

3. To apply specific expertise in support of business, including financial know-how to improve accounting and financial processes to enable a given company to grow robustly. This includes assistance to companies outside PTT Group. The resulting application of the knowledge and expertise gained from serving in such leading companies will enhance the benefit to PTT and foster cordial relations and business alliance with PTT.

4. This is part and parcel of the responsibility of the directors and the management of PTT.

PTT ensures its consideration of executives or outsiders from the Ministry of Finance's Director's Pool for appointment within PTT Group, which is regarded as a state enterprise, based on the act on standard qualifications of directors and state enterprise officials. Chosen directors from the pool must make up no less than one-third of other directors of a given state enterprise. As of December 31, 2017, PTT had 27 members who belonged to the Director's Pool. It also ensures that PTT executives and such outsiders who serve as directors in PTT affiliates serve on no more than three PTT affiliates or other state enterprise affiliates. This is designed to lower risks of conflicts of interest and ensure conformance to applicable laws, as well as conformance to a Cabinet resolution of January 24, 2011, on fraud prevention measures at state enterprises, entitled "The appointment of senior government officials or persons as directors on multiple state enterprises", as proposed by NACC.

Finally, the Board defined guidelines and criteria for serving in various positions by PTT Group's executives. This year the Board decided to adopt them as part of the CG Handbook.

Supervision of the Use of Inside Information

1. Internal Control System

PTT consistently values internal control, particularly a system that is comprehensive in scope of activities and aspects, as well as adequate and suitable for its businesses, to achieve objectives on:

1. Operational excellence: Ensure efficient, effective management of resource consumption, together with stewardship of properties through prevention and reduction of errors, damage, waste, and fraud

2. Reporting reliability: Ensure that financial and other reports developed for internal and external consumption are accurate, credible, and timely

3. Compliance: Ensure compliance with laws and regulations dealing with the organization's business together with strict compliance with PTT-defined policies and procedures dealing with its businesses.

Under PTT's system, a unit is responsible for internal control to assess such control. The President & CEO has authorized the Corporate Plan and Risk Management Committee together with the Strategic Investment Management and Internal Control Committee to define work procedures under PTT's internal control standards, assess the outcomes, and report on PTT's internal control. The Board has assigned the Audit Committee to review the outcomes of such internal control assessment, annually conducted by the management and the Office of Corporate Audit, as highlighted below.

(1) Control Environment

PTT commands a sound overall control environment that is adequate for business efficiency and effectiveness. Its executives have promoted an organizational culture focusing on the code of conduct as a role model with the following implementation:

- PTT has defined a policy and procedures in writing on integrity and a code of conduct. The Corporate Governance Committee defines a CG policy in line with international standards. Disclosures are made about conflicts of interest to ward off activities of such conflicts, illegal, and improper activities. The policy and the handbook are revised each year. Each director, management team member, and employee sign his or her name to acknowledge and conform to such policy and handbook as part of their work, illustrating the commitment to concretely applying the CG policy and code of conduct.
- PTT has instituted an organizational structure that decentralizes power for business flexibility and alignment with prevailing circumstances. Duties and responsibilities are defined in writing, with definitions of key performance indicators (KPIs) set early in the year as guidelines for employees' performance. Performance is regularly monitored against goals and measured at the year-end. Goals are revised each year. All employees are aware of their roles, authority, duties, and responsibilities.
- PTT has integrated CG with the organization's vision, missions, and core values by setting a goal for PTT as a company with a sustainable growth strategy, a high-performance multinational energy company with excellent capability for growing its competitiveness and a focus on creating shared value (CSV), with suitable benefit to stakeholders on the basis of CG.

(2) Code of Conduct

PTT's written policy and a code of conduct are in place for integrity and a high ethical standard. In the handbook, the Corporate Governance Committee defines the code based on international standards. Violators of the code are subject to disciplinary action.

The essential aspects of the code are included below:

1. Respect the law and the Universal Declaration of Human Rights principles
2. Prevent money laundering
3. Stay politically neutral
4. Stay free of vested interests and conflicts of interest
5. Maintain confidentiality and refrain from using inside information for self-gains
6. Respond to customers' needs and show responsibility to consumers
7. Compete freely and fairly
8. Use a transparent procurement system and treat business partners fairly
9. Show responsibility to communities and society
10. Support employees' rights and establish employee engagement
11. Strictly, transparently, and equitably honor loan contracts
12. Have an efficient internal control system and an internal audit system
13. Have a guideline for accepting and giving gifts, assets, or other benefits
14. Maintain safety, promote health, and preserve the environment
15. Respect intellectual properties and properly apply information technology.

(3) Conflicts of Interest

PTT requires information disclosure to prevent conflicts of interest and illegal, improper activities. Under the Board's policy, business decisions made by the management and employees must be solely for PTT's best interests. All staff must not only avoid engaging in financial and other relationships with external

parties that would lead to financial losses for PTT or a conflict of loyalty or interests, but also not compromise the efficiency of business operations. Those staff with interests or related businesses which may require PTT's review and decisions must report their relationships and connection with possible conflicts of interest. PTT is to disallow such connected persons from exercising their authority for and involvement in such transactions.

(4) Reporting Connected Transactions with PTT

PTT has required the directors, management, and all employees to disclose potential conflicts of interest through a specific disclosure form. In addition, any approval of such items must not contain special conditions or specifications that are out of the ordinary, which forms part of PTT's internal controls. PTT's Office of Corporate Audit and the Audit Committee have been entrusted with the monitoring and resolution of issues related to conflicts of interest. The directors, management, and all employees were required to report for conflicts of interest at the beginning of the year. Also, executives and employees are able to electronically report on the PTT intranet. However, no such cases of significance have arisen. The disclosure form confirms their acknowledgment that violation of ethics and the code of conduct in PTT's business operations is subject to disciplinary measures varying with the seriousness of the actions.

(5) Reporting Vested Interests of Directors, the Management, and Related Parties

In the first quarter this year, the Board developed a form for reporting the vested interests of directors, the management, and related parties as basic information to manage vested interests for directors and senior management. The directors and the management are to report such matters every year and with every change. The Corporate Secretary is to compile and submit the copy to the Board Chairman and the Chairman of the Audit Committee to check and manage conflicts of interest. This year, however, no such cases have arisen.

(6) Reporting Changes in Share Portfolios

As part of the oversight of inside-information measures, all PTT directors and management, including their spouses and children not yet of legal age, must report any changes in their PTT share ownership to SEC under Article 59 of the Securities and Exchange Act B.E. 2535 (1992) within three days from the dates of sale, purchase, disposal, or receipt of such shares. PTT defines the policy of disclosing or reporting the sale, purchase, disposal, or receipt of such shares, changes in share ownerships of the directors and the management to the monthly Board meeting, contained in advance as a regular agenda item.

Moreover, one week before the closing of the quarterly and yearly financial statements, the Office of the President and Corporate Secretary issues a letter to the directors, executives, or units with privilege of inside information, forbidding them to disclose such information to external parties or unrelated parties, and to buy or sell PTT shares within 45 days (for quarterly statements) and 60 days (for the annual statements) of the last effective date of the financial statements to the notification date of the financial statements to SET, ahead of the public dissemination of the statements so as to prevent insider trading. This year, all directors and the management have strictly observed this policy. Notifications of no sale, purchase, or transfer of PTT's shares were served on four occasions to the directors and executives:

1. Between January 1 and February 28, 2017 (fiscal year 2016)
2. Between April 1 and May 15, 2017 (fiscal year 2017, first quarter)
3. Between July 1 and August 15, 2017 (fiscal year 2017, second quarter)
4. Between October 1 and November 15, 2017 (fiscal year 2017, third quarter).

A policy was set for the avoidance of share trading of PTT Group companies during other periods. If necessary, such share trading must follow notification to the Corporate Secretary by at least two days.

Directors' Securities Portfolio, 2016 - 2017

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
1.	Mr. Piyasvasti Amranand	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
2.	Prof. Dr. Kittipong Kittayarak	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
3.	AM Boonsuib Prasit	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
4.	Mr. Boontuck Wungcharoen	-	N/A	N/A	(Appointed on February 27, 2017 and Resigned on December 31, 2017) (As of December 30, 2017, no PTT share held)
	Spouse and children under legal age	-	-	-	-
5.	Gen. Chatchalerm Chalermsook	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
6.	Mr. Chanvit Amatamatucharti	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
7.	Mrs. Nuntawan Sakuntanaga	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
8.	Mr. Vichai Assarasakorn	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
9.	Mr. Somchai Sujjapongse	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
10.	Mr. Somsak Chotrattanasiri	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-
11.	Mr. Don Wasantapruet	-	-	-	(No PTT share held)
	Spouse and children under legal age	-	-	-	-

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
12.	Mr. Thon Thamrongnawasawat	–	–	–	(No PTT share held)
	Spouse and children under legal age	–	–	–	–
13.	Mr. Thammayot Srichuai	–	–	–	(No PTT share held)
	Spouse and children under legal age	–	–	–	–
14.	Mr. Somkit Lertpaithoon	–	–	–	Appointed on February 27, 2017 (No PTT share held)
	Spouse and children under legal age	–	–	–	–
15.	Mr. Tevin Vongvanich	–	–	–	Shown in the Management's Ownership of Shares Table.
	Spouse and children under legal age	–	–	–	–

Securities Portfolios of Directors Who Completed Their Terms and Who Resigned, 2017

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
1.	Mr. Prasert Bunsumpun	–	N/A	N/A	Retired on reaching the age of 65 years on February 20, 2017 (PTT shares held by spouse)
	Spouse	130,800	N/A	N/A	–
	Children under legal age	–	N/A	N/A	–

Management's Ownership of Shares, 2016 - 2017

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
1.	Mr. Tevin Vongvanich	25,000	25,000	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
2.	Mr. Wirat Uanarumit	15,500	15,500	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
3.	Mr. Auttapol Rerkpiboon	22,500	22,500	–	(No trading transaction of PTT shares in 2017)
	Spouse	4,300	4,300		(No trading transaction of PTT shares in 2017)
	Children under legal age	–	–	–	–
4.	Mr. Chansin Treenuchagron	–	–	–	(No PTT share held)
	Spouse and children under legal age	–	–	–	–
5.	Mrs. Nitima Thepvanangkul	41,000	41,000	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
6.	Mr. Kris Imsang	10,000	10,000	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
7.	Mrs. Sriwan Eamrungrroj	–	–	–	(No PTT share held)
	Spouse	110,200	110,200	–	(No trading transaction of PTT shares in 2017)
	Children under legal age	–	–	–	–
8.	Mr. Noppadol Pinsupa	13,600	13,600	–	(No trading transaction of PTT shares in 2017)
	Spouse	50,800	50,800	–	(No trading transaction of PTT shares in 2017)
	Children under legal age	–	–	–	–
9.	Miss Jiraphon Kawswat	N/A	–	–	* Appointed on October 1, 2017 (No PTT share held)
10.	Mrs. Boobpha Amornkiatkajorn	70,000	70,000		(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
11.	Mr. Wittawat Svasti-xuto	55,451	55,451	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
12.	Mr. Athavuth Vikitsreth	N/A	–	–	* Appointed on March 1, 2017 (No PTT share held)
	Spouse	N/A	2,000	–	(No trading transaction of PTT shares in 2017)
	Children under legal age	N/A	–	–	–
13.	Miss Peangpanor Boonklum	N/A	–	–	* Appointed on October 1, 2017 (No PTT share held)
14.	Mr. Somporn Vongvuthipornchai	–	–	–	(No PTT share held)
	Spouse	10,000	10,000	–	(No trading transaction of PTT shares in 2017)
	Children under legal age	–	–	–	–
15.	Mr. Atikom Terbsiri	–	–	–	(No PTT share held)
	Spouse and children under legal age	–	–	–	–
16.	Mr. Supattanapong Punmeechaow	–	–	–	(No PTT share held)
	Spouse and children under legal age	–	–	–	–
17.	Mr. Sukrit Surabotsopon	2,000	2,000	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
18.	Mr. Termchai Bunnag	–	–	–	* Appointed on March 1, 2017 (No PTT share held)
	Spouse and children under legal age	–	–	–	–
19.	Mr. Sumrid Sumneing	7,000	7,000	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–
20.	Miss Wilaiwan Kanjanakanti	3,699	3,699	–	(No trading transaction of PTT shares in 2017)
21.	Miss Chienvit Udomwatwong	1,516	1,516	–	(No trading transaction of PTT shares in 2017)
	Spouse and children under legal age	–	–	–	–

Note:

No PTT share was held by executives' spouses and children under legal age, except those of No. 3, 7, 8, 12 and 14.

Securities Portfolios of Executives Transferred/ Retired, 2017

No.	Name	Shares (Shares)			Remarks
		Dec 31, 2016	Dec 31, 2017	Change during the year	
1.	Mr. Sarun Rungkasiri	-	N/A	N/A	Retired on September 30, 2017 (No PTT share held)
	Spouse and children under legal age	-	N/A	-	-
2.	Mr. Chavalit Punthong	-	N/A	N/A	Retired on September 30, 2017 (No PTT share held)
	Spouse and children under legal age	-	-	-	-
3.	Mr. Supot Laosuarpha	78,807	N/A	N/A	Retired on September 30, 2017 (No trading transactions of PTT shares in 2017)
4.	Miss Nitaya Direksathapon	5,000	N/A	N/A	Retired on September 30, 2017 (No trading transactions of PTT shares in 2017)

Note:

PTT has issued and offered 60,000,000 warrants to the President, the management, PTT employees, and employees of PTT Group companies seconded to PTT, consisting of two batches: PTT-W1 (40,000,000 units), offered in 2005, with the last exercise date on August 31, 2010, and PTT-W2 (20,000,000 units), offered in 2006, with the last exercise date on September 28, 2011. The warrants were all exercised, and no new ones have been issued.

(7) Filing of Assets and Debts to NACC

Under Article 39 of the Anti-Corruption Act B.E. 2542 (1999), PTT's directors and senior management, including directors and senior management in the companies where PTT holds more than 50% of shares, are required to file a list of their own assets and debts, including those of their spouses and children not yet of legal age, to the NACC each time they take up a position, every three years during their terms, and one year after leaving their positions. To achieve this, PTT will issue a reminder to each of the directors and senior management as required.

(8) Declaring Vested Interests at Meetings

At each Board meeting, the Chairman reminds directors to conform to the policy on conflicts of interest on all agenda items, which requires those with vested interests to declare such interests to the meeting to abstain from voting or giving any views. This year, a total of 6 notices were made to the Chairman out of 13 Board meetings.

(9) Review of Connected Transactions

The Audit Committee reviews related transactions and those with potential conflicts of interest that could harm PTT's businesses. These have been examined for conformance to the law and SET's criteria. All these must be reported to the Board for approval.

(10) Corporate Governance Promotional Activities

The Corporate Governance Committee (CGC) provides oversight, monitors, and assesses the outcomes concerning PTT's CG and anti-corruption. It issues policies and guidelines to the Corporate Governance Working Group (CGWG), which this year underwent a name change to the Corporate Governance Management Committee (CGMC). Chaired by a senior executive vice president and reporting to CGC, CGMC serves as a state enterprise anti-corruption operation center at PTT under the approach set by NACC. CGMC implements the CG and anti-corruption operating plans and sets goals and KPIs approved by CGC and the Board. This year's tasks, both initiated and constantly developed, are described below:

- Delegated to the top management the driving of the corporate value strategy by appointing the COO, Upstream Petroleum & Gas Business Group, to the post of I Champion (Integrity & Ethics Champion) to found the Integrity Power Club among employees. The club is to attract employees as members to jointly engage in activities promoting awareness and expression of integrity by refusing all corrupt practices.
- A channel for directly communicating with all common shareholders is a quarterly, bilingual newsletter called "PTT Bizway", mailed to shareholders. It contains key information, including the vision, missions, message from the President & CEO, performance outcomes, CG, and PTT's sustainability management, business information, among others. PTT annually develops an evaluation form, which this year surveyed readers' satisfaction with the corporation. The results pointed out that PTT's CG was regarded by readers as "considerable" to "maximum" (90.24%).
- For new employees, the CG principles are communicated through orientation sessions, with tests to assess their knowledge under the CG E-Learning system. This year there were three batches, each 60 - 80 persons. All new employees receive a CG handbook each. They were to study them and sign their names as acknowledgment for implementation on their jobs.
- It also developed CG E-learning (self-learning) on the intranet as a learning media for CG, the Code of Conduct, and anti-corruption measures for all employees. Simulated situations drummed up awareness and enabled employees to apply what they learned from their self-learning experience to real-life situations as seen fit. At the end of the learning program, there was a test of their understanding. This year saw more lesson contents included, including anti-money laundering, treatment of creditors, and the anti-corruption policy. To date, 2,953 employees (63%) have joined the CG E-learning experience.

- Developed questionnaires through internal communication channels to assess employees' CG understanding and communication. It was found that over 97.08% commanded mastery of CG.
- Periodic promotional campaigns were conducted through various media within PTT, including exhibitions, a CG intranet website, and two-way communication channels through cghelpdesk@pttplc.com, video shows, CG Comics, and the CG See Through column in the "PTT SPIRIT" magazine, CG reminders through internal e-mails of CG movements together with knowledge tips and participation in activities of interest. In addition, topics dealing with QSHE, SPIRIT, CSR, CG Talk have entered meeting agenda (agenda-based meetings) at all units to convey CG messages and promote awareness of CG-filled business conduct, including meetings of the MC.
- Staged a CG Camp, Year 4, to allow representatives from different units to intensively observe and learn CG and anti-corruption practices to apply what they learn to real-life work while championing the cause among colleagues. This formed part of "strengthening from the inside" under PTT's strategies. At the camp, a workshop on the approach to an organization of integrity, a drama simulating CG compliance, and recreational activities interspersed with tips on CG, among others.
- A CG Day activity was organized under the "CG 4.0, It's Easy to Do Good Deeds for Sustainability" theme with a focus on employees' recognition of the value and inspiration for amassing the energy of good deeds. This was done through a dialogue and expression of the intention of executives, followed by a pledge of commitment to being smart and conscientious, as well as joint responsibility by directors, the management, and employees. PTT also staged an Integrity Forum 2017 activity to share views and concepts of the energy of good deeds together with transparency by representatives of SEC and NACC, among others on the topic of "Energy of Good Deeds...Strength from Within Creates Transparency toward Sustainability".
- PTT values PTT Group's CG to align with company management in the "PTT Group" management approach. To this end, goals have been defined for the elevation of the CG standards among PTT Group to comparable levels and getting prepared for ranking. Work plans were defined and proactive PR approaches were mapped out. A PTT Group Corporate Governance Committee was appointed to jointly investigate and develop an international-standard approach for PTT Group guidelines. A PTT Group CG Day was organized, a key annual activity designed to campaign, promote, and publicize CG practices among SET-listed PTT Group companies, namely PTT, PTTEP, PTTGC, TOP, IRPC, and GPSC. External guests of honor continued to join the event, including representatives from SET, SEC, IOD, Anti-corruption Network Foundation, business partners, Board of Directors, executives, and employees of PTT Group companies. This year GPSC hosted the event, entitled "PTT Group CG Day 2017: CG in DNA: Together We Can". CG is now PTT Group's identity for jointly nurturing a culture of transparency and freedom from corruption, which will expand to business networks, society, and the nation as a whole. The day's activities also featured a special lecture by Prof. Wicha Mahakhun, Chairman, Anti-Corruption Foundation, and a CEO forum among six PTT Group companies under the "Decoding CG to Continue Good Deeds and Strive for a Sustainable Culture".
- Besides promoting CG knowledge within the corporation, PTT shared this knowledge with external parties by agreeing to requests for visits by assorted organizations/institutions. PTT's top management were also invited to give talks or join seminars on the subject.

(11) Anti-corruption

- PTT defined its annual work plan in line with the national strategies on the prevention and suppression of fraud, phase 3 (2017 - 2021) by defining guidelines concerning anti-corruption as part of its business ethics and code of conduct, including a code of conduct on vested interests and conflicts of interest, on accepting and giving presents, assets, or other benefits. PTT absolutely does not support bribery.
- In 2010, PTT enlisted in the declaration of intention to join Thailand Private Sector Collective Action Coalition against Corruption (CAC), an endeavor of the Thai Institute of Directors (IOD) with the support of the government and NACC. PTT was one of the first 27 companies to do so.
- In 2012, PTT joined the United Nations Global Compact (UNGC) to show its desire to apply the principles of human rights, labor rights, environmental preservation, and anti-corruption at the international level to its business conduct. PTT presents an update of its compliance with the 10 elements of UNGC in its corporate sustainability report.
- Policy announcement:
 - Since 2014, PTT has begun enforcing PTT's and PTT Group's anti-corruption policies across each organization. It requires the Anti-Corruption Policy as a part of PTT's Corporate Governance, Ethics Standards, and Code of Conduct Handbook and requires PTT Group's Anti-Corruption Policy as part of the PTT Way of Conduct so that PTT Group companies may observe the same standards and management approaches and that all companies may achieve synergy under the investment objective. To this end, PTT organized media to convey the knowledge and a workshop with PTT Group representatives so as to develop gap assessment and gap closure plans through self-assessment under the CAC project. The purpose is to ready PTT Group companies for the certification process for CAC membership.
 - PTT's Anti-Corruption Policy forbids PTT's employees to carry out or participate in corrupt practices as well as any bribery giving or acceptance (direct and indirect). They must seriously observe the Anti-Corruption Policy, which covers various processes, including donation to charities, human resource administration, material procurement, and internal control.
 - In 2015, PTT declared its "No-Gift Policy" for any festive period. In 2016 - 2017 it enforced practical guidelines under PTT Group's policy on giving and accepting gifts, entertainment, or other benefits to establish a higher standard for business practices in the hope of having all employees perform to the best of their ability without expecting benefits. To this end, a letter was sent to business partners and external agencies, and signboards were put up on the premises of PTT along with assorted PR channels. PTT was the prototype company of Thailand to concretely enforce this policy.

- Communication, training, and highlights of tasks:
 - PTT communicates its Anti-Corruption Policy and guidelines to its subsidiaries, associates, and other PTT-controlled companies, business partners, and stakeholders, as well as the public, through assorted channels like letters, e-mails, website, PTT Intranet, seminars, and exhibitions so that all stakeholders may acknowledge and conform to PTT's guidelines.
 - PTT establishes constant communication with and training for its employees to develop true understanding about PTT's anti-corruption measures, expectations, and punishment for violators, including orientation sessions, an ethics curriculum, and CG E-learning. It also arranges for its executives and employees to join external training courses on anti-corruption.
 - Conforming to CAC's certification process, PTT duly secured CAC membership on October 3, 2014.
 - Launch of new systems under the PTT Intranet, designed to serve as a key tool for all PTT employees to show their transparency, namely a system to pre-report PTT Group securities trading to prevent insider trading and a system to report employees' acceptance of presents, assets, or other benefits in view of the No-Gift Policy so that employees who find it inevitable to accept such items and cannot return them to their givers can deliver such items for collection and donation for public use.
- PTT's hope is that it will become part of a transparency network for a strong Thai society. To this end, it promoted and pushed its business allies to declare their own intention to join CAC to lower corruption risks across their supply chains. This year it informed business partners to actively urge them to join CAC at the Supplier Relationship Management (SRM) Seminar, a seminar of marine petroleum product transporters, and a seminar of tank truck petroleum product transporters.
- Recognizing that corruption is a crucial problem that undermines the nation, PTT values its role of participating with public and private agencies in tracking, inspecting, and upgrading Thailand's transparency, namely through the implementation of the Integrity Pact. This year PTT's participating projects were the Fifth Onshore Gas Transmission Pipeline Project, segment 2 (Chachoengsao-Nonthaburi) and the LNG-Receiving Terminal Project in Rayong. PTT also formed anti-corruption networks through assorted activities, including the National Anti-Corruption Day, organized by the Anti-Corruption Organization of Thailand. Other activities included the definition of assessment criterion of CAC assessment for SMEs together with Thai IOD and the development of a master plan and action plan on enhancing PTT's morality for the National Morality Promotion Committee, Department of Religious Affairs, Ministry of Culture.
- Oversight and monitoring of performance:
 - The Board ensures that PTT commands an efficient system in support of anti-corruption to ensure that the management recognizes and values anti-corruption and cultivates it as a corporate culture.

- The Audit Committee supervises internal control, financial reporting, and other procedures related to anti-corruption measures, steers conformance to anti-corruption measures, and reviews applicable measures and internal control to ensure that the measures are adequate and effective. The committee reviews risk assessment and provides recommendations to the Board on suggested practices to mitigate such risks. Executives must implement such recommendations. The committee also regularly reports internal-audit outcomes regarding anti-corruption measures to the Board and provides good practices to the Board and the executives.
- The Corporate Governance Committee annually defines and reviews the Anti-Corruption Policy, provides recommendations and guidelines, monitors, and assesses anti-corruption performance.
- The Risk Management Committee steers and advocates risk management practices related to anti-corruption by assessing corruption risks and reviewing anti-corruption measures for adequacy and suitability.
- Executives establish risk assessment for business processes that may lead to corrupt practices, review the suitability of processes and measures, and personify proper behavior as well as communicating it to all employees and related parties.
- PTT has developed a Corruption Risk Assessment Manual for all units to apply as guidelines for assessing corruption risks in their respective business processes and for defining suitable internal control processes. This year Anti-Corruption Management Systems training was provided to vice presidents upward in two batches to elaborate the methods for assessing corruption risks, key internal control measures, decision-making guidelines, and provision of suitable advice to subordinates. PTT also handpicked units responsible for processes susceptible to corruption to join the Corruption Risk Assessment Workshop for application to their own processes and monitored the effectiveness of such measures to see whether the measures successfully reduced risks to manageable levels.
- PTT establishes procedures for maintaining auditable documents and records to confirm the accuracy and suitability of financial reports. The internal control of accounting processes and information storage is audited to verify the effectiveness of anti-corruption processes and ensure that the entry of financial items is well-evidenced for audit.
- The Office of Corporate Audit examines items of potential conflicts of interest, the likelihood of corruption, and corporate efficiency for managing risks arising from corporate corruption and those at operating levels. The office also reviews business ethics principles and the code of conduct for executives and employees. It reviews and reports to the Audit Committee and top executives immediately when encountering items or actions that could harm PTT's performance outcomes, including corruption.

- Measures, scope, and tools for whistleblower protection:
 - PTT's human resource administration process reflects its commitment to anti-corruption measures. Although refusal to take part in corruption may deprive PTT of business opportunities, its policy is not to demote, punish, or harm those that do so.
 - PTT's employees should not ignore actions in potential conflicts with anti-corruption measures. PTT has established channels for whistleblowing and protection of whistleblowers or those that need advice about conformance to anti-corruption measures.
 - PTT has established a requirement concerning complaint-making and whistleblowing to define related criteria and guidelines that are suitable and uniform throughout the corporation. In place are protective measures and fair treatment of whistleblowers or those that provide relevant information. Whistleblowing serves as an alerting tool for the organization and a channel for suppressing corrupt practices, since it could resolve problems promptly before they worsen and harm the image and financial position of the corporation. All employees can become whistleblowers by publicizing irregularities for the benefit of PTT's transparency, CG, and sustainability.
- Punishment
 - PTT has established a suitable and fair process for punishing violators of anti-corruption measures. Any violation of this policy, direct or indirect, calls for disciplinary review under PTT's regulations, consisting of fact-finding, investigation, punishment, and appeal. They could also lead to punishment by law. Employees must therefore master and strictly conform to the Anti-Corruption Policy in every step of their work.

2. Risk Assessment

PTT recognizes the significance of risk management under changes that impact its businesses because of internal and external factors. Viewing risk management as a key component of every business process which must be linked with one another, PTT therefore defined a policy of corporate risk management that all must conform to. At every level, risks are to be assessed. As for corporate risks, management is systematically undertaken by PTT's management committees. Operational risks fall under the oversight of respective executives. An Enterprise Risk Management Committee was set up by the Board to steer and support corporate risk management in line with business strategies and goals, as well as changing circumstances, and provide recommendations on guidelines for monitoring and assessment to the Enterprise and Risk Management Plan Committee to manage overall risks for maximum efficiency. It is the responsibility of all units to manage and control risks to manageable levels, as clearly stated in the functional descriptions of all units.

3. Control Activities

The Management Committee is authorized to review overall reports, financial and otherwise, of all business groups, and regularly reviews performance to ensure conformance to regulations, protocols, and job manuals. PTT has defined policies and procedures in writing, including those for performance assessment of all employees, which relies on KPIs to make control of administrative activities suitable, adequate, and auditable. Portions of businesses have been identified for key risks, and mechanisms defined to control and minimize errors. Regular performance reviews by the management are in place, including financial, procurement, and general administrative transactions. Systematic delegation of duties to personnel groups ensures checks and balances. Authority is duly and totally segregated for approval, information processing, transaction recording, receipt and disbursement of cash, reviews of inspection and stewardship of properties. In place is an internal control system for finance and accounting, dealing with cash collection, cash retention, receipt and disbursement, bank deposits, and cash advances. These follow rules with complete, accurate, and regular recording. Systematic storage of accounting documents, both documents and information, is in place to comply with the law.

In procurement, PTT follows rules and requirements on materials and supplies matters, which clearly define responsible parties, including the authority, approval limits, supply need assessment, inspection, control and storage of supplies, and property counting. As for human resource administration, PTT has instituted a human resource administration system, complete with adequate monitoring and assessment, covering recruitment, determination of compensation, duties, personnel development, performance, and communication so that employees may be competent and that PTT's human resource administration may be suitable and efficient.

If PTT enters into transactions with the major shareholder, directors, the management, or related parties, PTT will apply strict measures to ensure that each such transaction goes through the required approval procedures every time and for every item. Parties of vested interests will not take part in the approval of such an item. PTT also closely monitors subsequent actions.

In addition, PTT values security, safety, occupational health, and environment (SSHE), which is likened to a vital shield against risks or impacts, and efficiently and effectively lowers potential losses suffered by its employees, assets, work processes, data, and the surroundings. This would bring about business sustainability while extending corporate performance in all aspects of excellence for vision and goal attainment. The Board looks after, monitors, and provides policies as well as recommendations on SSHE, which PTT then applies as its control activities through the PTT MC, led by the President & CEO, PTT Group QSHE Policy Committee, and PTT QSHE Committee, which screens and steers management practices at the operating level for PTT Group and PTT. To this end, centralized functions are SSHE and Quality Management. This year a presentation on the main SSHE KPI performances was given to the PTT MC for review, direction, and comments once a month. SSHE management actions are detailed in the Corporate Sustainability Report 2017.

4. Information & Communication

This year PTT adopted an ICT direction that is moving into a digital age in support of the Thailand 4.0 Policy. In so doing, the Board cascaded the policy through its oversight of PTT ICT Solutions Co., Ltd. (PTTICT), altering its responsibility and renaming it PTT Digital Solution Co., Ltd. (PTT DIGITAL), which will now accommodate a hub for PTT's and PTT Group's digital services and enhance digital infrastructure. PTT DIGITAL will engage in its digital mandates in an efficient and continual manner, serving as PTT's and PTT Group's mainstay supporting and supplementing their business value.

This year the Board approved and drove a Digitization Roadmap, creating innovations to raise operating efficiency, lowering operating costs and expenses for ICT business competition by focusing on responses to the needs of all stakeholders thoroughly and equitably. For instance, the development of a digital procurement system to handle procurement under the Procurement for Public Agencies Act and support data connectivity with the Electronic Government Procurement (e-GP), the public sector's main procurement system that enables PTT and its business partners to collaborate in a faster and more efficient way. PTT also established an HR Analytic system and introduced Big Data management technology to compile and perform "Smart Analytics" and present and manage PTT's human resources most optimistically businesswise. It also developed a memorandum system to raise the speed and efficiency of data transfer or inter-office memoranda. PTT established an integrated pipeline maintenance monitoring system to improve its operation to manage maintenance work along the pipeline route for maximum security and safety of application. As for its customers, PTT developed and connected data on PTT Blue Credit Cards under the concept of benefits for members by joining KBank

for point accumulation of both PTT Blue Card and KBank Reward Point, using the same card. It also developed a database for maps showing PTT service station locations in the ASEAN area (PTT Life Station – AEC Map) to accommodate liberalized travel into AEC and ASEAN member countries. To elaborate, land routes will be connected, raising the need for service stations. With transport safety and environmental consideration in mind, PTT launched the Eco Driving Project to compile and process data concerning driving and fuel consumption behavior of transport operators serving PTT. The outcomes will be monitored and reported to serve subsequent improvement. Finally PTT has improved its Geographical Information System (GIS) by adding data on its service stations (petroleum products and natural gas), stores, and other businesses related to PTT onto the map for use as a central database that all PTT units can exploit. A system for displaying results was also developed for consumers' access via www.pttplc.com.

To enable the supervision and management of PTT's performance—which involves investment in more than 100 PTT Group companies—to achieve goals, manage risks efficiently, command transparency and auditability, PTT mounted key projects, including a "Finance & Accounting Shared Service Project" to define the directions and strategies of finance and accounting administration so that PTT Group's finance and accounting services may be more flexible and save costs, which benefits the group's competitiveness and business decisions. This also forges CG and credibility among related parties, both inside and outside the corporation. To improve its internal control system, PTT developed a "Continuous Control Monitoring and Auditing System (CCMS)" Phase 2 as a tool to review the effectiveness of and monitor control processes, including lowering risks and evolve cyclical audits into continuous audits.

The Board recognizes and values system preparedness for an ICT infrastructural system for operational excellence efficiency. This is achieved by replacing fiber optic transmission equipment commonly used along PTT's gas transmission pipelines for higher capacity and accommodation of the internet technology connected with future equipment and tools, the so-called "Digital Industrial Internet of Things (IIoT)" in tandem with improved IT security for modernity and efficient preventive ability against external threats. PTT Group therefore invested in the installation of a novel IT security system, "Advanced Persistent Threats (APT)", which wards off computer crimes, one of the biggest threats today. The ultimate result is that corporate data will not leak. Efforts were made to extend certification of the "Information Security Management System" to embrace all key equipment of computer centers ("Platform as a Service (PasS)"). Certification for ISO/IEC 27001:2013 is in place. The space inside the master network computer room is also certified for the ISO 14644-1 Class 8 for its clean-room properties. And the overall building has secured Green Building (Gold) certification from the LEED Institute of the US. In other words, PTT's Computer Center was the first in Thailand to achieve a certification standard on a par with international service provider (Co-location Service Provider). PTT engaged in a project to reduce greenhouse gas emissions in computer center management by introducing a solar power generation system for feeding electrical currents into the center instead of buying electricity from the Provincial Electricity Authority (PEA). In addition, PTT constructed a cogeneration plant, fueled by natural gas, for power generation. Natural gas, a clean-burning fuel, is PTT's own product. What is more, the heat obtained from the power generation system cools the system, bypassing air-conditioning, which consumes electricity. This project has secured certification from the Thailand Greenhouse Gas Management Organization (Public Organization) and recognition as Thailand's pilot project.

5. Monitoring & Evaluation

> Internal Control System

The Office of Corporate Audit is an independent unit which directly reports to the Audit Committee. It fosters assurance and provides consultation to ensure that business processes are properly equipped with CG, risk management, and sound internal controls in support of PTT's objectives.

The office commands an annual operating plan and three-year audit plans in line with PTT's business strategic directions and the risk-based approach (key corporate risks), encompassing PTT Group's businesses, both domestic and international. It reports findings to the Audit Committee for consideration and forwarding to the Board for acknowledgment every quarter. Regular monitoring is undertaken for actions in response to the office's recommendations. In its course of work, the office freely expresses its opinions. No conflicts have arisen between audited units and the office that cannot be resolved.

> Control Self-Assessment (CSA)

To ensure all stakeholders that PTT's business operations will achieve its objectives of business efficiency and effectiveness, credibility of financial and other reports, as well as compliance with laws and regulations, PTT has integrated internal control as part of the routine operation of executives, supervisors, and relevant parties. A unit under Corporate Strategy function called Investment Control and Internal Control Department, which supervises internal control, annually assesses Control Self-Assessment (CSA) within PTT in two forms:

1. Corporate assessment: An individual internal control assessment form for vice presidents upward under PTT's structure as well as executives on secondment at PTT Group companies

Investment Control and Internal Control Department collects data and develops an information system for a list of key controls. The effort consists of data on task description (FD), appointment orders of committees, five-point COSO Internal Integrated Framework (namely control environment, risk assessment, control activities, information & communication, and monitoring). The response format was also developed as an e-CSA (electronic) for executives to assess and access assessment reports. To enable the control self-assessment form to incorporate more activities under key processes for individuals, this year Investment Control and Internal Control Department amended questions for better alignment with the fundamental principles of defining suitable internal control measures for juristic persons' prevention of bribery of public officials under Article 123/5 of NACC.

2. Process assessment: This involves workshops to assess internal control at the activity level with a focus on process control. Assessment outcomes and plans to improve internal controls must have the buy-in of work process owners and monitoring by supervisors.

This year PTT focused on assessing internal control in key processes by applying COSO's five components of internal control and 17 principles to the assessment of a given unit. Consideration was given to efficiency, effectiveness, and the adequacy and suitability of existing internal control mechanisms. PTT also developed approaches / plans for internal control so as to achieve continuous development, promote, and foster the awareness of internal control to serve as a basis for future internal control system design.

This year the Office of Corporate Audit also reviewed the existing internal control to ensure that it is adequate, suitable, and consistently practiced. If a given item needed improvement, procedures were defined to ensure that audit and review findings are promptly remedied. The office also reviewed internal control assessment outcomes and reported to the Audit Committee. It indicated no significant problems or shortcomings, a view shared by the external auditor. In summary, PTT's internal control system was considered adequate and effective from a business standpoint.

Audit Fee

The Company and its subsidiaries paid audit fees to auditor's office for the completed accounting period amounting to THB 133,019,764 (One hundred thirty-three million nineteen thousand seven hundred sixty-four Baht). In addition, the Company and its subsidiaries paid non-audit free for the professional services fees, including the Offering Memorandum of the Global Medium Term Note Program, professional fees for the completed accounting period amounting to THB 45,226,190 (Forty-five million two hundred twenty-six thousand one hundred ninety Baht).

Compliance with CG in other areas

According to a survey on PTT's CG conducted by the Thai IOD, the overall score given to PTT on the CG principles for listed companies in 2017 was "excellent". On average, PTT earned a higher overall score and individual category scores than the field of 620 companies, and higher than the average score of SET 50 companies. The survey result was based on PTT's public information. This year PTT commands good guidelines apart from the survey criteria which can serve as best practices for other listed companies such as:

- The current Chairman of the Board, an independent director, exercises freedom in assigning policies and guidance for PTT management.
- PTT requires that independent directors make up at least half of its directors.
- Because under the Budget Procedures Act B.E. 2502 (1959), PTT is regarded as a state enterprise, so the Audit Committee endorsed the appointment of the Office of the Auditor-General of Thailand (a credible, neutral agency) as PTT's external auditor. The committee has secured the Board's endorsement for approval by the shareholders, who will appoint and approve its audit fees.
- The Corporate Governance Committee at Meeting No. 5/2560 (2017) of December 13, 2017, and Board Meeting No. 12/2560 (2017) of December 22, 2017, acknowledged the Corporate Governance Code (CG Code) issued by SEC. They recognized very well their role as a governing body for the corporation by implementing CG principles in supplementing sustainable values for business. Having assessed PTT's compliance with the CG Code point by point and in detail, in comparison with PTT's CG Policy and actions, they viewed PTT as having a policy, measures, and work processes that align with CG Code guidelines, in addition to commanding short-term and long-term plans to develop PTT's CG system to suit its business growth and trends among international leading companies.

This year PTT has observed CG, though it may not have fully covered the criteria of the Corporate Governance Report of Thai Listed Companies and the ASEAN CG Scorecard in the following aspects:

1. Board composition of 5 - 12 directors

PTT Regulations (Articles of Association) call for 5 - 15 directors. Today it has a total of 15 directors, which agrees with the requirement for petroleum businesses that needs experts from a variety of professions. The Board has appointed five committees to screen key matters, namely the Audit Committee, the Nominating Committee, the Remuneration Committee, the Corporate Governance Committee, and the Enterprise Risk Management Committee.

(The number of subcommittee meetings has been detailed under "Board Meetings")

2. Director election through cumulative voting

PTT's regulations call for director election to be decided by a majority of votes. Each shareholder carries votes equal to his or her number of shares. In addition, PTT has consistently devised other ways to preserve the rights of minor shareholders, including its encouragement for them to exercise their right to nominate additional agenda items or nominate directors in advance.

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Internal Control and Risk Management

Assigned by the Investment and Internal Control Management Committee, the Investment and Internal Control Supervision Department has developed a self-assessment on the part of internal control for the executives, at the level of Vice Presidents and higher, who serve under PTT's corporate structure and those seconded to PTT Group companies. The assessment covers the duties and responsibilities referred in the internal-control guidelines of The Committee of Sponsoring Organizations of the Treadway Commission (COSO), which attributed to the major compositions of internal controls: (1) control environment, (2) risk assessment, (3) control activities, (4) information & communication, and (5) monitoring activities. This move is to ensure that PTT's overall business would achieve the objectives of internal control with regard to business efficiency; resource consumption; stewardship of properties; errors, damage, losses, and waste prevention or reduction; credibility of financial, accounting, and other reports; laws, regulations, Cabinet resolutions, and PTT's policies and regulations compliance. The assessment is also conducted under the scope of corporate governance and anti-corruption measures under the CAC checklist.

After the review on effectiveness of internal controls, the Office of Corporate Audit reported the findings to the Audit Committee and the Board. The Board, then, assesses the system data obtained from the management on the implementation of guidelines/ recommendations to improve the process of internal control. The evaluation indicates that the system of internal control applied in PTT has been graded in adequate and proper as the result of workers sufficient to adequately perform all internal control activities.

Head of the Office of Corporate Audit

Pursuant to the Board of Director's Meeting No. 7/2560 (2017) on July 21, 2017, the Board had resolved to appoint Mr. Chalot Boonlai to be Executive Vice President, Office of Corporate Audit, effective from August 16, 2017 onwards. Mr. Chalot's in-depth understanding in PTT's business operation along with his expertise, skills, and experience in internal audit, principles of good governance, risk assessment, and internal control at both the business and overall levels reflects appropriateness to this position.

Compliance Mechanism

Formerly, PTT defined units responsible for proactively ensuring corporate regulatory compliance include the Office of the President and Corporate Secretary, Office of General Counsel, and the Office of Corporate Audit.

In 2017, the Compliance Department was established to ensure all units' actions to be in accordance with applicable laws, by-laws, rules, regulations, directives, and announcements—both inside and outside the corporation.

Structured under the Office of General Counsel, the Compliance Department has the duties in overseeing employees and all units to strictly engage to all required legal matters, and also those matters involved in investment, state enterprise laws, listed companies, energy laws, and other legislation relating to PTT's business operation, particularly new transactions in Thailand and abroad. Moreover, the Compliance has a duty to give sound legal advice for PTT's personnel and internal units so as to confide that all practice would be complied with all laws and regulations and prevent disruption due to legal issues. To this end, the proactive means of the Compliance would lead PTT's business operating to the goals of zero non-compliance policy with sustainability.



Head of the Office of Corporate Audit

Mr. Chalot Boonlai

Head of the Office of Corporate Audit

Age 57

Education:

- Bachelor of Engineering (B.E.), Chulalongkorn University
- Master of Public Administration (M.P.A.), Burapha University

Training:

- Leadership Development Program:
Center for Creative Leadership, Singapore
- MDD III Business & People Management Program, PLLI
- Anti-Corruption for Executive Program, Thai IOD
- Finance for Senior Executives,
Sasin Graduate Institute of Business Administration of
Chulalongkorn University

Career Experience:

- 2009 - 2012 Manager, Maintenance Section, PTT
- 2010 - 2012 Director, Production,
Thai Lube Blending Co., Ltd.
- 2012 - 2013 Vice President,
Internal Audit Strategy and Quality Improvement
- 2013 - 2014 Vice President, Internal Audit
- 2014 - 2017 Acting Managing Director,
Thai Petroleum Pipeline Co., Ltd.
- 2017 - Present Executive Vice President,
Office of Corporate Internal Audit, PTT

Relevant Important Position: None

Relationship with the Management: None