

**Attachment 5: Supplemental Information on Petroleum Exploration and Production Activities (Unaudited)****(A) PTTEP and Our Subsidiaries' Petroleum Reserves Report as of December 31, 2019**

The total Proved Reserves of PTTEP and our subsidiaries as of December 31, 2019 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, 2019, the total amount of Proved Reserves of PTTEP Group's projects<sup>1</sup> was 310 million stock-tank barrels (MMSTB) of crude oil and condensate<sup>2</sup>, and 5,097 billion standard cubic feet (BSCF) of natural gas or 830 million barrels of oil equivalent (MMBOE). The total amount of Proved Reserves in terms of oil equivalent in consolidation was therefore 1,140 MMBOE. Proved Reserves of crude and condensate are approximately 27% while, for gas, are 73% of the total Proved Reserves in terms of oil equivalent.

In 2019, the total production of PTTEP Group<sup>1</sup> was 151 MMBOE, consisting of 41 MMSTB of crude oil and condensate<sup>2</sup> and 690 BSCF or 110 MMBOE of natural gas. This was equivalent to the production rate of approximately 413,640 barrels of oil equivalent per day (BOED), which was approximately 54,255 BOED or 15.1% increase from the previous year. The increase was mainly due to the acquisition of Murphy Oil Corporation in Malaysia and Partex Holding B.V.

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<sup>1</sup> Include APICO Joint Venture project

<sup>2</sup> Include the proved reserves and production of LPG

# PTT Exploration and Production Public Company Limited

## Crude Oil and Condensate and Natural Gas Proved Reserves <sup>(1)</sup>

	Crude Oil and Condensate <sup>(2)</sup>			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, 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
Company's share of reserves of consolidated companies									
As of December 31, 2018	116	48	164	2,181	1,105	3,286	470	207	677
1) Revision of previous estimates	13	(1)	12	160	(53)	107	41	(4)	37
2) Improved recovery	1	0	1	1	1	2	2	1	3
3) Extensions and discoveries	2	45	47	21	954	975	5	207	212
4) Purchases/Sales of Petroleum in place	21	106	127	816	582	1,398	153	206	359
5) Production	(30)	(11)	(41)	(475)	(212)	(687)	(107)	(43)	(150)
Company's share of Reserves of equity companies <sup>(3)</sup>	0	-	0	16	-	16	2	-	2
As of December 31, 2019	123	187	310	2,720	2,377	5,097	566	574	1,140

(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

(3) Included Reserves from APICO Joint Venture project

**(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)	2019	2018
Proved properties	31,152	26,731
Unproved properties	<u>4,366</u>	<u>4,715</u>
<b>Gross capitalized costs</b>	<b>35,518</b>	<b>31,446</b>
Accumulated depreciation, depletion, amortization and allowance for impairment	<u>(22,277)</u>	<u>(20,218)</u>
<b>Net capitalized costs</b>	<b><u>13,241</u></b>	<b><u>11,228</u></b>

**(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)	2019			2018		
	Domestic	Foreign	Total	Domestic	Foreign	Total
Acquisition of properties						
- Proved	60	2,580	2,640	1,314	-	1,314
- Unproved	-	22	22	-	26	26
Exploration costs	5	210	215	1	75	76
Development costs	<u>594</u>	<u>354</u>	<u>948</u>	<u>718</u>	<u>273</u>	<u>991</u>
<b>Total</b>	<b><u>659</u></b>	<b><u>3,166</u></b>	<b><u>3,825</u></b>	<b><u>2,033</u></b>	<b><u>374</u></b>	<b><u>2,407</u></b>

**(D) Results of operations for producing activities**

Results of operations from oil and gas producing activities for the year 2019 and 2018 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)	2019			2018		
	Domestic	Foreign	Total	Domestic	Foreign	Total
<b>Gross revenues</b>						
Sales – Related parties	4,281	1,024	5,305	3,745	1,085	4,830
Sales – Third parties	276	891	1,167	304	465	769
<b>Total sales</b>	<b>4,557</b>	<b>1,915</b>	<b>6,472</b>	<b>4,049</b>	<b>1,550</b>	<b>5,599</b>
<b>Expenses</b>						
Operating expenses	486	582	1,068	436	497	933
Exploration expenses	2	127	129	2	43	45
General administrative expenses	43	94	137	35	76	111
Petroleum royalties and remuneration	528	19	547	470	-	470
Depreciation, depletion and amortization	1,511	497	2,008	1,371	459	1,830
Other (income) / expenses	<u>(59)</u>	<u>(37)</u>	<u>(96)</u>	<u>(14)</u>	<u>83</u>	<u>69</u>
<b>Total expenses</b>	<b>2,511</b>	<b>1,282</b>	<b>3,793</b>	<b>2,300</b>	<b>1,158</b>	<b>3,458</b>
<b>Results before income taxes</b>	<b>2,046</b>	<b>633</b>	<b>2,679</b>	<b>1,749</b>	<b>392</b>	<b>2,141</b>
Income tax expenses	<u>706</u>	<u>210</u>	<u>916</u>	<u>573</u>	<u>237</u>	<u>810</u>
<b>Net results of operations</b>	<b><u>1,340</u></b>	<b><u>423</u></b>	<b><u>1,763</u></b>	<b><u>1,176</u></b>	<b><u>155</u></b>	<b><u>1,331</u></b>

**(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	
	2019	2018	2019	2018	2019	2018
Future cash inflows	17,902	16,164	20,025	6,759	37,927	22,923
Future production costs	(2,784)	(2,660)	(4,946)	(1,251)	(7,730)	(3,911)
Future development costs	(7,548)	(6,048)	(3,682)	(933)	(11,230)	(6,981)
Future income tax expenses	(2,174)	(2,288)	(3,186)	(945)	(5,360)	(3,233)
<b>Future net cash flows</b>	<b>5,396</b>	<b>5,168</b>	<b>8,211</b>	<b>3,630</b>	<b>13,607</b>	<b>8,798</b>
10% annual discount	(1,091)	(818)	(4,039)	(1,169)	(5,130)	(1,987)
<b>Standardized measure of discounted future net cash flows (SMDCF) of consolidated companies</b>	<b>4,305</b>	<b>4,350</b>	<b>4,172</b>	<b>2,461</b>	<b>8,477</b>	<b>6,811</b>
SMDCF of equity companies <sup>3</sup>	37	-	-	-	37	-
<b>Total SMDCF</b>	<b><u>4,342</u></b>	<b><u>4,350</u></b>	<b><u>4,172</u></b>	<b><u>2,461</u></b>	<b><u>8,514</u></b>	<b><u>6,811</u></b>

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

(Unit: Million US Dollar)	2019	2018
Present value at beginning of year of consolidated companies	6,811	5,399
Sales and transfers of oil and gas produced, net of production costs during period	(4,652)	(3,767)
Development costs incurred during the period	960	1,145
Net changes in prices and production costs	2,197	3,216
Net changes in development costs	(112)	(564)
Extensions, discoveries and improved recovery	4,414	1,412
Revisions of previous quantity estimates	415	579
Purchases / sales of petroleum in place	3,714	1,225
Accretions of discount	(3,143)	(1,045)
Net changes in income taxes	<u>(2,127)</u>	<u>(789)</u>
<b>Present value at the year end of consolidated companies</b>	<b>8,477</b>	<b>6,811</b>
Present value at the year end of equity company <sup>1</sup>	<u>37</u>	-
<b>Total Present value at the year end</b>	<b><u>8,514</u></b>	<b><u>6,811</u></b>

<sup>3</sup> included investment in APICO Joint Venture project

**(F) Other Information**
**Productive Oil/Condensate and Gas Wells**

The numbers of productive wells at December 31, 2019 were as follows:

	Oil/Condensate	Gas
	Gross	Gross
Thailand	865	1,205
Foreign		
Southeast Asia	129	286
Others	9,315	-
Total	10,309	1,491

**Drilling in Progress of Oil/Condensate and Gas Wells**

The numbers of wells in progress at December 31, 2019 were as follows:

	Number of Well
<u>Exploratory</u>	
Thailand	-
Foreign	
Southeast Asia	1
Others	-
Total	1
<u>Development</u>	
Thailand	16
Foreign	
Southeast Asia	2
Others	1
Total	19

## Net Oil/Condensate and Gas Wells Drilled Annually in 2019

	Productive Well	Dry Well
<u>Exploratory</u>		
Thailand	-	-
Foreign		
Southeast Asia	8	8
Others	1	1
Total	<u>9</u>	<u>9</u>
 <u>Development</u>		
Thailand	342	12
Foreign		
Southeast Asia	43	1
Others	-	-
Total	<u>385</u>	<u>13</u>



Quarterly Information in 2019 and 2018 for the consolidated financial statement are as follows:

Unit: US Dollar

<u>Year 2019</u>	<u>4thQ</u>	<u>3rdQ</u>	<u>2ndQ</u>	<u>1stQ</u>
<b>Revenues</b>				
Sales	1,754,900,631	1,494,389,633	1,469,499,654	1,327,626,240
Revenue from pipeline transportation	25,211,924	29,453,709	33,441,021	28,289,483
Other income				
Gain on foreign exchange	29,442,854	19,975,173	26,449,713	32,729,790
Interest income	13,597,516	12,741,830	32,807,784	27,087,691
Gain on financial derivatives	-	21,347,992	-	-
Other income	16,929,538	15,382,313	10,407,629	12,671,171
<b>Total Revenues</b>	<b>1,840,082,463</b>	<b>1,593,290,650</b>	<b>1,572,605,801</b>	<b>1,428,404,375</b>
<b>Expenses</b>				
Operating expenses	280,742,698	181,382,444	153,473,481	135,083,704
Exploration expenses	27,496,976	59,091,981	33,006,988	8,502,045
Administrative expenses	132,383,175	93,950,863	92,580,760	64,861,714
Petroleum royalties and remuneration	151,527,598	135,608,689	137,138,703	122,059,219
Depreciation, depletion and amortization	577,988,263	511,721,459	476,953,188	459,392,677
Other expenses				
Loss on financial derivatives	41,020,245	-	7,709,075	82,018,396
Finance costs	62,434,355	59,800,813	55,684,491	57,059,082
<b>Total Expenses</b>	<b>1,273,593,310</b>	<b>1,041,556,249</b>	<b>956,546,686</b>	<b>928,976,837</b>
Share of profit of associates and joint ventures	6,303,945	802,183	2,518,049	2,727,662
<b>Profit before income taxes</b>	<b>572,793,098</b>	<b>552,536,584</b>	<b>618,577,164</b>	<b>502,155,200</b>
Income taxes	(189,146,369)	(193,931,190)	(185,994,360)	(107,926,126)
<b>Profit for the year</b>	<b>383,646,729</b>	<b>358,605,394</b>	<b>432,582,804</b>	<b>394,229,074</b>
<b>Basic earnings per share</b>				
Continuing operations	0.09	0.09	0.10	0.10

Unit: US Dollar

<u>Year 2018</u>	<u>4thQ</u>	<u>3rdQ</u>	<u>2ndQ</u>	<u>1stQ</u>
<b>Revenues</b>				
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	<b>1,556,397,548</b>	<b>1,397,744,609</b>	<b>1,347,734,128</b>	<b>1,239,651,435</b>
<b>Expenses</b>				
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	<b>995,734,293</b>	<b>979,519,550</b>	<b>908,073,722</b>	<b>813,865,025</b>
Share of profit of associates and joint ventures	1,699,603	2,285,467	1,848,770	2,098,428
<b>Profit (loss) before income taxes</b>	<b>562,362,858</b>	<b>420,510,526</b>	<b>441,509,176</b>	<b>427,884,838</b>
Income taxes	(294,011,392)	(105,156,779)	(328,480,261)	(5,009,755)
<b>Profit for the year</b>	<b>268,351,466</b>	<b>315,353,747</b>	<b>113,028,915</b>	<b>422,875,083</b>
<b>Basic earnings per share</b>				
Continuing operations	0.07	0.07	0.03	0.10

**Petroleum Sales Volume and Average Unit Prices**

	2019	2018
Net sales of petroleum (BOED)	350,651	305,522
Average petroleum unit prices		
Average unit prices of crude oil and condensate (USD/BBL)	61.18	67.40
Average unit prices of natural gas (USD/MMBTU)	6.92	6.42
Average unit prices of petroleum (USD/BOE)	47.24	46.66
Lifting cost (USD/BOE)	4.31	4.33