



# BCP

## Next Chapter Begins







## **Three decades of sustainable business development in harmony with environment and society.**

To strike a balance between value and virtue, Bangchak has relied on sheer determination to run energy and downstream businesses for public interests. We are proud of our role in upgrading the living conditions for Thai society.

This has been our tenet of the past three decades.

Our Greenery Excellence vision calls for us to drive business along with our employee culture of

**“To be virtuous, knowledgeable, and contributive to society”.**

These ideals produce business innovations for the sustainable growth of communities, society, and the environment into our next decades.











## Message from the President

As a Thai company, Bangchak Petroleum PCL has as its key mission the enhancement of energy security and improvement Thais' quality of life through creating value in parallel with virtue. This year we extended and broadened our approach for sustainable business development in harmony with environmental and social betterment for stakeholders, with high regard for their needs and expectations as well as our strengths and weaknesses. New projects were initiated, while our organizational structure was revamped with new units to accommodate our increasing missions to promote economic growth hand in hand with environmental and social stewardship in line with the very first mission on our founding date.

Amid the altered environment, political problems, and a plunging world oil price, the oil business of this past year has suffered heavily. Nevertheless, our risk diversification and greater business opportunities in renewable/alternative energy and non-oil businesses, designed to generate more income, have enabled our performance this year to continue strongly under the Sufficiency Economy philosophy, which Bangchak has humbly applied to its businesses. Our performance this year in fact came close to achieving our goals. We invested in the future by entering the renewable/alternative energy business to contribute to pollution mitigation and playing a bigger role in environmental stewardship by expanding the ethanol output and biodiesel capacity to lower risks. Our investment seeks to establish energy security of oil supply further upstream through geographic expansion. We have launched intermediate-term and long-term plans to study the feasibility of investment in waste to energy, biomass, and geothermal development to secure energy sources for corporate sustainability

Further, this year Bangchak upgraded its sustainability business by enlisting in corporate sustainability assessment by RobecoSAM, under the same assessment procedure as that used to select members of DJSI (Dow Jones Sustainability Indices 2014.) It turned out that Bangchak scored in all indices comparably to companies selected to the Emerging Market group of the oil and gas Industry. Such an assessment outcome has shown opportunities for development and directors for business development to greater sustainability. In view of these opportunities, Bangchak has applied this outcome to setting plans for sustainability of the next five years, which are its critical plans.

The year 2015 marks the completion of Bangchak's first three decades. We have indeed come a long way from a business that lost Baht 4 billion on our founding to steady profit and growth today, while generating value for the company and virtue for society and the environment. Under the employee culture of "To be virtuous, knowledgeable, and contributive to society" and the business culture of "Develop sustainable business, in harmony with environment and society", we will certainly keep forging ahead in the coming years.

*(Mr. Chaiwat Kovavisarach)*

**(Mr. Chaiwat Kovavisarach)**  
President



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# Bangchak's 30-year missions, building on virtue toward sustainability

Established in 1984, Bangchak Petroleum Public Company Limited has adopted its businesses with values and cultures coherently with national energy security and the development of the Thai society. From day one, our corporate vision, culture, and missions have been fully aligned with the principle of Business Sustainability with Environment and Society. This principle demands clear alignment and strong adherence between business activities and the environment and society, as well as the adoption of the Sufficiency Economy philosophy, corporate governance principles, and principles of social responsibility. These principles have been integrated and applied to drive Bangchak toward sustainable growth under the corporate vision of “creating an energy business that is environmentally friendly for sustainable development”, or “Greenenergy Excellence”.

**Business Culture** : Develop sustainable business, in harmony with environment and society

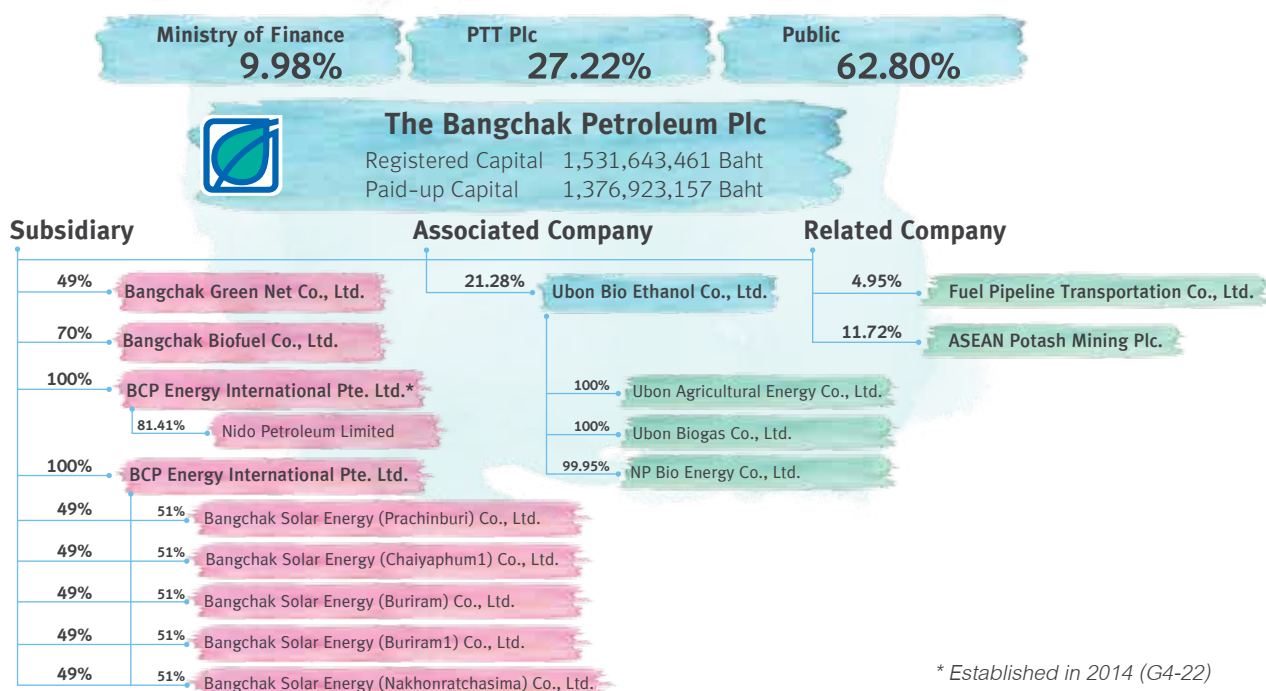
**Employee Culture** : To be respectable, knowledgeable, and helpful to others

**Value Statement** : B - Beyond Expectation  
C - Continuing Development  
P - Pursuing Sustainability

**Mission**  
Shareholders / business partners / customers / creditors : Conduct business to steadily grow its returns in a fair manner  
Society / Community / Environment : Promote a business culture that is responsible to the environment and society  
Employees : Grow employees into professionals

With its 30-year anniversary observed in 2014, Bangchak's business growth has expanded into various alternative/renewable energy sources to meet changing demand of stakeholders and correspond to the national and global changes on society and the environment. As a good corporate citizen, Bangchak is fully committed to growing invariantly to its original work philosophy in creating value for society and the environment with both CSR in-process and CSR after-process activities, designed and executed at all levels from local communities, communities surrounding the refinery, to the nation. All work activities promote stability and strengthen preventive capability toward better, sustainable economy, society, environment, and energy security for Thais. These missions are adhered to by executives and all employees of all units under the employee culture of “to be virtuous, knowledgeable, and contributive to society”.

## Equity Chart of Bangchak Petroleum Plc







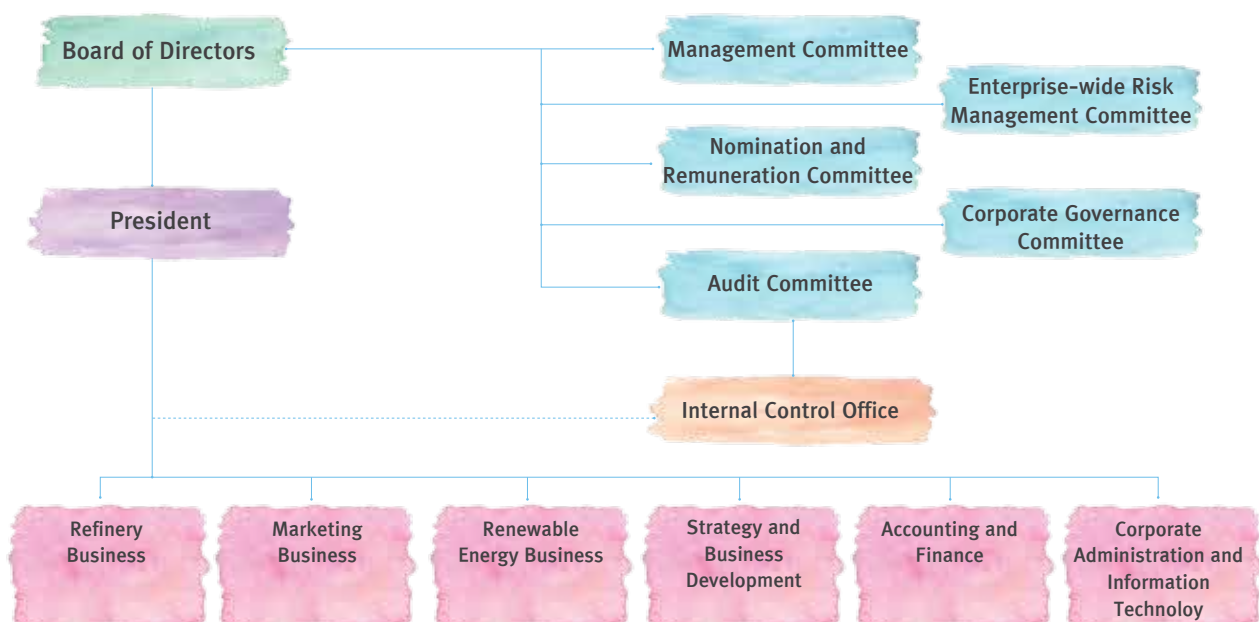
## Organizational Structure (G4-17)

- Leading Thai petroleum company importing crude oil from the indigenous sources, operating an oil refinery and marketing the finished products and renewable energy.
- Pursuant to a resolution passed by the Prem Tinsulanonda-led Cabinet since June 19, 1984
- Incorporated as a limited company under the Civil and Commercial Code on November 8, 1984
- Changed status to a Public Company Limited under the Public Company Limited Act on April 23, 1993, and listed on the Stock Exchange of Thailand (SET) on August 2, 1994
- The Company's registered capital is amounting to Baht 1,531 million, of which Baht 1,377 million was paid up.
- The address of the head office is 555/1 Energy Complex, 10th Floor, Building A, Vibhavadi Rangsit Road, Chatuchak, Bangkok

As of December 31, 2014



As of December 31, 2014





## Business Structure\*

### Refinery Business

a 120,000 barrels/day capacity



48%

### Marketing Business

More than 1,000 stations



23%

### New Business Development



28.99%

### Exploration and Production



0.01%

\* Proportion based on Market EBITDA



# 30 Years Bangchak : The Journey of Sustainable Excellence







- The first company logo came into use

Increased the Third Plant's capacity to 80,000 barrels per day

Set up the first community service station with Si Prachan Agricultural Cooperative, Suphan Buri



- Launched Bangchak's first operated service station across from the refinery entrance
- Refined and sold unleaded gasoline and low-sulfur diesel, a first in Thailand

1985

The refinery business and management began

1986

1987-1989

1989

1990

1991

The logo was changed to a green leaf inside a blue rectangle



- The company underwent a name change to Bangchak Petroleum Public Company Limited
- Installed a gasoline quality improvement unit for green fuels, a first in Southeast Asia

1993

Launched the first Lemon Farm shop

1998



1997

Selected community products as sales promotional tokens, strengthening sustainable community economy

Bangchak underwent privatization from a state enterprise

1995



1994

- Launched the first Lemon Green shop
- First day of Bangchak share-trading on Bangkok's stock

- Set up a center for the investigation and development of deserted orange groves in Rangsit into an oil palm plantation in Nakhon Nayok
- Founded Bangchak Solar Energy Co., Ltd., to generate power from solar cells (Sunny Bangchak) in Phra Nakhon Si Ayutthaya



2011



2012

- For the very first time, launched a flagship service station under the Green Station format
- Launched the Diesel Club Card



Launched the sale of Euro 5-standard E20 Gasohol, a first in Thailand

2013

2014



- Observed the 30<sup>th</sup> anniversary of foundation with the "Refuel with Bangchak for Baht 30-Million Contribution to the Thai Red Cross Society" project
- Founded BCP Energy International Pte. Ltd. in Singapore to engage in the international energy, petrochemical, and natural resources businesses





# Sustainability Policy

With the advancement of its environmental and social management system in 2013, Bangchak has defined a sustainable business development policy, requiring executives to serve as decent role models and employees to operate with thorough understanding, aligning with stakeholders' needs and expectations from the short term to the long term so as to strive for success and achieve objectives and goals. The policy covers seven key areas.

## Good Corporate Governance

All business conducts must be legal and comply fully with applicable rules and regulations, and must be transparent and accountable. All practices must strictly adhere to good corporate governance and follow the Sufficiency Economy philosophy to benefit shareholders, employees, community and the public, business partners, media groups, customers and the public, business competitors, creditors, government agencies, and other stakeholders.

## Fair Business Conduct

Fair business conduct means promotion of free and fair competition, avoidance from activities of potential conflicts of interest and violation of intellectual properties, resistance to corruption of all forms, and support to social responsibility programs throughout the business chain.

## Human Rights and Treatment of Employees

Bangchak strictly adheres to its corporate culture of fully respecting and promoting human rights protection, and fair treatment of all employees. The management system provides welfare and fringe benefits, workplace safety and occupational health conditions, organizational and individual training programs to promote professionalism, work process development, and an organizational innovative culture. Employees are urged and supported to directly or indirectly participate in public service activities.

## Accountability to Consumers

Accountability to consumers means development and manufacture of products and services that are harmless to consumers and the environment, meet specifications and, wherever possible, exceed customers' expectations. Sales are made under fair conditions to all with accurate, sufficient, and factual information of products and services. Private data of customers must be kept from any profiteering attempts by any parties.

## Environment and Safety

All business processes must be executed with full awareness and equipped with analytical risk and impact assessment concerning the environment and safety. Resources and energy must be consumed with highest efficiency and under international conservation practices.

## Participation in community and social development

All business processes are designed and implemented to benefit the improvement of the quality of life as well as the economy, and strengthen local communities and the Thai society.

## Development and publicity of CSR innovations

Bangchak supports and promotes innovations and participation in activities with stakeholders in the development of social responsibility innovations generating the right balance of worth and value to the community, society, and the environment in tandem with sustainable business growth.





## Core strategies for sustainability

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According to the company culture and vision, the company has instituted risk management practices to diversify income to businesses with more stable income in harmony with environmental stewardship achieved through being a low-carbon company, extending to a green society with a green process in all refining stages since 2013. It sells green products (meaning alternative-energy forms sold through all service stations), practices green management and green procurement (meaning consumption of green products), while growing green society to incorporate affiliates, business partners, and stakeholders. In addition, Bangchak has introduced sustainable management as its key component, ranging from its strategic planning, where social and environmental KPIs are made operating goals on top of business ones (financial, customer, process, and people). These are then deployed into action for business lines, division, executives and employee



### Grow the business and diversify risks to businesses with secure income

The Company has defined business growth goals to grow sustainable value for its business by restructuring its revenue from refining business, which is highly volatile by nature of the refining business-whether world market prices or refining margins that are subject to global and regional economic conditions-which could in turn result in the Company's performance being also volatile. The Company has increases its revenue in renewable energy business to 50% in 2020, includes solar-energy power generation, biodiesel production, ethanol production from energy crops- which is a secure income business and has low risks from external factor.





### Low Carbon Company

Recognizing that its oil refining business belongs to the energy-consuming industry, Bangchak strives to become a low-carbon company by emitting minimal volumes of carbon dioxide to minimize environmental impacts arising from its business. Investment is made to produce and sell clean fuels with less environmental impacts than other fuels. Bangchak was in fact the first company to produce and sell gasohol and biodiesel, add energy stability in production processes by purchasing power and steam from a cogeneration power plant fueled by natural gas, a green form of energy. Bangchak is also studying diesel production from algae and renewable energy from household waste. It also plans to continually upgrade the refinery's energy efficiency.



### Socially and Environmentally Friendly Business Models (In-process)

The Company is determined to do business in such a way that not only can it sustain continuous growth, but also simultaneously generate positive impacts on society and the environment. Such a model that the Company has been operating successfully is the cooperation of retail stations and agricultural cooperatives. The Company buys agricultural products from cooperatives in different communities and uses them for retail stations' sales promotion to create jobs and revenue in support of the economic and social development of the communities. The Company, in cooperation with the Ministry of Agriculture and Cooperatives, the Ministry of Energy and the Bank for Agriculture and Agricultural Cooperatives, will initiate a conversion of abandoned orange farms to palm plantations for orange farmers in Rangsit consist with the government plan to promote renewable energy. In addition, its reduce land subsidence and flood problems in Bangkok.



### Open, Transparent and Verifiable

The Company adheres to an open, transparent and verifiable policy in its operations. Operational data are transparently disclosed under good corporate governance and SET rules in the Annual Report, Sustainability Report and website etc. Applying proactive environmental management, it discloses the actual data on quality of air and effluents around the refinery by posting such information at the entrance to the refinery and in surrounding communities.



## Updates on development of sustainable business operation

Strategy	Plan and goal	Progress made and performance in 2014	Goal
1. Grow the business and diversify risks to businesses with secure income (economic aspect)	1.1 Develop the solar- power plant business by 118 MW	1.1.1 Successfully generated and sold 48 MW of power in Amphoe Prakhon Chai and Amphoe Nong Ki (Buri Ram province), Amphoe Bamnet Narong (Chaiyaphum province), Amphoe Dan Khun Thot (Nakhon Ratchasima province), and Amphoe Kabin Buri (Prachin Buri province), enabling Bangchak to fulfill its 118-MW PPA obligation. (In 2012, it generated and sold 38 MW in Amphoe Bang Pa-in of Ayutthaya province; in 2013, another 32 MW in Amphoe Bamnet Narong of Chaiyaphum province and Amphoe Bang Pahan of Ayutthaya province.)	1.1.1.1 Participate in a 100-MW community solar power generation investment project
	1.2 Develop the ethanol business with a capacity of 400,000 liters/day	1.2.1 Ubon Bio-Ethanol Co., Ltd. (UBE) with a capacity of 400,000 liters/day produced and sell ethanol with 62% of Utilization Rate to the company	1.2.1.1 Continuity produces with its full Utilization to compliance with the customer demand. 1.2.1.2 Acquire shares in another ethanol plant with a 150,000-liter/day capacity
	1.3 Develop the biodiesel business with a capacity of 300,000 liters/day	1.3.1 Bangchak Biofuel (BBF) with a capacity of 360,000 liters/day posted a 100% utilization rate	1.3.1.1 Start up the biodiesel capacity of 450,000 liters/day and estimate to sell by the year 2016
2. Become a Low Carbon company (environmental aspect)	2.1 Use clean natural gas instead of fuel oil	2.1.1 Replaced 71% of fuel oil consumption with natural gas, which was conform to the goal.	2.1.1.1 Replaced all fuel oil consumption with natural gas. by the year 2017.



Strategy	Plan and goal	Progress made and performance in 2014	Goal
	2.2 Consumed clean natural gas with low carbon rather than LPG as a raw material for the hydrogen unit	2.2.1 Displaced 89% of LPG consumption with natural gas	2.2.1.1 Replace all LPG consumption with natural gas 100%. Except, in case of a usage of natural gas is not efficient, will replace for other raw material.
	2.3 Generate electricity and steam from co-gen with high efficiency (BUP)	2.3.1 Generate 64% and 67% of electricity and steam from co-gen capacity	2.3.1.1 Continually increased the electricity and steam from co-gen capacity and improve the power plant. by early year 2017.
	2.4 Improve the refinery's energy efficiency	2.4.1 7 efficiency improvement projects saved in energy consumption	2.4.1.1 Continually investigate investment in a production efficiency improvement project
	2.5 Develop clean-energy businesses (as in (1))	2.5.1 Details as in (1)	2.5.1.1 Details as in (1)
3. Develop business formats for in-processes (social & environmental aspects)	3.1 Develop business formats leading to national benefits to society and the environment	3.1.1 Developed 9 more service stations in cooperation with agricultural cooperatives and created jobs as well as income for cooperative members and communities	3.1.1.1 Constantly developed/ improved and expanded 30 more service stations in cooperation with agricultural cooperatives
		3.1.2 Supported promotion of farm products as sales promotion giveaways: "seedless velvet tamarind" from the three southernmost provinces, "roast rice tea and roast rice green tea" from earthquake victims in Chiang Rai, and "organic brown rice" from the Rai Choen Tawan community enterprise.	3.1.2.1 Plan to introduce farmers' products as sales promotional giveaways at Bangchak service stations every year.

Strategy	Plan and goal	Progress made and performance in 2014	Goal
		<p>3.1.3 Launched Triple M: Modern, Management and Marketing training for the second year for community service station managers to groom them for change in economic, social, and technological circumstances, which has 41 representatives joined.</p> <p>3.1.4 Expanded service stations with E85 gasohol by 90 to a total of 700, and E20 by 22 to a total of 200.</p> <p>3.1.5 Launched “Bangchak Hi Diesel” which enhances combustion efficiency, cleans engines, and saves fuels.</p> <p>3.1.5 Operated the Thailand Go Green project for the seventh year under the “Smart Dining, Living, and Consumption of Alternative Energy: Thai Ways toward Green Society” theme to cultivate awareness and knowledge of renewable energy among students nationwide. The year saw more than 486 participating schools.</p>	<p>3.1.3.1 Launched Triple M: Modern, Management and Marketing training for the triple straight year</p> <p>3.1.4.1 Expand service stations with E85 gasohol by 100 and E20 by 40.</p> <p>3.1.5.1 Develop green product quality and constantly improve performance efficiency.</p> <p>3.1.5.1 Maintain the Thailand Go Green year 9 under the theme “Smart Dining, Living, and Consumption of Alternative Energy: Thai Ways toward Green Society”</p>

Strategy	Plan and goal	Progress made and performance in 2014	Goal
	3.2 Develop business formats leading to social and environmental benefits at the community level	<p>3.1.6 The project to turn deserted orange groves in Rangsit into an oil palm plantation yielded its first harvest and commercial sale in December, while serving as a learning center for oil palm for local farmers.</p> <p>3.2.1 Developed new projects between Bangchak and communities concerning health, biodiversity conservation project and to improve the teacher potential.</p>	<p>3.1.6.1 Expect oil palm yield of about 1 ton/rai for sale.</p> <p>3.1.6.2 Develop personnel to mentor local farmers that are keen on working on an oil palm plantation on deserted orange groves.</p> <p>3.2.1.1 Conducted projects of biodiversity conservation and improve the teacher potential.</p>
4. Be open, transparent and auditable (social aspect)	4.1 Disclose business information transparently to allow public scrutiny	<p>4.1.1 Showed environmental and social operation data in the annual report</p> <p>4.1.2 Certify the sustainability report under the Global Reporting Initiative (GRI-G4) by third party and received the Sustainability Report Award 2014 from The Stock exchange of Thailand.</p> <p>4.1.3 Displayed on line environmental quality inspection system in front of the refinery and in three communities around the refinery, apart from linking them for display at the Department of Industrial Works</p>	<p>4.1.1.1 Continue such operation.</p> <p>4.1.2.1 Received the GRI-G4 report</p> <p>4.1.3.1 Continue such operation.</p>





# Stakeholder Engagement (G4-25)

Bangchak's missions are clear in addressing stakeholders' needs and expectations for fair business execution for continued growth, a business culture that is responsible to the environment and society, and professional development of its personnel. Nine identified groups of stakeholders (G4-24) (employees, business partners, customers, communities and society, mass media, shareholders, creditors, government agencies, and business competitors) are taken care of by assigned units, with clear two-way communication channels that align with lifestyles for effective responses to all stakeholders.

Items (G4-24)	Stakeholder groups	Engagement methods (G4-26)
1. Employees	1.1 Regular employees	<ul style="list-style-type: none"> <li>• B-Voice (employee engagement survey)</li> <li>• In-depth interviews; focus group interviews for middle-level employees</li> <li>• The President Meets Employees;</li> <li>• Employee Committee</li> <li>• Employee Committee; Health, Safety, and Work Environment Committee</li> <li>• Other Communication channel</li> </ul>
2. Business partners	2.1 Service stations (BGN)  2.2 Dealers  2.3 CO-OP service stations	<ul style="list-style-type: none"> <li>• Dealers' seminars</li> <li>• Small group meetings; annual general meetings of Cooperatives; calls on service stations</li> <li>• Complaints through Call Center, E-mails, Suggestion box, BCP marketing agents, members' activities</li> </ul>



Needs / expectations (G4-27)	Bangchak's responses	Outcome
<ol style="list-style-type: none"> <li>1. Work safety</li> <li>2. Career planning and career growth</li> <li>3. Suitable welfare compatible with economic conditions and comparable to industry peers</li> </ol>	<ul style="list-style-type: none"> <li>• Upgraded safety standards by hiring foreign experts to improve work environment and modify equipment with a focus on employees' safety and work satisfaction</li> <li>• Engaged in succession management to retain good personnel and develop them to cope with change</li> <li>• Revised pay for competitiveness, including those cross-posted to other areas and abroad</li> <li>• Began employee engagement activities, boosted morale, and strived to become The Best Employer</li> </ul>	<ul style="list-style-type: none"> <li>• Higher injury rates for employees and contractors (G4-LA6) due to annual major turnaround calling for more work and a larger headcount</li> <li>• 0.15% turnover (G4-LA1) higher than last year turnover rate</li> <li>• Salary administration comparable to industry peers and comparable industries for verification. BCP's average is in the 50<sup>th</sup> percentile</li> <li>• Result of Employee Engagement Survey 66% due to in issue of career opportunity is 44% and learning and self development issues are 47%. The data is identified baseline year for developing roadmap of Best Employee Program within 3 years.</li> </ul>
<ol style="list-style-type: none"> <li>1. Improved performance</li> <li>2. Support &amp; care for service station standards for competition (hardware, software, peopleware)</li> <li>3. Capable marketing agents able to solve problems and mentor them promptly on all matters</li> <li>4. Support for capital, equipment &amp; tools to strengthen them for business competition</li> </ol>	<ul style="list-style-type: none"> <li>• Pushed for supplementary services to meet consumers' needs</li> <li>• Introduced POS automation to speed up service station operation</li> <li>• More small-group meetings held to address &amp; share views &amp; solve operators' problems</li> <li>• Built on CSR for operators under Green Partner Award Project</li> <li>• Established Co-Op Business Development Division to focus on upgrading community service stations &amp; supported resources for co-ops' continuous businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Rising assorted sales volumes, causing market shares of service-station sales to rise to No. 2</li> <li>• 9 community service stations added for a total of 626</li> </ul>

Items (G4-24)	Stakeholder groups	Engagement methods (G4-26)
	2.4 Supplier <ul style="list-style-type: none"> <li>- Contractors</li> <li>Labor contractors</li> <li>Vessel operators</li> <li>Tank truck operators</li> <li>Pipeline operators</li> <li>- Suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Call Center, E-mails, Website Procurement employees, Bangchak employees (users)</li> <li>• Annual seminars / meetings / training (contractor meetings, annual planning meeting with logistics contractors, seminars on the environment &amp; applicable laws)</li> <li>• Relations activities (contractors &amp; suppliers)</li> </ul>
3. Customers	3.1 Customers	<ul style="list-style-type: none"> <li>• Call Center,</li> <li>• E-mails, website, suggestion box</li> <li>• Relations activities for Bangchak Gasohol Club &amp; Bangchak Diesel Club cardholders</li> </ul>
	3.2 Industrial customers	<ul style="list-style-type: none"> <li>• Satisfaction surveys</li> <li>• Marketing agents' calls</li> <li>• E-mails, website, oil delivery assessment form/ complaint form</li> <li>• Relations activities under the Privilege Club Project,</li> </ul>
4. Communities & society	4.1 Vicinity (Nearby) <ul style="list-style-type: none"> <li>• Communities</li> <li>• Schools</li> <li>• Families</li> <li>• Condominiums</li> </ul>	<ul style="list-style-type: none"> <li>• Opinion surveys, assessment of community relations</li> <li>• Community broadcast, SMS, Call Center</li> <li>• Community panel seminars</li> <li>• Activities</li> </ul>
	4.2 Farther communities, public, society, country (general)	



Needs / expectations (G4-27)	Bangchak's responses	Outcome
<ol style="list-style-type: none"> <li>1. Task/product clarity / goods inspection processes in place with punctual payment</li> <li>2. Proper work area allocation, including tool storage, work area, rest area, car parking</li> <li>3. More self-development in social &amp; environmental responsibility to become good business partners and grow with BCP</li> </ol>	<ul style="list-style-type: none"> <li>• Applied E-Procurement &amp; modified process for quotation &amp; job scoping</li> <li>• Educated users on proper hiring &amp; purchasing processes</li> <li>• Supplied food stalls &amp; rest areas for contractors</li> <li>• Staged environmental educational activities &amp; awareness activity for contractors &amp; business partners: encouragement of business partners to acquire Green Industry Level 2-3 certification</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier Seminar for Sustainable Growth and greater satisfaction more than 80%</li> <li>• Support and advise for industrial supplier to involve the development campaign of Department of Industrial Work : CSR-DIW and 5 Suppliers won CSR-DIW Award Level 2 and 1 supplier won CSR-DIW Award Level 3.</li> </ul>
<ol style="list-style-type: none"> <li>1. Good, prompt service</li> <li>2. Safe, convenient service stations &amp; clean restrooms</li> <li>3. Quality, green products</li> <li>4. Service discounts</li> </ol>	<ul style="list-style-type: none"> <li>• Installed POS automation systems to make pump work more flexible and faster</li> <li>• Developed processes and analyzed Voice of Customers to promptly respond &amp; resolve problems</li> <li>• Regularly monitored services at service stations</li> <li>• Developed service contest activities</li> <li>• Refueling point accrual cards</li> </ul>	<ul style="list-style-type: none"> <li>• Rising assorted sales volumes, causing market shares of service-station sales to rise to No. 2</li> <li>• Response and manage customers' complaints were completed 95% and satisfaction 85%.</li> </ul>
<ol style="list-style-type: none"> <li>1. Price</li> <li>2. After-sales service</li> <li>3. Care provided by marketing agents</li> <li>4. Relations activities</li> </ol>	<ul style="list-style-type: none"> <li>• Staged after-sales service, including maintenance programs and punctual transport</li> <li>• Relations activities</li> </ul>	<ul style="list-style-type: none"> <li>• Rise in industrial users' satisfaction from 91% to 95%</li> </ul>
<ol style="list-style-type: none"> <li>1. Safe operation, no community impact</li> <li>2. Environment quality &amp; green areas / parks in Phra Khanong District</li> <li>3. Fastest communication with communities during emergencies</li> <li>4. Participation in community relations activities improves community lives, esp. educational and youth activities</li> </ol>	<ul style="list-style-type: none"> <li>• Hired foreign experts to upgrade safety management beyond standards</li> <li>• Reported air quality online to automatic display screens in communities</li> <li>• Established green areas and sports center on premises of the Secretariat Dept. housing area (BCP area) for public recreational purposes</li> <li>• Established broadcast system between refinery and communities</li> <li>• Added community relations activities that addressed to solve the social problems</li> </ul>	<ul style="list-style-type: none"> <li>• 97% satisfaction with community relations execution</li> </ul>

Items (G4-24)	Stakeholder groups	Engagement methods (G4-26)
5. Mass media	Embracing the mainstream media & social media 5.1 Newspapers 5.2 Magazines 5.3 TV 5.4 Radio 5.5 Online media	<ul style="list-style-type: none"> <li>Press tours compatible with BCP's business expansion &amp; forging relations with media</li> <li>Regular meetings with mass media</li> </ul>
6. Shareholders	6.1 Major shareholder 6.2 Minor shareholders	<ul style="list-style-type: none"> <li>Open houses</li> <li>Analyst meetings</li> <li>Opportunity Day</li> <li>Roadshows (dom. &amp; int.)</li> <li>AGM</li> </ul>
7. Creditors	7.1 Financial institutions 7.2 Debenture holders	<ul style="list-style-type: none"> <li>Analyst meetings</li> <li>Road shows</li> </ul>
8. Government agencies	8.1 District office 8.2 Departments & ministries	<ul style="list-style-type: none"> <li>Comm. channels: Open houses, meetings, clarification, discussion &amp; participation in govt. agencies' projects</li> </ul>
9. Business competitors	- Other energy companies / oil traders	<ul style="list-style-type: none"> <li>Comm. channels: Intelligence, networks, marketing activities, website</li> </ul>

Needs / expectations (G4-27)	Bangchak's responses	Outcome
<ol style="list-style-type: none"> <li>1. Updates on business or expansion and hot issues fast &amp; promptly, incl. urgent executive interviews</li> <li>2. Knowledge about oil, energy, and industry</li> </ol>	<ul style="list-style-type: none"> <li>• At least quarterly business updates / annual press conferences, business roundups, future business plans</li> <li>• Coordinated with executives at once when mass media needs special interviews</li> <li>• Issued press releases during crises to provide correct information, ease impacts &amp; misunderstanding</li> </ul>	<ul style="list-style-type: none"> <li>• Earned regular coverage of news and corporate image concerning environment &amp; safety by mass media</li> </ul>
<ol style="list-style-type: none"> <li>1. Capital gains</li> <li>2. Attractive dividends with regular payment</li> <li>3. Solid performance &amp; continued, secure growth</li> <li>4. Priority is core refining excellence</li> <li>5. Goals &amp; business growth directions</li> </ol>	<ul style="list-style-type: none"> <li>• Added comm. channels for shareholders to monitor &amp; be more aware of BCP's data</li> <li>• Added roadshow frequency &amp; countries</li> <li>• Designed a modern, friendlier IR website with complete data</li> <li>• Staged executives-minor shareholders activities</li> <li>• Developed factsheets for shareholders &amp; investors on BCP's business and quarterly performance</li> <li>• BCP paid suitable dividends, with rates comparable to peers</li> </ul>	<ul style="list-style-type: none"> <li>• BCP stocks are more attractive; investors are more confident; in 2014, BCP stocks remained among SET 50</li> <li>• BCP won awards from Finance Asia - Best Mid-Cap (ranked 1<sup>st</sup>) &amp; Most Committed to a Strong Dividend Policy (ranked 7<sup>th</sup>) Company Asian Excellence Recognition Awards 2014 - Best Investor Relations Company SET Award 2014 for outstanding investor relations</li> <li>• More invitations for roadshows from securities firms (dom. &amp; int.), for being attractive to investors &amp; a top pick among securities companies</li> </ul>
<p>Honor terms &amp; conditions of loan and debenture agreements</p>	<ul style="list-style-type: none"> <li>• Strictly honored conditions of loan and debenture agreements</li> <li>• Answered queries of loan analyst officers when in doubt</li> <li>• Staged activities to forge relations with financial institutions</li> <li>• Staged open houses to foster confidence in BCP's performance &amp; relations with financial inst. &amp; creditors</li> </ul>	<ul style="list-style-type: none"> <li>• Continued lending by creditors</li> </ul>
<ol style="list-style-type: none"> <li>1. Compliance with laws or better</li> <li>2. Social &amp; envir. responsibilities, sustainable co-existence with communities</li> <li>3. Sound safety &amp; envir. management systems in plants</li> <li>4. Prompt information provision &amp; support to govt. agencies' projects</li> </ol>	<ul style="list-style-type: none"> <li>• Properly and transparently complied with laws &amp; regulations related to businesses</li> <li>• Controlled envir. quality beyond legal requirements</li> <li>• Accurate and prompt clarification of data with regulators</li> <li>• Cooperated with public sector in promoting green projects</li> <li>• Poised for move to Green Industry Level 5</li> </ul>	<ul style="list-style-type: none"> <li>• Trust by govt. agencies to continue industrial works operation</li> <li>• Continued certification of ISO 14001</li> <li>• Public-sector envir. awards, incl. Green Industry Level 4, CSR-DIW Level 5</li> </ul>
<ol style="list-style-type: none"> <li>1. Free competition &amp; fair marketing activities</li> </ol>	<ul style="list-style-type: none"> <li>• Conducted transparent business under fair trade &amp; competition</li> </ul>	<p>Rising sales of fuels prompted market shares through service stations to rise to No. 2</p>





# About the Report

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## Background

Since 2005, this is the 10<sup>th</sup> consecutive sustainability report prepared to demonstrate the activities and performances from January 1 to December 31 each year on sustainability management of business economics, society, and environment. The reference for this report is the Global Reporting Initiatives Guideline version 4.0 (GRI G4) and Oil & Gas Sector Supplement (OGSS) at the Core level. The report format has been adjusted to illustrate stakeholders' needs and expectations (G4-23) and demonstrate Bangchak's achievements to meet these, with weight indicators corresponding to specific issues defined in the GRI G4 standard.

**Issue selection criteria** The criteria for issue selection under GRI G4 are as follows; (G4-18)

**1. Identification** Determination of sources of report information from within the organization (business objectives) and outside the organization (stakeholders) including their key issues, needs and expectations that could affect corporate business sustainability concerning economics, environment, and society.

- **Within the organization** or business objectives: evaluation of meetings of responsible people and applications of organizational strategies, key issues concerning organizational sustainability and short-term and long-term enterprise risk management.
- **Outside the organization** (stakeholders): evaluation of meetings of people responsible for nine groups of stakeholders to define factors affecting their decisions, input on their opinions, and expectations from surveys and unsolicited sources, consultations, public talks, conferences, seminars, or unstructured interviews suitable to each group of stakeholders.

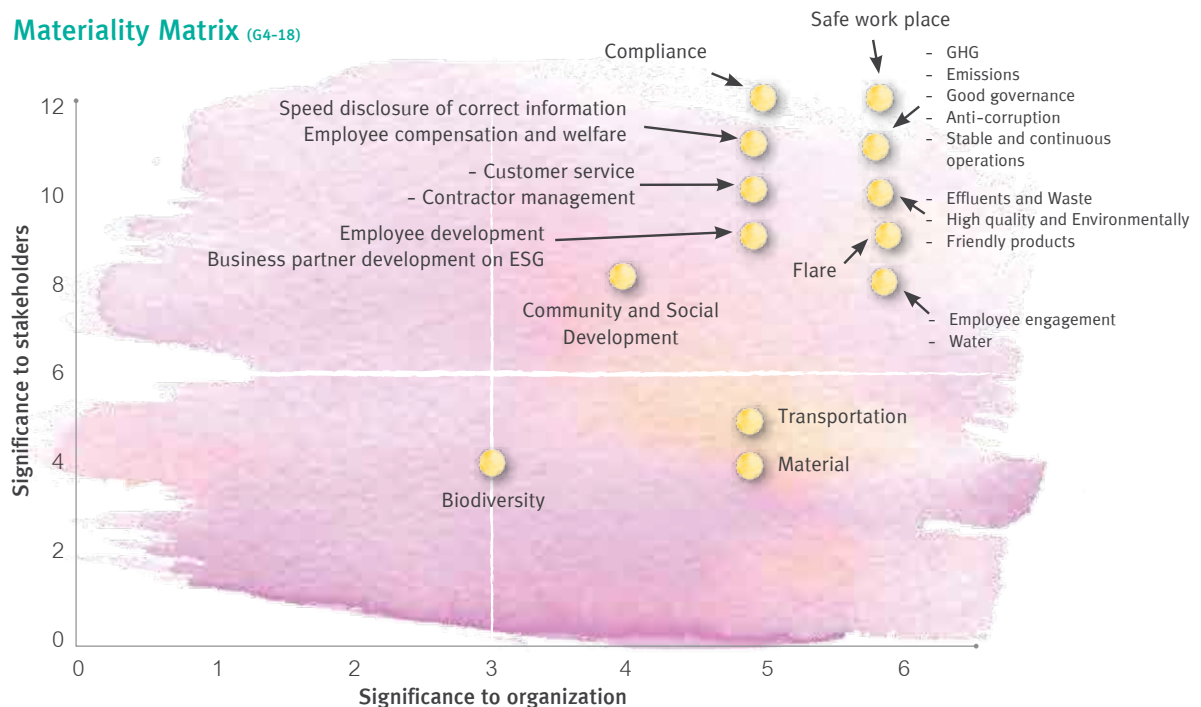
**2. Prioritization**

This prioritization stage is pursued in reference to the GRI G4 after the identification stage. Scores are given to each issue or topic with two parallel criteria set in the Materiality Matrix as follows.

**2.1 Horizontal axis** : issues deemed significant to the organization

**2.2 Vertical axis** : issues deemed significant to the stakeholders.

### Materiality Matrix (G4-18)



### 3. Validation

Presentation of selected issues ranked with the Materiality Matrix to the Sustainability Policy Committee for endorsement to further define the scope and duration of the report to ensure proper rationale and balance of the contents. The reporting is aimed to demonstrate growth of business sustainability and indicate all gaps for improvement found during the year.

### 4. Scope (G4-17, G4-20)

The report includes performances in 2014 of all activities run by all units of Bangchak, excluding its subsidiaries and other related companies. Included in the report from such companies, however, are environmental KPIs, namely the volumes of raw materials, GHG, and energy usage (G4-23) by Bangchak Biofuel (BBF), Bangchak Solar Energy (BSE) and Ubon Bioethanol (UBE). Data on safety and injury rates in the office areas and the refinery on Sukhumvit 64 are included as part of the operation performance. The 2015 reporting scope is set to include more performance data from subsidiaries and related companies. (G4-21)

### 5. Assurance Statement

The report is audited and certified by a third party with expertise in the assessment and assurance of the operation performances in the oil and natural gas businesses for the sake of thoroughness, accuracy, and credibility under the GRI G4 guideline, with details illustrated on page xx.

### 6. Contact us

Environment and Community Relations Division, The Bangchak Petroleum Public Company Limited  
Email: [chongprode@bangchak.co.th](mailto:chongprode@bangchak.co.th) Telephone: 0-2335-4100 Fax: 0-2335-4151



# Materiality Issues

Materiality Issues	Issue Defined under GRI (G4-19)	Report Scope (G4-19)			Report Content	Page
		BCP	BBF	BSE		
<b>Economic</b>						
1. Good corporate governance	1. Economic Performance	●			1. Economic performances (G4-EC1)	35, 73
2. Continuous, secure operations	2. Procurement Practice	●			2. Supply Chain Management (G4-EC9)	36, 73
3. Procurement process						
<b>Environmental</b>						
1. Greenhouse gases (GHG)	1. Emissions	●	●	●	1. Carbon footprint (EN15-16)	44, 74
2. Energy	2. Energy	●	●	●	2. Energy usage (G4-EN 3)	41, 74
3. Air pollution	3. Emissions	Refinery			3. Air pollution (G4-EN21)	46, 75
4. Flare	4. Flare	Refinery			4. Flare (G4-OG6)	47, 75
5. Water pollution & waste	5. Effluents and Waste	Refinery			5. Effluents & solid waste (G4-EN23)	48, 76
6. Water usage	6. Water	Refinery			6. Water withdrawal (G4-EN8)	45, 75
7. Compliance	7. Compliance	●			7. Compliance (G4-EN29)	76
8. Business partner development on environment, social & governance (ESG)	8. Supplier Environmental Assessment	●			8. Procurement & supply chain management (G4-EN32)	76
9. Raw materials	9. Material	●	●	●	9. Raw materials and products (G4-EN1)	38, 74
<b>Social</b>						
1. Workplace safety	1. Occupational Health and Safety	Refinery			1. Safety & occupational health (G4-LA6)	57-59, 79
2. Anti-corruption	2. Anti-Corruption	●			2. Anti-corruption (G4-SO3)	28
3. Green product quality	3. Product & Service Labeling	●			3. Accountability to customers (G4-PR5)	52, 54
4. Employee engagement	4. Employment	●			4. Employee care (G4-LA1)	60
5. Contractor management	5. Turnaround contractor management	●			5. Safety & occupational health (G4-LA6)	57-59, 79
6. Employee compensation & welfare	6. Employment	●			6. Employee care (G4-LA2)	62
7. Customer service	7. Marketing Communication	●			7. Accountability to customers (G4-PR5)	52-54, 63, 79
8. Employee development	8. Training and Education	●			8. Employee care (G4-LA9)	78
9. Community & social development	9. Local Communities	●			9. Community & social development participation (G4-SO1)	64-69

Notes BCP Notes to abbreviations: (G4-21)

BCP = Bangchak Petroleum Public Company Limited

BBF = Bangchak Biofuel Company Limited

Refinery = including data from Sukhumvit 64 refinery

BSE = Bangchak Solar Energy Company Limited







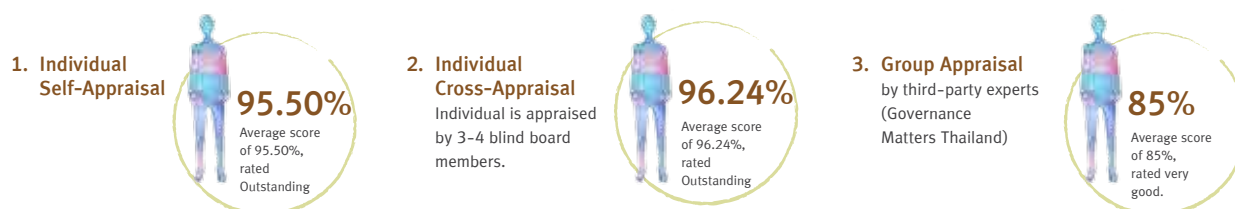
## Corporate Governance

Since its foundation, Bangchak has fully adhered to good corporate governance and the missions of national energy security and social development, corresponding to the employee culture of being “virtuous, knowledgeable, and contributive to society”. The corporate governance (CG) policy was first officially enforced in 2003 and has been strictly observed by board members, executives, and all employees.

The **Corporate Governance Committee** was appointed by the Board with responsibilities to steer the company with CG and continuously improve the CG policy annually to meet international standards. Consisting of three members, the committee held three meetings in 2014 to ensure good CG practices like SET's other listed companies and monitor progress of all activities under the CG work plan.

Policy Improvement	Firm on Intention	Sharing of Ideas
<ul style="list-style-type: none"> <li>Amended for Revision 11 the CG policy: the committee selection policy in Section 3 (Board of Directors), term of office in Section 5 (administration), and shareholders' rights in Section 7 (shareholders' rights and equality and company roles toward stakeholders)</li> <li>Amended the CG policy of affiliates with addition of anti-corruption clauses in line with the parent company's CG policy</li> </ul>	<ul style="list-style-type: none"> <li>Required acknowledgment of the policy and launched a survey with questionnaire and test for all employees. Feedback was returned on potential conflicts of interest.</li> <li>Joined the 2014 anti-corruption parade and campaign under the “Hand-in-Hand, Reform the Fight to Sustainable Victory against Corruption” theme, organized by the CAC (Thailand's Private Sector Collective Action Coalition against Corruption) at CentralWorld plaza.</li> <li>Organized the 2014 CG Day under the “Bangchak's 30-year Journey, Building on Virtue toward Sustainability” theme. The goal was to share the company's 30-year history and values, promote the employee culture of being virtuous, knowledgeable, and contributive to society, and reiterate the ‘no-gift’ policy.</li> </ul>	<ul style="list-style-type: none"> <li>Organized a knowledge-sharing campaign with business partners to join anti-corruption activities (details shown on Anti Corruption).</li> </ul>

In addition, the Board approved the performance appraisal program for itself at least once a year, which in 2014 was conducted under three different formats:



Also, more performance appraisals are in place for each “committee”. Details are shown in the 2014 Annual Report under Management Structure.



## Anti-Corruption

Bangchak is one of the 22 founding members of the Thailand's Private Sector Collective Action Coalition Against Corruption (CAC).

Below are activities organized and supported during 2014 under Bangchak's anti-corruption commitment:

- **Communicate and share knowledge** : Communicated and shared knowledge with all employees on the CG policy via KM web and launched an 18-item test on the policy via the KM Happy Quiz. The 2014 outcomes were 100% for awareness and acknowledgment by executives and employees, and 100% passed the test. These outputs form the basis of stringent, efficient practices and communication channels.
- **Continuously improve anti-corruption measures** : Declared a "no-gift policy" for festivities and special occasions, and communicated with all employees, business partners, and external business contacts of Bangchak and its affiliates. The policy heightened good CG and set good standard practices with all business partners. The awareness and acknowledgment outcome was 100%.
- **Share ideas with business partners** : Organized a 2014 seminar with business partners in conjunction with Procurement Section to share ideas and promote the CAC campaign. The seminar was held at Bangchak Refinery with participation by 44 business partners, 92.31% of whom decided to join the campaign and 58.97% were ready to join the campaign in 2014.





# Adherence to the United Nations Global Compact

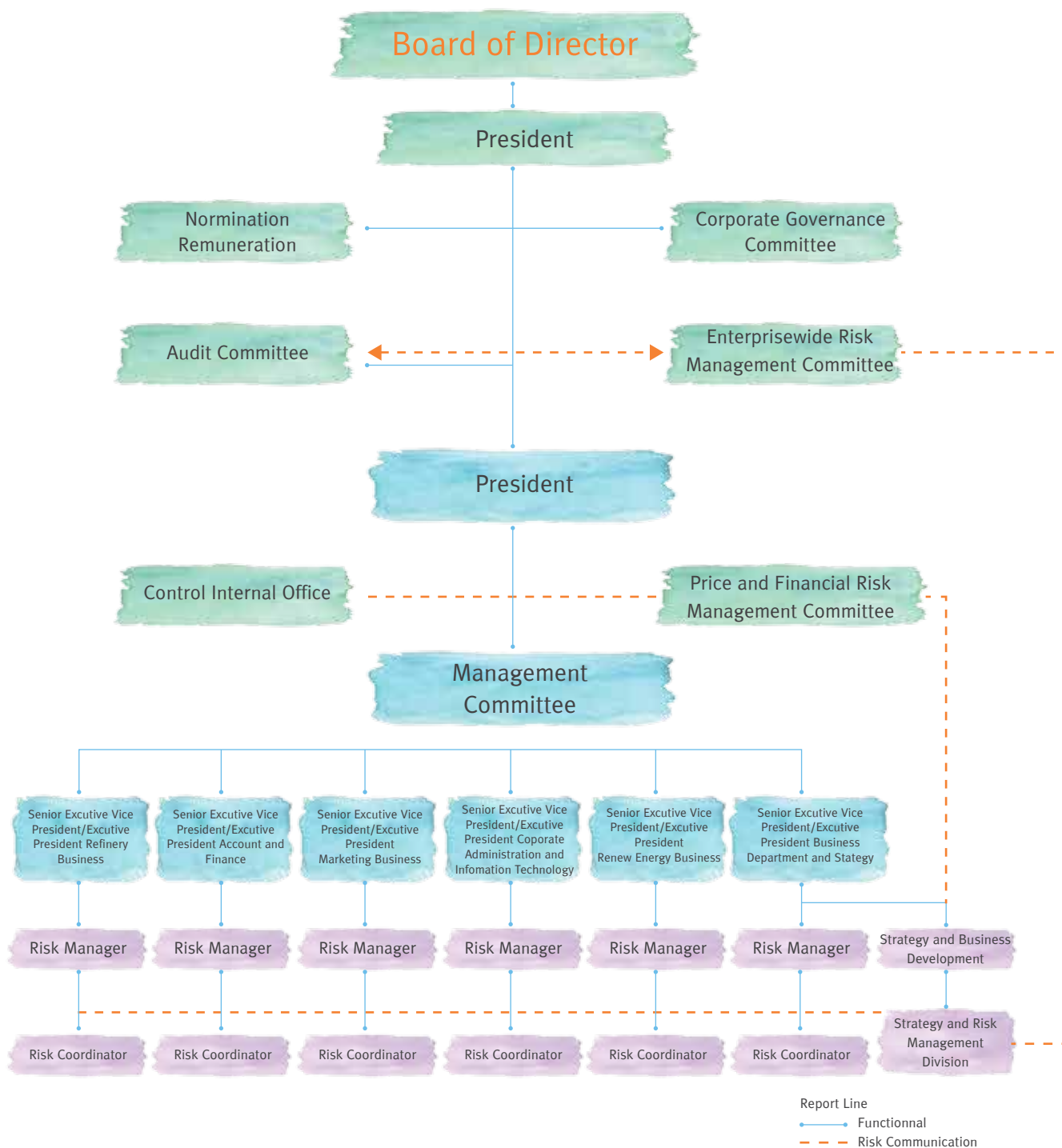
10 universal principles		Implementation
Human rights	<ol style="list-style-type: none"> <li>1. Support and respect the protection of human rights under the universal declaration, within one's authority</li> <li>2. Diligently ensure that one's business is involved in no violation of human rights</li> </ol>	<ul style="list-style-type: none"> <li>• Define equitable respect for human rights in the corporate governance policy</li> <li>• Establish channels for whistle-blowing and complaints about violations of laws or ethics, together with protective mechanisms for whistle-blowers</li> </ul>
Labor	<ol style="list-style-type: none"> <li>3. Support and encourage freedom of labor congregation and earnest confirmation of negotiation rights</li> <li>4. Eliminate the use of conscripted labor and forced labor in all forms</li> <li>5. Earnestly abolish child labor</li> <li>6. Eliminate discrimination in hiring and livelihoods</li> </ol>	<ul style="list-style-type: none"> <li>• Support and establish a Bangchak Labor Union to               <ol style="list-style-type: none"> <li>1. Seek and safeguard benefits concerning hiring conditions</li> <li>2. Promote cordial relations between the employer and employees, as well as among employees themselves, to ensure peaceful and proper co-existence</li> </ol> </li> <li>• Hire no involuntary labor, forced labor or child labor</li> <li>• Support competency development at the professional level; put the right man on the right job; treat employees fairly; establish decent and safe welfare and workplace environment; and provide compensation comparable to business peers; fair treatment to employee both men and women; organized good environmental; standard safety management system for the employee to work with happiness and realize SHEE awareness.</li> </ul>
The environment	<ol style="list-style-type: none"> <li>7. Support careful approaches for work potentially affecting the surroundings</li> <li>8. Volunteer for activities promoting environmental responsibility</li> <li>9. Promote development and spreading of green technologies</li> </ol>	<ul style="list-style-type: none"> <li>• Define "Greenenergy Excellence" as the Company's vision (that is, striving for an environmentally friendly energy business for sustainable development)</li> <li>• Define "Greenenergy Excellence" as the Company's business culture</li> <li>• Provide accurate data, strive for understanding and listen to potential problems and impacts so that they may be promptly resolved, a basis for co-existence between plants and communities</li> <li>• Shared environmental knowledge and experiences to public through The Thailand Go Green project and enhance community participation in social and environmental activities.</li> <li>• Be a leader in alternative-energy development, focusing on businesses that cut carbon dioxide emission</li> <li>• Promote environmental awareness among stakeholders, public and communities</li> <li>• produce green goods and spend environmentally conscious lives</li> <li>• Provide EIA report</li> </ul>
Anti-corruption	<ol style="list-style-type: none"> <li>10. Conduct business to resist fraud, extortion, and bribery of all forms.</li> </ol>	<ul style="list-style-type: none"> <li>• Shown the Environmental Quality in the communities               <ul style="list-style-type: none"> <li>- Amended the CG policy for affiliates, namely Bangchak Green Net, Bangchak Biofuel, and Bangchak Solar Energy). The first amendment included addition of principles and practices on anti-corruption under a new section 2 of the policy.</li> <li>- Organized a 2014 seminar with business partners with knowledge-sharing and campaigned to join the CAC (Thailand's Private Sector Collective Action Coalition against Corruption).</li> <li>- Developed a no-gift policy and informed internal and external parties, forbidding gift-giving and acceptance on festivities and special occasions, in a move to support CG and define fair business practices for all concerned.</li> <li>- Organized the 2014 CG Day under the "Bangchak's 30-year Journey, Building on Virtue toward Sustainability" theme. Employees participated in shows designed to share the company's 30-year history and promote building on virtue toward sustainability.</li> </ul> </li> </ul>





# Risk Management

At Bangchak, an enterprise risk management (ERM) has been developed, with systematic reporting and performance monitoring mechanisms to ensure its capability to meet business objectives and cope with continuously changing business circumstances.



## Note :

Risk Manager - Manager/Vice President Position or is assigned to.

Risk Corordinator - assigned by senier executive vice president/executive vice president.

Designed to manage and prevent risks affecting businesses for Bangchak under the COSO ERM and ISO 31000 international risk management standards, ERM has been in place since 2004. The process includes three risk management systems as follows.

1. Operation Risk Management: The system focuses on managing risks defined annually as corporate strategic risks. A generated Risk Map is used to analyze and link all risks with a matrix of probability and severity of impacts.
2. Business Continuity Management: The system is designed under the ISO 22301:2012 standard guideline, consisting of ten crisis management plans and six business continuity plans. It regularly calls for drills, monitoring, and revision of work procedures to ensure emergency preparedness of manpower, resources, and strategies for coping with possible current crises.
3. New Business Investment Risk Management: The system is designed to help screen new business investment projects by the Enterprisewide Risk Management Committee (ERMC). Only those endorsed by ERMC can be further reviewed by the Board.

## Risk Management Outcomes

The extreme volatility in economy, politics, and the oil price of 2014 influenced the demand and supply of oil products and the oil business directly. The company's risk management system, nevertheless, drove its business plans for full achievement.

### 1. Financial Risks

The big swing in the oil price was phenomenal in 2014 following the worldwide crude oil glut, while demand was declining as the global economy failed to recover-resulting in a free fall in prices. Thanks to its financial hedging on crude and product prices, Bangchak managed to somewhat mitigate its inventory losses. The losses were well offset by a consistent revenue stream provided by solar power generation, whose capacity was increased to 118 MW, and by an expanding biofuel business. By using palm oil as raw material for biodiesel, the generating capacity has gradually been rising from 360,000 to 810,000 liters per day in 2016. (expanded 450,000 liters per day) The company further expanded its ethanol output by another 150,000 liters per day by acquiring an ethanol plant based on tapioca and molasses. Combined with the existing capacity of 400,000 liters per day, the total ethanol production of Bangchak is now 550,000 liters per day. The capacity expansion strategy reduces the sourcing and supply risks and increases the market share when the country is looking for more alternative/renewable energy sources.

## 2. Social Risks

With its utmost commitment to safety of communities and society, the risk management process review of possible impacts created by internal and external changing environment is regularly conducted, leading to continuously improved work processes. Develop, improve and upgrade various safety standards to provide assurance of the overall program advancement. These activities include:

- Reviewed the Hazard and Operability Study, a study to identify hazardous work by compiling and reconciling comments and suggestions from operators to improve the overall work process design to prevent undesirable incidents so that machines and equipment can operate safer under the operating standards. The review is part of the efforts to ensure completeness of the overall operations and compliance with international safety standards.
- Elevated the safety system from TISI/OHSAS 18001 to PSM (Process Safety Management). This requires a thorough review of all safety programs related to refining processes and high-risk work processes. An internationally renowned specialist from Du Pont ensured successful implementation.
- Deployed an emergency preparedness system to ensure efficient handling of crises, including complete extinguishment systems for incidents within the refining facilities and the surrounding communities, a closed-circuit monitoring system, and security personnel.

To ensure safety of communities and the public, a series of public relations and campaigns to share knowledge and foster safety awareness with surrounding communities including schools, temples, and condominiums have been regularly organized. Some of these events are basic fire extinguishing, communication and alarm systems with the communities, and observation programs for community personnel at Level 3 emergency drills.

## 3. Environmental Risks

Environmental risks are generally sensitive and highly prone to public attention, and therefore could pose critical threats to company business if such an incident is caused by the company itself. Bangchak has adopted an offensive strategy to foster environmental stewardship with environmental safeguarding and continuously improved work efficiency to eliminate environmental risks. This strategy includes:

- Enforced restriction on the use of crude oil and refined product vessels to only those with double hulls to prevent environmental incidents.
- Treated all waste water with the reverse-osmosis technology to ensure high water quality suitable for reuse, reduced waste water to the minimum, and minimized the use of raw water. Since the installation, waste water has been reduced by 25%, on the way to the 2020 target of 80%.
- Initiated a technical study on the use of an enclosed ground flare to reduce air pollutants causing environmental impacts on the surrounding communities by 2015.
- Manage the refinery efficiency improvement project for reduction of energy and GHG.

#### 4. Business Continuity Management

Bangchak was honored by MASCI (Management System Certification Institute (Thailand) with an ISO 22301:2012 award in 2014, representing a management standard for business continuity covering operating areas of Head Office, Bangchak Refinery, Bangchak Oil Distribution Center, Central Business Office, and the Bang Pa-In Oil Distribution Center. The award reassured stakeholders of its capability to continue its overall business during emergency crises.

A plan for an oilspill emergency drill is set for 2015. An oil spill incident is assumed to take place during the offloading from a vessel to the storage tank. The business continuity plan (BCP) is to be activated to manage and minimize the impacts on the public. Participants to the drill will include IESG (Oil Industry Environmental Safety Group), government agencies such as the Department of Energy Business, Marine Department, Port Authority of Thailand, Phra Khanong District Office, Phra Khanong Metropolitan Police Station, Bangkok Fire and Rescue Department of the Bangkok Metropolitan Administration, and surrounding stakeholders. The drill outcomes would further improve the BCP.

#### Lesson Learned in 2014

Bangchak deployed BCM during the political unrest and widespread demonstration in Bangkok during 2014, which caused disruption to its operations and transportation of employees and main roads. Bangchak deployed the crisis management plans in case of disable office and transportation. Daily management briefings and meetings helped monitor the situation closely and develop necessary measures under the plan. With the program in place, Bangchak successfully managed its overall operations and delivered products to its customers uninterrupted.

The 2014 lesson learned provided high value in many aspects. All departments were requested to put up a report with their own lessons in detail and co-develop with the central office a new BCP specifically for political chaos. The plan was disseminated among employees to foster knowledge-sharing and strengthen the overall business operations, and to be better prepared for any future crises.





A watercolor illustration of a sustainable landscape. In the background, there are blue and green mountains under a light sky. A bird is flying in the upper right. In the foreground, there is a body of water reflecting the scene. On the left, a modern building complex with yellow and grey structures is visible. To the right, there are colorful trees and a building with a large mural. The overall style is artistic and eco-friendly.

# Sustainability

## Performances



# Economic Performances

## Revenue

In 2014, Bangchak generated a revenue stream of Baht 178,300 million from sales and services. The revenues included Baht 175,299 million from sales and services of the oil business, Baht 2,183 million from sales of Lube oil sale and Baht 818 million from the solar farm business. The Bangchak's revenues drop of Baht 4,963 million or 2.72% from last year's resulted from the political crisis in Thailand, the World Economic Deflation and volatility in the oil price. Nonetheless, the GRM (Gross Refining Margin: crack spreads or margins between refined product prices and costs of reference crudes) was US\$ 6.96 per barrel gained up from US\$ 5.76 per barrel in 2013. The average Dubai crude price was lower from US\$ 105.45 per barrel to US\$ 96.96 per barrel extremely impacted to the inventory losses of Baht 5,454 million. The company posted a net profit of Baht 296 million, a drop of Baht 3,675 million (92.54%) from last year. The sales volume through the marketing business was Baht 5,006 million, similar level to last year with a drop of 4% in the industrial market but a rise of 3%, in the retail market. As a result the market share of Bangchak in the retail market moved up from the 3rd top at 14.8% in 2013 to 2nd top at 15.1% up. Moreover,

Moreover, the total marketing margin value in 2014 gained raised up to 37% both in the retail market and industrial market are increased at Baht 0.71 per liter. (37% up) and compare with the last year for Besides, the 38 kilowatt-hour solar farm business generated 38 kilowatt-hour power, generated 2.78 million kilowatt-hour power or added up 4% relative to last year due to a rise of 2.78 million kilowatt-hour power or added up 4% from the capacity stemmed from full-year operation and the weather permitting the higher solar intensity. at Baht 0.71 per liter.



## Expenditures

In 2014, the company's operating expenses increased although the production reduced. This was caused by the stock inventory losses. Other expenditures for society in forms of the contributions to the public, schools, and communities, as well as the donations both in things and cash were reduced by Baht 5.8 million. Likewise, the tax payment to the government and municipalities were reduced by Baht 1,067 million due to the loss of the corporate income tax. Furthermore, the financial cost was raised by increase in the Baht 10,000 million debenture bond at Baht 305 million. Nonetheless, the company still paid for the dividend at the amount of Baht 1,859 million, but 10% decrease from relative to last year



## Supply Chain Management

Regarding vendors and suppliers as critical players in the company's success, Bangchak puts in place a policy supporting procurement of domestic goods and services, promotion of green merchandise, and development of their sustainability together with Bangchak's. Therefore, Bangchak has since 2008 established E-procurement to ensure procurement processes marked by clarity, transparency, ethics, with equitably detailed procurement for the sake of fair competition, contractor management filled with respect for human rights and conformance to labor laws. Bangchak reviews merchandise qualifications to fit tasks and users' safety in addition to minimal environmental impacts before price setting so as to focus on merchandise with the right qualifications for given tasks.

This year Bangchak has taken the following actions on its purchasing and hiring system, while modifying business processes to cater to vendors' and suppliers' desires:

- Migrated to the SAP SRM system in September for transparent and accountable procurement
- Built capacity for contractors and suppliers through training and seminars on anti-corruption to stress procurement ethics and transparency and invite business partners to participate and accept the company's invitation to join CAC membership on environmental aspects together with the procurement of green goods and services. That way, their greater awareness of green products and services and Labor Law will arise.
- Encouraged corporate procurement of green products and services, beginning with office supplies and increasing in number.
- Drove business partners' certification efforts for green industry so as to jointly and proactively develop the industrial sector in a concrete way with a goal to continually develop all business partners into green companies.
- Managed relationship with contractors, vendors and suppliers, and business partners every year to share their views and continually apply these to the improvement of business.
- Communicated relevant news and information to business partners by business processes and E-mail, including the policy of rejection of gifts in all circumstances.





# Environmental Performances

## Milestones



### Environmental operation during the annual major turnaround

This year Bangchak Refinery underwent 45 days of annual major turnaround. Recognizing potential environmental impacts, Bangchak added environmental preventive measures like the procedural modification of plant stoppage for repair and plant resumption, especially for impact mitigation on odor, effluents, and solid waste. Bangchak applied chemical decontamination, resulting in easier and cleaner equipment washing that proves safer to operating personnel.



### Effluent reduction project

To cut down on its volumes of effluents and water consumption, Bangchak installed an additional, modern effluent quality improvement unit to raise treatment efficiency so as to handle a higher volume and quality fluctuation of water. It is expected to treat water to a cleaner quality to enter the reverse-osmosis system to obtain tap-water quality for reuse in Bangchak's processes. Start-up was undertaken in late 2014. In addition, smells were reduced from the sediment treatment system so that the treated water may be used for plant watering on the company's compound.



### Start Off Smart Office Energy (SOS)

Bangchak people cooperate to save energy company-wide. That is the message to all employees, urging them to join a contest to find the best in office buildings and save energy (the so-called SOS Featuring Energy 2013), hosted by the Ministry of Energy. Bangchak met all three aspects of the criteria: electricity-saving in buildings, promotion of energy-saving appliances, and awareness campaigns on energy conservation. Thanks to its participation in this project, tools and mechanisms have been produced in day-to-day work and long-term monitoring. Bangchak won outstanding awards (energy-saving buildings: Building 2 and Building 4). Equally important, employees have become more aware of conscientious energy consumption.



### Excellence in Green Office

Bangchak also manages and operates under the Green Office criteria at the "excellent" level, certified by the Department of Environmental Quality Promotion, in these aspects: organizational management, Green Office operation, energy-resource consumption, waste management, surroundings, procurement of office supplies, and continuous improvement.



## Raw Materials

The raw materials of Bangchak and producing subsidiaries (Bangchak Biofuel and Bangchak Solar Energy) fall into two main types: non-renewable and renewable. This year, the volumes amounted to:

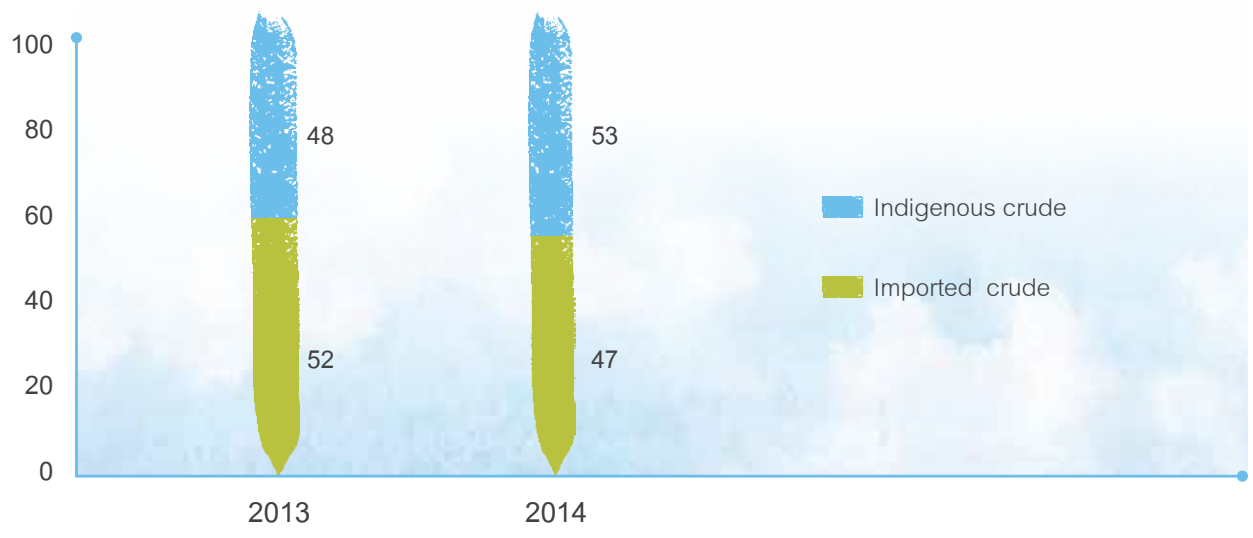
	Year	Unit	BCP	BBF	BSE	Consolidated*
Material	2013	tons	5,864,844	156,799	3	5,918,948
Material	2014	tons	5,826,559	165,032	3	5,870,930
- Non-renewable		tons	5,492,211	2,065	3	5,494,280
- Renewable		tons	334,348	162,967	-	376,650

\* Total raw materials of Bangchak and subsidiaries ("Bangchak Group"), exclusive of raw materials under connected transactions

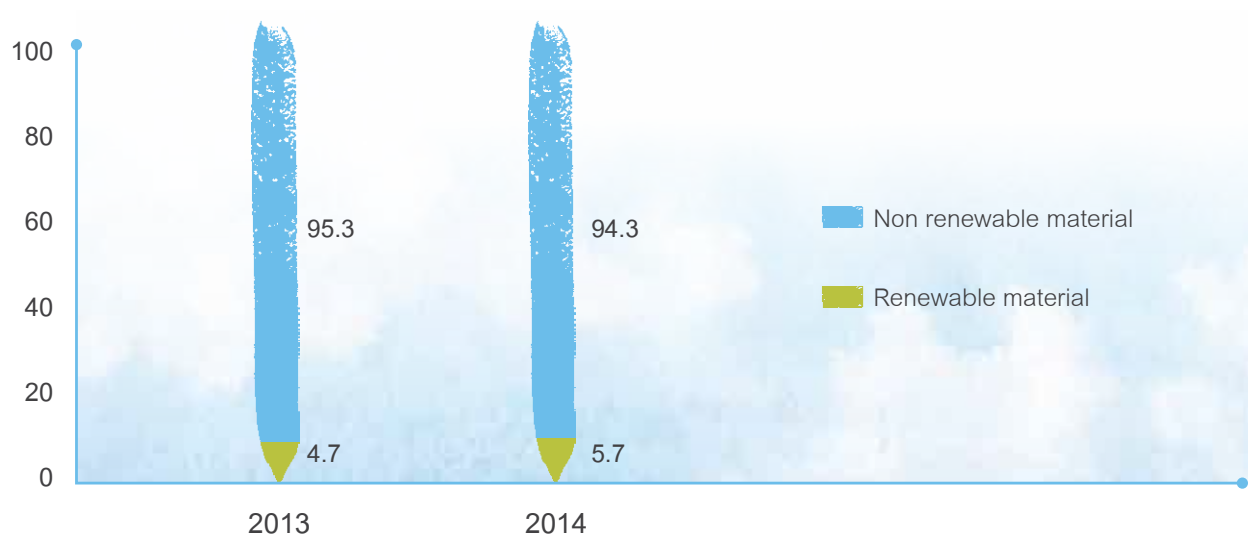
Bangchak's main raw material is crude oil, indigenous and imported. The company chooses to maximize indigenous crude oil consumption to ease transport impacts to its own allocated amount. This year, indigenous crude amounted to nearly 2.7 million litres, or 53% of the total crude run. In addition, the Company fed 1.8% of off-specifications refined oil and slop oil back into its refining processes, thus lowering oil losses and consuming resources more effectively.

Besides crude oil, Bangchak uses other products or additives for refined products, including biodiesel, ester (B100), and ethanol derived from its subsidiaries, chemicals, and additives. Biodiesel, ester, and ethanol-all renewable raw materials-have found extensive applications in Bangchak's biodiesel and gasohol production since 2013 in the national effort to cut down crude oil imports and support public policy (Department of Energy Business) in abolishing 91-octane and 95-octane gasoline sale.

### Crude oil sources (%)



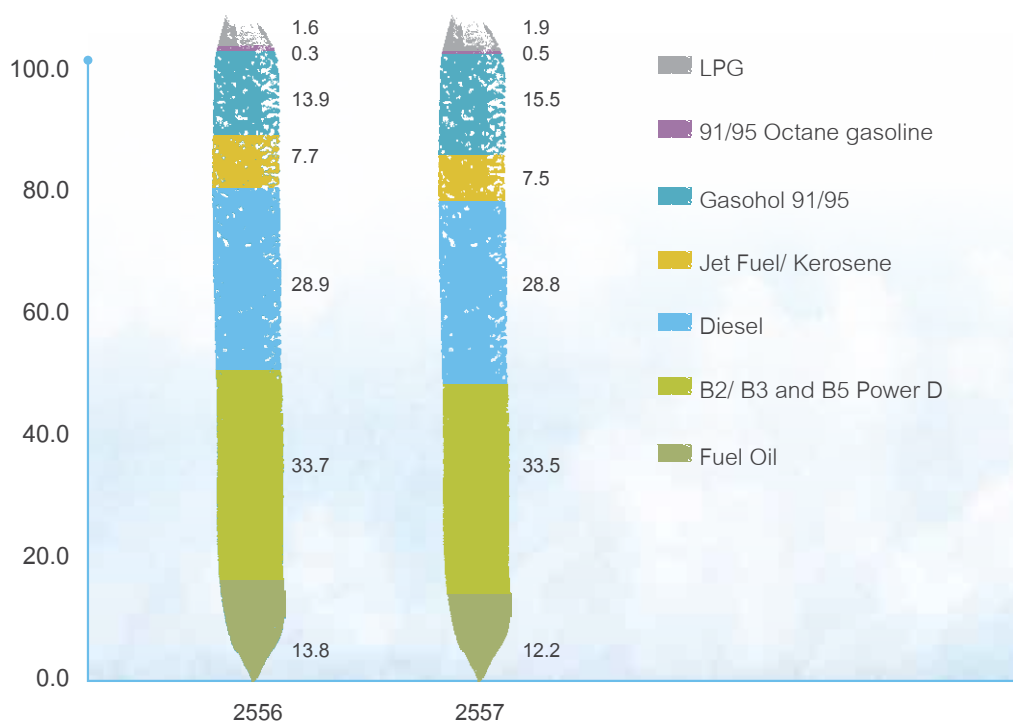
### Raw material by type (%)



## Product

The Company's products include fuel gas, LPG, 91-octane gasoline, gasohol 91 and 95, jet fuel, B2, B3 and B5 PowerD and fuel oil. This year, BCP increase the refine of gasohol 91 and 95, in order to replace Benzine 91 and 95.

### Product Ratio (%)



\* In 2013 and 2014, no 91-octane or 95-octane gasoline was refined at Bangchak Refinery (only some purchased 91-octane for blending)

\*\* In 2013 and 2014, no kerosene was refined

### ISO 27001

The heart of Bangchak's IT system for its processes is the DCS (distributed control system) in the Control Room and Substation No. 5 and the DCS support system in Substation No. 3. Keenly aware of information security, especially under today's computer threats that come in various dynamic forms, leading to potential impacts on its business, Bangchak investigates the development of an information security management system with suitable efficiency and in line with ISO/IEC 27001:2005, which would ensure related parties about Bangchak's information system and its service to them in a secure and continuous manner.

## Energy

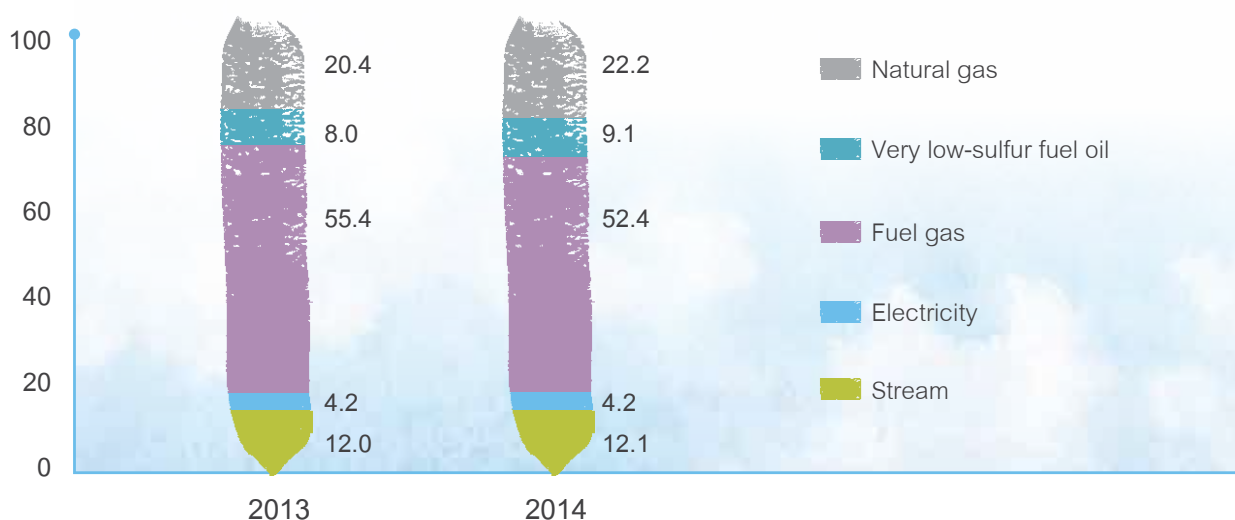
This year Bangchak, Bangchak Biofuel, and Bangchak Solar Energy consumed only non-renewable energy in their processes and offices, namely:

1. Fuels: Fuel gas and LPG, natural gas, and fuel oil consumed in the processes of Bangchak and Bangchak Biofuel
2. Electricity: This was derived from Bangchak Utility Plant (BUP), the Metropolitan Electricity Authority (for the portion used in the Sukhumvit 64 area), and the Provincial Electricity Authority (for subsidiaries' consumption).
3. Steam: Steam was consumed in Bangchak's and Bangchak Biofuel's processes.

This year Bangchak Refinery consumed 11,769 terajoules of energy, 8.5% less than last year, because of the shutdowns of some plants for planned turnaround maintenance and the effort to improve energy efficiency by maximizing natural gas consumption at the expense of fuel oil. But since 2014 also saw a shutdown at Bangchak Utility Plant (BUP), more fuel oil was consumed as a fuel than last year.

Source of Energy in Refinery	2013 Tera Joules	2014 Tera Joules
<b>FUEL</b>		
- FG + LPG	7,130	6,163
- NG	2,626	2,613
- FO	1,029	1,075
<b>Electricity Purchasing</b>		
- MEA	103	99
- BUP	438	395
<b>Steam Purchasing</b>		
- BUP	1,538	1,424
<b>Total</b>	<b>12,864</b>	<b>11,769</b>

## Energy consumption (%)





This year, the Energy Management Committee continued to manage its refinery efficiency improvement project. After the project launch, the Company managed to trim about 115.72 Tera Joules, equivalent to a reduction of 7,045 tons of carbon dioxide equivalent (TOCE) in greenhouse gas emission.

Refinery efficiency improvement project	Reduction in energy (Tera Joules)	Reduction in greenhouse gas emission (TOCE)
<b>Fuel reduction projects</b>		
1. Installation of insert tubes at the naphtha quality improvement unit's heat exchanger	6.3	} 6,482
2. Installation of insert tubes at the CDU heat exchanger	14.7	
3. Internal pipe-cleaning of furnaces number 1 and 2 of the CDU	13.7	
4. Replacement of CDU furnace walls	2.7	
5. Control of ratio between steam and raw materials of the hydrogen unit	55.2	
6. Utilization of gas oil heat exchangers	22.9	
<b>Power reduction project</b>		
1. Ventilator fan replacement	0.02	} 563
2. Replacement of lighting system at the Second Plant with LED	0.2	
<b>Total</b>	<b>115.72</b>	<b>7,045</b>

To lower carbon dioxide venting, not only Bangchak, but also Bangchak Biofuel has turned to natural gas at the expense of fuel oil.



## Bangchak Group's renewable and non-renewable energy consumption and sale

		Unit	BCP (Exclude Refinery)	BCP (include Refinery)	BBF	BSE	Consolidated
Overview of Bangchak Group's renewable and non-renewable energy consumption							
2013	Tera Joules	12,863.1	89.0	12,952.1	2,755.2	1.0	15,708.3
2514	Tera Joules	11,768.8	71.8	11,840.6	199.8	3.2	12,043.6
Bangchak Group's non-renewable energy consumption, 2014							
Fuels							
- Fuel gas and LPG	Tera Joules	6,163.2	-	6,163.2	-	-	6,163.2
- Natural Gas	Tera Joules	2,612.8	-	2,612.8	173.7	-	2,786.5
- Fuel oil	Tera Joules	1,075.0	-	1,075.0	9.7	-	1,084.7
Purchase electricity and stream							
- electricity	Tera Joules	493.8	71.8	565.6	16.4	3.2	585.2
- stream	Tera Joules	1,424.0	-	1,424.0	-	-	1,424.0
Bangchak Group's renewable energy consumption							
- No renewable energy consumption within Group yet *							
Overview of Bangchak Group's sale of power and renewable energy							
2013	Tera Joules					214.2	456.6
2014	Tera Joules					580.2	832.6

\* This year a solar PV panel was installed at the refinery's parking lot. The plan is to study the feasibility of installing a similar panel at some fuel distribution centers to generate power for these centers.



## Carbon Footprint

Bangchak recognizes the significance of higher capability of handling climate change, a universal environmental predicament for the world community. This year it improved energy efficiency in its processes and constantly lowered fuel and steam consumption, resulting in greenhouse gas (GHG) reduction of 7,045 tons of carbon dioxide equivalent (TOCE). For the year Bangchak Group's GHG emissions totaled 933,721 TOCE in the operational control approach, broken down into:

1. Direct emission from processes: 762,906 TOCE
2. Indirect emission from the purchase of electricity and steam: 170,815 TOCE

### Bangchak Group's GHG emissions under the Operational Control Approach

Unit : TOCE	2013				2014*			
	BCP	BGN	BBF	BSE	BCP	BGN	BBF	BSE
Scope 1	819,846	-	8,937	24	753,078	-	9,760	68
Scope 2	171,528	11,010	1,818	147	157,173	8,591	2,479	2,572
Total	991,374	11,010	10,755	171	910,251	8,591	12,239	2,640
	1,013,310				933,721			

\* 2014 is the baseline year for the GHG Reduction Project

Under the equity share approach, Bangchak Group's GHG emissions totaled 925,668 TOCE, broken down into:

1. Direct emission from processes: 759,978 TOCE
2. Indirect emission from the purchase of electricity and steam: 165,690 TOCE

### Bangchak Group's GHG emissions under the equity share approach

Unit : TOCE	2013				2014*			
	BCP	BGN	BBF	BSE	BCP	BGN	BBF	BSE
Scope 1	819,846	-	6,255	24	753,078	-	6,832	68
Scope 2	171,528	5,395	1,272	147	157,173	4,210	1,735	2,572
Total	991,374	5,395	7,527	171	910,251	4,210	8,567	2,640
	1,004,467				925,668			

\* 2014 is the baseline year for the GHG Reduction Project



## Water Consumption

One of the four basic necessities, water is turning increasingly critical because the impacts of climate change have resulted in water shortages around the world, Thailand included. While Bangchak's location in Bangkok Metropolis hardly suffers from water shortage, it enforces a resource consumption policy for maximum efficiency and loss reduction. Bangchak's measures concern continual water consumption reduction and water reuse (in offices and processes). This year Bangchak consumed 2,388,903 cubic meters of piped water from the Metropolitan Waterworks Authority, or 2.19 cubic meters per barrel equivalent of produced oil. This exceeded last year's volume because of installation work and test runs of the sulfur recovery unit, waste water treatment unit phase 3, reverse-osmosis system of effluents for reuse instead of piped water, and the electro de-ionization system

No	Action plan	Performance
1	Used the micro-filtration system in parallel with the reverse-osmosis system in initially treating raw water going into the demineralization system at the Power Plant	Saved 32,046 cu.m./year (0.9% of the total demand for water and equivalent to 29,438 cu.m./million barrels of fuel outputs)
2	Used quality condensate water instead of water for boilers at Plant 2 and the Power Plant	Saved 555,192 cu.m./year (14.8% of the total demand for water and equivalent to 510,667 cu.m./million barrels of fuel outputs)
3	Used stripped water from the sour-water stripping unit and the stripping stream from Plant 2 and Plant 3 instead of piped water at the desalter unit	Saved 56,249 cu.m./year (1.5% of the total demand for water and equivalent to 51,671 cu.m./million barrels of fuel outputs)
4	Treated slightly contaminated condensate water at Plant 4 for reuse in the boiler feed water system	Saved 421,088 cu.m./year (11.2% of the total demand for water and equivalent to 386,816 cu.m./million barrels of fuel outputs)

## Air Pollution

Air emission has assumed top priority for Bangchak throughout its first three decades of operations. Its corporate culture demands business to develop in harmony with the environment and society. Bangchak's ultimate goal is not merely to fully comply with all rules and regulations, but also to cause no impact on society. Numerous investment programs have been installed to consistently reduce air emissions, including the reduction of all pollutants at sources to ensure the use of clean fuels in production processes.

An international, experienced third party has been employed to conduct independent measurement of the air quality emitted from distillation towers at every six-month period or sooner. The measurement follows the U.S. EPA (United States Environmental Protection Agency) standard including NO<sub>x</sub>, SO<sub>2</sub>, H<sub>2</sub>S, and TSP (total suspended particulates) measurement as part of Bangchak's environmental monitoring program. Emissions from all refining units are combined as a mass flow rate or the total air emissions, with the exception of the H<sub>2</sub>S, which is emitted only from the SRU (sulfur recovery unit) tower. The total air emissions in 2014 are broken down into various compounds and compared with previous years as follows.

Unit: ton

Direct Emissions	2011	2012	2013	2014
NO <sub>x</sub> from combustion	634	279	521	451
SO <sub>2</sub> from combustion and SRU/TGTU (sulfur recovery unit/tail gas treating unit) stack	260	29	205	25*
PM10 (particulates finer than 10 microns) from combustion	43	10	20	8
H <sub>2</sub> S from SRU/TGTU stack	1.84	0.26	0.03	7.08

\* Not Included SO<sub>2</sub> from Acid Flare

Unit: ton/thousand tons of crude

Direct Emissions	2011	2012	2013	2014
NO <sub>x</sub> from combustion	0.08	0.08	0.11	0.11
SO <sub>2</sub> from combustion & SRU/TGTU stack	0.03	0.01	0.04	0.01
PM10 (particulates finer than 10 microns) from combustion	0.01	0.00	0.00	0.00
H <sub>2</sub> S (SRU/TGTU Stack)	0.00	0.00	0.00	0.00

In addition, the measuring and the monitoring of VOCs (volatile organic compounds) contents in parallel to the maintenance program are mandatory in the refining business. During 2014, with a plan to reduce VOC emissions, Bangchak closely monitored such emissions through the following processes.

1. Establishment of a VOC inventory by experts and development of plans to control and reduce VOC emissions.
2. Treatment by cleaning and segregating oil emulsion from the wastewater treatment system to reduce the agglomeration of oil residues under a closed system by rooftop installation. The VOC emission reduction outcomes were efficient, corresponding positively to VOC emissions measurement in the wastewater treatment work area compared with previous years.
3. Daily measurement of the fugitive VOCs with a portable measuring device under the US EPA standard

## Flare

The flare is a vital part for petroleum and petrochemical plants because it is a safety instrument that ensures that the flare gas and liquids are released and eliminated from production processes through complete combustion for the benefit of plant safety and minimized impacts on the environment and communities. To ensure that gas flaring is safe and least disturbs the environment, burning at the stack's tip is essential. In a sense, this burning means hydrocarbon release through the flare, which is a loss of resources and affects production continuity. Therefore Bangchak has tried to avoid flaring. But more important, since Bangchak now lies in an urban area, flaring could drastically hurt neighbors' feelings and could affect nearby communities. As a result, Bangchak has increased the reliability of its production processes, curbed flaring, and established a broadcast system from the refinery to communities to ensure their understanding and ease their concerns. In addition, the company measures the hydrocarbon volumes flared from the stacks of the Second, Third, and Fourth Plants by calculating the proportions and valve-opening durations. This year it measured 1250.5 cubic meters of hydrocarbons, and plans to install hydrocarbon measurement equipment for the stacks of the Fourth Plant in 2018 and the Second and Third Plants in 2020 to ease potential impacts on communities, avert flaring, and lower resource losses. To this end, the company has taken the following actions:

1. Installed equipment to restore the gas from RSU (reformat splitter unit) and the hydrocracking unit (4C-105: Product Fractionators) that constantly enters the flare for reuse in the process gas system, which is expected to become functional by June 2015
2. Managed the project to modify the flare into a ground flare stack
3. Developed the communication protocol with communities and their participation through the likes of annual major turnaround planning and informing the communities at least a month ahead of time, and scheduling officers or Bangchak employees to call on communities around the refinery to reach an understanding about the annual major maintenance turnaround or other shutdowns.

## Water Pollution

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The Company houses high-efficiency wastewater treatment systems using closely-monitored online measurement devices. Effluent is tested daily by its Environmental Quality Analysis Laboratory, certified by the Department of Industrial Works, Ministry of Industry, and is ISO/IEC 17025-certified. Process water is treated physically, chemically and biologically until the quality exceeds the required standards before discharge through the Bang Aw Canal to the Chao Phraya River.

This year Bangchak released a total of 975,466 cubic meters of effluents that have been treated and those contaminated with oil. Gathered in a pool, they are in time released to the external environment. The year-end saw Bangchak on a trial run and launch of its effluent reduction project, which yields water with a quality on a par with tap water, which is then recycled for use in its processes.



## Waste and scrap / disposal

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The Company treated waste derived from processes by using the 3Rs principle and sending it for disposal by using domestic carriers and disposal companies licensed by the Department of Industrial Works. Each time waste is transported from its plants, Bangchak notifies the department. In addition, Bangchak conducted random sampling of trucks transporting waste by using GPS to prevent unlawful disposal.

This year the Company exported from its plants a total of 3905 tons of waste, consisting of 3261 tons of hazardous waste (83.5%) and 644 tons of non-hazardous waste (16.5%). Waste that underwent treatment and disposal through proper technical means was broken down as a result from Major turnaround, as follows,: 443 tons as reuse, 984 tons as recycle, 1420 tons as recovery, 410 tons as incineration, 112 tons as secure landfill. Also, 1.1 tons from oil spill and no waste from construction work and treatment total of 88.66 tons. About 537 tons of waste lies in storage, awaiting disposal. The volume of waste reused and recycled this year is about 36.54 % of the total waste exported.



## Environmental Cost Accounting

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In Bangchak's environmental cost accounting covering oil refining processes and the depots at Bangchak and Bang Pa-in, the total expenditure for this year fell by Baht 18,139 million from last year, or about 13%, as detailed below:

**Material costs of output products :** These were lower than last year because of the major turnaround maintenance of all refining processes, which lower outputs. Besides, the plummeting oil price contributed to the lower expenses.

**Material costs of non-output products :** These surged with the turnaround maintenance this year, which implied more waste than normal, made worse by the higher prices of process chemicals.

**Expenses for pollution control equipment :** These also rose with the additional asset formalization for more environmental projects, including the debottlenecking of the sulfur processes and the effluent reduction project.

**Expenses for environmental protection :** These also rose with more environmental quality measurements on process days and mechanical days, during the turnaround maintenance, and monitoring of efficiency measurement under the commissioning environmental project.

In addition, this year Bangchak generated Baht 3.42 million (22%) more revenue from selling process by-products and waste, including liquid sulfur, surplus glycerine, and iron scrap from liquid sulfur, glycerine, and by-products from fuel product and biodiesel processes.



(Unit : million baht)

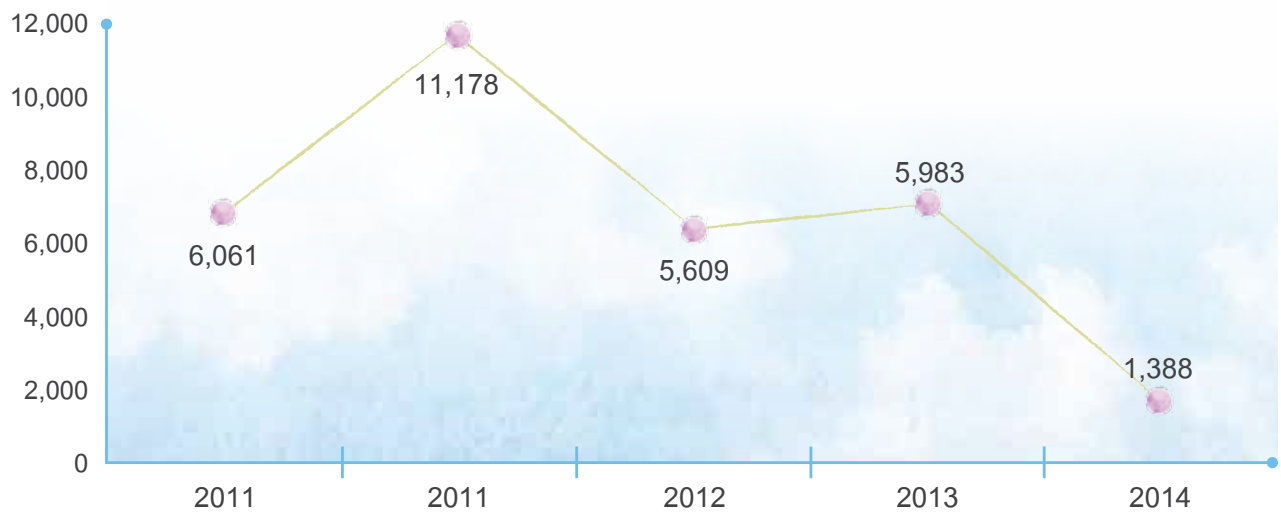
Item	2012	2013	2014
<b>Material costs of product outputs</b>			
Crude Feed	96,406.01	127,407.41	106,781.94
Ethanol	2,391.83	5,551.98	7,043.31
B100 biodiesel	3,106.96	2,971.28	3,993.63
Used vegetable oil	23.38	35.76	18.70
Chemicals	47.98	39.88	41.28
Process water	34.63	40.03	29.48
Process energy	4,022.86	3,964.21	3,779.22
<b>Material costs of non-product outputs</b>			
Slop oil	258.70	107.51	142.98
Oil sediments from crude/fuel oil tanks	1.86	2.19	0.25
Effluent	8.35	6.65	8.14
Excess chemicals from stabilizer pool	0.17	1.71	0.34
Low-quality sulfur	0.12	0	0.04
<b>Waste and emission control costs</b>			
Environmental equipment maintenance	15.04	34.74	53.38
Pollution control equipment depreciation	171.37	128.70	240.94
Effluent treatment	6.22	4.54	6.71
Waste disposal	8.74	6.93	12.72
Environmental fees and taxes	N.A.	N.A.	N.A.
Fines	0	0	0
<b>Prevention and other environmental management costs</b>			
Monitoring and measurement	5.77	5.39	16.73
Waste storage area depreciation	0.23	0.25	0.21
System operation	0.17	0.07	0.23
Environmental equipment maintenance	0.01	0.47	0
<b>Benefits of byproducts and recycling</b>			
Liquid sulfur	(15.39)	(4.26)	(8.64)
Glycerine	(0.64)	(0.66)	(0.38)
Iron and aluminium scrap	(7.98)	(10.89)	(10.27)
Paper	0.00	(0.05)	0

## Eco-efficiency

Eco-efficiency is a management tool for sustainability, linking economic performance to environmental performance. In other words, it illustrates financial capacity derived from corporate activities / products / services compared with resource consumption / pollution emission. Here, high efficiency values are managed to raise competitiveness and development in harmony with environmental stewardship.

To achieve eco-efficiency, Bangchak relies on EBIT and the equivalent volume of carbon dioxide generated, which is a key environmental aspect in the petroleum industry, in the denominator. For this year, eco-efficiency equaled 1,388 baht/TOCE was lower from last year. Because the revenues drop resulted from volatility in the oil price.

Eco-efficiency table (Unit: Baht /ton CO<sub>2</sub> equivalent)



## Green products and services

With due regard for the development of environmentally friendly (“green”) products that meet customers’ needs, Bangchak is committed to inventing and developing high-quality products that raise efficiency and are cost-effective. In place are the constant development of product quality, service station improvement, supplementary business addition, and service improvement, not to mention the establishment of a customer network through assorted membership cards. This year, therefore, the company took the No. 2 market share for sales through service stations, an improvement over last year.

### Green products

#### Expansion of E85 gasohol service station network

Containing 85% alcohol, E85 gasohol is a green fuel due to its composition of a replantable component and ability to absorb carbon dioxide. As a result, it is desired by environment-conscious consumers, for besides its environmental benefit, it gives farmers higher income with higher plant supply. Interestingly, there is a booming market for new E85-compatible cars, prompting Bangchak to grow those stations selling E85 from 102 to 200 today, driving its market share to 53.2% of the market (No. 1).

#### Bangchak Hi Diesel: more power, same price

For diesel consumers, Bangchak has come up with Bangchak Hi Diesel, a quality fuel that is both cleaner and more powerful, thanks to the Hi Clean additive, designed to raise quality and combustion efficiency. As a result, the engine is clean, and performance is uncompromised. So consumers can save fuels, while the Hi Power additive gives them more power at the old price.

#### Developing lube quality in pursuit of international standards

Bangchak constantly develops lubricating oil in search of lubricating oil leadership, first by achieving the ISO 9001 standard management system and then the ISO/TS 16949, an international quality management system for the automotive industry—a first in Thailand—for supply, product development, distribution, and after-sale services, for excellence in quality and efficiency of business execution.



##### Carbon offset

Bangchak participated in an activity to offset carbon emission in the product and service sector in support of the domestic voluntary carbon market. The company buys carbon credit to offset the carbon emitted from its power consumption this year when dispensing fuels at Bangchak Service Station on Vibhavadi Rangsit Road. The volume in question was 141 TOCE.



Bangchak supports consumers’ sustainable consumption by informing them of the carbon dioxide reduction each time they consume renewable/alternative energy, seen on the point accrual sales slip.

Reduction of carbon dioxide emission due to refueling (gasohol and diesel cards):

In million kg.

2010	2011	2012	2013	2014
19	35	54	113	149



This year Bangchak developed lubricating oil for fuel-saving cars and those with low pollutants like eco cars, hybrid cars, and new models for high efficiency of lubrication, engine protection, and for fuel economy. Other qualities include improved cleansing power, breaking-up of soot and sediment, heat resistance, engine life prolonging, less carbon dioxide emission, which is a green quality. Further, Bangchak enhanced its lubricating oil for high-performance gasoline engines with an additive and an engine test formula proven by OEM auto-parts manufacturer like Mercedes-Benz and Volkswagen, bolstering confidence in quality on the part of consumers.



## Continual development of services and supplementary businesses

Besides quality fuels, as a rule, convenience, speed, and nice surroundings of service stations are what customers expect. The company has therefore developed its service stations' image and surroundings in addition to properly delegating responsibility among market units in charge of business. In 2014 it ensured that its service station standard is ready for competition in hardware, software, and peopleware. At the same time, it expanded supplementary services through Mini Big C convenience stores and Inthanin Coffee.

- Introduced the POS Automation system at service stations to give services at the pump more flexibility and mistake-free fueling service, apart from operating and cash receipt & change mistakes. Consumers' behavior data can also be reported and analyzed for the benefit of future promotional campaigns. Implementation of this system also lowered staff resignation.
- Supported other supplementary businesses to cater to consumers' needs and add income to service stations, including Black Canyon, KFC, and McDonald's food outlets.
- Joined a project promoting accurate volumetric measurement of fuels, organized by the Department of Internal Trade, Ministry of Commerce, to ensure consumers of accurate fuel volumes with proper, quality measurement tools, complete with good services, cleanliness, and hygienic settings.
- Developed clean toilets complete with amenities, around-the-clock availability, and a friendly smell. Toilets for the handicapped, the elderly, and pregnant women are located in a safe and secure corner. The company's Udomsuk 45 service station won the best toilet award under BMA (Bangkok Metropolitan Administration) this year; the Vibhavadi Rangsit service station had earlier won the same award last year.

- Issued a Mobile Application to make it more convenient to locate Bangchak service stations in the vicinity, including those selling E20 and E85-another way to promote renewable/alternative energy consumption. The application also provides a search function for supplementary business outlets like Bai Chak, Mini Big C, Inthanin Coffee, and Green Series Car Care. A feature alerts consumers of fuel price adjustment. And then there are Bangchak advertisements and Bangchak Cardholders' display of accrued points.

All these efforts have catapulted Bangchak into the No. 2 brand among consumers ("Top 2 Brand of Choice") for a fifth consecutive year, based on a survey of over 1,000 fuel users nationwide by a third-party research company.

## Bangchak service stations and public services

**Into the 25<sup>th</sup> year with community service stations :** A good example of CSR in-Process that has been a long-standing part of Bangchak, community service stations are operated by agricultural cooperatives to upgrade farmers' business competitiveness, spreading the benefit to more than 1 million households in an association that thrives even in economic crises. Like a family, both parties have long supported each other. Today there are 626 community service stations, which spread income and brought better living conditions to cooperative members-in short, the benefits are both economic and social by strengthening communities' self-reliance. This year the company set up a Co-op Business Development Division to look after and develop such service stations for sustainable growth.

- Initiated a "Green Partnership Award", under which service stations' good deeds are promoted through the "Green Society" concept. A case in point is a service station contest for carrying out CSR projects with a focus on CSR in-Process under the Sufficiency Economy philosophy and the ISO 26000 CSR international for consumer stewardship, environmental stewardship, community and social stewardship, and employee stewardship. The key goals are to serve customers, look after the environment, society, and communities near Bangchak service stations, as well as employees and business partners in one way or another. It is equally important, however, that no donation of cash or items takes place.
- Staged sales promotional campaigns by picking community goods to distribute income, launch new markets, and create jobs for local areas to strengthen community economies. Three items were promoted this year, sending Baht 16 million back to communities:
  - Seedless velvet tamarind from the three southernmost provinces (Pattani, Yala, Narathiwat)
  - Roast rice tea and roast green rice tea (organic tea products and organic rice made by farmers of Chiang Rai), which created jobs and income for the communities that had survived a recent strong earthquake in Chiang Rai province and nearby areas. Elderly people in affected families derived some income by putting the tea into bags.
  - Organic brown rice (Mee Dee Sam Taw) from a project on Buddhist Farmers School, founded by the revered monk Waw Wachiramethi. The produce of the Rai Choen Tawan community enterprise, the rice relies on no chemical or fertilizer.





*We Thais patronize Bangchak,  
which donates Baht 30 million to Thai Red Cross*  
On Bangchak's 30th anniversary of establishment, we urge Bangchak patrons of fuels and lubricating oil to join the sharing with Bangchak under the captioned project and donate a blood-donation bus to the Thai Red Cross Society together with medical apparatus for the Bhumisiri Mangalanuson Ward of Chulalongkorn Hospital.

## Customer engagement through membership cards

### Bangchak Gasohol Club and Bangchak Diesel Club cards

These complimentary cards are issued by Bangchak to patrons that register through its website. Benefits are earned through the use of these cards to accrue points by buying fuels, products, or services of supplementary businesses found at service stations, a form of long-term engagement. Today the total membership has risen by 20% to some 1.2 million.

Bangchak has staged useful activities like classes on cooking, make-up, and yoga, and movie-screening to forge cordial relationships between the company and its patrons, as well as among patrons themselves.



Gasohol Club  
Cardholders  
**990,000**  
**Bangchak**



Diesel Club Cardholders  
**296,000**  
**Bangchak**

### *Special campaigns designed to promote renewable/ alternative energy consumption:*

- Double the discount from Baht 0.05 per liter to Baht 0.10 per liter (January 1 to February 28, 2014) for diesel patrons
- Double the discount from Baht 0.20 per liter to Baht 0.40 per liter (December 1, 2014, to January 31, 2015) for gasohol patrons E20

### Bangchak Card Connects Thais and community service stations

The company has launched a "Bangchak Card Connects Thais" project for customers of community service stations and for such stations to stage sales promotional campaigns or customer relationship activities suiting each local areas. This way, sales volumes will be raised, strengthening community service stations while supporting community economies. Today, cardholders number over 191,000.

## Green Business



**Ms. Panthip Perchow**  
Bangchak Service Station  
Klong Luang Agricultural  
Cooperative, Ltd.

*The “Green Business” concept of our cooperative and that of Bangchak pretty much agree, which enables our businesses to proceed continuously. Bangchak has provided excellent support in sponsoring service station rebranding to cater to current consumers’ needs, resulting in higher sales. Next year our cooperative will be installing the Automation – POS system for more efficient fuel dispensing, and in the future we need to expand green areas at service stations for greater shade and productivity for our employees and patrons. Finally we’re hoping to use part of the area for some vegetation to add extra income for our employees.*

## Bangchak is a true friend

*Throughout our 20 years of operating this service station, we’ve received wonderful support from Bangchak. We’ve been on the same boat, so to speak. Our service station has been refurbished, with the distribution office and toilets renovated to accommodate increasing sales volumes. We’re confident in this Thai brand. Bangchak’s business principles lie in responsibility to the environment, communities, and society, in addition to a green range of products. That’s why it has achieved sustainable growth—like branches that reach out and provide shade to communities and farmers in a sustainable way. It’s done this day in and day out for three decades now.*



**Ms. Kanokkarn Luangthammuen**  
Samrit Oil Limited Partnership,  
Pathum Thani





# Environmental Performances

## Safety and Occupational Health

Safety is vital to the organization and stakeholders. All executives and all employees are directly responsible for safety, security, occupational health, environment and energy under the “SHEE are everyone’s responsibility” theme. They are held responsible for all stakeholder groups, themselves, peers, communities, and society. The company therefore has a standard safety management system, ranging from policy-making, compliance, to specific standards i.e. American Petroleum Institute: API, National Electric Code: NEC, International Electro-technical Commission, American Society Mechanical Engineering: ASME, American Society for Testing and Material: ASTM etc. Development of employees’ competence in work performance. Assessment, and review by senior executives for support of necessary resources and continuous improvement. (PDCA)

## Safety, Security, Occupational Health, Environment, and Energy Management (SHEE)



## Some SHEE Awareness activities



Moment of CARE

- "Moment of CARE" is designed to nurture all employees and contractors with SHEE awareness and safe work practices. Executives and employees are given opportunities to write notes with care and support contents to all peers and contractors.



Safety manuals

- Distribution of portable safety manuals to employees and contractors.



SHEE talk

- SHEE talk : A SHEE talk is compulsory before all meetings, designed to promote communication on safety, occupational health, environment, and energy among management and employees.



SHEE Channel

- SHEE Channel : SHEE Channel is a set of activities designed to support communication among employees via corporate communication channels, including company broadcast, internal electronic mails, and posters located at various places in each building under subjects of BB-SHEE and We Care-We Share.

## International SHEE Accreditation

To efficiently conduct SHEE management, Bangchak commits itself to the accreditation of international management standards, including ISO-14001 for environmental management, OHSAS/TIS 18001 for safety and occupational health, ISO 17025 for quality laboratory, ISO 27001 for IT system security, ISO 22301 for business continuity management, ISO 50001 for energy management, and ISPS Code for sea port safety and security management.



## Health and Occupational Health

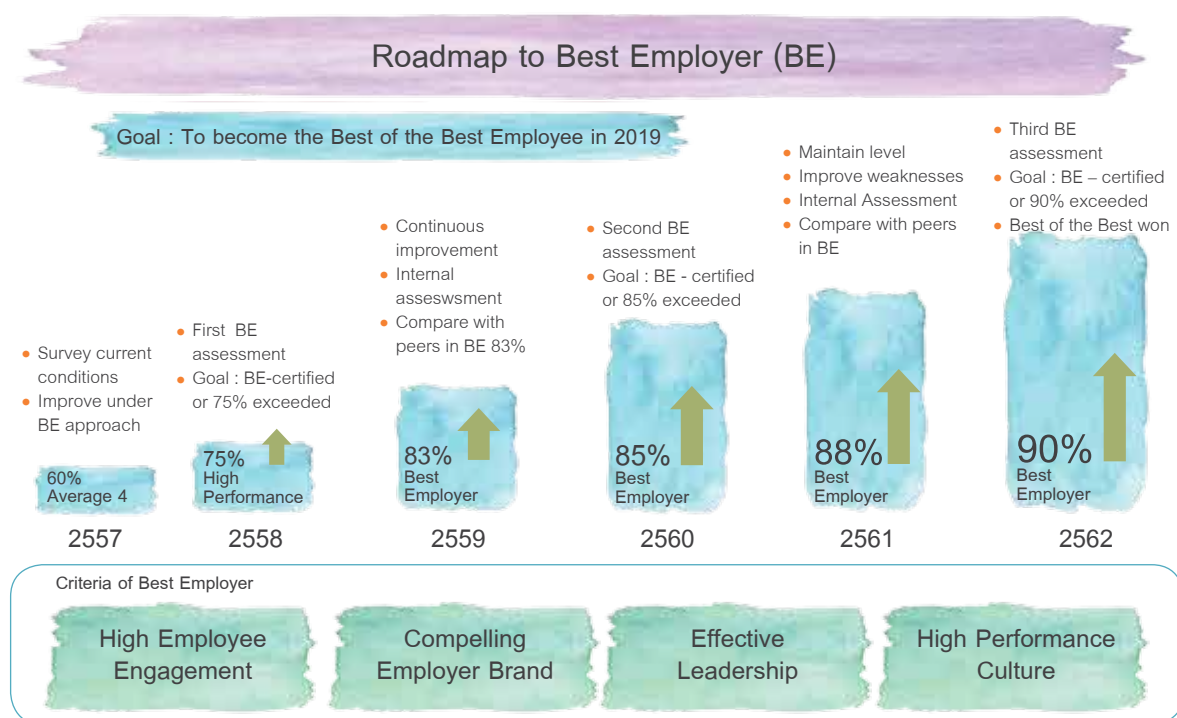
Under proactive management for health and occupational health, Bangchak initiated a risk assessment program on occupational health. Work space redesign was executed to limit unsafe possibility from the source. The work environment including chemicals, light, noise, and heat, is regularly monitored to define preventive and mitigation measures, as well as improving workplace safety. These initiatives include:

- Conducted health risk assessment.
- Deployed proactive occupational health processes, including;
  - Employee health checkups before, during, and after employment.
  - Annual employee health checkups on a standard program and specific programs for those working under specific occupational health risks prescribed by Bangchak's occupational health doctors and medic personnel. These occupational health specialists regularly identify special health checkups for certain personnel, follow up, and analyze the health status of these people, both at home and at work; and prescribe medication if unusual medical results are found.
  - International-standard procedures and monitoring programs for certain personnel with occupational health risk exposure, and grouping of these personnel by risk level of low, medium, and high.
  - Development of occupational health programs for contractors, including proper preparation of work space, personnel protective equipment, and knowledge-sharing during the refinery's planned maintenance shutdowns.
- Promoted communication with employees on health and occupational health.
- Improved physical work space for workers, including adjustment of work space for safety and increasing light intensity in working areas.
- Improved work space exposed to a chemical environment, including regular measurement of VOCs and conversion of production units into additional closed systems.
- Took auditory conservation measures in the workplace, including measurement of noise levels and mapping of noise contours for noise reduction and prevention. Erected a sound wall; notified areas with loud noise for workers to be well prepared and act accordingly; provided special health checkups on hearing ability and hearing disorders for individuals; and equipped high-risked personnel with hearing measuring devices, and so on.
- Improved ergonomics in work space, including installation of ergonomic chairs in control rooms for workers required to sit for long hours.
- Upgrading the process safety management system and hiring safety experts from a leading international company as adviser on process safety management and Bangchak's move toward safety excellence.

Between 2015-2020 the company has to develop the process safety management system to complete the 14 elements, build safety culture continuous and upgrading plant reliability by means of modern systems and modern equipment installation, including Safety Integrity Level (SIL), Risk-Based Inspection (RBI), Reliability-Centered Maintenance (RCM), and Alarm Management System. To this end, Bangchak has appointed a Reliability and Integrity Division to exclusively look after its reliability and integrity.

## Employee care

Regarding employees as a vital component of business success that enhances corporate virtue as well as value and drives corporate sustainability, Bangchak continuously looks after and develops employees' capability, including their compensation, which is derived from benchmarking outcomes within the petroleum industry (upstream, midstream, to downstream) and peer industries, and Bangchak's own welfare, which is far superior to legal requirements. This year, to put these systems on a par with international standards, Bangchak enrolled in the "Best Employer (BE)" project, which seeks to find outstanding employers in Thailand to exemplify successful businesses due to outstanding employee administration. The project is operated by the Sasin Graduate Institute of Business Administration of Chulalongkorn University and the Aon Hewitt (Thailand) Co., Ltd., a renowned international consultant on personnel administration. Conducting a survey every two years, the project was designed to heighten employee engagement, leadership efficiency, reputation of employers, and an internal culture that drives an efficient organization. To this end, workforce analysis and planning are first prepared for the analysis and planning of manpower needs for each period. Then an adequate number of employees should be in place for corporate expansion. The planning also prescribes how this manpower will be acquired from outside and inside the company. Development of existing personnel's capability to the desired qualifications, as specified by plans, is illustrated below:



1. Building High Performance Culture
  - 1.1 Defining competencies for each position to develop professionalism fitting each duty and position through properly prepared training processes
  - 1.2 Career Path and Learning Development Program defines career-path criteria for all employees, grouping them into management and specialist such as Senior Petroleum Refining Executive etc. All employees have opportunities to progress in the lines and professions of their choice.



## 2. Building Effective Leadership & Leadership Pipeline

2.1 In preparing key corporate successors, one extracts the ability or caliber of all executives to achieve corporate success:

2.1.1 This year, leadership DNA was assessed for Bangchak executives under the following process:

- Assessment made through the Assessment Center on the “5 Gives” leadership characteristics (leadership branding).
- 90-Degree Assessment (Self & Boss) on the “5 Gives” leadership characteristics (leadership branding).
- ADEPT personality questionnaire, a psychological test relying on the analysis of thinking, basic individual habits, and personalities.

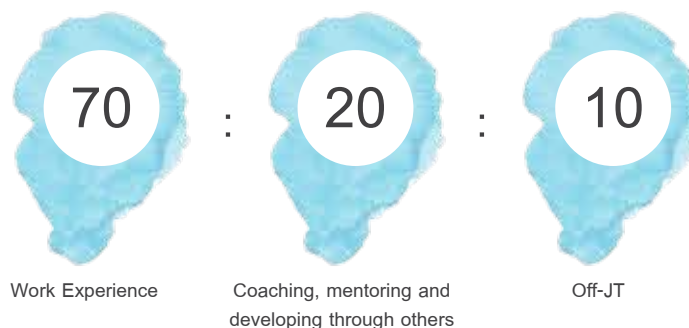
2.1.2 For 2014-2015, succession planning covers department directors up to senior executive vice presidents

2.1.3 For 2015, development of successors will be planned for these positions through various development processes with a focus on development on the job and coaching rather than formal training.

DNA	Enabler	Enabler Definition
Give directions	Identify Opportunity for Improvement and Business Expansion	Envision business opportunities or opportunities for organizational development, or create opportunities for business expansion, or both, and improve the organization.
	Make Sound Decisions	Analyze and decide sensibly on logic or credible data, and can pinpoint missing data for decision-making.
	Generate Visionary Perspective	Conceive corporate plan (short-term and long-term) by anticipating or making clear direction-simulating plan with clearly visible paths to goals.
	Drive Results	Provide support and take responsibility upon new business expansion or upon new developments within the corporation.
Give examples	Model Integrity	Exemplify commitment to corporate governance and sensibility for managing matters. Understand the framework of good behavior for the organization by avoiding and preventing conflicts of interest for the organization.
	Live the Organization's Values	Accept and believe in the organization values by showing behavior that illustrates such values inside and outside the organization.
Give opportunities	Build Talent Pipeline	Foster subordinates' capability and talents by providing opportunities and promoting constructive comments, while delegating work to systematically induce or increase skills and assorted learning.
	Delegate Authority	Know the organization's competency requirements to drive it. Form capable teams through delegation of authority to competent, keen, and suitable ones through efficient two-way communication.
Give time	Coach for Performance	Can provide clear, regular feedback and encourage others for performance improvement with clear communication of targets.
	Foster Learning	Establish surroundings inductive to learning and development of subordinates and coaching of new employees.
Give value	Create Emotional Attachment	Show empathy and value others by showing admiration and recognize dedication to the organization with rewards.
	Inspire Others	Promote and stimulate team spirit by actively pushing others to try new ideas, while fostering a positive environment for trials-and-errors of prudent ideas and inspires others at work.

## Translate results into action

Effective measures in business manager leadership development – Lominger Model Work Experience Coaching, mentoring and developing through others



2.2 Young talent management: Besides grooming executives, Bangchak runs this program for high flyers, who are apt to be chosen for capacity-building for other tasks or businesses for the company

2.3 Employee engagement is another yardstick for Best Employer, surveyed every year for future improvement and development

Bangchak has prepared a roadmap for becoming the Best Employer by 2019. To this end, it had set a Best Employee score this year at more than 60% as the corporate KPI on the Balanced Scorecard on Learning and Growth. This goal has been exceeded, with 66% achieved.

## Bangchak Petroleum Plc Labor Union

All the Company employees are treated fairly and enjoy equal rights under Company regulations, whether they belong to the labor union or not. Set up under the law with 20% of the workforce as its members, Bangchak Petroleum Plc Labor Union cooperates with the Company in looking after employees' well-being through regular consultations with top management while getting feedback from employees about their needs to develop the Company's labor aspects.

The Company also instituted an Employee Committee, consisting of employee representatives of 13 persons appointed by the labor union and coming from employee elections. The committee is engaged in consultations with representatives from top management on matters of welfare and benefits to ensure their suitability. To date, the consultation sessions went well, with all concerns or queries properly addressed, thus resulting in high employee satisfaction.

Besides personnel development and labor improvement, Bangchak has made improvements to its surroundings for employees' continued comfort. This year it has erected a shaded walkway from the company entrance to its office buildings and installed a mist fan to the side of the canteen. Also, a spray mist (designed to cool the surrounding) was installed near the BCP Center Point for the maximum comfort of employees and visitors alike.



*Bangchak has instituted more equitable welfare schemes for employees and their families than required by law and in line with changes in social and economic circumstances.*

- Shuttle buses
- Medical service
- Fitness room
- Bonus
- Uniform
- Medical room
- Provident fund
- Social Security
- The interest of housing loan subsidy etc.

## Accountability to Customers

Committed to promptly meeting customers' needs, Bangchak modified the roles and responsibilities of the VOCC (Voice of Customers Committee) to listen to customers' feedback and lead to modification and response in four main aspects: information administration for strategic planning, upgrading of service standards and development of fuel quality for upcoming products.

Bangchak's Customer Service Center relies on the SAP CRM software in handling complaints. The center is the first contact point for customers' views, recommendations, and complaints aired through the Call Center, E-mails, and the Bangchak website. Also, thanks to an automatic program, the company proactively reports data, messages, and news covering all aspects mentioned in the social media and website discussions every day, making the company aware of such data and promptly address such issues and problems-effectively closing the gaps of customers being unable to contact Bangchak directly. As a result, this year's customer responses (94%) exceed those of last year.

### Complaint and suggestion-receiving

#### Channels:

- 75% through Call Center 1651
- 10% through website
- 13% through social network
- 1% through website discussions

#### A total of 1,145 cases:

- 59% concerning services
- 15% concerning goods & services
- 25% others

### Action

- Record items in SAP CRM.
- Forward each one to relevant units to acknowledge / improve / inform customers
- Assess satisfaction to close each matter (within two days; otherwise, the system reports this to the next level of senior executives of such business lines).

### Outcome

successfully managed & resolved complaints

**96%**

customers' satisfaction with Bangchak's responses to complaints & suggestions

**85%**

#### *Collapsed canopy at Nakhon Pathom Bangchak service station*

*This year the canopy of Bangchak Service Station (Nakhon Pathom branch) collapsed on a customer's vehicle. Instantly taking responsibility and paying out compensation, the company has added safety measures by having an investigation team inspect the structure's strength and the readiness of equipment so as to ensure patrons about their safety.*

#### **"Outstanding Call Center for 2014"**

*certificate in recognition of Bangchak's awareness of its responsibility to society at large and maintenance of service standards, prompt problem-solving, and consumers' satisfaction, presented by the Office of the Consumer Protection Board.*

## Community and Social Development Participation

Sustained happiness means sharing and living in harmony with nature With the “Sustained happiness means sharing and living in harmony with nature” Bangchak perennially joined in community and social development efforts through dedicated units. This year Bangchak initiated new project development based on identified social issues, stakeholders’ needs and expectations, its own strengths, global trends, political situations, and catastrophes (like earthquakes). The common underlying theme is “Sharing for Social Happiness”.

### New community and social projects

On reaching its 30th anniversary, the heart of Bangchak’s stewardship of communities and society at large is not just its best efforts of environmental and social responsibility where business growth is concerned, but the company’s ambitions are also to ensure that the Thai society can continue, as can Bangchak’s dedication of willpower as a corporate citizen to bring social benefits under the belief that “sustained happiness comes from sharing”. The ultimate aim is for Thais to be aware of our co-existence in this land in a sufficient way.

Sharing	Rekindling awareness of sharing	Sharing innovation
<ul style="list-style-type: none"> <li>- Bangchak’s 30-year Journey: Baht 30-Million Contribution to Thai Red Cross Society. Sharing Donation of cash &amp; blood donation buses/vans &amp; medical apparatus for the Bhumisiri Mangalanuson Building, Chulalongkorn Hospital.</li> <li>- The Bangchak Service Station Green Partnership Project expands the concept of social &amp; environmental responsibility to the network of service station operators in their stewardship of consumers, the environment, communities &amp; society, and employees.</li> </ul>	<ul style="list-style-type: none"> <li>- “Sharing” ad film: Life story of Mr. Chon Chandai, the founder of the Phan Phan Center, a learning center for self-reliance &amp; seeds. A firm believer that genuine local seeds are the foundation of self-reliance &amp; sustained happiness, he collects and shares them with those around him so that happiness may take root in the Thai society.</li> <li>- Produced &amp; publicized the “Phaen Din Nee Mee Phaw” melody, with lyrics composed by Mr. Nitiphong Hornak and sung by Mr. Asani Chotikul. The hope is to rekindle Thais’ awareness of a traditional caring Thai society.</li> </ul>	<ul style="list-style-type: none"> <li>- Invented new sales promotional giveaways: roast rice tea and roast rice green tea, designed to ease the hardship of rice farmers amid the rice-pledging crisis. Tea growers in Chiang Rai province, devastated by an earthquake.</li> </ul>





### Ongoing projects at the community-society at large:

Economic	Social	Environmental
<ul style="list-style-type: none"> <li>Expanded the network of community service stations from 617 to 626</li> <li>Promoted the use of community products as Bangchak's sales promotional giveaways, like the organic brown rice (known as Mee Dee Sam Taw), a product of the Rai Choen Tawan community enterprise group. The location is supervised by revered monk Waw Wachiramethi. Over Baht 16 million has returned to the community.</li> </ul>	<p>Education : The Thailand Go Green 2012 Contest Project under the "Eat Smart, Live Smart, Use Renewable/Alternative Energy Smart : Thailand Go Green" theme for students nationwide to jointly conduct the project and live environmentally friendly lives</p>	<p>Purchase of second-hand vegetable oil to make biodiesel to displace crude imports while easing environmental impacts of dumping the used oil into public water sources. This year saw 108 tons bought to 92,000 liters of biodiesel and 72 tons of greenhouse gas emission averted.</p>

### New projects to address the needs of nearby communities and society

This year Bangchak initiated a seminar between the community panel and company executives to clarify information and forge good relations, with a focus on activities and two-way communication. A refinery community opinion survey provides each group's views and expectations of the refinery, which leads to follow-up participatory community relations activities under new projects that improve current operation and resolve social and public problems, notably education and youth development. The roadmap for those living around the refinery are as follows.

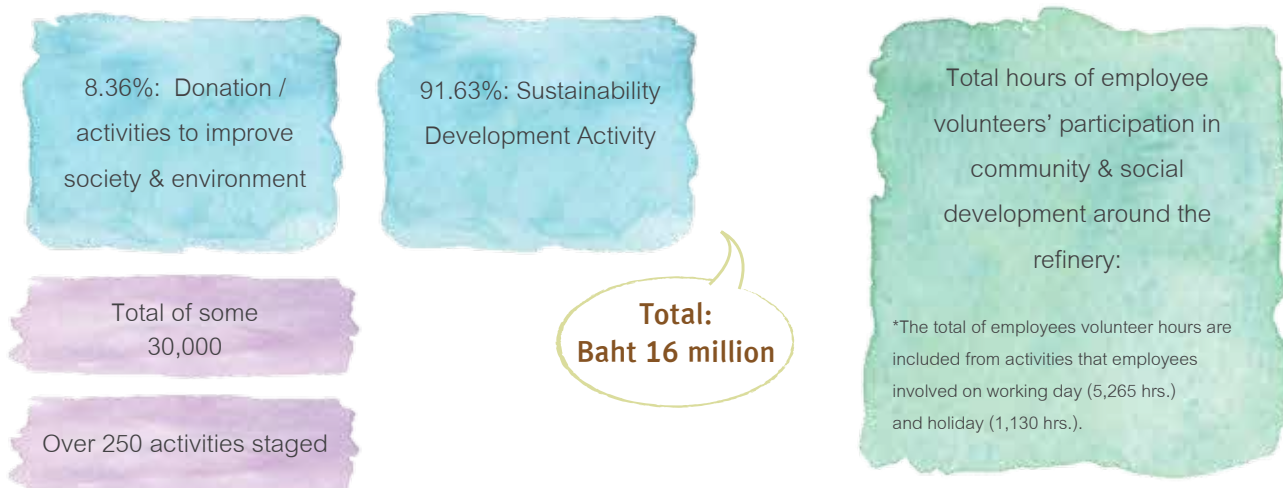
#### Roadmap for community relations and projects based on target groups and secondary target groups (2014-2017)



## New projects to address the needs of nearby communities and society

Economic	Social	Environmental
<ul style="list-style-type: none"> <li>- Ran a project on simple reading and writing literacy to ease child illiteracy (reading &amp; writing) in communities &amp; schools. This national problem is found .</li> <li>- Developed youths under the Gen-D Project: Invigorating youths, adjusting attitude, and resolving risk behavior of students of three schools around the refinery.</li> </ul>	<ul style="list-style-type: none"> <li>- Staged a seminar with the mobile community panel to forge relations and share communities' views and needs. The seminar provided opportunities for clarification of Bangchak's stance, policies, and responsibility to the organization.</li> </ul>	<ul style="list-style-type: none"> <li>- Ran a project promoting biodiversity: "Fireflies, a Path to Conservation", along with community leaders of six subdistricts around the so-called "hog's maw" area of Amphoe Phra Pradaeng, Samut Prakan province. The project's deliverable is a rehabilitation plan and conservation of green areas in Kung Bang Kachao (Bangkok's urban lung) for greater fertility, indicated by the firefly population. The monitored project will run from 2014 to 2016.</li> </ul>

### Percentage of Social Investment in Community relations activities nearby the refinery



## Sustainable conservation with community participation at all stages

*Bangchak cherishes Thailand's environment and society, evident in its logo and support for community goods by giving away community agricultural products at every refueling. Having worked with the company on the Fireflies Project, I can sense its earnest desire to take good care of communities and the environment. Bangchak is not just after preservation of its environmental image. It values and drives for sustainable conservation with community participation from planning to implementation. It pays meticulous attention to community participation, even trivial points. As for my hopes, the company should continue its work on social and environmental aspects for the longer term, though some projects may not pay out fast results in the short term. Continuity, earnestness, and sincerity do lead to projects that truly benefit society.*



**Asst. Prof. Dr. Anchana Thancharoen,**  
School of Entomology  
Faculty of Agriculture, Kasetsart University  
Bang Ka Chao Fire flies  
Project Adviser and Taskforce Member

### Satisfaction in community relations activities (%)

2011	2012	2013	2014	Goals
96.93	99.15	98.0	97.0	≥90

## Ongoing projects for nearby communities and society

### Education

**Expectation** : Youths learn and develop appropriately with their age groups, with their awareness cultivated to become smart and conscientious

**Continuing project**

- My School (Pee Bangchak Son Nong), Year 12
- Bangchak Youth Scholarship Project, year 10
- Project Citizen, Year 5
- Open up the World of Knowledge with Bangchak, year 11
- Bangchak GIFTED, Year 4



### Safety

**Expectation** : Confidence in refinery's safety Safety immunity for handling emergencies or catastrophes

**Continuing project**

- Trained schools / communities / nearby condominiums on emergency drills and firefighting
- Donated firefighting apparatus



### Sports

**Expectation** : Strong and healthy youths who stay away from drugs Ability to generate income and good educational opportunities through sports

**Continuing project**

- Bangchak Youth Futsal Tournament, Year 11
- Bangchak Youth Football Club, year 8





## Quality of life

- Expectation : Promotion of quality of life
- Continuing project
- One Family, Year 21
  - Healthy Community Project



## Environment

- Expectation : Awareness of environmental woes and cost-effective application of resources
- Continuing project
- Thot Pha Pa, Raksa Ton Nam by employees and participating schools around the refinery and those in Chaiyaphum, Year 10
  - Mobile Communities, Sapling Planting, Phu Long Reforestation Year 3, by Bangchak's neighbors from One Family group
  - Public (health) park in the compound of the housing area of the Secretariat Department, Office of the Permanent Secretary of Defense, in Bangchak
  - A project to buy used vegetable oil from communities around the refinery, Year 3



## Relations and cultural preservation

- Expectation : Promotion of cordial relations between refinery and its neighbors
- Continuing project
- Mobile Communities, Year 5
  - Filling up with Knowledge with Bangchak Refinery
  - Khrop Khrua Bai Mai Bulletin, year 10 and Rop Rua Bangchak Newsletter Year 9
  - Sanook kids, Waan pid term, year 5
  - National Children's Day



## Economic

- Expectation : Generation of income and opportunities for community residents to leverage their competencies to benefit themselves and their families
- Continuing project
- The Food stalls run by community residents catered to thousands of contractor employees during the annual major maintenance turnaround, with some Baht 1.86 million generated for the communities.
  - Use of communities' cooking and sweets
  - Hiring of locals with adequate competencies
  - Community occupational promotion and development project year 2





## My feelings upon our collaboration point to Bangchak's desire to vigorously and proactively work that is highly focused.

*Our collaboration to date has proved Bangchak's desire, perseverance, and devotion to the achievement of our common expectations. The more we worked together, the more I sensed Bangchak's creative perseverance sometimes tweaking its approach for more effective problem-solving. This convinced me of the executives' and taskforce's unity in their concept that their future work is bound to be creatively valuable to education and society. My expectations for Bangchak or other business entities with good wishes for society are that they should delve into the truth and root causes of social problems, seek allies and people of the same mind, visualize continuity leading to desired development, and create a tangible, workable model for social improvement. Finally, they should promote all sectors' participation in organizing learning activities about life and the human spirit in the sense of understanding life and society as well as grown-up, prudent analysis-as opposed to falling into the common traps of daily currents of Thai society today.*



**Asst.Prof. Siwakarn Patoomasoot**  
Tung Suk Ar Som Learning Center,  
U-Thong District, Supanburi Province  
Poet/ Academic Expert in Project on simple  
reading and writing literacy  
to ease child illiteracy  
(reading & writing) problem.



## Broad-minded, with communities and the environment close to its heart, Bangchak applies views to improve.

*As a customer, I'm impressed with and trust Bangchak, aware that it is a seller of clean, quality fuels. What's more, Bangchak has always tried to maintain this product quality. Its sales promotion is straightforward, with easy access and matching consumers' needs. On the whole, I'd say Bangchak is on the right path and hope that it will maintain its admirable characteristics for years to come-whether products, services, or stewardship of communities and the environment. By the way, Bangchak's employees do impress me with their earnest attention, care, broad-mindedness, and down-to-earth traits. They're not out for a nice image, but are extremely friendly.*



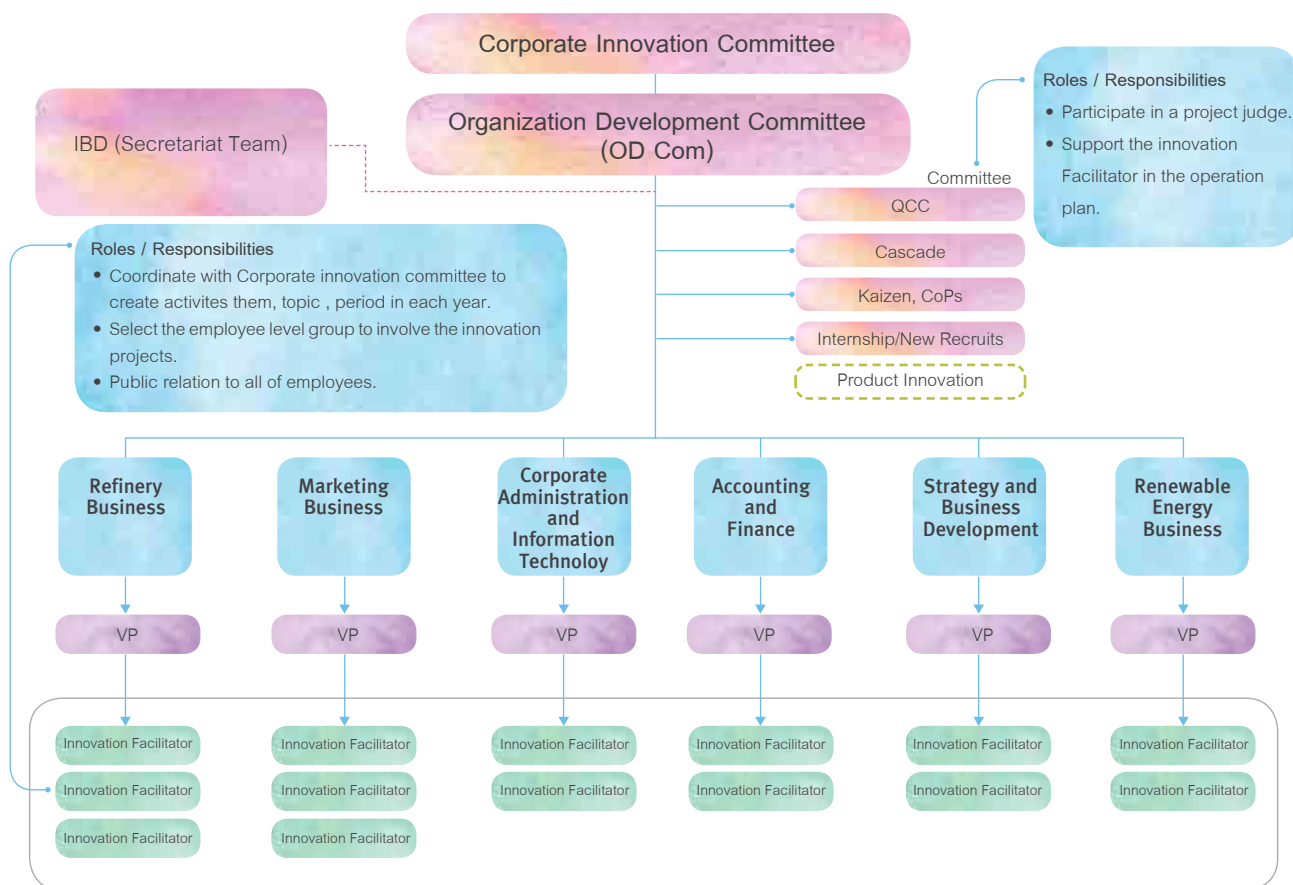
**Ms. Kanpassorn Kajornsrirorn**  
Condominium neighbor  
Elio Del Ray Condo,  
Sukhumvit 64



## Promotion of corporate innovation

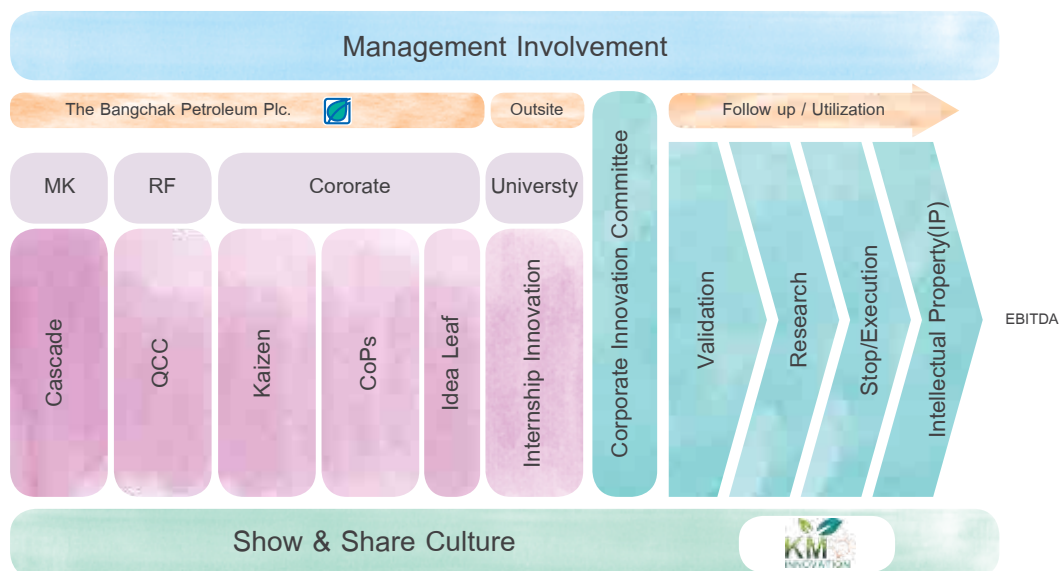
Convinced that learning and innovation lead the corporation toward efficient business or business under an improved format, Bangchak has defined a policy promoting organization learning and personnel development and a Corporate Innovation Committee, responsible for supporting plan implementation, judging innovation tasks under various projects, and approving further development of promising projects. Bangchak also set up an Innovation and Business Development Division specifically to look after innovation, charged with analyzing and presenting information for joint direction-setting with executives in the implementation of various innovation projects, and constantly developing and driving process efficiency. To this end, innovation facilitators from every business line jointly promote sustainable innovation development in line with the goal of a learning organization. Bangchak has defined the following scope for innovation structure:

## Corporate Innovation Structure



Bangchak has defined efficient work processes for communication and support of innovation and learning in the corporation, together with the establishment of channels for accepting recommendations about innovation for fruitful application.

1. Individual work improvement: All employees are responsible for their individual KPIs for conceiving and providing recommendations, or proceeding with their own work improvement for at least one topic each year.
2. Work improvement: Recommended projects for cost reduction, income generation, and day-to-day work efficiency improvement, including the QCC/Kaizen project for operation duties in the production, marketing, and office lines of business.
3. Development of new formats of business, products, or services: The company has instituted team development through cross-functional cascade projects designed to capitalize on the talents of employees of each professional line and have them work together on projects to related to the project theme strategy. Project which been select or received award will further develop in commercial way.
4. Development of specialized knowledge. such as Community of Practice : CoPs which enable knowledge- Management among those of the same professions, which lead to a lifelong learning company such as Legal CoP, Procurement CoP, Utility CoP etc.
5. Development of external innovation, including the promotion of student interns' presentation of their improvement of work processes or innovations in support of new knowledge development leading to real-life application to their work.



The project success consists of the implementation of promising projects selected by the Corporate Innovation Committee under defined budgets and implementation approaches.

A summary of innovation project operation outcomes from 2011 to 2014 is as follows:

Innovation Project	2011	2012	2013	2014
Quality Control Circle (QCC) <sup>a</sup>	36	26	40	40
Kaizen <sup>a</sup>	324	226	250	260
Others i.e.	55	60	60	60
- Cascade <sup>b</sup>				
- Community on Practices <sup>b</sup>				
- Internship <sup>b</sup>				
Personal Innovation <sup>a</sup>			700	850

a. Projects on improvement of work processes, cost reduction of production processes and office tasks

b. Projects on new business models and knowledge topics.

Data of various innovation projects and lessons learned from day-to-day task performances are compiled in the BCP Knowledge Management System (KM) for all to examine and apply them for their own work improvement anytime.

**Our company has a green, blooming heart. We're not perfect yet, but we still have room to grow.**



**Mr. Nopadol Suebsamran /  
Mr. Sarayuth Kerdmongkol /  
Mr. Pornchai Tharathonsanti /  
Mr. Noparit Tinwang**  
LAB BEE Group, Quality Analysis  
Division

*We're proud to work here. It's with understanding and courtesy that we're working together—much like a family. We're impressed with executives that have done a wonderful job of supporting innovation. This year the LAB BEE group represented the company and Thailand in presenting our QCC (Quality Control Circle) achievement to an international audience in Japan, which gave us experience and opportunities to share at a bigger forum. Our professionalism developed. We'd like Bangchak to keep on supporting innovation and give employees more learning opportunities. That way, employees will be properly stimulated to do their best and improve tasks, for innovation can take place anywhere. If the company systematically collects data and keeps record for further development, in the future we'll have our own helpful knowledge for the company in safety and cost reduction. Our people will also think, analyze, and solve problems more systematically.*

# Sustainability Performance







## Economic performance

Revenue	unit	2011	2012	2013	2014
Sales and services	million baht	156,928.44	162,622.83	183,262.93	178,300.35
Gross Income	million baht	158,557.50	169,097.64	186,127.08	181,876.03
Net profit	million baht	5,642.58	4,199.89	3,970.67	296.10

Expenditure for income redistribution to stakeholders	unit	2011	2012	2013	2014
Operating expenses	million baht	147,032.76	156,319.20	175,782.96	176,384.23
Interest expenses paid to financial institution creditors	million baht	748.17	910.48	1,051.94	1,293.81
Tax payment to government and local agencies	million baht	595.58	765.22	1,118.50	51.50
Community and social development	million baht	32.05	40.17	35.91	25.52
Donation to society and schools	million baht	31.34	14.14	18.14	22.73
Dividend payment to shareholders	million baht	1,582.20	1,858.79	2,065.05	1,858.80
Wages and employee welfare	million baht	1,176.82	1,310.04	1,337.33	1,341.58

Supply chain management	unit	2011	2012	2013	2014
Expense for local goods and service purchased*	million baht	2,497	3,327	3,381	4,511
Proportion of local goods and service purchased.*	percentage	83	96	89	91

\* Definition : Goods and service from domestic suppliers. The data shown in some groups of supply chain. Not include a purchasing of crude oil, goods and services lower than 50,000 baht each and from BCE subsidiary companies and PTT groups.

## Environment Performance

Detail		BCP		BGN		BBF		BSE	
		2013*	2014	2013*	2014	2013*	2014	2013*	2014
<b>Material</b>	unit								
- Non-Renewable Material	tons	5,864,844*	334,348	N.A	N.A	156,799*	2,065	3*	3
- Renewable Material	tons		5,492,21	N.A.	N.A.		162,967		0
* In 2013, The raw material date reported in totally not separate by type.									
<b>Energy</b>	unit								
- Non-Renewable Material	Tera Joules	12,952.10	11,840.60	N.A	N.A.	2,755.20	199.8	1	3.2
- Renewable Material	Tera Joules	-	-	-	-	-	-	-	-
<b>GHG emission</b>									
<b>Operational Control Approach</b>									
Direct GHG emission from production processes (Scope 1)		819,846	753,078	-	-	8,937	9,760	24	68
- CO <sub>2</sub>		818,556	751,876	-	-	8,907	9,748	22	66
- CH <sub>4</sub>		807	738	-	-	9	2	1	1
- N <sub>2</sub> O		483	464	-	-	21	7	1	1
- SF <sub>6</sub>		-	-	-	-	-	-	-	-
- HFC		-	-	-	-	-	-	-	-
Indirect GHG emission from purchases of power and steam (Scope 2)	TOCE	171,528	157,173	11,010	8,591	1,818	2,479	147	2,572
<b>Total</b>		<b>991,374</b>	<b>910,251</b>	<b>11,010</b>	<b>8,591</b>	<b>10,755</b>	<b>12,239</b>	<b>171</b>	<b>2,640</b>
<b>Equity Share Approach **</b>									
Direct GHG emission from production processes (Scope 1)		819,846	753,078	-	-	6,255	6,832	24	68
- CO <sub>2</sub>		818,556	751,876	-	-	6,235	6,824	22	66
- CH <sub>4</sub>		807	738	-	-	6	3	1	1
- N <sub>2</sub> O		483	464	-	-	14	5	1	1
- SF <sub>6</sub>	TOCE	-	-	-	-	-	-	-	-
- HFC		-	-	-	-	-	-	-	-
Indirect GHG emission from purchases of power and steam (Scope 2)		171,528	157,173	5,395	4,210	1,272	1,735	147	2,572
<b>Total</b>		<b>991,374</b>	<b>910,251</b>	<b>5,395</b>	<b>4,210</b>	<b>7,527</b>	<b>8,567</b>	<b>171</b>	<b>2,640</b>

\*\* The total indirect green house gas (equity share) is not include data from UBE, FTP and Asean Potash Mining

Pollution Emission	unit	2011	2012	2013	2014
NO <sub>x</sub> (Combustion)	tons	634	279	521	451
SO <sub>2</sub> (Combustion & SRU/TGTU Stack)					
SO <sub>2</sub> (Combustion & SRU/TGTU Stack)	tons	260	29	205	25
PM10 (Combustion)	tons	43	10	20	8
H <sub>2</sub> S (SRU/TGTU Stack)	tons	N.A	N.A	N.A	2.53
Fugitive VOCs	tons	N.A	N.A	N.A	
Flared hydrocarbon	Thousand cubic meters (gaseous)	N.A	N.A	N.A	1250.5
Vented (Vented hydrocarbon)	Thousand cubic meters (gaseous)	N.A	N.A	N.A	N.A
Vented hydrocarbons compared with refined products	Million barrels of refined products equivalent	N.A	N.A	N.A	0.02865

Water	unit	Refinery			
		2011	2012	2013	2014
Water withdrawal	cubic meters	2,156,619	2,146,890	2,378,073	2,388,903
Waste water to Bang Aw Canel	cubic meters	613,193	522,733	1,172,745	975,466

#### Water pollution

Parameter	unit	2557
Oil and Fats	tons	2.32
Suspended Solids	tons	4.67
Dissolved Solids	tons	1,502
BOD	tons	11
COD	tons	68
Sulfides	tons	0.33
Mercury	tons	0.002

## Waste

Type of waste	unit	2011	2012	2013	2014
Hazardous waste	tons (percentage)	1,487 (51)	1,739 (71)	1,253 (48)	3,261 (83)
Non-hazardous waste	tons (percentage)	1,451 (49)	692 (29)	1,363 (52)	644 (16.5)
<b>Total</b>	<b>tons (percentage)</b>	<b>2,938 (100)</b>	<b>2,431 (100)</b>	<b>2,616 (100)</b>	<b>3,905 (100)</b>
Waste derived from oil /chemical spill management	tons	N.A.	N.A.	N.A.	1.1

Treatment of Waste and scrap	unit	Hazardous waste	Non-Hazardous waste
- reuse	tons	-	443
- recycle	tons	927	56
- recovery and use as fuels	tons	1,395	25
- incineration	tons	410	-
- secure landfill	tons	1	111
- On site storage	tons	528	9
<b>Total</b>	<b>tons</b>	<b>3,261</b>	<b>644</b>

Oil and chemical spill	unit	2014
- Number of significant spill of oil and chemicals (more than 150 liters each time)	time (liters)	0 (0)

Complication	unit	2011	2012	2013	2014
Number and Monetary value of significant fines for non compliance with environmental laws.	time (Amount)	0	0	0	0

Supply chain management	unit	2011	2012	2013	2014
New suppliers were screened with enviromental criteria	Percentage	N.A.	N.A.	N.A.	2



## Social Performance

### 1. Employment

Employee	2011		2012		2013		2014	
	Persons	%	Person	%	Person	%	Person	%
<b>Total Employees by Gender</b>								
Male	756	73.3	750	73.03	753	73.18	762	72.43
Female	275	26.67	277	26.97	276	26.82	290	27.57
<b>Total</b>	<b>1,031</b>	<b>100.0</b>	<b>1,027</b>	<b>100.0</b>	<b>1,029</b>	<b>100.0</b>	<b>1,052</b>	<b>100.0</b>
<b>Total Employees by Level</b>								
Manager up (Level 0-4)	91	8.82	95	9.25	98	9.52	101	9.60
Executive up (Level 5-9)	452	43.84	461	44.89	462	44.9	494	46.96
Operationer (Level 10-13)	488	47.34	471	45.86	469	45.58	457	43.44
<b>Total Employee by age</b>								
Less than 30	346	33.56	309	30.09	296	28.77	287	27.28
Between 30-50	618	59.94	644	62.71	661	64.24	699	66.44
More than 50	67	6.50	74	7.21	72	7.00	66	6.27
<b>Total Employee by work place</b>								
Head office	141	13.67	136	13.24	135	13.12	112	10.65
Refinery	802	77.87	806	78.48	809	78.62	855	81.27
North District	53	5.14	11	1.07	11	1.07	10	0.95
Central District	12	1.16	53	5.16	54	5.25	57	5.42
North-East District	13	1.26	13	1.27	12	1.17	10	0.95
South District	10	0.9	8	0.78	8	0.78	8	0.76
<b>Total Number of Employees Turnover by Gender</b>								
Male	38	82.61	43	89.58	31	77.5	32	86.49
Female	8	17.39	5	10.42	9	22.5	5	13.51
<b>Total Number of Employees Turnover by age</b>								
less than 30	29	63.04	34	66.67	20	48.78	25	67.57
between 30-50	9	19.57	15	29.41	19	46.34	8	21.62
more than 50	8	17.39	2	3.92	2	4.88	4	10.81
<b>Turnover Rate</b>	<b>3.55</b>		<b>4.48</b>		<b>3.31</b>		<b>3.46</b>	
<b>Total Number of New Employees by Gender</b>								
Male	69	83.13	39	82.98	35	79.55	44	67.69
Female	14	16.87	8	17.02	9	20.45	21	32.31
<b>Total Number of New employee by ages</b>								
less than 30	80	96.39	47	100	43	97.73	61	93.85
between 30-50	3	3.61	0	0	1	2.27	4	6.15
more than 50	0	0.00	0	0	0	0.00	0	0.00
<b>Maternity leave</b>								
Maternity leave	N.A.	N.A.	N.A.	N.A.	5	N.A.	8	N.A.
Employee back to work after Maternity leave	N.A.	N.A.	N.A.	N.A.	5	N.A.	8	N.A.

## 2. Training and Education

Average hours of training per year per employee (hours)	unit	2011	2012	2013	2014
Total employees	hour/person/year	36	71	47.2	39.16
Training Hours per Person by Gender					
Male	hour/person/year	N.A.	N.A.	42	38.94
Female	hour/person/year	N.A.	N.A.	61.38	39.75
Training Hours per Person by Level					
Manager up (Level 0 - 4)	hour/person/year	N.A.	N.A.	122.1	79.51
Executive up (Level 5-9)	hour/person/year	N.A.	N.A.	63.9	39.01
Practitioner (Level 10-13)	hour/person/year	N.A.	N.A.	15.06	30.44
Training Hours per Person by Fields President					
Corporate Administration and Information Technology (CI)	hour/person/year	N.A.	N.A.	72.42	46.67
Accounting and Finance (AF)					
Marketing Business (MK)	hour/person/year	N.A.	N.A.	80.88	48.00
Refinery Business (RF)	hour/person/year	N.A.	N.A.	59.4	42.20
Business Development and Strategy (BD)	hour/person/year	N.A.	N.A.	31.62	21.68
Refinery Business (RF)	hour/person/year	N.A.	N.A.	41.1	44.67
Business Development and Strategy (BD)	hour/person/year	N.A.	N.A.	109.08	69.11
Renewable Energy Business (RE)	hour/person/year	N.A.	N.A.	84	41.14

## 3. Employee engagement

Employee engagment	Score 5/ Percentage	4.25*	4.41/4.44*	4.26*	Percentage 66
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\* The company contributed the employee engagement continuous since 2011-2013 by the third parties; [Gallop company](#) / [Tower watsons company](#) set the criteria in 5 scores. In 2014 the company adopt the percentage criteria score the become the best employer by Aeon Hewitt Company.



#### 4. Safety

“Bangchak began measuring IFR (injury frequency rate), ISR (injury severity rate), and TRIR (total recordable injury rate)”

Safety	Unit	2011	2012	2013	2014
<b>Injury Frequency Rate : IFR</b>					
Total employee plus supervised workers		0.5	0	0.8	1.4
Independent contractors		0	0	0	2.7
<b>Injury Severity Rate : ISR</b>					
Total employee plus supervised workers		10.9	0	13.5	18.1
Independent contractors		0	0	0	16.1
<b>Total Recordable Incident Rate (TRIR)</b>					
Total employee plus supervised workers		1.8	2	4.4	3.2
Independent contractors		0	1	0	9.4
<b>work-related illnesses and fatality</b>					
Employee	case/ million hrs.	0	0	0	0
Contractor	case/ million hrs.	0	0	0	0
Absentee rate (Employee)	case million hrs. of work	N.A.	N.A.	N.A.	
<b>Tier 1 Process Safety Event</b>					
<b>Tier 1 (Tier 1 Process Safety Event)</b>					
Employee	Case	N.A.	N.A.	N.A.	0
Contractor	Case	N.A.	N.A.	N.A.	0

“Based on these statistics, employees’ and contractors’ IFR, ISR, and TRIR have increased, part of which occurred during the annual turnaround maintenance, which attracted an unusually large number of repair workers and contractors. Bangchak has conducted incident investigations and applied the lessons learned to the refinement of standard operating procedures and operation control measures to prevent recurrences. Short-term and long-term improvement plans have been defined, with monitoring of corrective actions to ensure implementation along with

#### 5. Customer

Customer Responsibility	unit	2011	2012	2013	2014
Customer Satisfaction Survey	Percentage	78	86	84	N.A.*
Complaint of breaches of customer privacy and loss of customer data	Number	0	0	0	0

\* In 2014 the company reviewed the survey of customer satisfaction framework in term of most admired brand. The survey will launch in 2018.



# GRI Content Index

## General Standard Disclosures

General Standard Disclosures	Page Number (or Link)	External Assurance
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## Strategy And Analysis

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G4-2	30-33	

## Organizational Profile

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G4-4	7	
G4-5	6	
G4-6	6	
G4-7	5	
G4-8	7	
G4-9	6	
G4-10	78	
G4-11	62	
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G4-13	3, 31-33	
G4-14	32, 37, 49	
G4-15	20, 29, 53	
G4-16	24, 27-29, 31, 46	

## Identified Material Aspects And Boundaries

G4-17	6, 25	No.
G4-18	24-25	Yes, page 83-84
G4-19	26	Yes, page 83-84
G4-20	25	Yes, page 83-84
G4-21	25-26	No.
G4-22	5	No.
G4-23	24-25	No.

## Stakeholder Engagement

G4-24	18, 20, 22	Yes, page 83-84
G4-25	18	Yes, page 83-84
G4-26	18, 20, 22	Yes, page 83-84
G4-27	19, 21, 23	Yes, page 83-84

## Report Profile

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## Governance

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## Governance

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## Specific Standard Disclosures

DMA and Indicators	Page Number (or Link)	Identified Omission(s)	Reason(s) for Omission(s)	Explanation for Omission(s)	External Assurance
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### Category: Economic

#### Material Aspect: Economic Performance

G4-DMA	35				
G4-EC1	35,73				

#### Material Aspect: Procurement Practices

G4-DMA	36				
G4-EC9	36,73				

### Category: Environmental

#### Material Aspect: Materials

G4-DMA	38				
G4-EN1	38, 74				Total Materials used by weight.

#### Material Aspect: Energy

G4-DMA	41				
G4-EN3	41,74				Total energy consumption
OGSS					
G4-OG2		Total amount invested in renewable energy.	The information is currently unavailable	The data will be available in 2015.	
OGSS					
G4-OG3		Total amount of renewable energy generated.	The information is currently unavailable	The data will be available in 2015.	
OGSS					

#### Material Aspect: Water

G4-DMA	45				
G4-EN8	41,74				Total water withdrawal by source

#### Material Aspect: Emissions

G4-DMA	44, 46				
G4-EN15	44, 74	Total direct greenhouse gas from UBE, FTP and Asean Potash Mining.	The information is currently unavailable	The company will inform to associated and related company in 2017.	Total direct greenhouse gas (GHG) emissions (SCOPE 1)
OGSS					
G4-EN16	44, 74	Total indirect greenhouse gas from UBE, FTP and Asean Potash Mining.	The information is currently unavailable	The company will inform to associated and related company in 2017.	Total indirect greenhouse gas (GHG) emissions (SCOPE 2)
OGSS					
G4-EN21	46, 75		The information is currently unavailable		Total of significant air emissions including NO <sub>x</sub> , SO <sub>2</sub> , PM10, H <sub>2</sub> S and VOCs
OGSS					

#### Material Aspect: Effluents And Waste

G4-DMA	48				
G4-EN22	48, 75				
G4-EN23	48, 76				Total waste generated
OGSS					
G4-EN24		The volume of flared and vented hydrocarbon	The information is currently unavailable	BCP has plan to install instrument to capture gas flared at Plant 4 and Plant 2-3 in 2018, 2020 respectively.	
G4-OG6					

## Specific Standard Disclosures

DMA and Indicators	Page Number (or Link)	Identified Omission(s)	Reason(s) for Omission(s)	Explanation for Omission(s)	External Assurance
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### Material Aspect: Compliance

G4-DMA	23				
G4-EN29	76				

### Material Aspect: Overall

G4-DMA	49				
G4-EN31	50				

### Material Aspect: Supplier Environmental Assessment

G4-DMA	36				
G4-EN32	76				

## Category : Social

### Material Aspect: Employment

G4-DMA	60-62				
G4-LA1	77				
G4-LA2	62				

### Material Aspect: Occupational Health And Safety

G4-DMA	57-59				
G4-LA6	79	Contractor Absentee rate	The information is currently unavailable	BCP will officially inform the contractor company to provide the data in 2016	Total workforce and Independent contractors ISR, IFR, TRIR
G4-OG13	59, 79	Number of Tier2 process safety events	The information is currently unavailable	BCP will define term of Tier 2 Process Safety Event criteria in PSM Implementation plan.	

### Material Aspect: Training And Education

G4-DMA	57-59				
G4-SO4	79				Average Training hour per employee and by employee categories

## Sub-Category : Society

### Material Aspect: Local Communities

G4-DMA	64-69				
G4-SO1	64-69				

### Material Aspect: Anti-Corruption

G4-DMA	28				
G4-SO4	28				

## Sub-Category : Product Responsibility

### Material Aspect: Product And Service Labeling

G4-DMA	52-54				
G4-PR5	79				

### Material Aspect: Customer Privacy

G4-DMA	63				
G4-PR8	79				



## LRQA Assurance Statement

### Relating to the Bangchak Petroleum Public Company Limited's Sustainability Report for the calendar year 2014

This Assurance Statement has been prepared for the Bangchak Petroleum Public Company Limited in accordance with our contract but is intended for the readers of this Report.

#### Terms of engagement

Lloyd's Register Quality Assurance Ltd. (LRQA) was commissioned by the Bangchak Petroleum Public Company Limited (BCP) to provide independent assurance on its 'Sustainability Report 2014' ("the report") against the assurance criteria below to a limited level of assurance and at the materiality of the professional judgement of the verifier using LRQA's verification approach. LRQA's verification approach is based on current best practise and uses the principles of AA1000AS (2008) - inclusivity, materiality, responsiveness and reliability of performance data and processes defined in ISAE3000.

Our assurance engagement covered Sustainability Report 2014 of BCP's subsidiaries in Thailand under its operational control and specifically the following requirements:

- Confirming that the report is in accordance with:
  - GRI G4's reporting guidelines and core option
  - GRI G4's oil and gas sector disclosures
- Evaluating the reliability of data and information for only the selected specific standard disclosures listed below:
  - Environmental : material used by weight (G4-EN1), energy consumption within the organization (G4-EN3), water withdrawal by source (G4-EN8), direct and indirect GHG emissions (G4-EN15-16), NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions (VOC and H<sub>2</sub>S) (G4-EN21), total weight of waste by type and disposal method (G4-EN23) and
  - Social : type of injury and rates of injury, occupational diseases, lost days (G4-LA 6) and average hours of training per employee (G4-LA9).

Our assurance engagement excluded the data and information of the subsidiaries where BCP has no operational control in Thailand and all its operations and activities outside of Thailand. Our assurance engagement also excluded the data and information of its suppliers, contractors and any third-parties mentioned in the report.

LRQA's responsibility is only to BCP. LRQA disclaims any liability or responsibility to others as explained in the end footnote. BCP's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of BCP.

#### LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that BCP has not:

- Met the requirements above
- Disclosed accurate and reliable performance data and information
- Covered all the issues that are important to the stakeholders and readers of this report.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.

**Note:** The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites.

#### LRQA's approach

LRQA's assurance engagements are carried out in accordance with our verification approach. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing BCP's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through interviewing BCP employees who are directly engaging with stakeholder groups, and reviewing associated records.

- Reviewing BCP's process for identifying and determining material issues to confirm that the right issues were included in their report. We did this by benchmarking reports written by BCP and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether BCP makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing BCP's data management systems to confirm that there were no significant errors, omissions or mis-statements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems as well as a visiting its refinery waste handling facilities. We also spoke with those key people responsible for compiling the data and drafting the report.

## Observations

Further observations and findings, made during the assurance engagement, are:

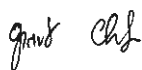
- Stakeholder inclusivity:  
We are not aware of any key stakeholder groups that have been excluded from BCP's stakeholder engagement process. BCP has maintained open dialogues with all of its stakeholders. Stakeholder inputs from these dialogues have influenced BCP's business strategies to continuously improve its sustainability performance.
- Materiality:  
We are not aware of any material issues concerning BCP's sustainability performance that have been excluded from the report. It should be noted that BCP has established extensive criteria for determining which issue/aspect is material and that these criteria are not biased to the BCP's management.
- Responsiveness:  
BCP and its subsidiaries have processes in place for responding to various stakeholder groups. BCP extended the reporting boundaries to cover its renewable energy business as a response to the expectation raised by local communities in Thailand. However, we believe that future reports should explain the progress and disclose performance indicators from these renewable energy businesses.
- Reliability:  
Data management systems are defined but the implementation of these systems varies in each subsidiary. BCP may consider establishing internal control activities such as internal verification to further improve the reliability of its data and information.

## LRQA's competence and independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This verification is the only work undertaken by LRQA for BCP and as such does not compromise our independence or impartiality.

Dated: 25 February 2015



Opart Charuratana  
LRQA Lead Verifier  
On behalf of Lloyd's Register Quality Assurance Ltd.  
Lloyd's Register International (Thailand) Limited  
14th Floor, Sirinrat Building, 3388/46 Rama IV Road  
Klongton, Klongtoey, Bangkok 10110 THAILAND

## LRQA reference: BGK6022617

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# Opinion Survey Form

Bangchak's Sustainability Report 2014

1. Your personal data :

- Sex : ☐ Female ☐ Male  
Age : ☐ Under 30 ☐ 30-45 ☐ Over 45

2. Group of stakeholders :

- ☐ Employee ☐ Customer ☐ Shareholder/Investor ☐ Resident of nearby communities  
☐ Operator of standard/community service station ☐ Customer & public  
☐ Business partner ☐ Mass media ☐ Civil servant/state enterprise ☐ Financial institute/creditor  
☐ Others (please specify) ..... ☐

3. How did you learn of Bangchak's Sustainability Report 2014?

- ☐ Bangchak's website ☐ Seminar/presentation/exhibition ☐ Bangchak's employee  
☐ General shareholders' meeting ☐ Others (please specify) ☐ .....

4. Your objectives for reading the Sustainability Report 2014 :

- ☐ To make a decision in the investment in Bangchak's shares/business ☐ Education  
☐ To learn about Bangchak ☐ To get guidelines for preparing your own CSR report/sustainability report  
☐ Others (please specify) .....)

5. Your level of satisfaction for our Sustainable Report 2014:

- |                                 |                                 |                            |                            |                            |
|---------------------------------|---------------------------------|----------------------------|----------------------------|----------------------------|
| Completeness of the contents    | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |
| Main issues in the report       | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |
| Contents, sequences             | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |
| Simplicity of messages conveyed | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |
| Report design                   | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |
| Overall satisfaction            | <input type="radio"/> very good | <input type="radio"/> good | <input type="radio"/> fair | <input type="radio"/> poor |

6. Which articles have you found most interesting?

(Please specify reason)

7. Which articles have you found least interesting?

(Please specify reason)

8. Do you think you have understood Bangchak's strong commitment through the sustainability activities detailed in this report? How? .....

9. In your opinion, are all important issues for the company's sustainability completely included in the report?

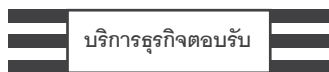
- ☐ Yes ☐ No (Please specify the issues that should be included in the report)

10. Other suggestions/recommendations for the improvement of next year's Sustainability Report.

Please return the filled questionnaire to Bangchak Petroleum PCL

Thank you





ใบอนุญาตเลขที่ ปณ.(ต) / 1253 ปณจ.บางนา  
ถ้าฝากส่งในประเทศไม่ต้องแนบตราไปรษณียากร



บริษัท บางจากปิโตรเลียม จำกัด (มหาชน)  
(ส่วนสิ่งแวดล้อมและชุมชนสัมพันธ์ : Sustainability Rrport 2014)  
ตู้ ปณ. 70  
ปณจ. บางนา  
กรุงเทพฯ  
10260









