | 1,133,844,632 | 1,032,320,685 | 1,092,580,769 |
| Expenses | | | | |
| Operating expenses | 168,080,012 | 162,191,500 | 152,874,578 | 141,915,277 |
| Exploration expenses | 23,078,034 | 8,468,079 | 19,302,802 | 1,344,636 |
| Administrative expenses | 106,140,710 | 51,328,478 | 51,646,957 | 42,254,790 |
| Petroleum royalties and remuneration | 102,391,207 | 89,664,243 | 84,302,712 | 91,499,703 |
| Depreciation, depletion and amortization | 435,662,557 | 413,462,171 | 381,268,098 | 419,826,900 |
| Other expenses | | | | |
| Loss on financial derivatives | 28,377,168 | 3,318,724 | 2,955,898 | - |
| Impairment loss on assets | - | 558,214,042 | - | - |
| Finance costs | 57,294,151 | 56,582,968 | 55,476,839 | 56,873,468 |
| Total Expenses | 921,023,839 | 1,343,230,205 | 747,827,884 | 753,714,774 |
| Share of profit of associates and joint ventures | 2,588,042 | 2,319,103 | 2,676,899 | 2,161,371 |
| Profit (loss) before income taxes | 352,326,259 | (207,066,470) | 287,169,700 | 341,027,366 |
| Income taxes | (63,317,211) | (57,351,361) | (67,303,990) | 8,401,312 |
| Profit (loss) for the period from continuing operations | 289,009,048 | (264,417,831) | 219,865,710 | 349,428,678 |
| Profit (loss) for the period from discontinued operations - net of tax | (347,441) | - | - | - |
| Profit (loss) for the period | 288,661,607 | (264,417,831) | 219,865,710 | 349,428,678 |
| Basic earnings (loss) per share | | | | |
| Continuing operations | 0.07 | (0.07) | 0.04 | 0.09 |
| Discontinued operations | (0.0001) | - | - | - |

Petroleum Sales Volume and Average Unit Prices

| | 2018 | 2017 |
|---|---------|---------|
| Net sales of petroleum (BOED) | 305,522 | 299,206 |
| Average petroleum unit prices | | |
| Average unit prices of crude oil and condensate (USD/BBL) | 67.40 | 52.26 |
| Average unit prices of natural gas (USD/MMBTU) | 6.42 | 5.59 |
| Average unit prices of petroleum (USD/BOE) | 46.66 | 39.20 |
| Lifting cost (USD/BOE) | 4.33 | 4.19 |