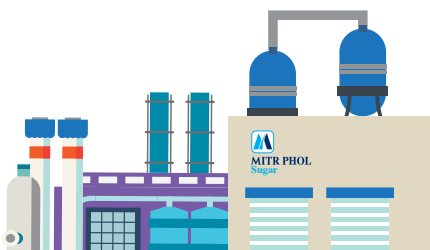
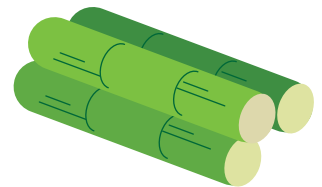




# MITR

FOR SUSTAINABLE SUCCESS







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51 Friends of Environment



81 Friends of Employees



101 Friends of Suppliers



107 Friends of Customers



115 Friends of Communities



125 Friends of Innovation



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## Message from CEO and President <sup>(102-14)</sup>



Krisda Monthienvichienchai  
Chief Executive Officer and President  
Mitr Phol Group

For Mitr Phol Group's businesses to continue growing sustainably, we strive for a deep level of understanding and maintaining a strong focus on holistic development that includes environmental, social, and economic aspects. We also support and act responsibly toward all of our stakeholders, whom we consider our friends first and foremost.

For more than 60 years, Mitr Phol Group has operated its cane and sugar business using the "From Waste to Value" philosophy. Recognizing the importance of utilizing waste, we have expanded our core sugar business to encompass several other entities including wood substitute, biomass, ethanol, and fertilizers. At the heart of all of our business operations is our effort to be "friendly" to all of our stakeholders.

Mitr Phol Group is committed to being "friendly" at every link of the supply chain. In our production process, we use advanced technology that is energy-efficient and eco-friendly to ensure we deliver high-quality products and services to our customers. We provide regular training and development opportunities for cane farmers, who grow our most important raw materials. The Mitr Phol ModernFarm project applies modern cane farming technology to handle labor shortages and navigate the effects of an aging society. The program also helps farmers to increase productivity, raise the quality of their harvests, and achieve a sustainable income. Mitr Phol Group has always recognized the value and contributions that cane farmers bring to our business. This year, the group adopted principles of the self-sufficiency economic philosophy professed by the late King Bhumibhol Adulyadej to launch the "Follow Father's Footsteps to Grow Happiness" project, with an aim of establishing 70 centers in local cane-growing communities.

From its humble beginnings as a small family business, Mitr Phol Group has grown into Thailand's largest sugar producer and the world's fourth largest sugar exporter. For our family of more than 8,000 employees across Thailand, we instill a business culture in which colleagues of all levels

are encouraged to share their thoughts freely and their opinions are heard and acted upon, ensuring everyone has a voice and we can all understand one another more effectively. As a result of our efforts, global human resources consulting firm AON Hewitt has recognized Mitr Phol with the "Best Employer" award for Thai companies for the last two years. To ensure that we continue to successfully meet the needs of our customers by providing the best products and services, we invest heavily in research and development. At our research center in the Thailand Science Park in Pathumthani province, our R&D teams collaborate to create innovative products and solutions, including sugar specialties, high-performance fertilizers made from ethanol, and melamine-coated wood products. For the local areas in which we operate, we continuously engage in activities that promote sustainable development, create job opportunities, and help community members build their capabilities. This year, we focused on working with communities to create value by setting up the Social Enterprise department, which is dedicated to helping villagers develop locally-made products and expand their market channels. Most importantly, we listen to the opinions of local communities in order to promote strong relationships.

For Mitr Phol Group's businesses to continue growing sustainably, we strive for a deep level of understanding and maintaining a strong focus on holistic development that includes environmental, social, and economic aspects. We also support and act responsibly toward all of our stakeholders, whom we consider our friends first and foremost. Today, we are ready to remain a key driving force to help create value and support a bright future for all of Thailand.



**Krisda Monthienvichienchai**  
Chief Executive Officer and President  
Mitr Phol Group





## About Mitr Phol Group



Vision and Philosophy



Culture



Strategic Directions



Mitr Phol: At a Glance



Economic Performance



Mitr Phol Value Chain



Recognitions and Achievements



Mitr Phol Group's Shareholding Structure



Corporate Governance



Mitr Phol Group's Risk Management



Stakeholder's Engagement

# About Mitr Phol Group <sup>(102-1)</sup>





# Vision and Philosophy

## Vision

**To be the world-class sugar and bio-based leader by combining our fully integrated agribusiness model with innovative technology and talent management to create value for better life for all.**



## Philosophy <sup>(102-16)</sup>




**Strive for Leadership**

At Mitr Phol, we aim to produce and offer high quality products for our consumers with the best of our efforts in every process we do.



**Believe in the Value of Human Dignity**

At Mitr Phol, we have a firm conviction that human resources are the most valuable assets of the organization. We take pride in encouraging every team member to gain knowledge and skills in what they do. It is our commitment to enhance the performance of Mitr Phol Group by combining the individual talents of our human resources.



**Stand Tall in Fairness**

At Mitr Phol, we conduct our business with utmost integrity and are fair in dealing with our stakeholders, especially our employees, farmers, buyers, suppliers and consumers.



**Responsible for Society**

At Mitr Phol, we are committed to operate our business under the respected principle of "GrowTogether" that emphasizes on social and environmental development no less than business development.




# Culture <sup>(102-16)</sup>

At Mitr Phol Group, we use the Mitr Phol corporate culture as the basis on which we operate our business. Our corporate culture helps our employees to develop their capabilities, and to adapt to change and competition. It is integral in driving our organization toward stability, prosperity, and sustainability in an age of digital transformation, innovation, and shared benefits. The Mitr Phol corporate culture is comprised of five key characteristics:



**Excellence**

Striving towards excellence and professionalism in all of our operations and endeavors to deliver the utmost benefits.



**Integrity**

Strict adherence to ethics, honesty, integrity, and transparency. Taking care to promote ethical practices in the surrounding society. Compliance with company regulations and laws.



**Trustworthiness**

Being trustworthy, keeping promises and commitments, and catering to the needs of all stakeholder groups in order to build trust and faith.



**Care & Accountability**

Caring for and being accountable to all stakeholder groups, including farmers, communities, society, the environment, business partners, and employees, in line with the "Grow Together" philosophy.



**Innovation**

Having the audacity to think outside the box, without fear of failure. Seeking ideas and innovation to help in the development of new products or adding value to existing products, leading to continuous progress and sustainable growth.





# Strategic Directions <sup>(102-15)</sup>



## Sustainable Growth

Apply technology and innovation in the production of sugar and its byproducts to create value-added product. Promote cooperation with stakeholders by adhering to good governance and risk management.



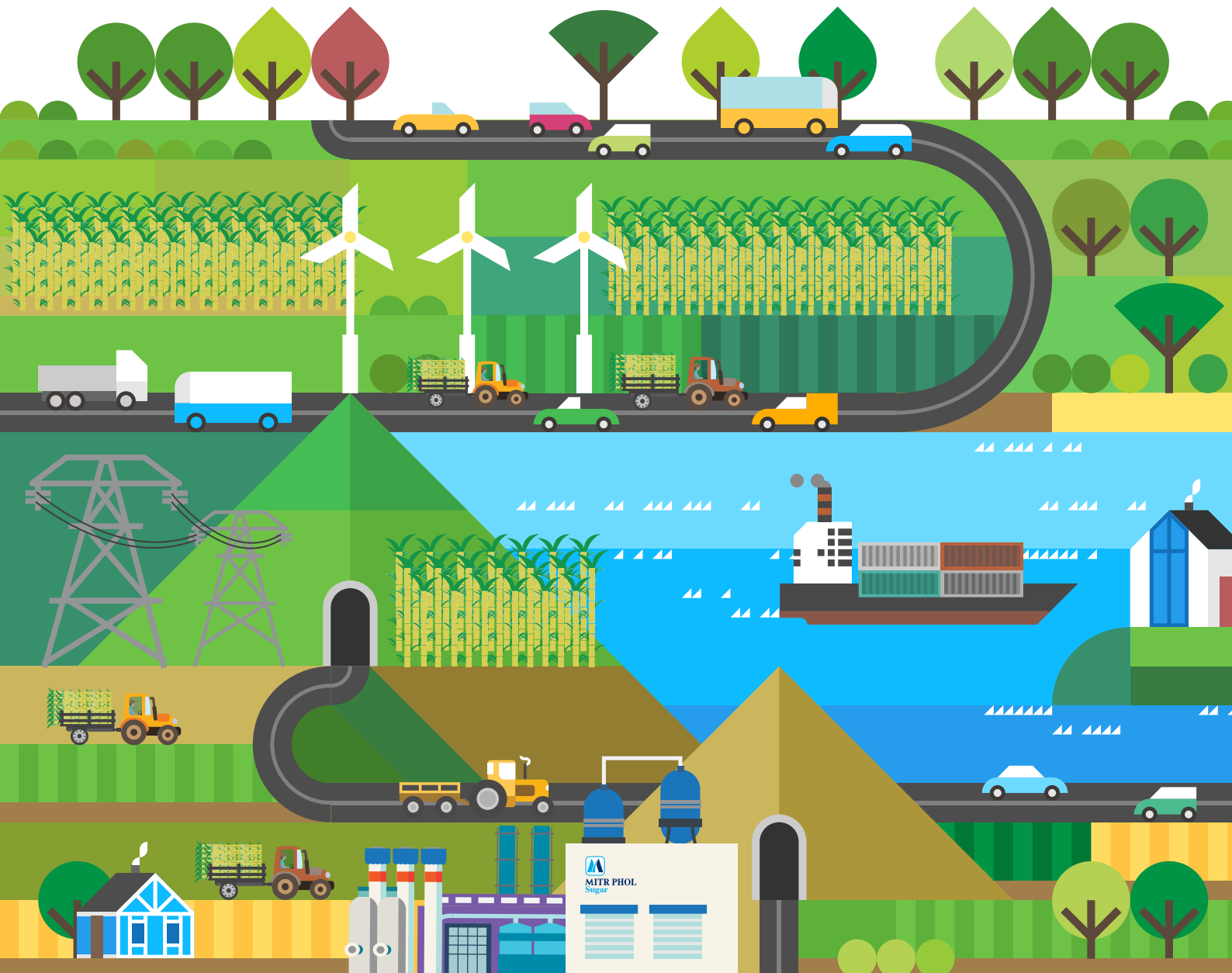
## Competitiveness

Advance a corporate culture that inspires innovation and use innovation and IT solutions to optimize productivity and effective cost control. We partner with world-class companies to gain access to state-of-the-art technology.



## Modern Farming and Manufacturing

Committed to promoting development of the Modern Farming approach for effective farming management, water management, crop varieties development, cane transportation as well as improving to world class manufacturing practices.



# Mitr Phol: At a Glance <sup>(102-2)</sup>

## Milestone

The name Mitr Phol is a combination of two Thai words: *mitr* meaning friends, and *phol* meaning productivity. Taken together, the name means "gifts from friends". The name was given to the company in 1946 by a local community leader from the Grub Yai sub district of Ratchaburi province's Baan Pong district. Mitr Phol Group began as a small family business producing concentrated cane syrup for local sugar factories. By 1956, the company had grown to become a factory capable of producing its own sugar, and continued to expand over the years to meet the demands of consumers in

the fast-industrializing country. In addition to Thailand, the group currently has operations in China, Laos, Australia, and the United States. Mitr Phol's philosophy from day one has been about ensuring a strong foundation for its sugar production operation, backed by research and development at every link of the supply chain, from the sourcing of raw materials to adding value to byproducts. Thanks to this unwavering commitment, Mitr Phol Group has become the largest sugar producer in Thailand and fourth largest in the world.

**1946**

Mitr Phol Sugar Business was initially established in Grub Yai sub district, Bann Pong district, Ratchaburi province as a small family business producing and trading condensed syrup to sugar mills.

**1956**

Mitr Phol Sugar Corporation was formally set up with in-house capacity to produce its own sugar.

**1983**

Mitr Phu Khiao Sugar Mill was established in Phu Khiao District, Chaiyaphum Province.

**1990**

Mitr Dan Chang Sugar Mill was established in Dan Chang District, Suphan Buri Province.

Particle Board business was initially established.

**2009**

Mitr Phol Bio Fuel Plant was established in Dan Chang District, Suphan Buri Province.

**2007**

Mae Sod Clean Energy Ethanol Plant, a joint venture project with Padaeng Industry Public Company Limited and Thai Oil Public Company Limited was set up in Mae Sod District, Tak Province.

**2006**

Mitr Phol Bio Fuel Plant was established in Kuchinarai District, Kalasin Province.

Mitr Phol Sugar was expanded into Savannakhet Province, Lao People's Democratic Republic.

**2010**

The first bio power plant was established in Funan, People's Republic of China, recognized as China's first bio power plant from sugarcane bagasse.

**2011**

The first bio power plant was established in the Lao People's Democratic Republic, recognized as Laos's first bio power plant from sugarcane bagasse.

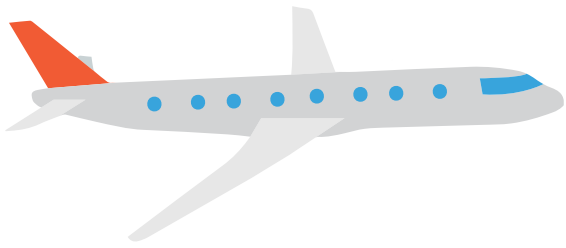
Mitr Phol Bio-Power Plant was established in Kuchinarai District, Kalasin Province.

**2012**

Mitr Phu Luang Sugar Mill was established in Wang Sapung District, Loei Province.

Mitr Phol Bio Power Plant was established in Wang Sapung District, Loei Province.

Mitr Phol expanded sugar business to Queensland State, Australia.



1993

Expansion of sugar business to Guangxi county, People's Republic of China.

1995

Mitr Phu Wiang Sugar Mill was established in Nong Ruea District, Khon Kaen Province.

1997

Mitr Kalasin Sugar Mill was established in Kuchinarai District, Kalasin Province.

Sing Buri Sugar Mill was established in Bangrachan District, Sing Buri Province.

Mitr Phol Sugarcane Research Center was established in Phu Khiao District, Chaiyaphum Province.

2005

The first ethanol plant, Mitr Phol Bio Fuel, was established in Phu Khiao District, Chaiyaphum Province.

2002

The first two bio power plants, Mitr Phol Bio Power, were established in Dan Chang District, Suphan Buri Province and Phu Khiao District, Chaiyaphum Province.

2014

Established 2<sup>nd</sup> Innovation and Research Center, Pathumthani Province.

Automatic Refinery Plant was established in Nong Ruea District, Khon Kaen Province.

2015

Fertilizer Plant joined with Sak Siam Group was established in China.

Fodder Yeast Plant was established in Phu Khiao District, Chaiyaphum Province.

2016

Invested in Dynamic Food Ingredients (DFI) USA to develop low-calorie natural sweetener such as Erythritol and Xylitol.

2017

Invested in Olam International to develop sugar mill in Blitar, Indonesia.



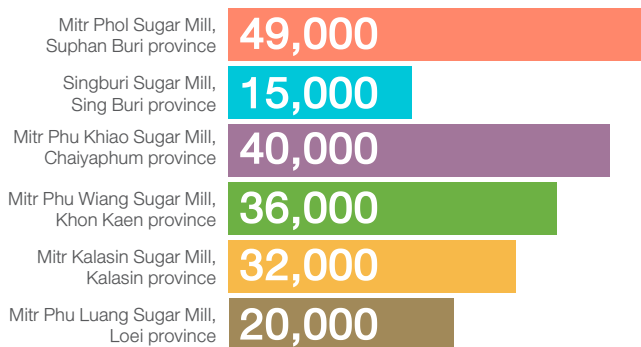
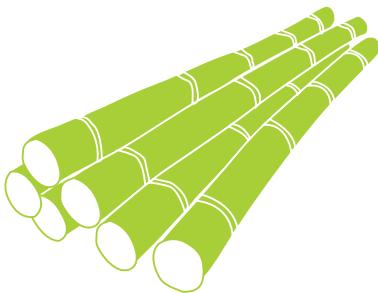
## Mitr Phol Group is comprised of eight business units, namely: <sup>(102-7)</sup>

### 1. Domestic Sugar Business

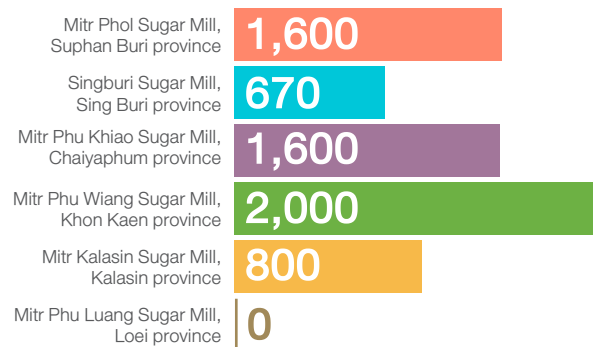
The domestic sugar business is the core Mitr Phol Group's operations. Attention to detail and heavy investments in research and development play integral roles throughout the production process, in order to improve the efficiency of cane farming management, promote sustainable practices, and achieve ethical sourcing of raw materials. The business produces a wide variety of sugar products that meet the many diverse needs of the consumer base. Currently, Mitr Phol Group operates a total of six sugar mills in Thailand.

### Domestic sugar production capacity <sup>(102-2) (102-4) (102-7)</sup>

Cane crushing (tonnes/day)



Refined white sugar\* (tonnes/day)



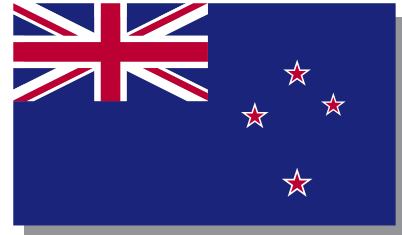
**Total 215,000**

Remark: \* Includes production capacity for white sugar, refined white sugar, and special refined white sugar.



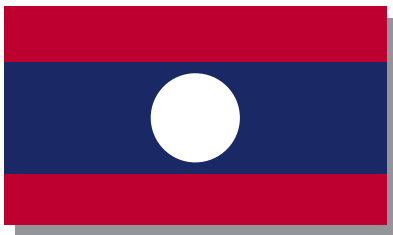
## 2. Sugar Business in China

Mitr Phol Group expanded the production base to China via a joint venture with a local sugar mill to establish the Guangxi Nanning East Asia Sugar Company Limited. Currently, Mitr Phol Group operates six sugar mills in Guangxi and is China's second largest sugar producer, with an annual juicing capacity of more than 10 million tonnes, which is equivalent to approximately 1.3 million tonnes of sugar per year.



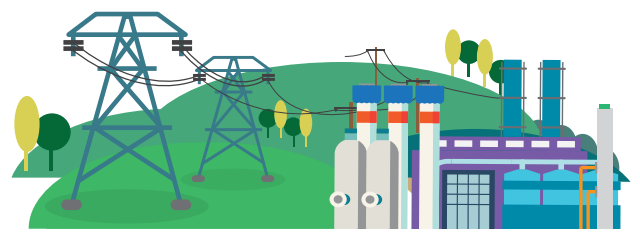
## 4. Sugar Business in Australia

Mitr Phol Group operates in Australia via Queensland-based MSF Sugar. As one of Australia's largest sugar producers, MSF has a cane juicing capacity of more than 4.7 million tonnes per year, equivalent to approximately 500,000 tonnes of sugar annually.



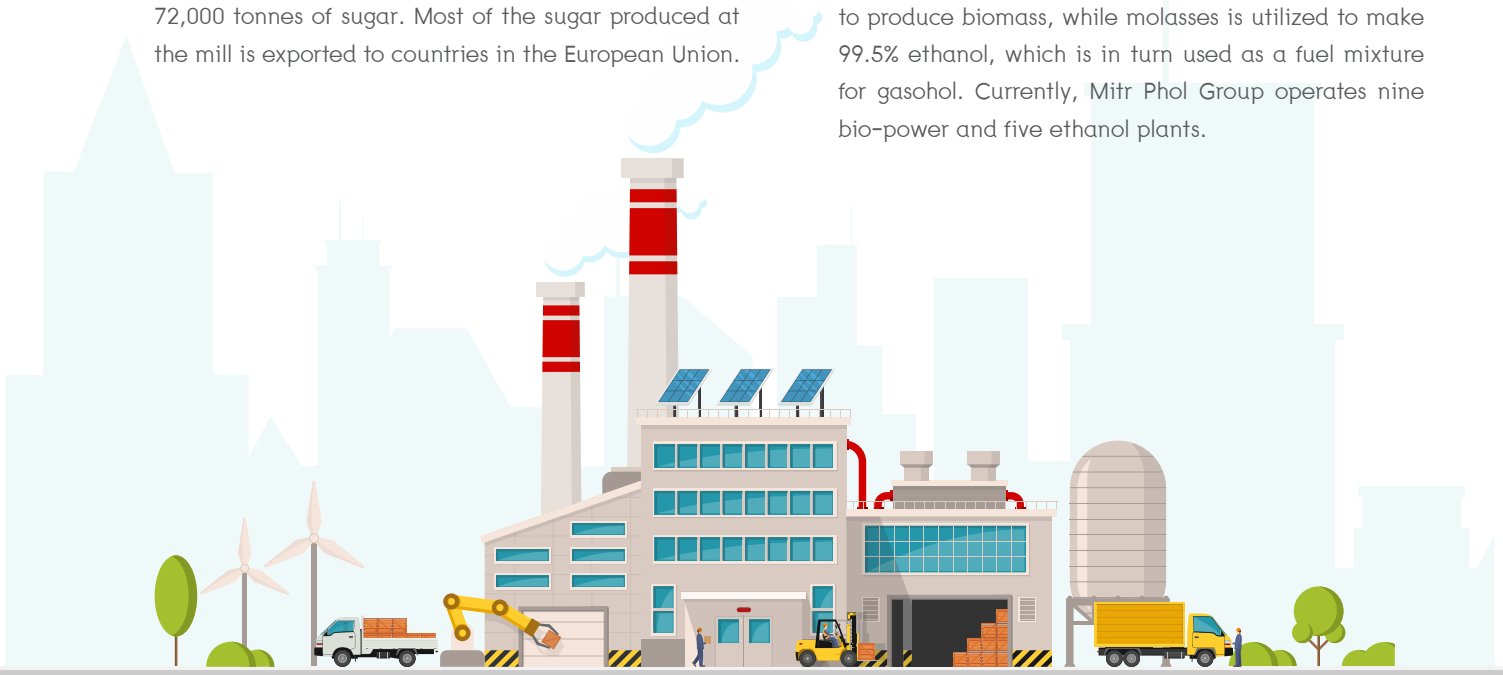
## 3. Sugar Business in ASEAN

In Laos PDR, Mitr Phol Group operates one sugar mill in Savannakhet province, with a cane juicing capacity of 500,000 tonnes per year, or equivalent to approximately 72,000 tonnes of sugar. Most of the sugar produced at the mill is exported to countries in the European Union.

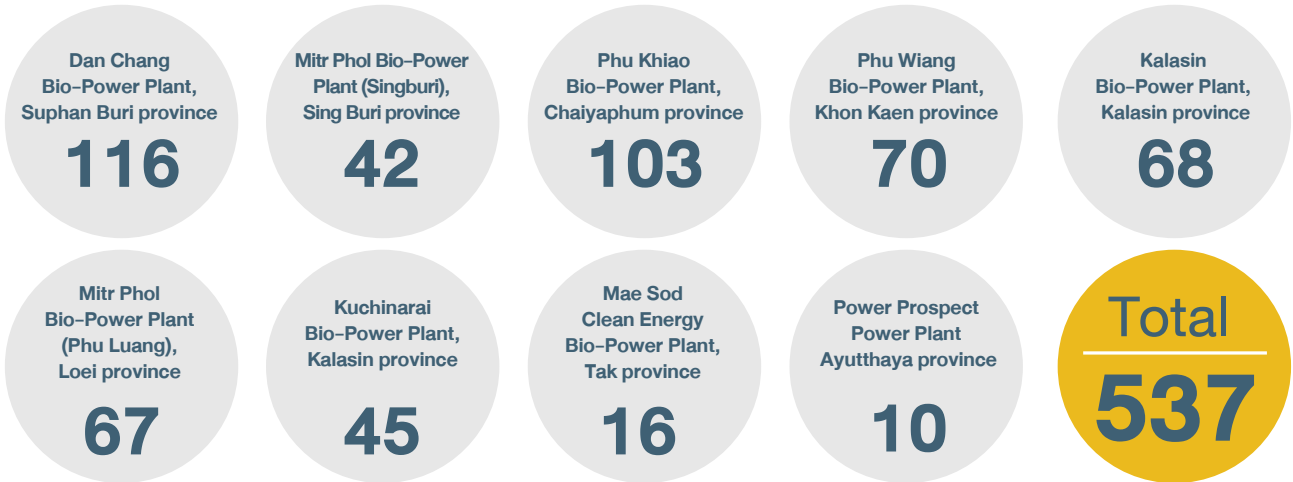
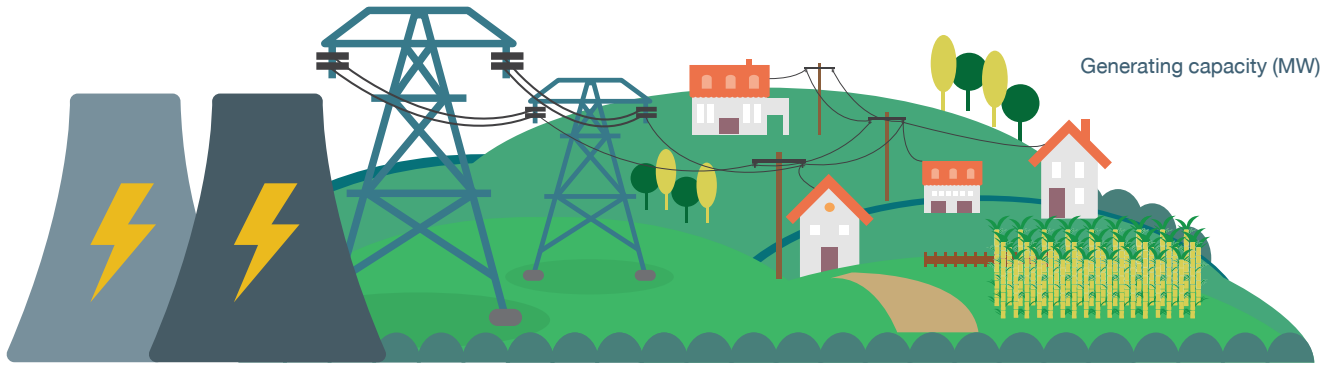


## 5. Renewable Energy Business

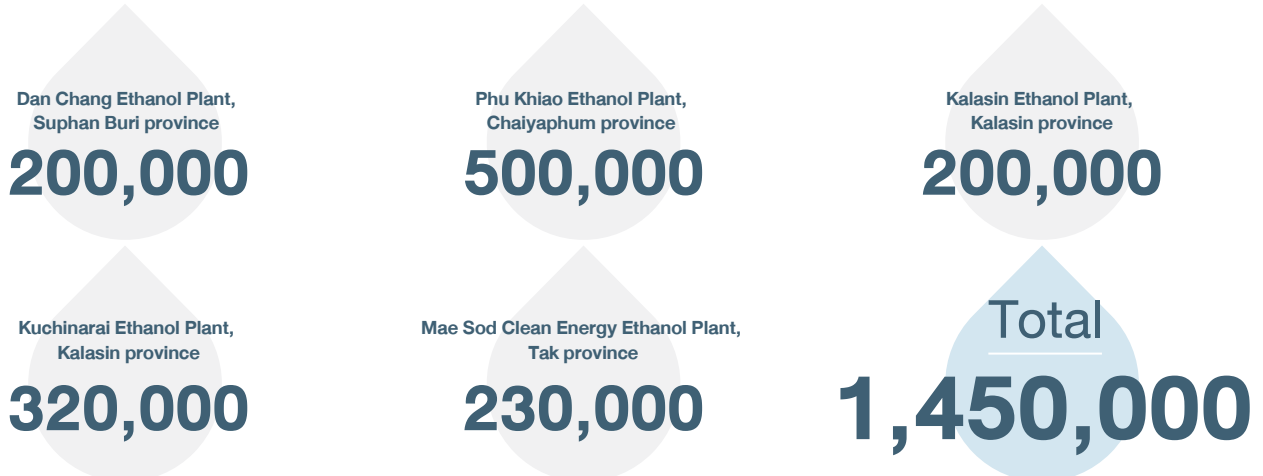
Mitr Phol Group's renewable energy business serves to make effective use of sugar production byproducts. For example, the company uses bagasse as a raw material to produce biomass, while molasses is utilized to make 99.5% ethanol, which is in turn used as a fuel mixture for gasohol. Currently, Mitr Phol Group operates nine bio-power and five ethanol plants.



## Domestic bio-power generating capacity <sup>(102-2) (102-4) (102-7)</sup>



## Domestic ethanol production capacity <sup>(102-2) (102-4) (102-7)</sup>



## 6. Wood Substitute Materials Business

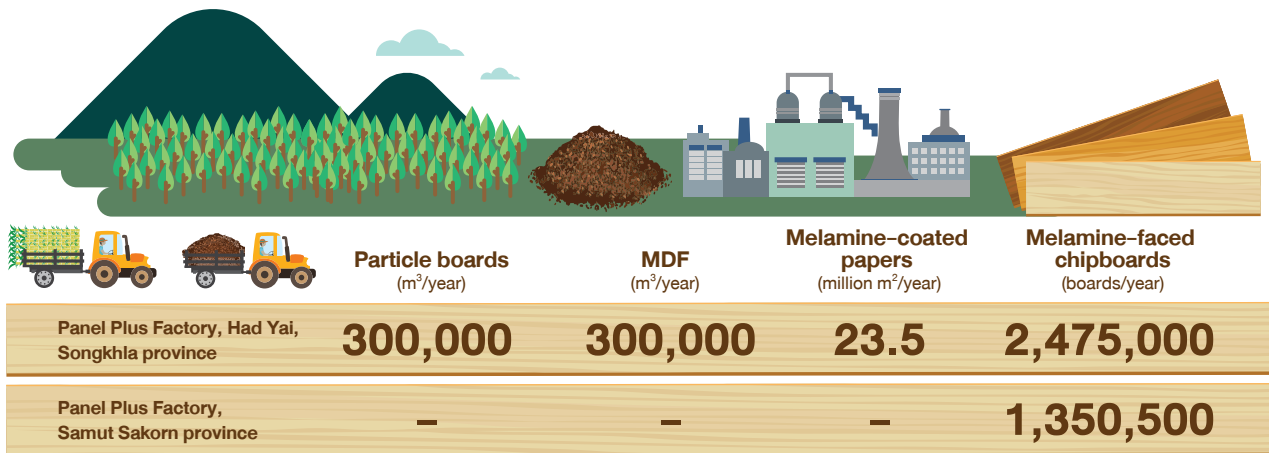
Originally, the wood substitute business consisted of making use of bagasse from sugar production. We later began using old rubber trees that no longer produced latex, rather than using bagasse, as the raw material for high-quality wood substitutes. Currently, Mitr Phol Group operates two wood substitute factories, namely:

- Panel Plus Factory in Hat Yai, Songkhla province – a large factory producing particle board and MDF boards, as well as melamine coated papers that are used to make melamine-faced chipboards at the Panel Plus Factory in Samut Sakorn province.
- Panel Plus Factory in Samut Sakorn province – produces melamine-faced chipboards featuring

colorful patterns. The chipboards are scratch-resistant and can withstand high heat, thanks to advanced production technology. Both sides of the chipboards have decorative coatings and are attached via melamine resin. Melamine-faced chipboards are produced using high-pressure compactors heated by temperatures from 150 to 180 degrees celsius, resulting in an extremely durable, high-quality wood substitute material.

The wood substitute materials business produces particle board, melamine-faced particle boards, MDF boards, and melamine-faced MDF boards, with the below production capacity:

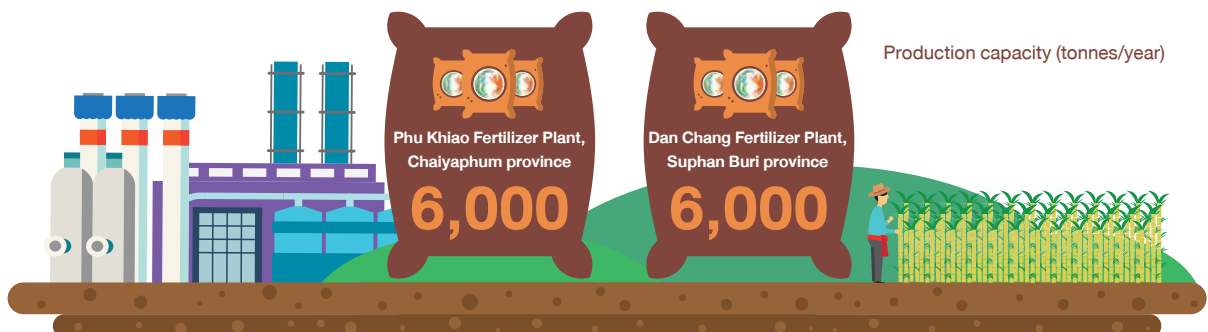
### Wood Substitute materials production capacity <sup>(102-2) (102-4) (102-7)</sup>



## 7. Fertilizer Business

Mitr Phol group adds value to sugar production byproducts including vinasse and filter cake to create bio-fertilizers. In 2017, Mitr Phol Group operated two fertilizer plants in Thailand: The Phu Khiao Fertilizer Plant in Chaiyaphum province and the Dan Chang Fertilizer Plant in Suphanburi province.

### Domestic fertilizer production capacity <sup>(102-2) (102-4) (102-7)</sup>



## 8. Logistics Business

This business provides logistics support for both Mitr Phol Group and external firms, with services including goods receipt and dispatch, warehouse storage, and port terminal services. Currently, Mitr Phol Group operates three logistics companies: United Standard Terminal Public Company Limited based in Samut Prakan province, Mitr Phol Warehouse Company Limited based in Samut Prakan province, and Aawthai Warehouse Company Limited based in Chonburi province.



## Domestic logistics and warehouse services <sup>(102-2) (102-4) (102-7)</sup>

Services	Details	Companies		
		United Standard Terminal	Mitr Phol Warehouse	Aawthai Warehouse
Goods receipt and dispatch services	Goods receipt capacity-bulk cargo (tonnes/hour)	350	-	350-400
	Goods receipt capacity-sacks (tonnes/hour)	125	-	150-200
	Goods dispatch capacity-bulk cargo (tonnes/hour)	330	-	1,000
	Goods dispatch capacity-sacks (tonnes/cranes/12 hours)	1,000	-	500
	Container capacity (minute/TEUs)	30-40	-	25
Port terminal services	Terminals	1	1	1
	Port width (meters)	133	133	350
	Port depth (meters)	8.2	8.2	14
	Deadweight tonnage (DWT)	25,000		60,000
	Warehouses	13	5	15
Goods storage service	Warehouse storage capacity (m <sup>2</sup> )	45,384	17,769	112,466
	Storage for liquids (tanks)	3	8	2
	Storage capacity for liquids (metric tonnes)	21,618	23,904	24,000
Free space	Free space (m <sup>2</sup> )	41,416	17,463	-





# Economic Performance <sup>(201-1)</sup>

Mitr Phol Group's key business performance figures for 2017 are shown in the below table:

## Economic impact

Economic impact details	Value (million Baht)
<b>Direct economic value generated</b> <ul style="list-style-type: none"> <li>Revenues</li> </ul>	85,577
<b>Direct economic value distributed</b> <ul style="list-style-type: none"> <li>Operating costs</li> <li>Employee wages and benefits</li> <li>Payments to providers of capital</li> <li>Payments to government</li> <li>Community investment</li> </ul>	66,347 4,820 11,517 134 37
<b>Economic value retained</b>	2,722

## Sales revenue

Sales revenue by business unit



## Sales Revenue by Region <sup>(102-6)</sup>

revenue (%)

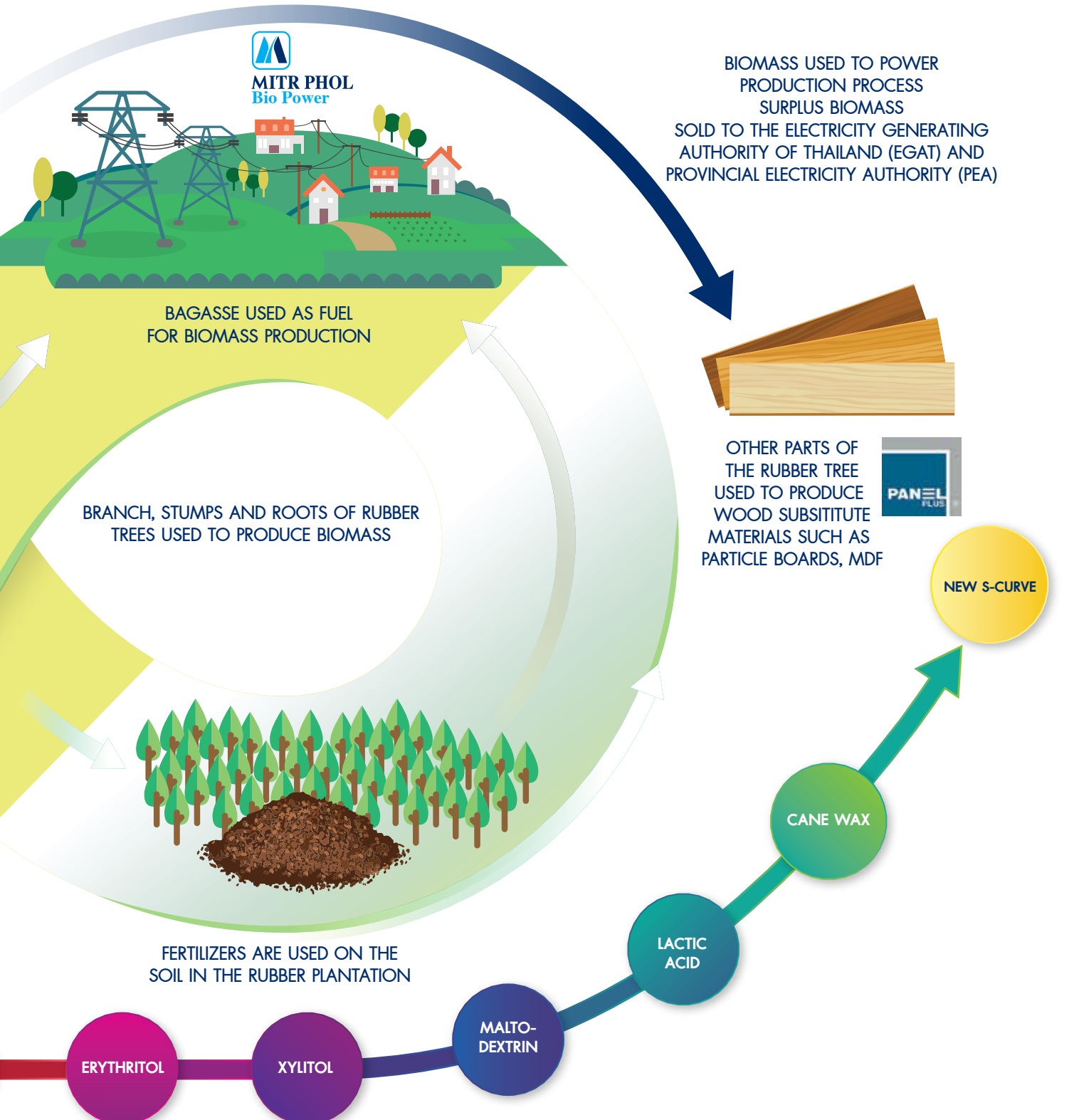


Mitr Phol Group operates its businesses in such a way as to ensure that growth is sustainable and beneficial to all of society, while also earning and maintains the trust of others. This is accomplished by strictly complying with internationally accepted sustainable practices in the areas of risk management, environmental protection, human rights, and foreign labor.



# Mitr Phol Value Chain <sup>(102-9)</sup>





# Recognitions and Achievements (102-12) (102-13)

## Environmental



Green House Gas Emissions Reduction Award granted by the Thailand Environment Institute

- Mitr Phol Sugar Co., Ltd.



Fresh Cane Award 2017 from Office of the cane and sugar board, Ministry of Industry

- United Farmer & Industry Co., Ltd.



Thailand Energy Awards 2017 Alternative Energy (Biofuel), granted by the Department of Alternative Energy Development and Efficiency, Ministry of Energy

- Mitr Phol Biofuel Co., Ltd.



Runner Up ASEAN Energy Awards 2017, granted by the Department of Alternative Energy Development and Efficiency, Ministry of Energy

- Mitr Phol Biofuel Co., Ltd.



Green Industry Award Level 4 (Green Culture), from the Green Industry Program by the Ministry of Industry

- Mitr Phol Bio-Power Co., Ltd.



Award for participating in the Thailand Voluntary Emission Reduction Program (T-VER) by the Ministry of Natural Resources and Environment

- Panel Plus Bio-Power Co., Ltd.

## Economic



Sugar mill excellence by Office of the Cane and Sugar Board, Ministry of Industry

- Mitr Phol Sugar Co., Ltd.
- Singburi Sugar Co., Ltd.
- United Farmer & Industry Co., Ltd.
- United Farmer & Industry Co., Ltd. (Phu Wiang Branch)
- Mitr Kalasin Sugar Co., Ltd.



Thai Chamber of Commerce Best Awards 2017 for outstanding ethical practices by Thai Chamber of Commerce

- Ratchasima Green Energy Co., Ltd.





**CSR-DIW Award 2017 by the Department of Industrial Works, Ministry of Industry**

- Ratchasima Green Energy Co., Ltd.



**CSR-DIW Continuous Award 2017, granted by the Department of Industrial Works, Ministry of Industry**

- Mitr Phol Sugar Co., Ltd.
- Singburi Sugar Co., Ltd.
- United Farmer & Industry Co., Ltd.
- United Farmer & Industry Co., Ltd. (Mitr Phu Wiang Branch)
- Mitr Phol Bio-Power (Dan Chang) Co., Ltd.
- Mitr Phol Bio-Power Co., Ltd.
- Mitr Phol Biofuel Co., Ltd.



**Community Care Company of the Year 2017 (Master Class in Asia) from the Asia Corporate Excellence and Sustainability Awards (ACES Awards) hosted by MORS Group**

- Mitr Phol Sugar Co., Ltd.



**Recognition as a private sector company with contributions to driving the self-sufficiency philosophy by the Office of the National Economic and Social Development Board (NESDB)**

- Mitr Phol Group



**Best Workplace for Labor Relations and Welfare Award, granted by the Ministry of Labor**

- Mitr Phol Sugar Co., Ltd.
- United Farmer & Industry Co., Ltd.
- United Farmer & Industry Co., Ltd. (Phu Wiang Branch)
- Mitr Kalasin Sugar Co., Ltd.



**Award for outstanding prevention of narcotic drug usage in the workplace by the Ministry of Labor**

- Mitr Phol Sugar Co., Ltd.



**Award recognizing outstanding work in supporting the disabled in 2017 by National Office for Empowerment of Persons with Disabilities, Ministry of Social Development and Human Security, in collaboration with Disabilities Thailand**

- Mitr Phol Group



**The Best Employer 2017, Award granted by Aon Hewitt (Thailand).**

- Mitr Kalasin Sugar Co., Ltd.
- Panel Plus Co., Ltd.



**Thailand's Best Employer Award 2017 for Gen-Y employees, granted by Aon Hewitt (Thailand)**

- Mitr Phol Biofuel Co., Ltd.



**Award for promoting social ethics in the media for the TV commercial/clip "Sakorn", granted by the Department of Religious Affairs, Ministry of Culture, in collaboration with Suan Sunandha Rajabhat University**

- Mitr Phol Group



**Best Workplace for Occupational Safety, Health, and Environment Award 2017, granted by the Department of Labor Protection and Welfare, Ministry of Labor**

#### Gold Award

- United Farmer & Industry Co., Ltd. (Mitr Phu Luang Branch)
- Panel Plus MDF Co., Ltd.

#### Silver Award

- Panel Plus Bio-Power Co., Ltd.



**Silver HR Innovation Award granted by the Thailand Productivity Institute, the Personnel Management Association of Thailand, and the National Institute of Development Administration**

- Mitr Phol Group

# Product Standard and Quality (102-12) (102-13)

## Labor Practices

- TLS 8001 Thai Labor Standard

## Quality & Product Responsibility

- ISO 9001 – Quality Management System
- ISO 22000 – Food Safety Management System
- GMP & HACCP – Good Manufacturing Practice and Hazard Analysis Critical Control Point
- FSSC 22000 – Food Safety System
- ISO/IEC 17025 – Competence of Testing and Calibration Laboratories
- Halal & Kosher – Halal Food and Kosher Dietary Law

## Safety, Occupational Health and Environment

- OHSAS 18001 – Occupational Health and Safety Management System
- ISO 14001:2004 – Environmental Management System
- Green Systems certification from the Ministry of Industry's Green Industry programme

## International Sustainability Standards

- Bonsucro Production Standard – Standards for sustainable cane and sugar production
- TIS 9999. Vol.1-2013 – Guidance on sufficiency economy for industries
- Carbon Reduction Label
- Corporate Social Responsibility – Department of Industrial Work (CSR-DIW), Ministry of Industry
- TIS 26000:2010 – Guidance on social responsibility, Thai Industrial Standards Institute, Ministry of Industry
- UN Guiding Principles on Business and Human Rights-UNGP
- FSC certified FSC™ FM and FSC™ COC (license code): FSC™ C125420 by FSC™: Forest Stewardship Council™
- California Air Resources Board (CARB) Control standard for formaldehyde volatility in wood products, California, United States



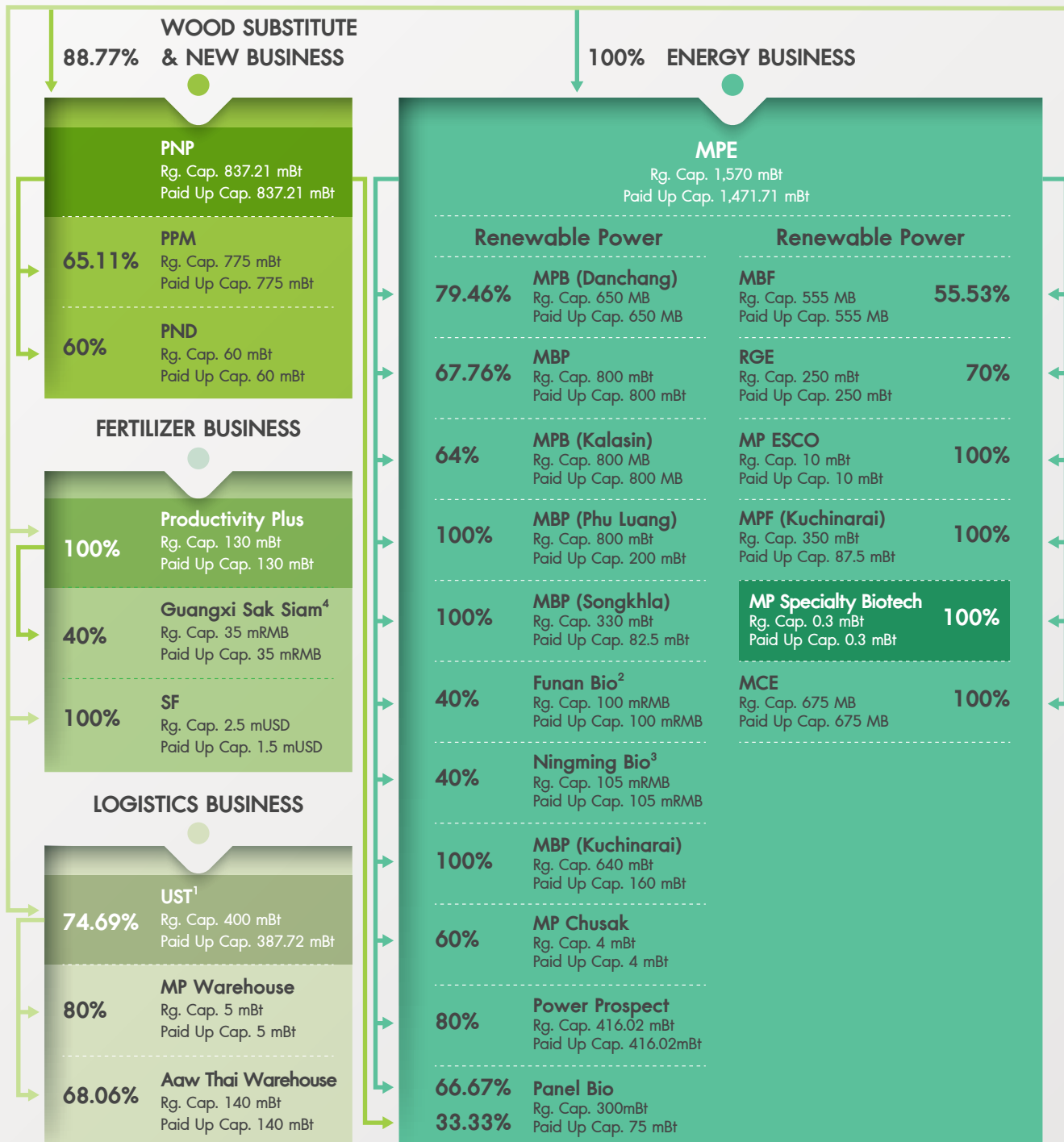




# Mitr Phol Group's shareholding structure<sup>(102-5)</sup>

Mitr Phol Group is comprised of nine business groups:

1. Domestic Sugar Business
2. Sugar Business in China
3. Sugar Business in ASEAN
4. Sugar Business in Australia
5. Renewable Energy Business
6. Wood Substitute Materials Business
7. Fertilizer Business
8. Logistics Business
9. Other Businesses

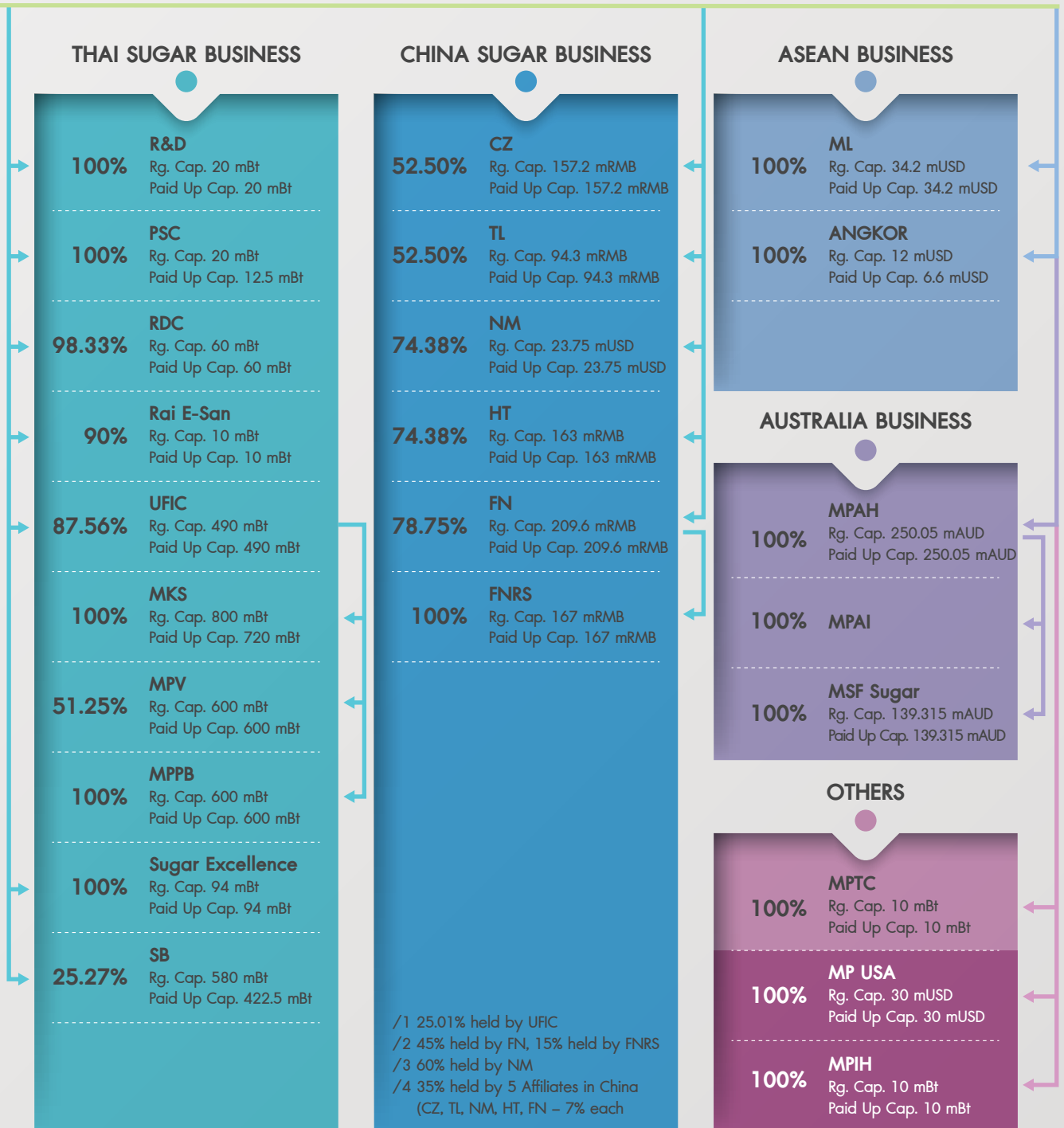


As of October 31, 2017, Mitr Phol Sugar is registered as a company limited, with business registration number 0105518011759. The headquarters is located at Floor 3<sup>rd</sup> Ploenchit Center Building, 2 Sukhumvit Road, Klongtoey, Bangkok 10110 Tel: +66 2794 1000, Fax: +662 656 8494 Website: www.mitrphol.com<sup>(102-3) (102-5)</sup>

With Mitr Siam Co., Ltd. holds 47,779,994 shares out of 47,780,000 shares which is 99.99% of Mitr Phol Sugar Corporation. Every share has the right to vote equally. Mitr Siam has major shareholders as following (Total share of major shareholders is 20.65%):

- Mr. Isara Vongkusolkit Chairman of Mitr Phol Group
- Mr. Kamol Vongkusolkit Honorary Advisor of Mitr Phol Group
- Mr. Soonthorn Vongkusolkit Honorary Chairman of Mitr Phol Group

Mitr Phol Sugar Corporation Limited invests with other subsidiaries and affiliates in the operations of all of the businesses. The shareholding structure is shown here.



**100% MITR PHOL**  
 Rg. Cap. 4,778 mBt  
 Paid Up Cap. 4,598 mBt

**100% MID-SIAM**  
 Rg. Cap. 4,048 mBt  
 Paid Up Cap. 3,868 mBt

**100% MS Capital**  
 Rg. Cap. 120 mBt  
 Paid Up Cap. 120 mBt

## Corporate Governance <sup>(102-18)</sup>

Throughout several decades in which Mitr Phol Group expanded from a family business into a player in the global market, we have always been committed to operating our business on the foundation of transparency and fairness, in order to grow sustainably. This commitment leads each Mitr Phol Group employee to uphold good governance in our business operations.

In 2017, Mitr Phol Group formally issued a good governance policy, outlining the responsibilities and duties of all board members, management, and employees to ensure that the group operates its business with ethical governance, efficiency, transparency, and accountability, while also taking into consideration all stakeholder groups, with an aim to build trust and sustainable business growth.

### Mitr Phol Group's Corporate Management Structure <sup>(102-18)</sup>

Mitr Phol Group's Board of Directors and Executive Board have clearly-defined roles. The Board of Directors consists of 11 members who are responsible for establishing the group's vision, mission, strategies, policies, guidelines and internal systems. The board of directors is also responsible for monitoring and overseeing the executive committee to ensure continuous and sustainable business growth. Mitr Phol Group holds board meetings at least six times per year to keep members up to date with the business operations and seek approval on important matters. General meetings of shareholders are held on an annual basis to provide information about the group's performance and future plans.

### Selection of Board of Directors

Realizing the important roles of the Board of Directors, Mitr Phol Group's policy dictates that there must be no less than nine board members, and each year one third of the members must vacate their positions. Mitr Phol evaluates directors' performance annually both attendance and time available for the company. Each director has to attend the Board of Meeting not less than 90% a year. Whereas non-executive and independent directors are allow to be a director of other Board of Directors, but no more than 4 companies. In 2017, Mitr Phol Group's board of directors comprises of 11 members who are highly-skilled knowledgeable, competent and experienced in sugarcane and sugar industry that are beneficial for Mitr Phol Group's success.

### The board of directors' structure are as follows:

- Executive directors comprise of 6 persons:  
Mr. Krisda Monthienvichienchai, Mr. Buntoeng Vongkusolkit, Mr. Chusak Vongkusolkit, Mrs. Amporn Kanjanakumnerd, Mr. Verajet Vongkusolkit and Mr. Pongsakorn Wongwuttikraikul
- Non-executive directors comprise of 5 persons which can be then categorized into 2 groups as follows:
  - Independent directors, 2 persons: Assoc. Prof. Klanarong Sriroth and Assoc. Prof. Chiradet Ousawat
  - Other directors, 3 persons: Mr. Isara Vongkusolkit, Mr. Chanin Vongkusolkit and Mr. Ataphol Vongkusolkit.

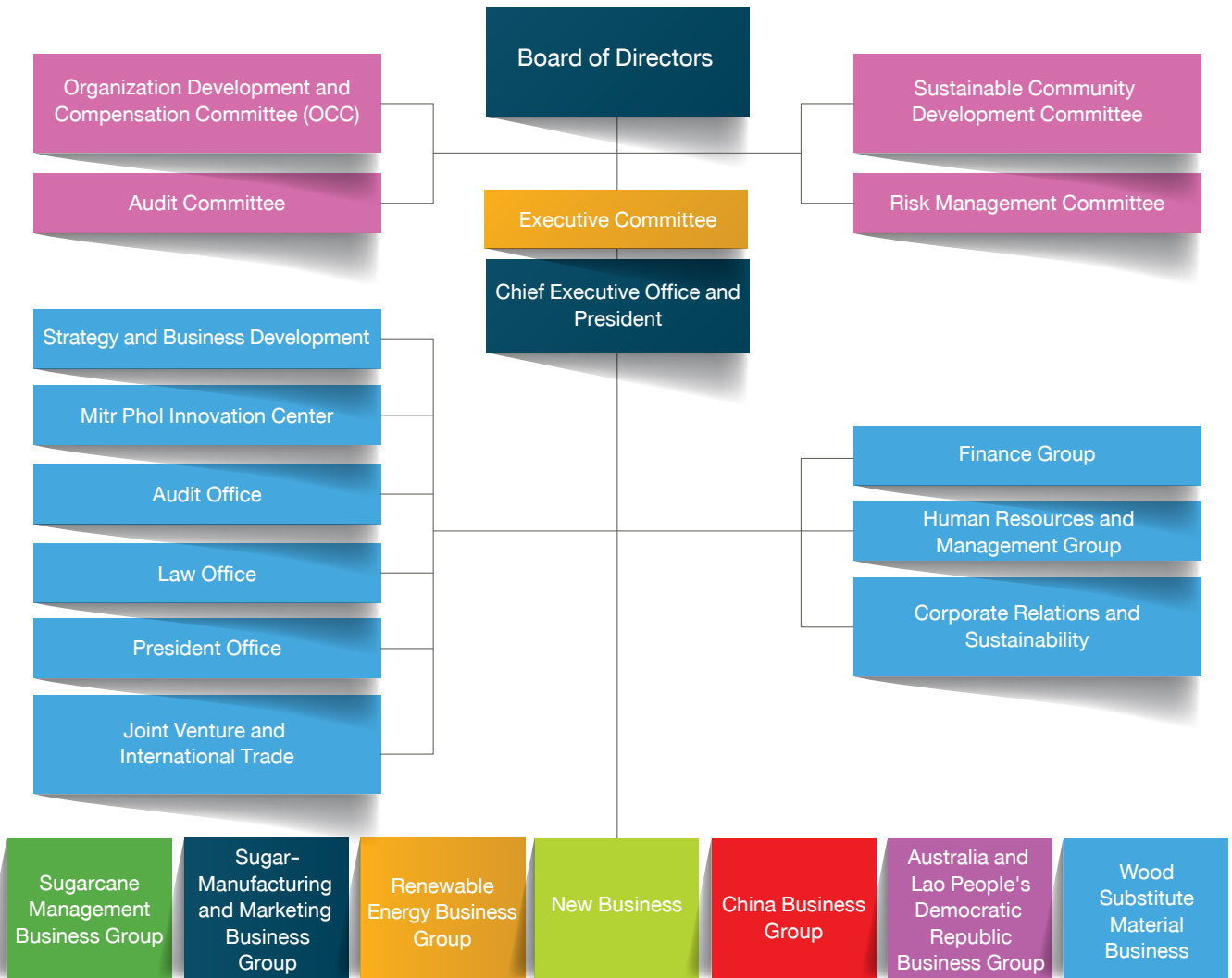
The Average tenure of Mitr Phol Group's Board of Directors are 11 years (as of October 31, 2017) and consisted of the following:

Name	Title	Term as board member (years)
Mr. Isara Vongkusolkit	Chairman	10
Assoc. Prof. Klanarong Sriroth, Ph.D	Independent director	7
Assoc. Prof. Chiradet Ousawat, Ph.D	Independent director	10
Mr. Chanin Vongkusolkit	Director	35
Mr. Krisda Monthienvichienchai	Director	20
Mr. Buntoeng Vongkusolkit	Director	18
Mr. Chusak Vongkusolkit	Director	4
Mrs. Amporn Kanjanakumnerd	Director	1
Mr. Verajet Vongkusolkit	Director	10
Mr. Ataphol Vongkusolkit	Director	6
Mr. Pongsakorn Wongwuttikraikul	Director	1

At least seven days prior to each board meeting, the company secretary distributes a notice in writing to all members to inform them of the meeting details. Minutes are kept and certified by all board members and can be audited by relevant parties. In the past year, the meeting attendance rate was 90.16%.

The executive committee consists of eight members, each representing their own functional area, including material

sourcing, production, marketing and finance. The executive directors' duties include both the planning and management of actions in accordance with the group's missions and policies, as established by the Board of Directors. The executive committee is also responsible for analysis, decision-making, and proposing important matters of economic, social, and environment nature to the Board of Directors, in order to continue to add value to the group in a sustainable manner.



To ensure Mittr Phol Group's sustainable growth, good governance, transparency, and accountability are requirements for all Mittr Phol Group employees. The governance committee promotes awareness and understanding about good governance, and ensures the Code of Conduct are reviewed on a regular basis so that they remain relevant to the changes in the context in which Mittr Phol Group operates its business. Regular communications to employees through several channels remind management and workers of the group's commitment to good governance. The Mittr Phol Code of Conduct is reviewed and updated often to ensure it remains relevant and in line with the ever-changing business landscape. Regular communications with management and employees across business functions are also maintained through different channels. The Mittr Phol Code of Conduct of rules, regulations, and measures to which all Mittr Phol Group

employees are required to adhere. The codes cover topics including relevant laws and regulations, international human rights, anti-fraud and corruption practices, exercising political rights, conflicts of interest, data protection, responsibility toward all stakeholder groups, and receiving or giving gifts, gratuities or other benefits.

Mittr Phol Group also encourages whistleblowing through appropriate channels for any suspected wrongdoing or violation of the Mittr Phol Code of Conduct. The investigation process is systematic and is overseen by a dedicated department that receives and compiles all complaints before processing them, in accordance with the group's whistleblowing policy. Those who suspect any wrongdoing can lodge their complaints by following these steps:



# Whistleblowing process

## Complaint Channels

Written and Verbal Complaints:

Intranet : **Mymitrphol**

[www.mitrphol.com/whistleblowing](http://www.mitrphol.com/whistleblowing)

(E-mail)

[cg@mitrphol.com](mailto:cg@mitrphol.com)



**Letter**

or other appropriate channels that are convenient for the complainant



To CG Section

\* The complainant may or may not include his/her name and contact channel when lodging a complaint.

## Official Receiving the Complaint

### Issues Complaints or suggestions

1. Fraud and Corruption
2. Do not comply applicable laws
3. Mitr Phol Code of Conduct



- Company director, supervisor or trusted member of management
- Corporate Governance Section, Human Resources and Management Group, Internal Audit Offices

\* The person receiving the complaint notifies the Corporate Governance Section.



## Process

1

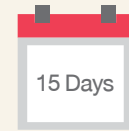
**The complainant** lodges a complaint or provides information through a designated channel.



2

**The Corporate Governance Section** considers the complaint within 15 days before coordinating with a responsible department and follow-up every 15 days.

**If the complaint** involves actions that violate Mitr Phol's regulations and policies, it will be passed on to the Human Resources and Management Group.  
**If the complaint** involves fraud, corruption, or an unlawful act, it will be passed on to the Internal Audit Offices.



3.1

**The Audit Committee** verifies the complaint and considers an investigation.

**If the complaint** is found to have merit or clearly involve wrongdoing, an investigation committee shall be appointed.

**If the complaint** is found to have no merit or no wrongdoing is found, the investigation result is passed back to the responsible department, who will then inform the Corporate Governance Section to notify the complainant.



3.2

**An investigation committee** will be appointed and report the results to the Audit Committee.



4.1

**Internal Audit Offices** upon completion of the investigation process, the Audit Committee shall contact the Corporate Governance Section to notify the complainant.



4.2

**Human Resources and Management Group** considers appropriate disciplinary actions. If an investigation finds the accused guilty, the committee will pass on the case to the Human Resources and Management Department to consider appropriate disciplinary actions and propose such actions for further approval.



5

**Corporate Governance Section** reports the investigation result to the complainant.



\*\* If the complainant discloses his/her identity, he/she shall be notified the result.

## Anti-corruption Policy

Corruption can result in adverse effects on development and can pose a threat to national security. Mitr Phol Group implements an anti-corruption policy and measures to prevent any possible incidents from corruption from occurring throughout the supply chain. Key anti-corruption policy include:

- Mitr Phol Group has announced an anti-fraud and corruption policy and promotes a systemic monitoring and reviewing process. Employees are made aware of the company's anti-corruption policy and are promoted to fight corruption through several mechanisms, such as good governance promotion activities, having clear rules and regulations in place for business activities that are more prone to corruption, and designating safe and secure channels for whistleblowers, as well as encouraging other organizations that work with Mitr Phol to follow anti-corruption practices.
- In a case of corruption comes to the company's attention, a systemic and fair investigation is launched in line with the company's whistleblowing policy, with a strict compliance to the law. The company treats the investigated parties fairly and provides whistleblower protection in line with human rights practices.
- Mitr Phol Group regularly reviews anti-corruption best practices to ensure they are current and relevant to the ever-evolving business landscape. The Mitr Phol Ethics Code of Conduct guidance to employees for proper conduct including anti-fraud and corruption policy and exercising political rights.
- Mitr Phol Group does not condone the giving and receiving of any gifts, valuables, gratuities, facilitation, or benefits that may lead to improper motivations,

decision making, or bribery. The company implements clear guidelines for all employees concerning the giving and receiving of gifts, gratuities and other benefits.

- Mitr Phol employees shall refrain from receiving or giving gifts, valuables, gratuities, facilitation or benefits to and from internal and external persons and organizations beyond levels and values deemed appropriate for common well-wishing, cultural practices, and relevant laws. Employees uncertain of the value of such inappropriate gifts should refuse the items and return them to the original party or sent to Corporate Service Department each area for donation as appropriate.
- Mitr Phol employees and their families are prohibited from soliciting gifts, valuables, gratuities, facilitation, or benefits from customers, business partners, suppliers, or other business stakeholders, as such actions may lead to improper motivation or decision making.
- For receiving or giving gifts, gratuities, services, expenses, or other benefits including donations, Mitr Phol Group employees are required to adhere to the rules in the anti-corruption policy.

In 2017, Mitr Phol Group conducted a review of the group's good governance and anti-corruption policies. It also created awareness about the importance of the anti-corruption policy by communicating to employees via several channels, including the Mitr Phol employee magazine, posters at offices and factories, emails, intranet posts and events.

## The number of executives, employees, and business partners who have received communications regarding Mitr Phol Group's anti-corruption policy <sup>(205-2)</sup>

Employee level	Employees who have received communications*	
	Persons	Percentage
Company board	11	100
Top-level management	25	100
Mid-level management	247	100
Line managers	706	100
Officers	2,648	100
Operational staff	2,475	100
<b>Total</b>	<b>6,112</b>	<b>100</b>

Remark: full-time employees





Training is provided by Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) for 100% of Mittr Phol Group's executive directors and top-level management.<sup>(205-2)</sup> This ensures they fully understand the importance of fighting against corruption, and that the roles they play in leading the fight can cascade the knowledge down to the line managers.

In 2017, Mittr Phol Sugar Corporation announced its intention to join Thailand's Private Sector Collective Action Coalition against Corruption, a group of Thai companies that are seeking to fight against corruption of all types by promoting and implementing effective policies. Every year, Mittr Phol Group also participates in the Anti-Corruption Organization of Thailand's activities to reiterate its commitment to good governance and fighting against all forms of corruption. The CG Day activity "Mittr Phol United Fight against Corruption" is attended by employees of all levels in a show of force against corruption. The activity not only spreads awareness about Mittr Phol Group's ethics code and anti-corruption policy, but also encourages employee involvement in the collective fight against corrupt practices.

Mittr Phol Group is one of 77 organizations who are part of the "Thailand Future Network". The group participated in the network's "Don't let them say that about Thai people" program, encouraging employees, farmers, communities, society at large, and the entire nation to have fundamental changes

in their values and behaviors in four dimensions: economic, social, cultural, and environmental. Mittr Phol Group also participated in and supported several other communications and activities by other organizations in the network.

## Mittr Phol Group's Risk Management <sup>(102-15)</sup>

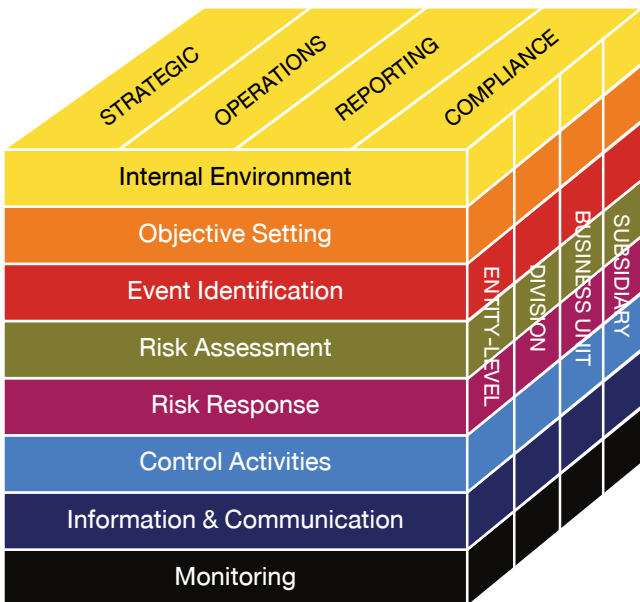
Mittr Phol Group places great importance on risk management in the economic, social and environmental realms. In accordance with good corporate governance practices, the Risk Management Committee assesses the company's risk policy on a yearly basis in order to add value and enhance security for the utmost benefit of all stakeholder groups. The risk management policy is run in accordance with the company's strategic, operational and project plans, as well as relevant laws and regulations governing Mittr Phol Group's business operations. The key risk management practices are as follows:

1. Balancing the level of risk and return to ensure business objectives and stakeholders' expectations are met, while creating maximum benefits to shareholders with an acceptable level of risk.
2. The business strategy must be aligned with the level of risk the company Board of Directors considers acceptable.
3. Risk management is an important component of the corporate culture and needs to be adhered to and implemented in an effective and efficient manner by all members of management.

4. Any risks that may impact Mitr Phol Group's business objectives and strategies must be dealt with immediately and continuously, as per the following:
  - 4.1 Risks must be identified thoroughly and in a timely manner.
  - 4.2 A risk evaluation must be carried out to determine the likelihood and impact should a risk occur.
  - 4.3 Risks must be managed to be at a level acceptable by the board and executive directors. Assessments of costs involved and probable impact must be made.
  - 4.4 Risk monitoring and reporting must be carried out regularly to properly mitigate and manage risks.

Mitr Phol Group has appointed a Risk Management Committee, which assigns important functions such as policy, guidelines and procedures, oversight and review of practices to improve risk management.

Mitr Phol Group has adopted COSO Enterprise Risk Management - Integrated Framework throughout the enterprise. The framework is used for objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring. An annual report is compiled to assess potential risks and vulnerabilities to the company. The COSO Enterprise Risk Management framework is shown here.



COSO Enterprise Risk Management-Integrated Framework

In 2017, Mitr Phol Group's key risks were as follows:

## 1. Corporate Risks

### 1.1 Strategic risks

- **Risks posed by climate change and the natural environment**

Climate change and threats originating in the natural environment such as droughts and floods are key risks that affect sugarcane yields both in terms of volume and quality. Sugarcane is the base raw material for the sugar business and is also used in the renewable energy and fertilizer businesses, in line with Mitr Phol Group's philosophy and its "From Waste to Value" model.

Mitr Phol Group has placed great importance on managing this risk by encouraging cane farmers to efficiently manage water resources, as well as by providing additional water sources and large- and small-scale irrigation systems, so that cane farmers have access to water for agricultural use and consumption both in the short- and long-terms. Mitr Phol Group works closely with government authorities, local communities and cane farmers for these operations. The group regularly creates awareness among farmers about preparing for droughts. The research and development center also works on breeding cane species that are resilient and suitable for the topography and climate of each cane growing region, and encourages farming methods and other factors that improve yields. These measures help farmers increase productivity, leading to higher incomes. In addition, Mitr Phol Group also collaborates with leading universities to develop a cane forecast and assessment system, and uses technology to predict rainfalls, in order to provide the necessary support for cane farmers and ensure there are no shortages in the production system. Contract farming is also used to reduce risks of volatility in the amount of cane that enters the juicing process. A dedicated team has been set up to provide knowledge to cane farmers about effective farming management, cane farming methods, cane harvesting and transportation. In addition, the Mitr Phol ModernFarm program promotes advanced farming methods and the usage of machinery in every part of the process in order to increase yields, improve cane quality and alleviate problems with labor shortages.

For other continuous businesses that rely on cane and their byproducts, a risk management plan is

also in place to reduce any negative impact of cane volatility. This is accomplished by securing agreements with external sources to provide raw materials in the event of cane shortages or compromised quality.

- **Risks from international investments and operations**

Mitr Phol Group has had a foreign investment policy for more than 20 years, in markets including in China, Laos, and Australia. The group continues to seek other investment opportunities to add to long-term growth. The group considers not only returns on investment but also assesses several dimensions of risk such as political and economic policies, economic climate, trade and investment systems, currency exchange volatility, changes of government, trade and investment promotion policy, and laws and regulations of the host countries. Careful assessments are made prior to investing in any foreign market. Mitr Phol Group focuses on investing in industries in which it has expertise. Once investments are made, the company continues to monitor and assess any changes such as regulatory policy, the economic situation, and the political climate. Teams of Thai executives are also sent to manage offshore operations and chair regular meetings to keep up to date with the company's business. Investing in international markets diversifies risk by having several sources of income, reducing risks from volatility of the global economy. Mitr Phol Group is also able to use the knowledge, experience, and expertise gained in international markets to increase its competitiveness.

## 1.2 Risks from operations

- **Risks concerning product quality and safety**

Consumer safety is a priority at Mitr Phol Group. Quality must meet international standards, and products must be hygienic and free from contamination. An ability to serve customers' needs is also crucial, as low-quality products that are released to the market can cause not only dissatisfaction, but can also lead to complaints, product recalls, lawsuits or even boycotts from consumer groups. These incidents threaten the trust and reputation of the group and can lead to a loss of revenue and market share.

Mitr Phol Group strives to deliver high-quality products to market, with a stringent quality control

process in place so that customers never lose trust in the brand. Several internationally - accepted standards and best practices such as TISI, ISO, GMP, HACCP, FSSC and HALAL are applied. Audits are performed by internal and external parties to ensure compliance with international standards. Technology and state-of-the-art machinery are used to increase production efficiency and ensure quality and safety. For example, in the sugar business, conditioning silos are used to reduce sugar humidity, and automated systems are used in the packing process to minimize contamination risks. The company has a dedicated department that is in charge of quality control, analysis and quality development.

- **Environmental risks**

Environmental impacts such as waste water, dust and odor pollution, and energy usage are extremely important to Mitr Phol Group, as they affect employees, communities and stakeholders. Mitr Phol Group operates its business in accordance with its "From Waste to Value" model and continues to improve its environmental management systems and practices. Relevant laws, regulations, and codes of conduct regarding environmental protection are strictly adhered to at every step of the value chain, from cane farming, juicing and production, to storage and transportation. To ensure minimal impact on the environment, preventive and precautionary measures as well as audits are conducted by internal and external parties including independent organizations, and central and local government agencies. Cane farmers are educated about efficient water usage and the harm of cane burning. Environmental management best practices are closely followed, including ISO 14001 and Green Factory standards. Representatives from factories, government agencies, and communities make up a tripartite committee to share ideas and suggestions on how to sustainably improve environmental management. Mitr Phol Group also carries out community relations activities to ensure understanding and good relationships between the factories, the government and local communities. Opinions are listened to and used to make improvements to the group's business operations.

- **Risks from threats to business operations**

Mitr Phol Group realizes that business operations are exposed to a number of threats, including natural and man-made disasters such as fires, political conflicts, and terrorism. Such threats can cause a direct impact on people's lives and assets, the safety of employees, and business continuity. If an organization is unable to resume business operations in a timely manner, it can have a major impact on stakeholders. In order to prepare for and reduce risks posed by such threats, Mitr Phol Group implements an ISO 22301:2012 - certified business continuity management system at the head office and at all of its factories.

### 1.3 Financial risks

- **Risks from commodity price fluctuations**

The Thai government recently passed the Cane and Sugar Act, which stipulates that the price of sugar be allowed to float on the open market according to global commodity prices. Due to this, Mitr Phol Group is exposed to risks of global sugar price fluctuations, which can have an impact on costs and lead to unexpected business performances. Therefore, Mitr Phol Group strives to ensure that its supply chain, production processes, inventory management, and transportation systems are run as efficiently as possible, as this not only helps to mitigate risks of commodity price fluctuations, but also reduces costs and increases productivity. Mitr Phol Group also uses sugar hedging strategies as a precaution against global sugar price fluctuations. In addition, an effective sales management strategy and ensuring currency exchange rates are aligned with reference prices allow for efficient profit and loss management while minimizing risks of global sugar price fluctuations.

Other commodity prices such as oil and coal also impact the revenues of Mitr Phol Group's renewable energy business. For the ethanol business, prices and sales volume are to some extent relative to oil prices. However, impacts are not significant. Mitr Phol Group makes advanced sales contracts with its clients. The government's promotion of alternative energy usage has also helped to keep domestic gasohol usage relatively unchanged even when oil prices are low, thanks to a shift in consumer behavior. Thus, oil prices do not have a significant impact on Mitr Phol Group's renewable energy business.

- **Risks from currency exchange rates**

Fluctuations in currency exchange rates have a direct impact on Mitr Phol Group's business performance, as the group's main revenue comes from exports of sugar and wood substitute materials, as well as overseas business operations. Currency exchange rate fluctuations also affect the prices of imported machinery.

Mitr Phol Group has appointed a committee to oversee financial risk management and a policy framework to administer cash flows and exchange rates. Regular meetings are held to keep abreast of the fast-paced changes. A variety of financial tools are used such as forward contracts, option contracts, natural hedges, interest rate swaps, and other types of derivatives. The committee effectively manages financial risks under changing circumstances by continuously conducting in-depth analyses of the group's financial structure and closely monitoring other external factors that may impact exchange and interest rates.

- **Risks from non-performing loans to cane farmers**

Mitr Phol Group has a policy to provide financial funding to farmers through cane contracts, which are also considered a risk management method to ensure raw materials security. The group provides important items for farming such as cane species, fertilizers, machinery and other equipment. In addition, farmers are provided with access to low-interest loans for building irrigation systems, and purchasing machinery and equipment, as well as for operating cash flow during cane farming seasons. When Farmers deliver cut canes to the factory, their revenue is deducted for loan repayments. Risks related to this system stem from farmers' failure to supply cane or meet the repayment amount, which can be due to a variety of reasons such as natural disasters, diseases, or choosing to sell their cane elsewhere.

In order to effectively manage such risks, Mitr Phol Group uses an integrated technology system to maintain a database of cane farmers, their historical productivity rates, their loan information, collateral, repayments, cane delivery, and receipt of revenue. The database helps to identify farmers and assess their ability to make loan repayments. Processes for establishing loan limits and assigning credit ratings to farmers are clearly defined. Support is also provided to educate farmers about leasing machinery and equipment, borrowing cane species, and securing fertilizers, in order to maximize productivity. A GPS system is also used to collect information about geographical data, yields, and farm management, and help to increase planning efficiency. A special committee has been established to oversee loan approvals, and to monitor and analyze the loans, thus ensuring that farmers' debts are at an acceptable and manageable level.

#### 1.4 Legal and regulatory compliance risk

Laws and regulations related to Mitr Phol Group's businesses have increased and intensified. Violations of such laws and regulations can potentially affect the group's business operations and its overall reputation. Mitr Phol Group is therefore committed to operating its business in strict compliance with all laws, rules, and regulations. A compliance committee has been established to oversee, coordinate with, provide support to, and ensure that each business unit is aware of relevant laws and is always in compliance. As Mitr Phol Group's businesses span across several industries, a representative has been appointed for each business unit to monitor and compile compliance checklists so that the company can avoid engaging in behaviors or actions that may be in violation of the law. Their scope of responsibilities are clearly and officially defined.

Mitr Phol Group has also introduced a system to efficiently keep track of important permits and legal documents required for the business operations of all companies and subsidiaries within the group.

The group fully realizes the importance of legal and regulatory compliance risk management and has applied the same compliance systems for the group's businesses in China and Laos.

## 2. Emerging Risks

### 2.1 Risks related to the restructuring of Thailand's sugar industry

Following Brazil's petition to the World Trade Organization regarding the Thai government's practice of providing subsidies to sugar producers, Thailand has restructured its entire sugar industry to be compliant with international obligations. Although the restructuring by the Ministry of Industry is not scheduled to complete until 2021, it has already had an impact on sugar producers. Effective in January 2018, domestic sugar prices were allowed to float and the quota system was abolished. The new measures cover the production seasons of 2017/2018 and 2018/19, and will allow sugar prices in Thailand to follow market mechanisms. Mitr Phol Group has been monitoring the situation closely to assess the impact and prepare for the necessary adjustments to its business operations. The group is also in cooperation with Thai Sugar Miller Company Limited (TSMC), the Office of the Cane and Sugar Board, and representatives from farmers associations in preparation for and in support of the impending changes.

### 2.2 Risks from digital disruption




Digital disruption has completely changed market landscape, as well as the lifestyle and behavior of consumers. These all have an effect on Mitr Phol Group's competitiveness, and its short- and long-term business operations. Consumer behavior, sales channels, payment methods, communication channels, and supply chain management have all been affected greatly by digital disruption. Organizations must keep abreast of the rapidly changing landscape and be adaptable to change. Digital disruption has also brought about opportunities for doing new business and reaching new customer groups, and this could help to lead to sustainable growth. Mitr Phol Group closely monitors new trends and analyzes both threats and opportunities posed by digital disruption and new technologies. Through this in-depth analysis, Mitr Phol is able to implement new technologies and practices that can improve its supply chain and overall business. For example, the Mitr Phol ModernFarm project encourages farmers to use technology to improve productivity, and robotics is used in the sugar production and packing processes. In addition, an e-commerce platform is now available to engage with customers.







## Stakeholder's engagement (102-40) (102-42)

Stakeholders are an integral part of every business process and play an important role in enhancing Mitr Phol Group's strength in all aspects, including economic, social and environmental. Mitr Phol Group values the opinions of all stakeholder groups and engages with them by listening to their opinions, suggestions, and concerns, and then uses their feedback and input to improve the group's operations.

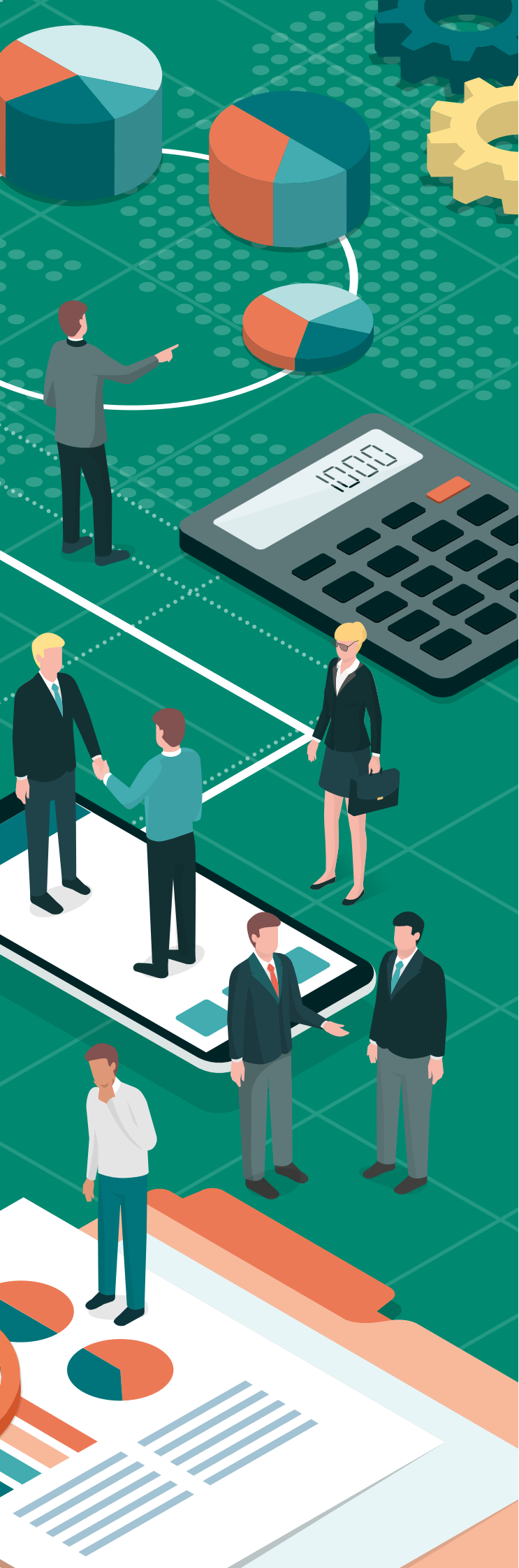
Mitr Phol Group conducts analysis and evaluations of stakeholders and organizes them into seven categories, assigning each with the appropriate communication mechanisms and accountable departments. This is to ensure that stakeholders' opinions are heard and appropriate measures are implemented to maintain their trust.

Stakeholder groups (102-40)	Communication mechanisms (102-43)	Frequency (102-43)	Stakeholders expectations/concerns (102-44)	Response (102-44)
<b>Shareholders</b> 	<ol style="list-style-type: none"> <li>General meetings for shareholders and investors.</li> <li>Annual reports or sustainability reports providing company performance.</li> </ol>	<p>Annually</p> <p>Annually</p>	<ol style="list-style-type: none"> <li>Business capability development.</li> <li>Transparent and ethical business management.</li> <li>Strong business performance and a good return on investment.</li> <li>Business risk management.</li> <li>Corporate social and environmental responsibility as part of business operations.</li> </ol>	<p>See details in the "About Mitr Phol"</p> <p>See details in the "Friends of Communities"</p> <p>See details in the "Friends of Environment"</p>
<b>Cane farmers</b> 	<ol style="list-style-type: none"> <li>Mitr Chao Rai Newsletters.</li> <li>Cane farmers' meetings.</li> <li>Provide updates and arrange activities about cane farming.</li> </ol>	<p>Every two months</p> <p>Monthly</p> <p>Monthly</p>	<ol style="list-style-type: none"> <li>High and fair cane prices.</li> <li>Increase productivity and quality.</li> <li>Loans for agricultural purposes.</li> </ol>	<p>See details in the "Friends of Suppliers"</p>
<b>Communities</b> 	<ol style="list-style-type: none"> <li>Regularly meet with surrounding communities to build understanding and establish good relationships.</li> <li>Tripartite committee meetings.</li> <li>Meeting Committee for environmental protection.</li> </ol>	<p>Monthly</p> <p>Quarterly</p> <p>Monthly</p>	<ol style="list-style-type: none"> <li>Operate business transparently and fairly.</li> <li>Utilize natural resources efficiently and with conscience.</li> <li>Operate business with environmental protection practices and develop production processes that reduce environmental impact.</li> <li>Provide truthful information to the public.</li> <li>Help people in surrounding communities to be healthy.</li> </ol>	<p>See details in the "Friends of Suppliers"</p> <p>See details in the "Friends of Environment"</p> <p>See details in the "Friends of Communities"</p>

Stakeholder groups <sup>(102-40)</sup>	Communication mechanisms <sup>(102-43)</sup>	Frequency <sup>(102-43)</sup>	Stakeholders expectations/concerns <sup>(102-44)</sup>	Response <sup>(102-43)</sup>
<b>Business partners/ Vendors</b> 	<ol style="list-style-type: none"> <li>1. Site visits and evaluations for Business partners/vendors related to food safety, such as packaging and chemicals.</li> <li>2. Providing training and performing User Acceptance Testing (UAT) with vendors.</li> <li>3. Satisfaction survey Mitr Phol Procurement System (MPS-on web) Procurement System (MPS - on web).</li> <li>4. Mitrphol Procurement System (MPS - on web).</li> <li>5. Mitr Phol Supplier Code of Conduct.</li> <li>6. Annual suppliers conference and awards ceremony.</li> </ol>	<p>Annually</p> <p>Every time prior to the implementation of a new system relevant to particular vendors.</p> <p>Annually</p> <p>Real Time</p> <p>Before register vendors in system.</p> <p>Annually</p>	<ol style="list-style-type: none"> <li>1. Fully understand and be aware of agreements for doing business with Mitr Phol Group.</li> <li>2. Decrease Non Conformance Report (NCR) and promote business sustainability jointly.</li> <li>3. Acknowledge and understand the procurement systems together for work efficiency and satisfaction.</li> <li>4. Be on Mitr Phol Group's Approved Vendor List (AVL), establish partnership with Mitr Phol Group and increase sales.</li> <li>5. Receive information and updates from Mitr Phol Group's procurement department. Able to send quotations, check Purchase Orders and PO status, edit vendor information in real time for fast and effective management.</li> <li>6. Suppliers are aware of the code of conduct required for doing business with Mitr Phol Group.</li> <li>7. Suppliers learn about Mitr Phol Group's updated policies, exchange ideas, provide suggestions, and strengthen relationships. The awards ceremony boosts morale and increases motivation for suppliers to continue to improve.</li> </ol>	<p>See details in the "Friends of Suppliers"</p>
<b>Customers and consumers</b> 	<ol style="list-style-type: none"> <li>1. Complaint call center.</li> <li>2. Customer satisfaction surveys.</li> </ol>	<p>Daily</p> <p>Annually</p>	<ol style="list-style-type: none"> <li>1. Receive high-quality, safe, and healthy products and services.</li> <li>2. Provide product variety for different needs.</li> </ol>	<p>See details in the "Friends of Communities"</p>
<b>Employees</b> 	<ol style="list-style-type: none"> <li>1. Employee satisfaction survey.</li> </ol>	<p>Annually</p>	<ol style="list-style-type: none"> <li>1. Access to adequate and suitable resources with which to perform their duties.</li> <li>2. Keep up-to-date with the group's news.</li> <li>3. Appropriate and attractive compensation and benefits.</li> <li>4. Recognition.</li> <li>5. Fair evaluations and career growth opportunities</li> </ol>	<p>See details in the "Friends of Employees"</p>
<b>Government and civil society organizations</b> 	<ol style="list-style-type: none"> <li>1. Participating in meetings with government agencies.</li> <li>2. Working together with civil society organizations.</li> <li>3. Participate in public forums and panel discussions arranged by international organizations.</li> <li>4. Tripartite committee meetings.</li> <li>5. Communicate through annual sustainability reports about issues that are of interest to international organizations such as human rights and anti-child labor abuse.</li> </ol>	<p>Monthly</p> <p>Monthly</p> <p>Monthly</p> <p>Quarterly</p> <p>Annually</p>	<ol style="list-style-type: none"> <li>1. Participation in activities arranged by the government sector.</li> <li>2. Legal compliance.</li> <li>3. Transparency.</li> <li>4. Demonstrate social and environmental corporate responsibility.</li> <li>5. Participate in driving important agendas to create business sustainability.</li> <li>6. Operate the business with transparency and respect to human rights.</li> </ol>	<p>See details in the "About Mitr Phol"</p> <p>See details in the "Friends of Communities"</p> <p>See details in the "Friends of the Environment"</p>







## About this report



Scope of This Report



Identifying Materiality and Scope of Report



Information Enquiry



Mitr Phol Group's compliance with the United Nations Global Compact and support of the United Nations Sustainable Development Goals

## About This Report <sup>(102-48) (102-49) (102-50) (102-52)</sup>

Mitr Phol Group has compiled its annual sustainability report for 2017 to disclose information about the group's performance in the areas of economic, social, and environmental sustainable development, as well as corporate governance, as these all have an impact on stakeholder groups. The report also contains Mitr Phol Group's policies, strategies, and direction on sustainable development, in line with the United Nations' Sustainable Development Goals. Mitr Phol Group has published an annual sustainability report for four consecutive years, This report has been prepared in accordance with the GRI Standards: Core option <sup>(102-54)</sup>

## Scope of this report <sup>(102-48) (102-49) (102-50) (102-51) (102-52)</sup>

This report covers the performance and operations of Mitr Phol Group's companies and subsidiaries in Thailand between November 1, 2016 and October 31, 2017. The report divides Mitr Phol companies and subsidiaries into seven distinct groups: sugar business (six companies) and farming business (two companies), renewable energy business (11 companies), wood-substitute materials business (three companies), fertilizer and new business (one company), logistics business (three companies), and other business (one company). The scope of environment performance accounts for 92.26% and the scope of this report accounts for 100% of Mitr Phol Group's revenues generated in Thailand.

## List of companies within the scope of this report <sup>(102-45) (102-46)</sup>

Business/company	Economic performance	Environmental performance				Social performance	
		Energy	Water	Waste	Air	Safety	Human Resources
<b>Sugar business</b>							
Mitr Phol Sugar Co., Ltd.	●	●	●	●	●	●	●
Singburi Sugar Co., Ltd.	●	●	●	●	●	●	●
United Farmer and Industry Co., Ltd.	●	●	●	●	●	●	●
United Farmer and Industry Co., Ltd. (Mitr Phu Wiang branch)	●	●	●	●	●	●	●
United Farmer and Industry Co., Ltd. (Mitr Phu Luang branch)	●	●	●	●	●	●	●
Pacific Sugar Corporation Co., Ltd.	●	NR	NR	NR	NR	NR	●
Mitr Phol Development Co., Ltd.	●	NR	NR	NR	NR	NR	●
Mitr Siam Sugar Co., Ltd.	●	NR	NR	NR	NR	NR	NR
Mitr Phol Treasury Center Co., Ltd.	●	NR	NR	NR	NR	NR	NR
<b>Farming companies</b>							
Rai Dan Chang Co., Ltd.	●	NA	NA	NA	NA	●	●
Rai E-Sarn Co., Ltd.	●	NA	NA	NA	NA	●	●
<b>Renewable Energy business</b>							
<b>Electricity business</b>							
Mitr Phol Bio-Power (Dan Chang) Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Bio-Power Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Bio-Power (Phu Wiang) Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Bio-Power (Kalasin) Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Bio-Power (Phu Luang) Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Bio-Power (Kuchinarai) Co., Ltd.	●	●	●	NA	NA	●	●

Business/company	Economic performance	Environmental performance				Social performance	
		Energy	Water	Waste	Air	Safety	Human Resources
<b>Ethanol business</b>							
Mitr Phol Bio-Fuel Co., Ltd.	●	●	●	●	●	●	●
Rachasima Green Energy Co., Ltd.	●	●	●	●	●	●	●
Maesod Clean Energy Co., Ltd.	●	●	●	●	●	●	●
Mitr Phol Energy Services Co., Ltd.	●	NR	NR	NR	NR	NR	NR
Power Prospect Co., Ltd.	●	●	●	●	●	●	●
<b>Wood-substitute materials business</b>							
Panel Plus Co., Ltd.	●	●	●	●	●	●	●
Panel Decor Co., Ltd.	●	●	●	●	NA	●	●
Panel Plus MDF Co., Ltd.	●	●	●	●	●	●	●
<b>Fertilizer and new businesses</b>							
Productivity Plus Co., Ltd.	●	●	●	●	NA	●	●
<b>Logistics business</b>							
United Standard Terminal Public Co., Ltd.	●	●	●	●	NR	●	●
Mitr Phol Warehouse Co., Ltd.	●	●	●	●	NR	●	●
Aawthai Warehouse Co., Ltd.	●	●	●	●	NR	●	●
<b>Other businesses</b>							
Mitr Phol Sugarcane Research Center Co., Ltd.	●	●	●	NA	NR	●	●

Remark: NA (Not Available)-Information is not available.  
NR (Not Relevant)-Information is not relevant.



# Identifying Materiality and Scope of Report <sup>(102-46)</sup>

Mitr Phol Group has identified materiality that is relevant to the group's business operations by studying sustainability topics that are high on the global agenda and selecting only those areas that are relevant to Mitr Phol Group, using the following criteria:

- Importance of the topics to the global food and beverages industry.
- Corporate strategies, which are reviewed on an annual basis.
- Relevancy to topics covered in Mitr Phol Group's previous sustainability report in 2016.

## Identifying materiality and impact assessment <sup>(102-46)</sup>

### Step one: Identification

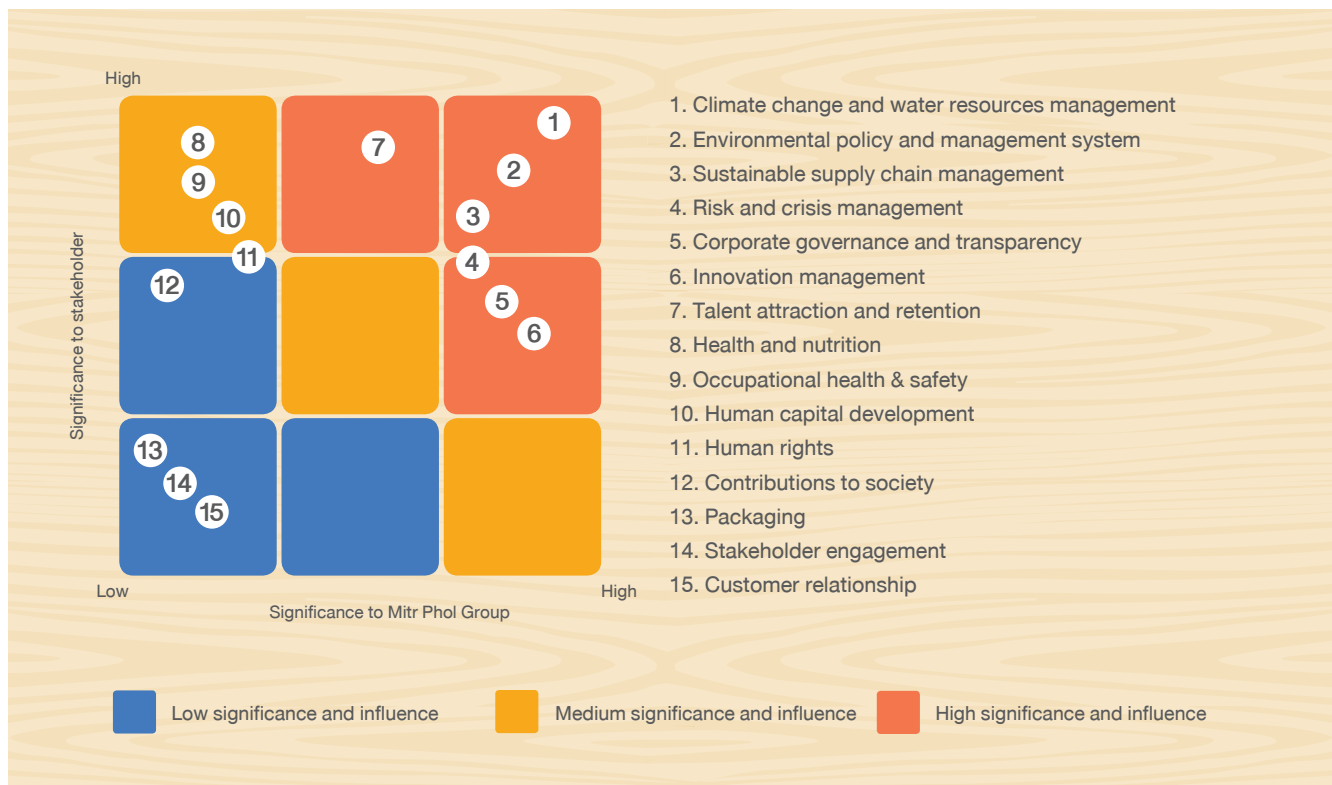
The working group identifies materiality in conjunction with related departments. The information included in this report

was identified based on the sustainability context relating to economic, social and environmental aspects. The identification process also takes into consideration stakeholders' concerns and expectations. In identifying materiality, the working group also took into account the economic, social and environmental impacts throughout the value chain, both externally and internally, as well as the relevancy of such topics to important issues in the global food and beverages industry.

### Step two: Prioritization

Tests are then conducted to prioritize the materiality of this report. Material aspects selected to be covered in this report are considered on two levels: influence on stakeholder assessments, and decisions and significance of the organization's economic, environmental and social impacts. Management from relevant departments take part in deliberating these issues together with the working group.

## Results of the materiality test <sup>(102-47)</sup>



### Step three: Scoping materiality

Mitr Phol Group developed a scope of 15 key topics to be covered in this report by working closely with relevant departments and stakeholder groups to determine topics that were significant to them.

# Scoping materiality

Topic	Material aspects	Scope of impact <sup>(102-46)</sup>																				
		Internally						Externally														
<b>Business</b>	Corporate governance and transparency	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Risk and crisis management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Stakeholder engagement	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Environment</b>	Environmental policy and management system	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Climate change and water resources management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Employees</b>	Packaging	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Talent attraction and retention	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Human capital development	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Human rights	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Occupational health and safety	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Suppliers</b>	Sustainable supply chain management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Health & nutrition	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Customers</b>	Customer relationship management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Contributions to society	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>Innovation</b>	Innovation management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Step four: verification

The working group verified the information in this report with the Corporate Sustainability division, then proposed it to the Risk Management Committee, and finally to the company board of directors.



### Information enquiry <sup>(102-53)</sup>

If you require more information or would like to make a suggestion, please contact:

Sustainability Sub-Department, Corporate Sustainability Division

Mitr Phol Sugar Co., Ltd.

2 Pleonchit Center, 3<sup>rd</sup> floor, Sukhumvit Rd., Klongtoey, Bangkok, 10110

Tel: +662 794 1651

## Mitr Phol Group's compliance with the United Nations Global Compact and support of the United Nations Sustainable Development Goals <sup>(102-11) (102-13)</sup>

Mitr Phol Group is committed to carrying out its business operations in accordance with the 10 principles of the United Nations Global Compact (UNGC) covering human rights, labor, the environment, and anti-corruption measures. Mitr Phol Group is also a founding member of the Global Compact Network Thailand, which aims to drive businesses in Thailand to be compliant with international principles.

UNGC scope and principles	Actions
<b>Scope:</b> Applying the 10 principles to business operations.	<ul style="list-style-type: none"> <li>• Mitr Phol Group's strategies</li> <li>• Mitr Phol Group's sustainability policy</li> <li>• Sustainable supply chain management</li> </ul>
<b>Principle 1:</b> Businesses should support and respect the protection of internationally proclaimed human rights. <b>Principle 2:</b> Businesses should make sure that they are not complicit in human rights abuses.	<ul style="list-style-type: none"> <li>• Human rights policy</li> <li>• Sustainable supply chain management</li> </ul>
<b>Principle 3:</b> Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining. <b>Principle 4:</b> The elimination of all forms of forced and compulsory labor. <b>Principle 5:</b> The effective abolition of child labor. <b>Principle 6:</b> The elimination of discrimination in respect to employment and occupation.	<ul style="list-style-type: none"> <li>• Personnel management policy</li> <li>• Employee care</li> <li>• Occupational health and safety</li> <li>• Opposing child labor</li> <li>• Opposing all forms of forced labor</li> <li>• No discrimination in respect to employment, using an efficient and fair recruitment system</li> </ul>
<b>Principle 7:</b> Businesses should support taking a precautionary approach to environmental challenges. <b>Principle 8:</b> Businesses should undertake initiatives to promote greater environmental responsibility. <b>Principle 9:</b> Businesses should encourage the development and diffusion of environmentally-friendly technologies.	<ul style="list-style-type: none"> <li>• Environmental management policy</li> <li>• Eco-friendly practices</li> <li>• Environmental profit &amp; loss accounting</li> </ul>
<b>Principle 10:</b> Businesses should work against corruption in all its forms, including extortion and bribery.	<ul style="list-style-type: none"> <li>• Good governance and anti-corruption policy</li> </ul>

Mitr Phol Group realizes the role the private sector can play in supporting and driving global sustainability agendas, as 193 member countries of the United Nations have agreed to the 17 Sustainable Development Goals and 169 targets.

Mitr Phol Group has incorporated these SDGs throughout its business operations and corporate practices. SDGs are noted throughout this report when they are relevant with Mitr Phol Group's sustainability performance.











## Friends of Environment



Sustainable use of Resources



Environmental Protection

# Friends of Environment

Mounting global concerns about climate change have resulted in increased interest and actions from governments, companies, and the general public to reduce environmental damage and bring about sustainability. Mitr Phol Group realizes the importance of playing its role in the protection of the environment and implements comprehensive and effective environmental management measures in order to ensure that all the group's business operations are sustainable. The group's efforts regarding environmental sustainability cover a wide range of aspects including sustainable sourcing, water and energy efficiency, using eco-friendly machinery, and implementing 3Rs measures. Mitr Phol Group also applies the "zero waste" initiative for waste management, adding value to byproducts to generate new businesses and enhance environmental sustainability for Thailand.

Mitr Phol Group implements occupational health & safety and environmental protection strategy and policy across the group's businesses. Internationally - accepted standards and best practices for environmental management are also applied across all factories, with the support of the Occupational Health & Safety and Environment department, to ensure measures and practices are complied with and business operations are able to continue smoothly. In 2017, the group set a target to reduce water usage by 10% compared with 2016. In addition, the group is committed to using 95% renewable energy across all business operations, promoting the use of machinery as part of the Mitr Phol ModernFarm project to reduce cane burning and resulting CO<sub>2</sub> emissions. The Mitr Phol ModernFarm project is a key initiative to improve environmental management.

The company's cane and sugar businesses also introduced the BONSUCRO sustainability standards, which are used widely in the global cane and sugar industry to improve environmental management. Other energy-saving and conservation efforts have also been made, including joining the Thailand Voluntary Emission Reduction Program (T-Ver). These various initiatives are a testament to Mitr Phol Group's commitment to be "Friends of Environment" by ensuring effective environmental management across the group's businesses to bring about sustainability to all stakeholder groups and to Thai society.

## Mitr Phol Group's security, safety, occupational health and environmental protection policy

Mitr Phol Group employees adopt the group's security, safety, occupational health and environmental protection policy while carrying out their daily duties to ensure maximum effectiveness and efficiency. Mitr Phol Group has outlined and

reviewed other relevant policy as follows:

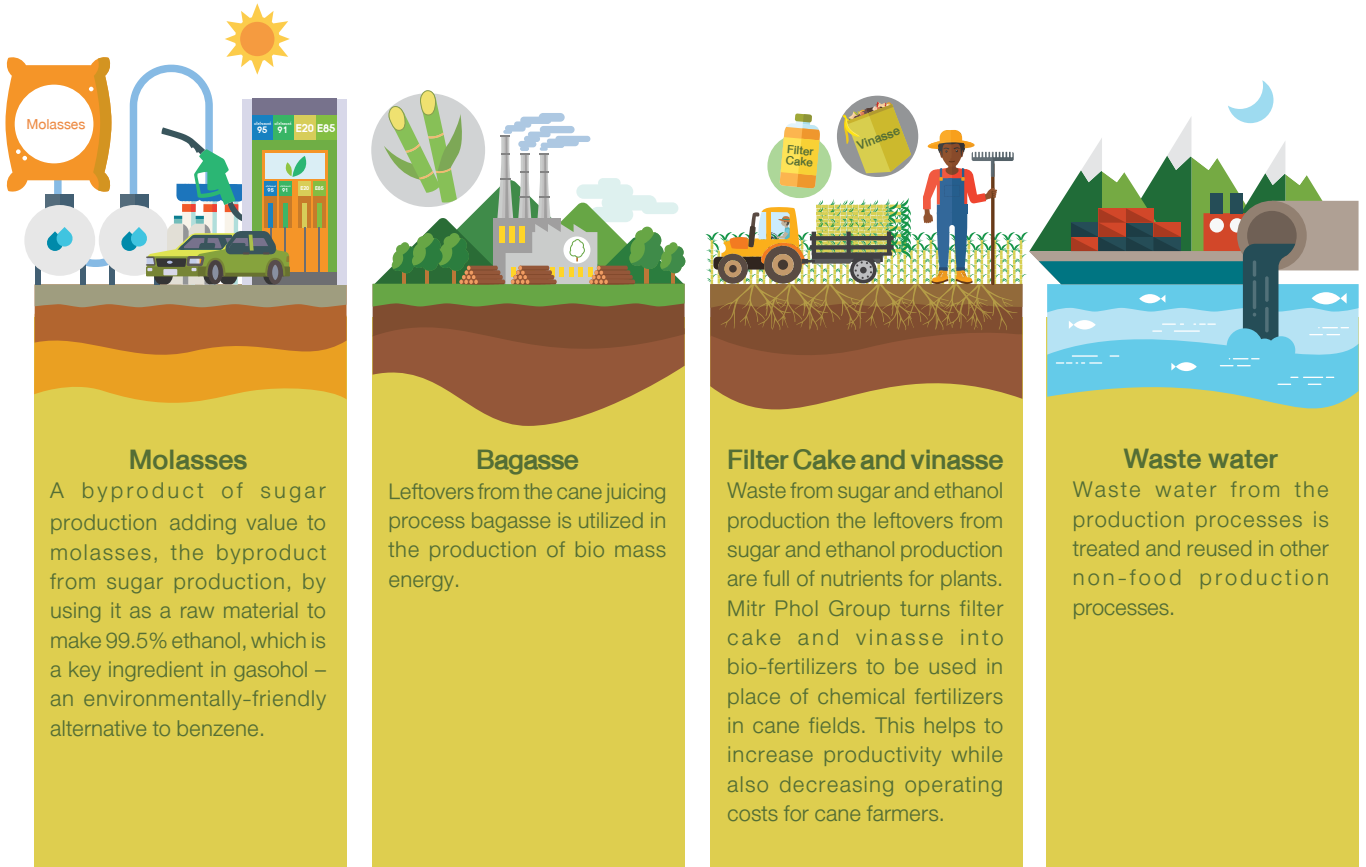
1. The company continuously improves its security, safety, occupational health and environmental protection management to ensure the policies remain efficient, are in compliance with ISO 14001 and OHSAS 18001, and abide by all relevant laws, rules and regulations to protect consumers and communities. All of these requirements are taken into consideration to create policies and standards that govern the company's business operations.
2. The company shall make continuous improvements in the following areas: the efficient use of natural resources, environmental protection, the reduction, control and prevention of work - related injuries and illnesses, social responsibility, and the promotion of security, safety and occupational health for employees and all stakeholders.
3. The company provides resources to allow for efficient security, safety, occupational health, and environmental protection management, including personnel, time, budgeting, and appropriate and adequate training. The resources also provide for instilling awareness about the importance of environmental protection and effective health and safety management among the general public.
4. The company has issued policies for supervisors of all levels to be responsible for the security, safety, occupational health, and environmental protection of employees under their care. Such policies shall be strictly adhered to by all employees, as they are responsible for protecting the environment, and promoting safety and occupational health practices for themselves and their colleagues.
5. The company's security, safety, occupational health and environmental protection policy and guidelines also apply to those who operate on the company's premises, including suppliers, contractors, customers, and visitors to the company and/or sugar mills.

In addition to these policies, the group has also established regulations about the management of waste and byproducts, covering all aspects including sorting, storing, transporting, disposing, monitoring, reusing, and reducing waste. Employees and other stakeholders involved such as waste disposal and transportation suppliers are required to abide by these rules at a minimum, along with other relevant environmental laws.

In 2017, Mitr Phol Group's key environmental sustainability initiatives included:

## Sustainable use of resources <sup>(102-11)</sup>

Mitr Phol's From Waste to Value is the system used by the group in its business operations. As part of this concept, waste from all production processes is turned into valuable raw materials to make other products, significantly reducing the amount of waste and surpluses, as well as adding value to the sugarcane. Mitr Phol's From Waste to Value model involves the use of the following byproducts:



Another key initiative is the implementation of environmentally sustainable sourcing policy acrosses Mitr Phol Group to help ensure that the group's operations are environmentally friendly, from upstream to downstream. Mitr Phol Group's sourcing practices applied across all businesses are as follows:

1. Employees in the procurement department must utilize resources to their full potential and in the most environmentally-friendly manner.
2. Choosing products and services that do not have an impact on the environment throughout their life cycle, by considering the sourcing of raw materials, production processes, transportation, usage, and disposal.
3. Promoting the use of products from renewable and environmentally – friendly resources such as products with green labels.
4. Selecting suppliers and service providers who have received environmental protection certifications.
5. Ensuring a fair and transparent procurement process for all organizations.

In 2017, Mitr Phol Group's efforts in sustainable resources management included:

## Raw materials management

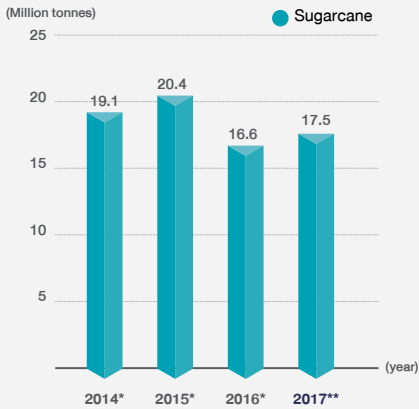
Mitr Phol Group's business has consistently evolved to cater to rising customer demands. This has resulted in an increase in the demand for raw materials – both renewable and non-renewable. Without an efficient management plan of raw materials in place, the production process may be compromised. Mitr Phol Group places great importance on natural resources management to ensure that they are used in the most efficient and effective way possible.

There are two main types of raw materials used for sugar production: renewable materials (sugarcane) and non-renewable materials (fuels and chemicals). In 2017, Mitr Phol Group's main raw materials consumption was as follows:

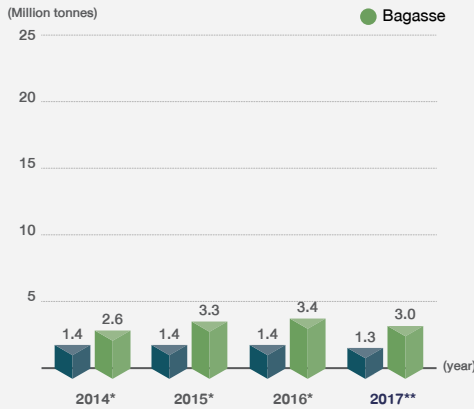
# Key raw materials used in Mitr Phol Group's production processes <sup>(301-1)</sup>

## Renewable materials

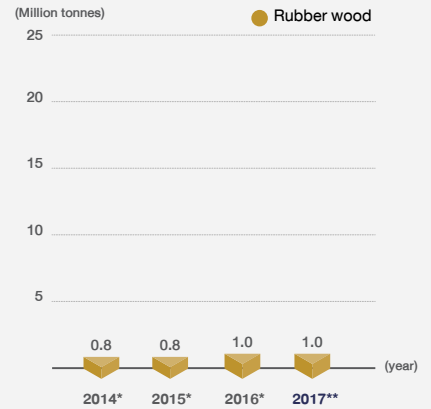
### Sugar Business



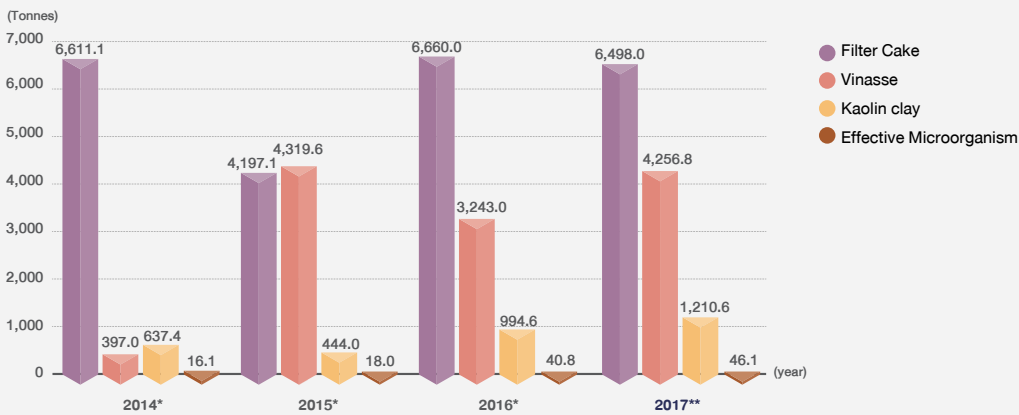
### Renewable Energy Business



### Wood Substitute Materials Business

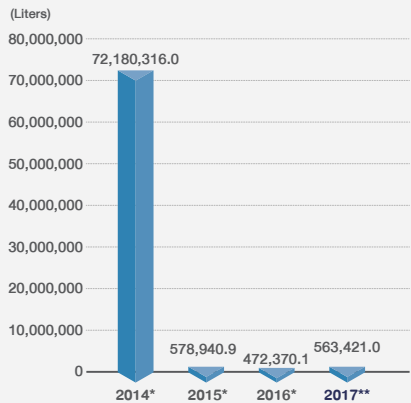


### Fertilizer Businesses

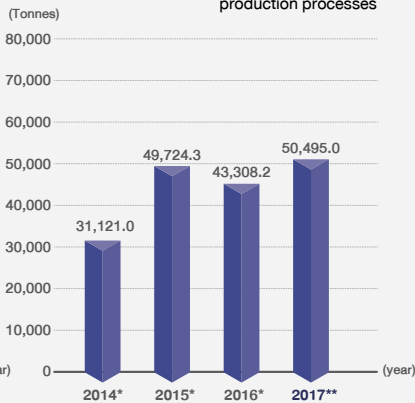


## Non-renewable materials

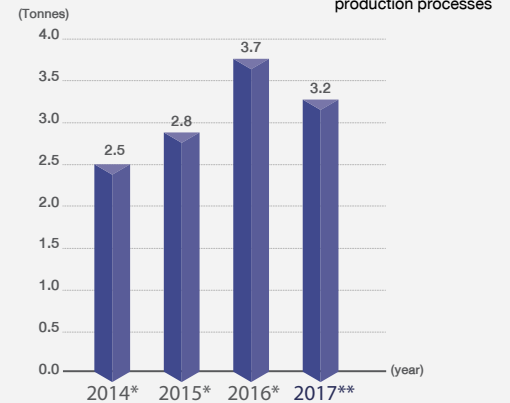
### Sugar Business



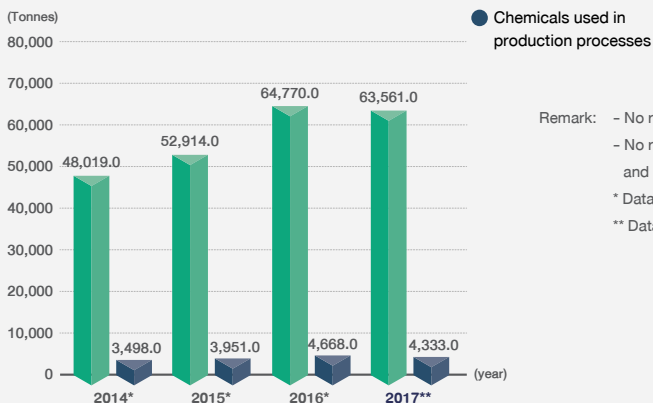
### Sugar Business



### Renewable Energy Business



### Wood Substitute Materials Business




Remark: - No record of revolving stock material quantity for logistics business and other businesses;  
 - No record of non-revolving stock material for fertilizer business, logistics business, and other businesses.  
 \* Data from year 2014-2016 was collected from January 1 to December 31 each year.  
 \*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Water resources management

Water is a crucial resource in farming and manufacturing. Climate change has had a significant impact on unpredictable and extreme weather including severe droughts. Mitr Phol Group's supply chain relies heavily on the availability of water resources. For example, the sugar production process requires water for juice extraction, clarifying, boiling and crystallization. Water is also required in electricity generation, steam generation, as well as the production of wood substitute materials. Most of the water used in Mitr Phol Group's production comes from surface water sources. The group works with local authorities responsible for managing water resources in regions in which Mitr Phol Group operates, such as the Sub-district Administrative Organization, Municipalities, and the Provincial Waterworks Authority. Regular tripartite committee meetings ensure that the use of water resources is compliant with the laws and will not lead to shortages for the surrounding communities. Mitr Phol Group also relies on two other key water sources in the production processes: water

from cane and treated waste water. Cane is made of 29 % water. The water from the sugar production process is used in other non-food production processes to lessen the amount of water required from other sources. Usage of water from cane is included under usage of water from surface sources. Waste water undergoes a treatment process and is reused in other non-food production processes, such as in offices or on sugarcane farms, in order to ensure maximum resource utilization.

Mitr Phol Group has implemented water usage policy focusing on reducing and reusing water to maximize utilization and minimize waste at offices and factories. The group's goal is to reduce water usage by 10% compared with 2016 and reuse 85% of waste water, with a heavy focus on areas with high tension over water resources. In 2017, water usage across Mitr Phol Group was as follows:

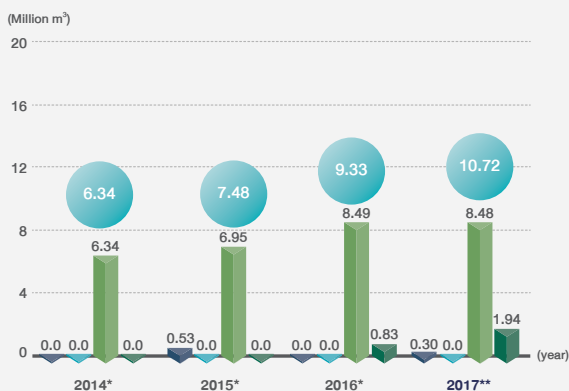
 Decrease by 10% compared with 2016

### Water usage by sources <sup>(303-1)</sup>

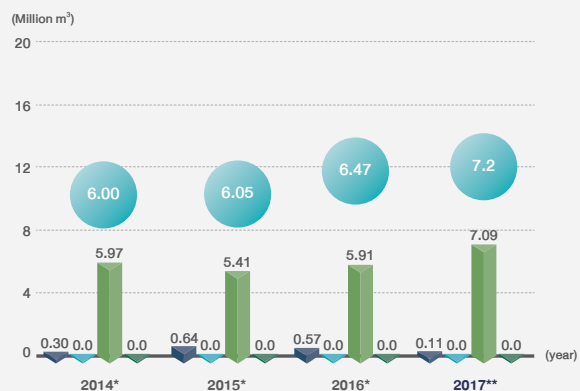
- Ground water
- Surface water
- Tap water
- Rain water

#### Businesses

##### Sugar Business



##### Renewable Energy Business

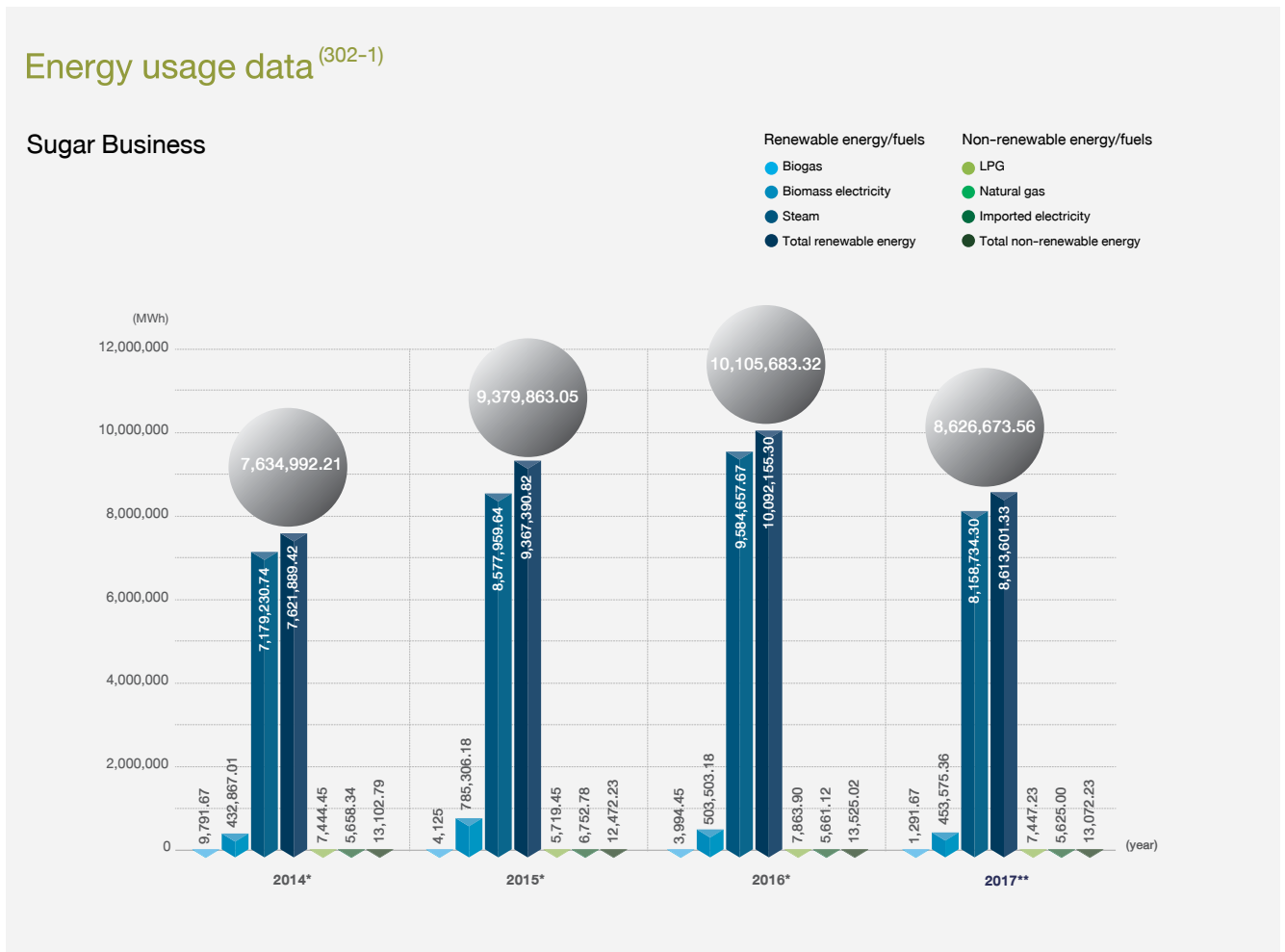




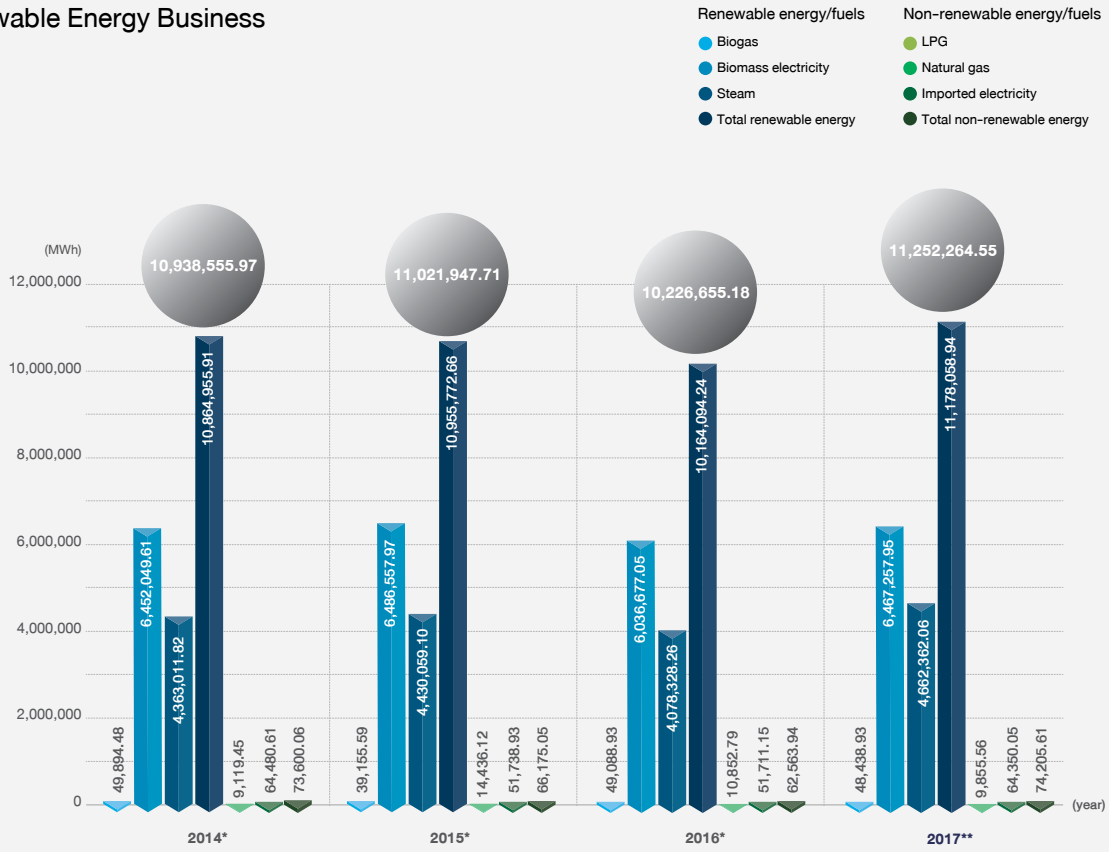
## Energy management

Mitr Phol Group fully realizes its responsibility to the country and the world to conserve energy, as Thailand is faced with threatened energy security and climate change. Because Mitr Phol Group's sugar facilities are categorized by the Energy Ministry as controlled factories, it is of the utmost importance that the group strictly adheres to laws and regulations governing energy usage, implementing energy conservation policies, to establishing an energy conservation committee and publishing energy reports.

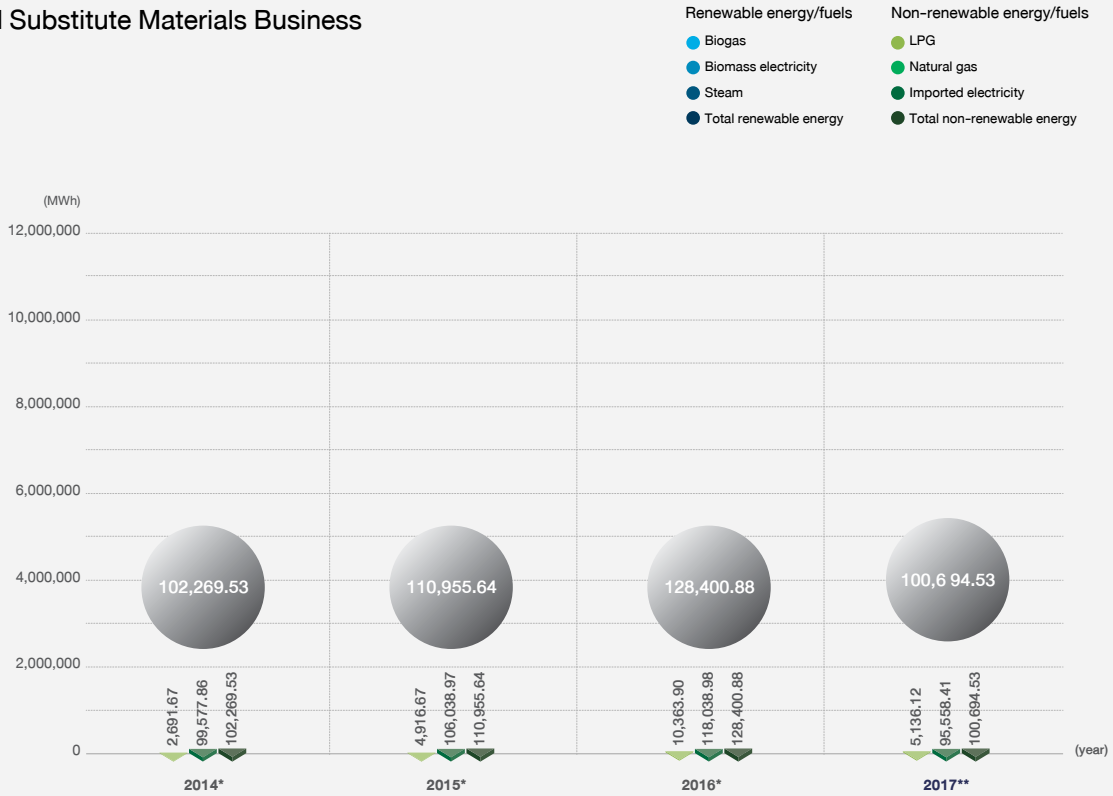
Mitr Phol Group focuses on improving energy efficiency in all areas of operation. The continued efforts have resulted in significant cost savings, thanks to the cooperation by employees of all levels across the company. Mitr Phol Group's energy consumption in 2017 was as follows.



## Renewable Energy Business

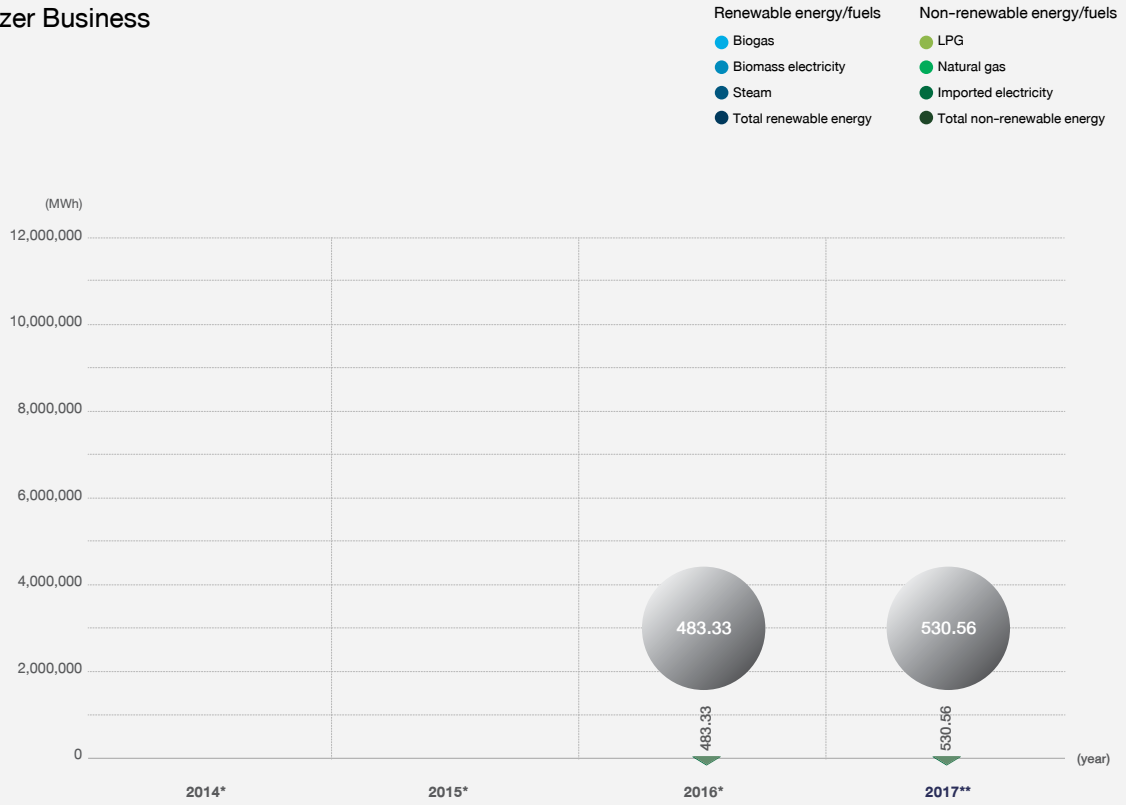


## Wood Substitute Materials Business

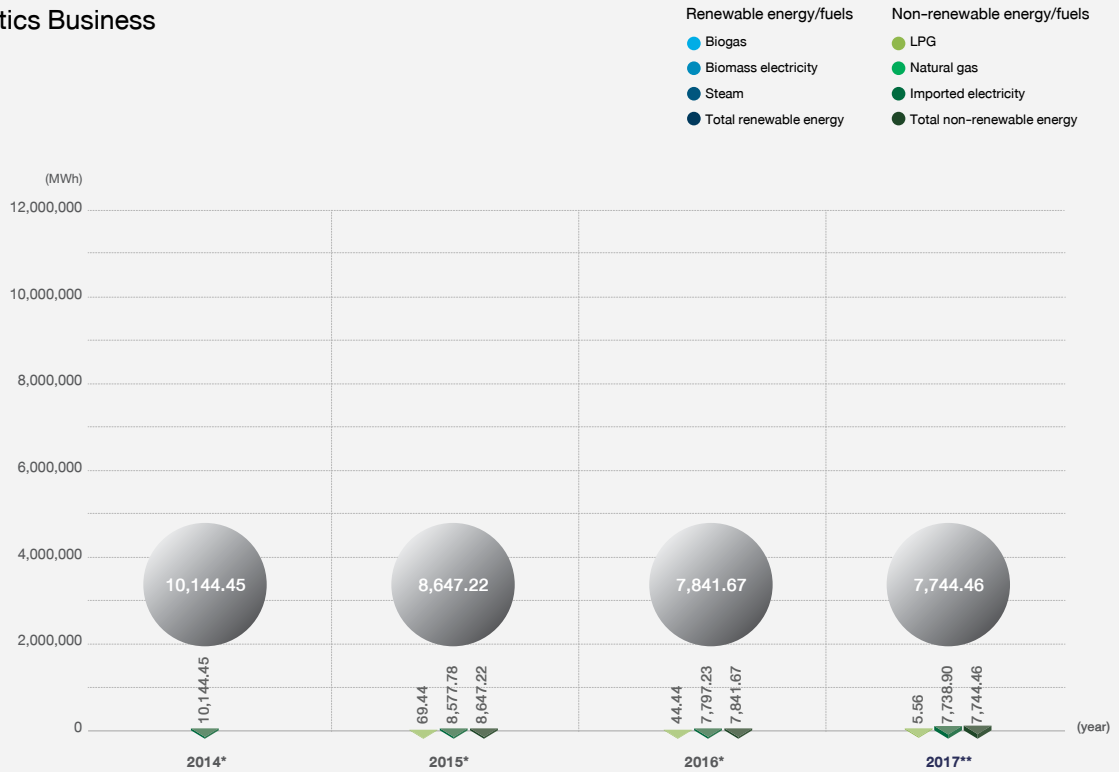




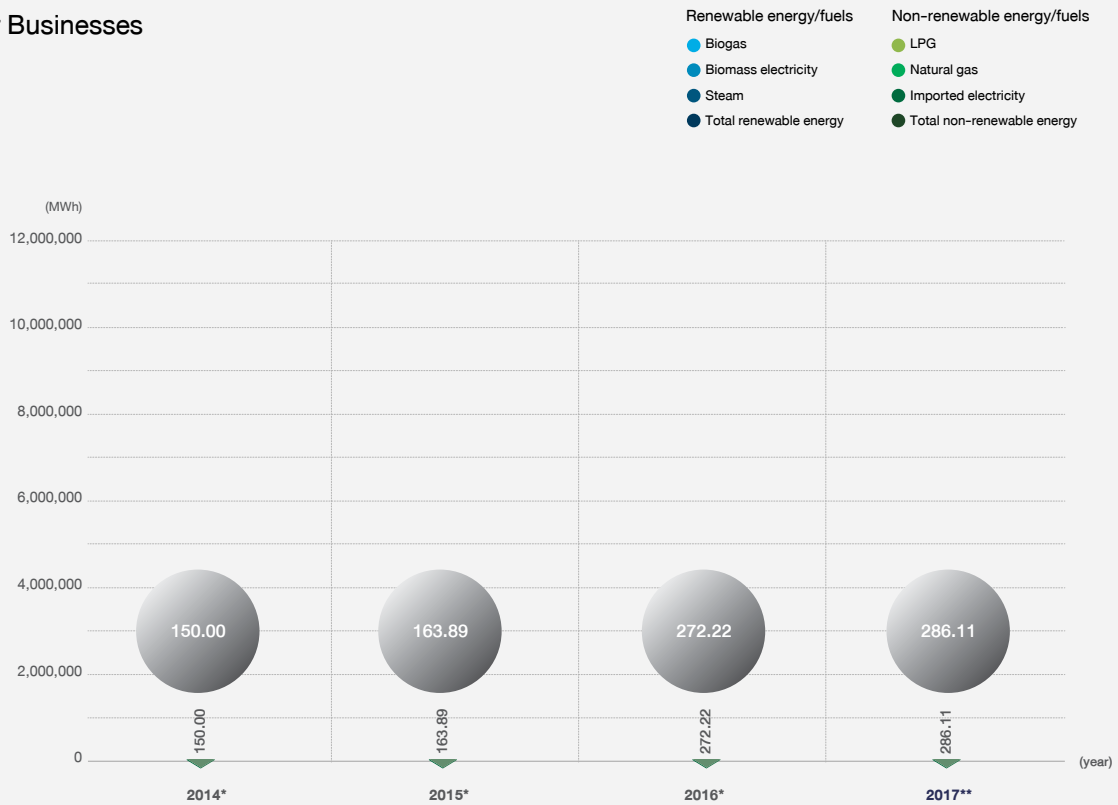
## Fertilizer Business



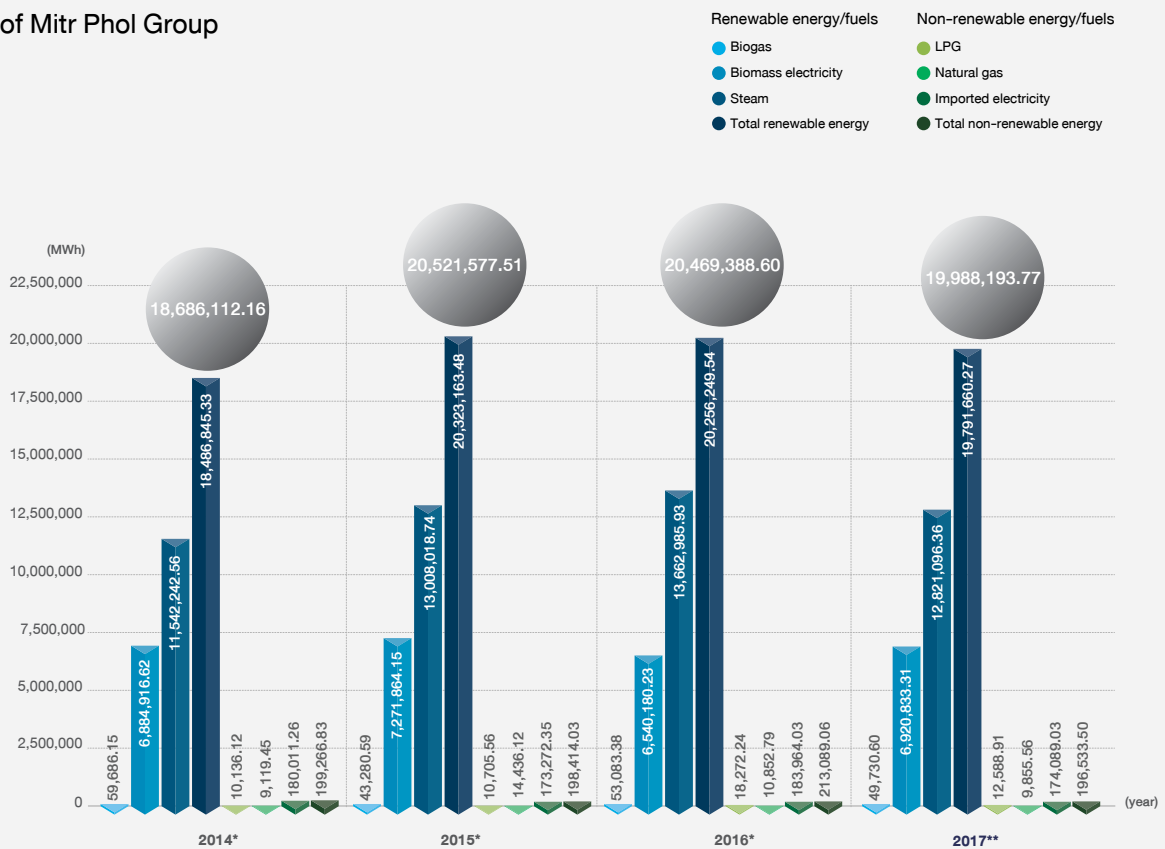
## Logistics Business



## Other Businesses



## Total of Mitr Phol Group



Remark: - No record of energy/renewable fuel usage data for the wood substitute material, fertilizer and logistics business during 2014–2017.

\* Data from year 2014–2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

In 2017, renewable energy made up 96.69 percent of the total energy consumption by Mitr Phol Group.

## Environmental protection

To ensure the most efficient environmental management and protection, Mitr Phol Group uses the 3Rs initiative (Recycle, Reuse, Reduce) in its business operations. Key performances are:

### 1. Air pollution management

Mitr Phol Group's production processes may cause dust pollution from chimneys, conveyor belts, bagasse piles, and wood chips. Mitr Phol Group's air pollution management controls dust pollution at the source, covering the following measures:

#### 1.1 Measures to reduce furnace chimney dust

- Wet scrubbers to remove dust and particles from burning
- Electrostatic precipitators

#### 1.2 Measures to reduce conveyor belt dust

- Leakage inspection
- Installing conveyor belt covers
- Using mobile belts

#### 1.3 Measures to reduce bagasse pile dust

- Training for employees to prevent bagasse pile dust
- Growing rows of pine trees to prevent dust dispersion

- Installing wind breaks to change wind directions and wind socks to detect wind directions
- Using Big Gun sprinklers to spray water and mist to control dust

#### 1.4 Measures to reduce dust from the production of wood substitute materials

- Using the dryer system to prevent dust and cyclones to remove dust particles from air
- Installing electrostatic precipitators to remove dust

#### 1.5 Measures to reduce dust from traffic and transportation of raw materials

- Water spraying of operation areas and road surfaces

Thanks to the above measures and initiatives, in 2017 Mitr Phol Group was successful in controlling dust pollution levels to below the legal requirements. The average dust levels ranged between 0.01–0.23 mg/m<sup>3</sup>, lower than the legal requirements of 0.33 mg/m<sup>3</sup>. Details of air quality in the areas surrounding the factories are shown in the chart below:

## Ambient air quality around Mitr Phol Group's factories <sup>(305-7)</sup>

Businesses	Air Quality - Ambient	Standard level	Year			
			2014*	2015*	2016*	2017**
Sugar Business	NO <sub>2</sub> (ppm)	0.17	0.0090	0.0126	0.0084	0.0111
	SO <sub>2</sub> (ppm)	0.12	0.0010	0.0081	0.0061	0.0081
	TSP (mg/m <sup>3</sup> )	0.33	0.0848	0.1050	0.0660	0.1270
	PM10 (mg/m <sup>3</sup> )	0.12	0.0398	0.0507	0.0437	0.0738
Renewable Energy Business	NO <sub>2</sub> (ppm)	0.17	0.1390	0.0655	0.0235	0.0030
	SO <sub>2</sub> (ppm)	0.12	0.1115	0.0645	0.0165	0.0085
	TSP (mg/m <sup>3</sup> )	0.33	0.1075	0.0715	0.0125	0.0215
	PM10 (mg/m <sup>3</sup> )	0.12	0.1315	0.0715	0.0113	0.0075
Wood Substitute Materials Business	NO <sub>2</sub> (ppm)	0.17	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	0.12	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	0.33	NR	NR	NR	NR
	PM10 (mg/m <sup>3</sup> )	0.12	NR	NR	NR	NR
Fertilizer Business	NO <sub>2</sub> (ppm)	0.17	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	0.12	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	0.33	NR	NR	NR	NR
	PM10 (mg/m <sup>3</sup> )	0.12	NR	NR	NR	NR

Businesses	Air Quality – Ambient	Standard level	Year			
			2014*	2015*	2016*	2017**
Logistics Business	NO <sub>2</sub> (ppm)	0.17	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	0.12	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	0.33	NR	NR	NR	NR
	PM10 (mg/m <sup>3</sup> )	0.12	NR	NR	NR	NR
Other Businesses	NO <sub>2</sub> (ppm)	0.17	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	0.12	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	0.33	NR	NR	NR	NR
	PM10 (mg/m <sup>3</sup> )	0.12	NR	NR	NR	NR
Average	NO <sub>2</sub> (ppm)	0.17	0.0740	0.0391	0.0160	0.0071
	SO <sub>2</sub> (ppm)	0.12	0.0563	0.0363	0.0113	0.0083
	TSP (mg/m <sup>3</sup> )	0.33	0.0962	0.0883	0.0393	0.0743
	PM10 (mg/m <sup>3</sup> )	0.12	0.0857	0.0611	0.0275	0.0407

Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Stack air quality from Mitr Phol Group's chimneys<sup>(305-7)</sup>

Businesses	Air Quality – Stack	Standard level	Year			
			2014*	2015*	2016*	2017**
Sugar Business	NO <sub>2</sub> (ppm)	200	88.27	74.70	112.00	83.40
	SO <sub>2</sub> (ppm)	60	7.54	1.35	5.90	12.00
	CO (ppm)	690	NA	397.67	327.80	306
	TSP (mg/m <sup>3</sup> )	120	20.31	34.80	18.80	6.40
Renewable Energy business	NO <sub>2</sub> (ppm)	200	59.17	66.56	62.37	66.84
	SO <sub>2</sub> (ppm)	60	0.91	1.91	2.20	1.89
	CO (ppm)	690	63.43	206.64	172.57	127.16
	TSP (mg/m <sup>3</sup> )	120	21.76	23.09	28.09	19.77
Wood Substitute materials business	NO <sub>2</sub> (ppm)	200	17.00	10.00	11.00	15.00
	SO <sub>2</sub> (ppm)	60	1.00	1.00	2.00	2.00
	CO (ppm)	690	273.00	233.00	264.00	132.00
	TSP (mg/m <sup>3</sup> )	120	34.00	84.00	130.00	160.00
Fertilizer Business	NO <sub>2</sub> (ppm)	200	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	60	NR	NR	NR	NR
	CO (ppm)	690	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	120	NR	NR	NR	NR
Logistics Business	NO <sub>2</sub> (ppm)	200	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	60	NR	NR	NR	NR
	CO (ppm)	690	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	120	NR	NR	NR	NR

Businesses	Air Quality – Stack	Standard level	Year			
			2014*	2015*	2016*	2017**
Other Businesses	NO <sub>2</sub> (ppm)	200	NR	NR	NR	NR
	SO <sub>2</sub> (ppm)	60	NR	NR	NR	NR
	CO (ppm)	690	NR	NR	NR	NR
	TSP (mg/m <sup>3</sup> )	120	NR	NR	NR	NR
Average	NO <sub>2</sub> (ppm)	200	66.07	50.42	61.79	55.08
	SO <sub>2</sub> (ppm)	60	4.27	1.42	3.37	5.30
	CO (ppm)	690	63.43	279.10	254.79	188.39
	TSP (mg/m <sup>3</sup> )	120	21.82	47.30	58.96	62.06

Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.

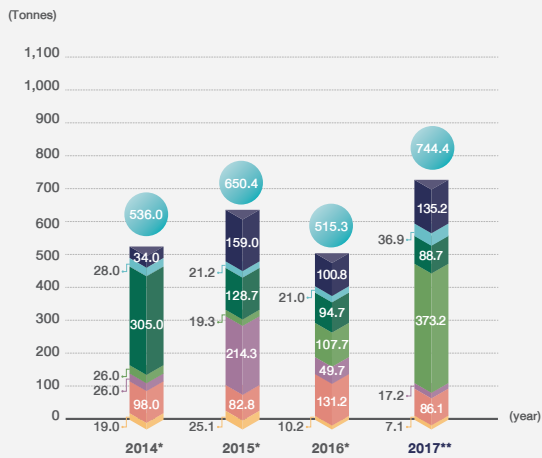
\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## 2. Waste management

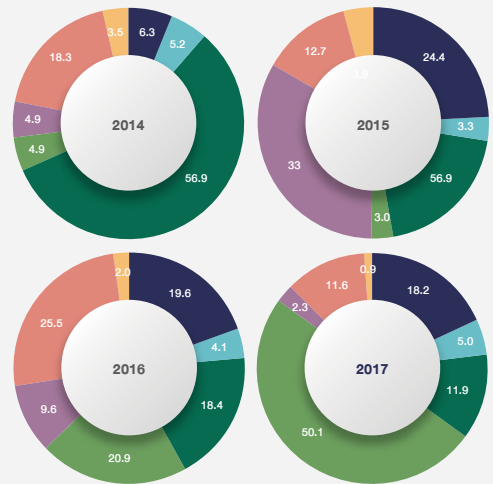
Mitr Phol Group operates its business using the philosophy "From Waste to Value". However, there are certain types of waste from production processes that cannot be utilized. For these types of waste, Mitr Phol Group applies the principle of "3Rs" – Recycle, Reuse and Reduce. The volume of all unutilized waste, divided into hazardous and non-hazardous, for 2017 is shown in the table:

### Surpluses and hazardous waste <sup>(306-2)</sup>

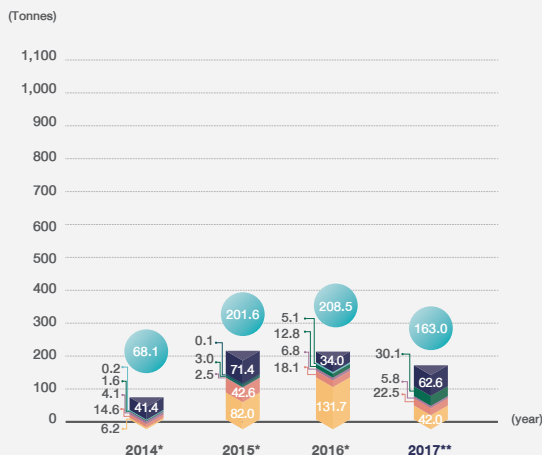
#### Sugar Business



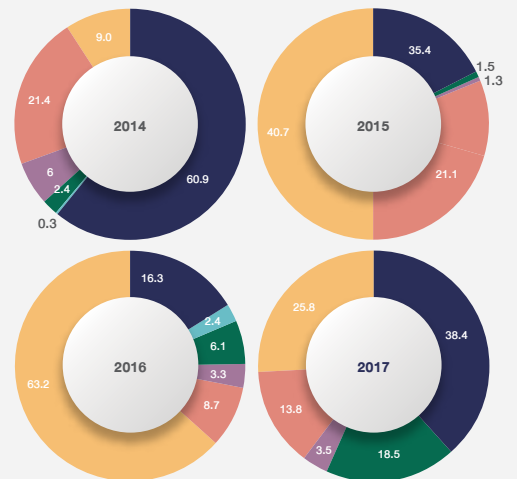
- Used lubricating oil
- Used coolants
- Used fuel oils
- Contaminated materials
- Used rasin
- Contaminated container
- Insulation
- Miscellaneous



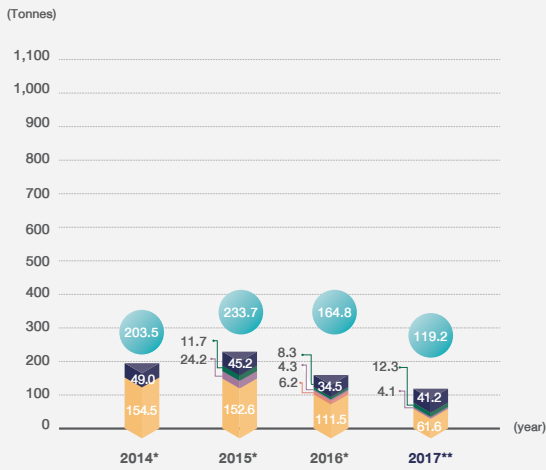
#### Renewable energy Business



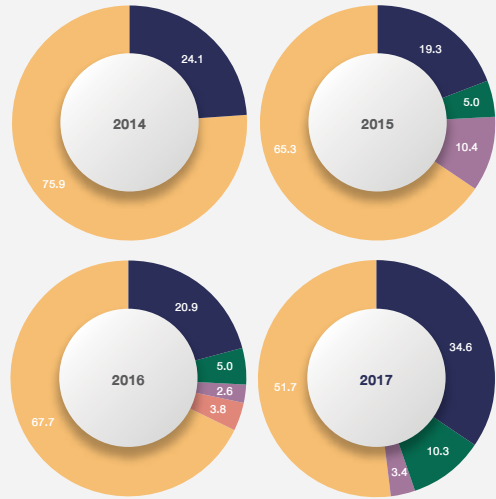
- Used lubricating oil
- Used coolants
- Used fuel oils
- Contaminated materials
- Used rasin
- Contaminated container
- Insulation
- Miscellaneous



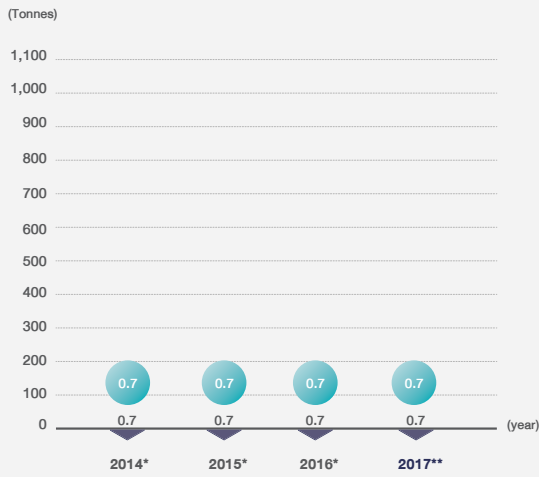
### Wood Substitute Materials Business



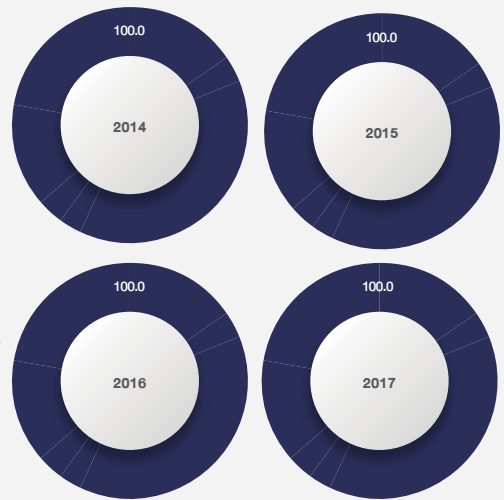
- Used lubricating oil
- Used coolants
- Used fuel oils
- Contaminated materials
- Contaminated container
- Insulation
- Miscellaneous



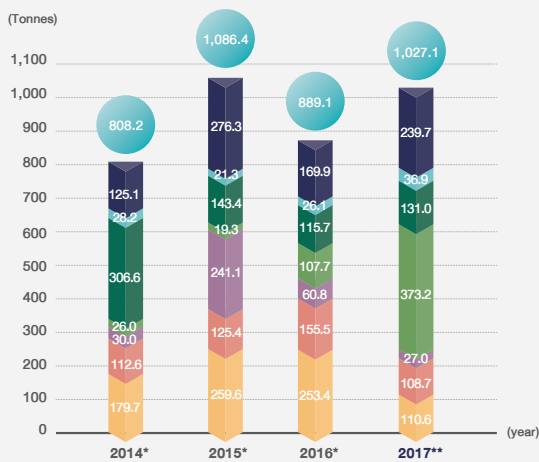
### Logistics Business



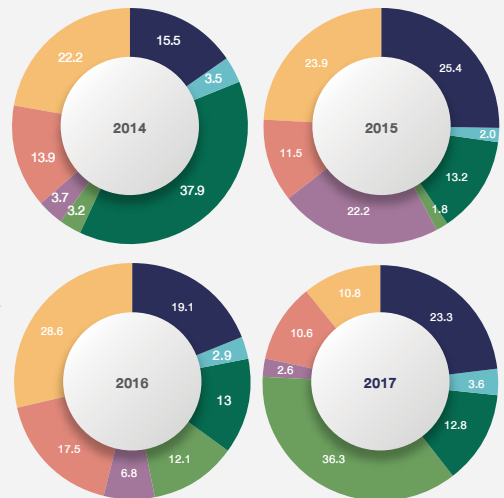
- Used lubricating oil
- Used coolants
- Used fuel oils
- Contaminated materials
- Used rasin
- Contaminated container
- Insulation
- Miscellaneous



### Total surpluses and hazardous waste of Mitr Phol Group



- Used lubricating oil
- Used coolants
- Used fuel oils
- Contaminated materials
- Used rasin
- Contaminated container
- Insulation
- Miscellaneous



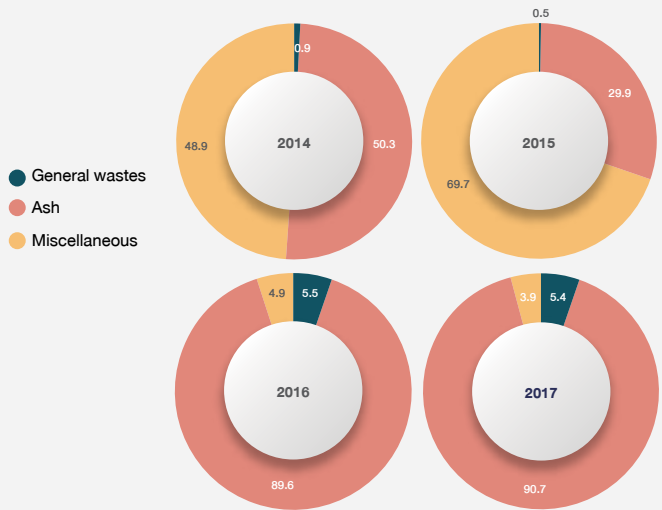
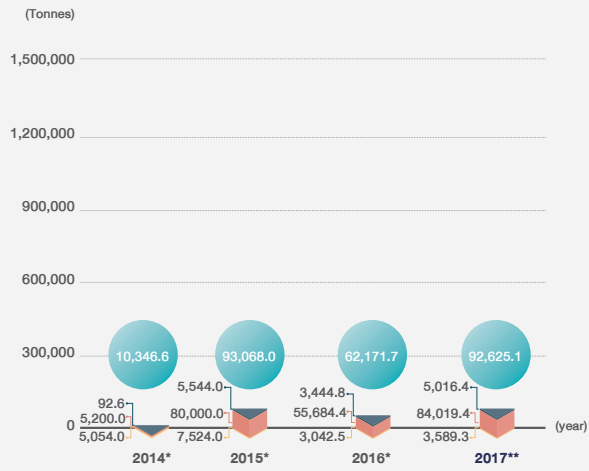
Remark: - No record of surpluses and hazardous waste for fertilizer business and other businesses during 2014-2017.

\* Data from year 2014-2016 was collected from January 1 to December 31 each year.

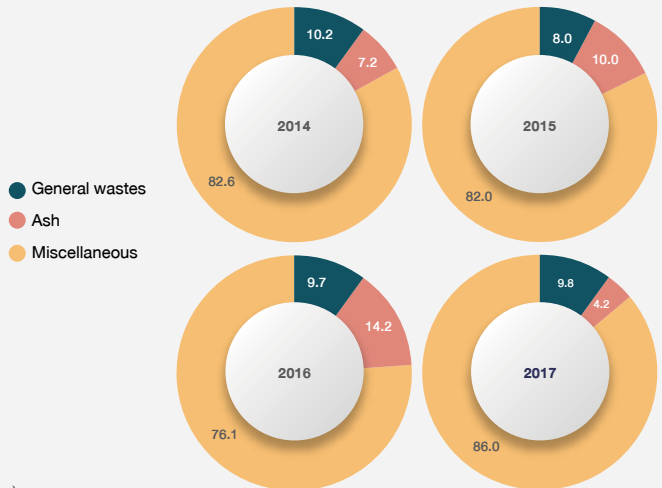
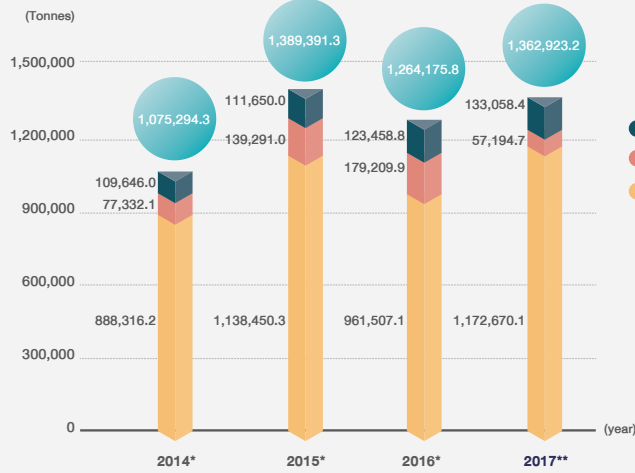
\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Surpluses and hazardous waste (306-2)

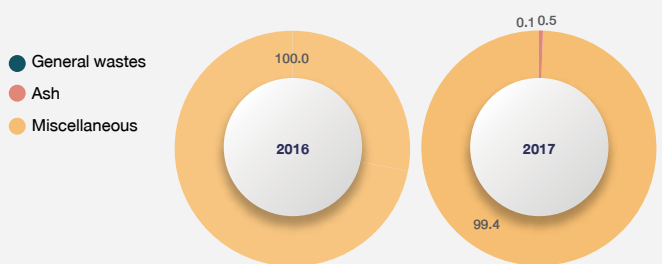
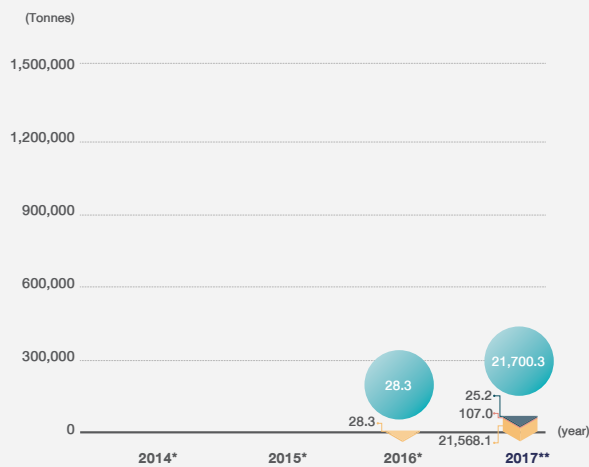
### Sugar Business



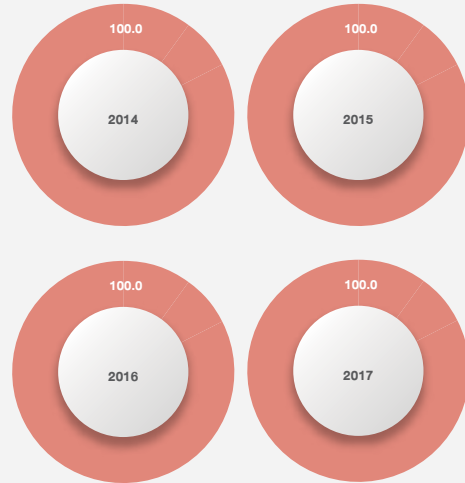
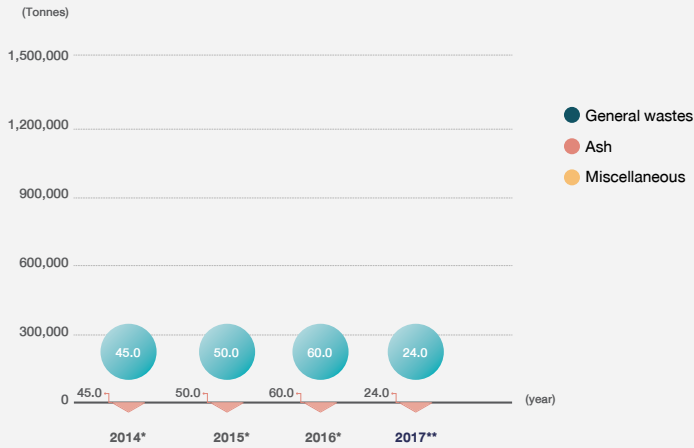
### Renewable energy Business



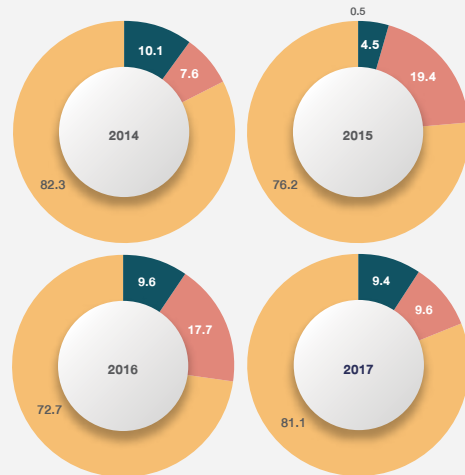
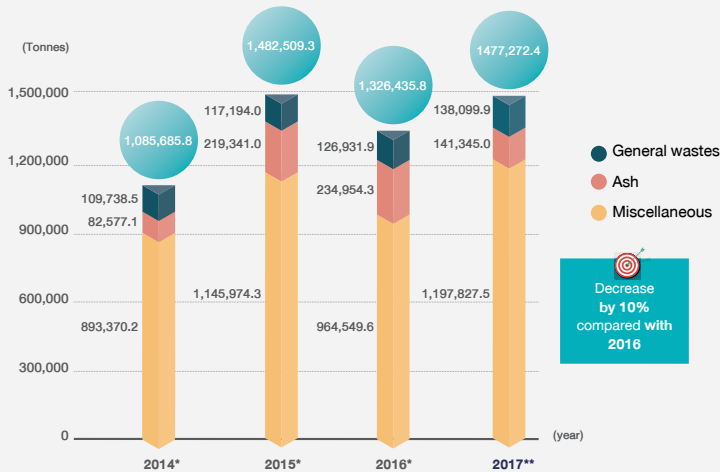
### Wood Substitute Materials Business



### Fertilizer Business



### Total surpluses and non-hazardous waste of Mitr Phol Group



Remark: - No record of surpluses materials and non-hazardous waste for logistics business and other businesses during 2014-2017.

\* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

Mitr Phol Group uses the services of transportation and waste disposal companies certified by the Department of Industrial Works for the proper disposal of leftover and hazardous waste. The department is notified every time waste is transported outside of the sugar mills.

Non-hazardous leftovers and waste are treated so that they can be reused, in line with the From Waste to Value model. Bagasse, molasses, filter cake, distillery slop, and ashes are 100% utilized for purposes including bio-energy production, bio-fertilizer production, reusing in cane fields, and reusing in production processes.



### 3. Waste water management <sup>(303-2)</sup>

Mitr Phol Group ensures that all waste water from sugar production is properly treated in compliance with applicable laws and regulations. Waste water from sugar production is treated using the following waste water treatment systems:

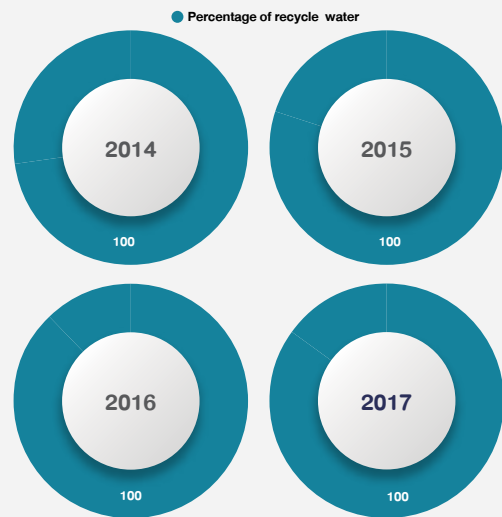
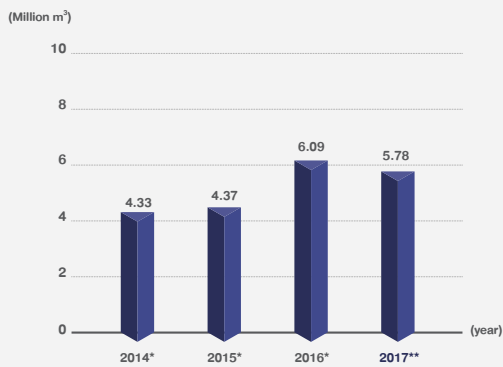
1. Biological treatment
2. UASB: Upflow Anaerobic Sludge Blanket
3. Constructed wetlands

All waste water from sugar production processes enters the aforementioned treatment systems. Treated water that meets the legal requirements for safety is then reused for other purposes throughout the sugar mills, such as for watering plants and cleaning.

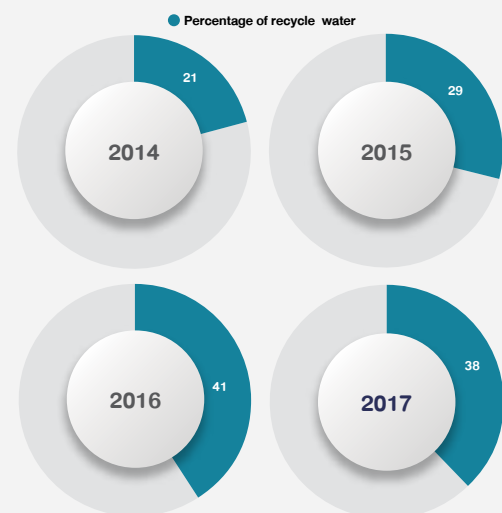
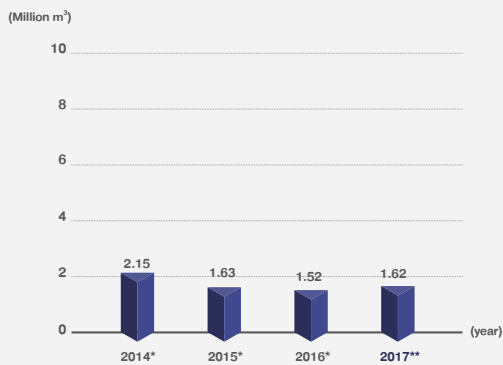
### Volume of waste water by business unit <sup>(303-3)(306-1)(306-2)</sup>

#### Volume of waste water (million m<sup>3</sup>)

##### Sugar Business

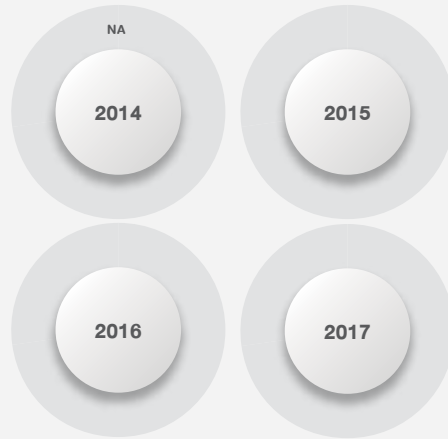
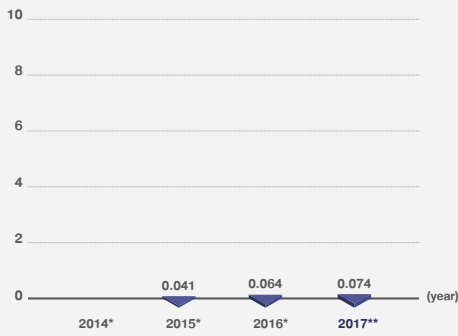


##### Renewable energy Business



### Wood Substitute Materials Business

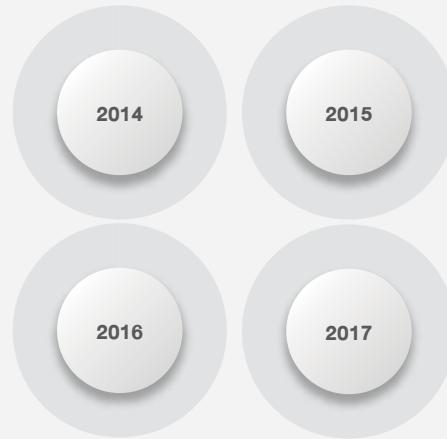
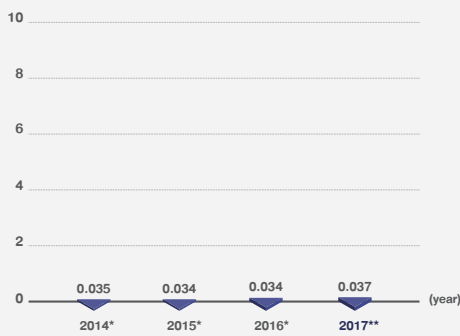
(Million m<sup>3</sup>)



Remark: No volume of recycle water in Wood Substitute Materials Business

### Logistics Business

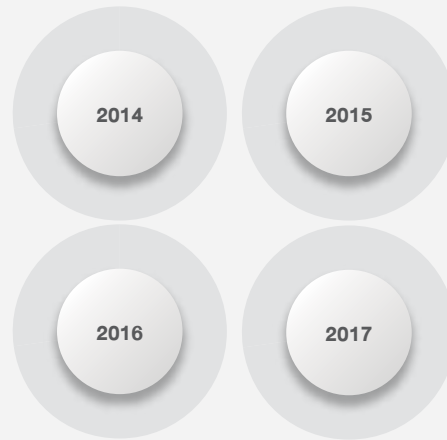
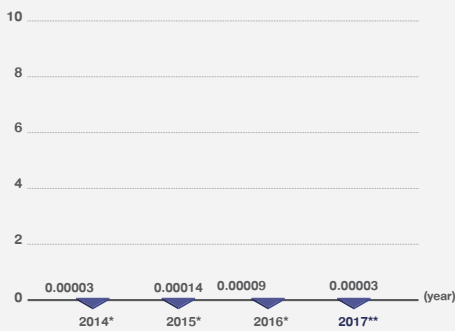
(Million m<sup>3</sup>)



Remark: No volume of recycle water in Logistics Business

### Other Businesses

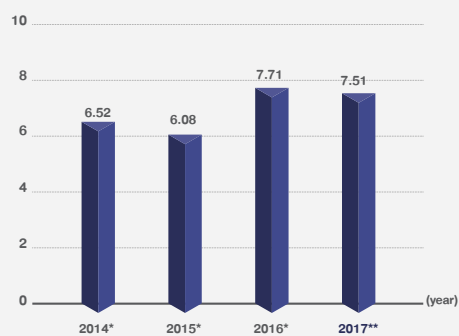
(Million m<sup>3</sup>)



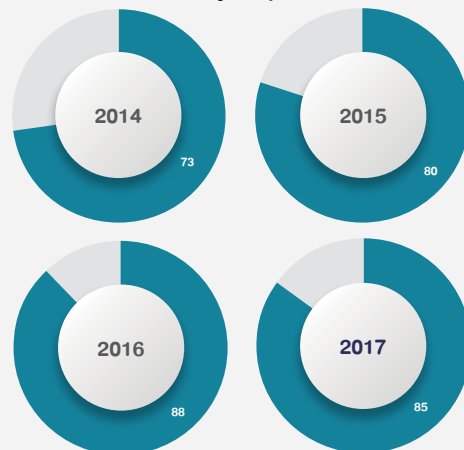
Remark: No volume of recycle water in Other Businesses

### Total volume of waste water of Mitr Phol Group

(Million m<sup>3</sup>)



● Percentage of recycle water



Remark: - Fertilizer business was established in 2016 and there is no waste water generated during 2016-2017.

\* Data from year 2014 - 2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Water quality post-treatment by business <sup>(306-1)</sup>

Businesses	Water quality	Standard level	Water quality statistics			
			2014*	2015*	2016*	2017**
Sugar Business	BOD (mg/l)	20	8.2	11.1	8.0	5.9
	COD (mg/l)	120	92.1	89.3	78.7	65.4
	SS(mg/l)	50	12.4	28.6	21.4	12.7
	PH	5.5-9.0	28.4	8.3	8.3	8.2
	Temperature (°C)	40	30.5	30.6	30.2	30.4
Renewable Energy Business	BOD (mg/l)	20	8.4	9.3	5.2	5.3
	COD (mg/l)	120	98.6	134.8	70.8	65.9
	SS(mg/l)	50	238.9	314.4	255.2	13.8
	PH	5.5-9.0	8.0	8.1	7.8	7.8
	Temperature (°C)	40	29.6	30.5	29.8	30
Wood Substitute Materials Business	BOD (mg/l)	20	231.0	9.0	13.0	17.0
	COD (mg/l)	120	90.0	95.0	95.0	90.0
	SS(mg/l)	50	67.0	11.0	22.0	25.0
	PH	5.5-9.0	7.8	6.8	6.5	6.9
	Temperature (°C)	40	31.0	32.0	31.0	32.0
Fertilizer Business	BOD (mg/l)	20	NR	NR	NR	NR
	COD (mg/l)	120	NR	NR	NR	NR
	SS(mg/l)	50	NR	NR	NR	NR
	PH	5.5-9.0	NR	NR	NR	NR
	Temperature (°C)	40	NR	NR	NR	NR
Logistics Business	BOD (mg/l)	20	1.5	3.5	5.0	13.0
	COD (mg/l)	120	NR	NR	NR	NR
	SS(mg/l)	50	17.8	6.9	9.1	10.0
	PH	5.5-9.0	7.8	8.1	8.8	8.9
	Temperature (°C)	40	NR	NR	NR	NR
Other Businesses	BOD (mg/l)	20	NR	NR	NR	NR
	COD (mg/l)	120	NR	NR	NR	NR
	SS(mg/l)	50	NR	NR	NR	NR
	PH	5.5-9.0	NR	NR	NR	NR
	Temperature (°C)	40	NR	NR	NR	NR
Average Water quality post-treatment of Mitr Phol Group	BOD (mg/l)	20	82.5	9.8	8.7	9.4
	COD (mg/l)	120	93.6	106.4	81.5	73.8
	SS(mg/l)	50	106.1	118.0	99.5	17.2
	PH	5.5-9.0	14.7	7.7	7.5	7.6
	Temperature (°C)	40	30.4	31.0	30.3	30.8

Remark: \* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

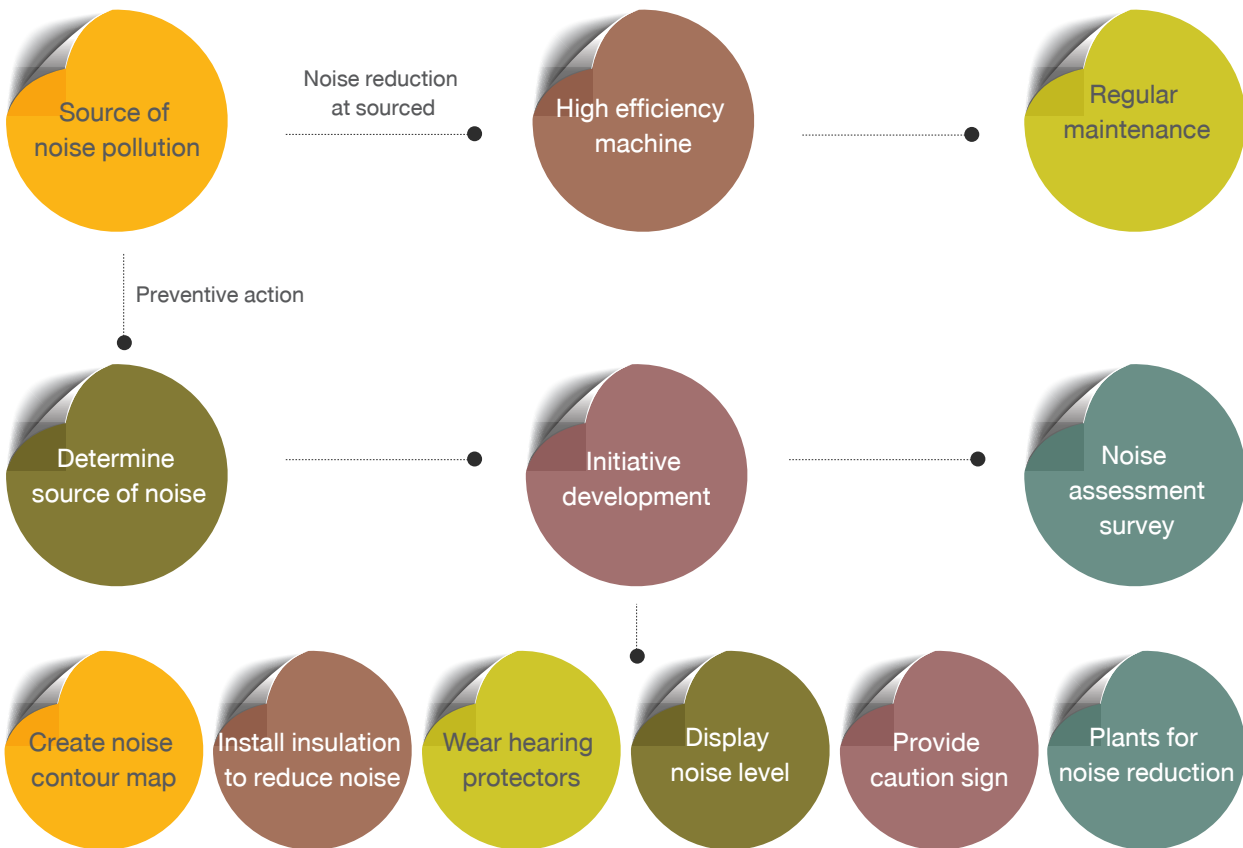
#### 4. Noise pollution management

Noise pollution is an important problem in the industrial sector. If not properly controlled and prevented, noise pollution – especially from production processes – can have a significant impact on the health and safety of sugar mill employees and the surrounding communities.

Mitr Phol Group strives to minimize the impact of noise pollution and uses a systematic approach in managing noise pollution at the source and throughout the production line. After machinery maintenance, production line flushing is performed by using high-pressure steam. The following measures have been implemented to minimize noise pollution throughout the production line.

- **Preventative measures at the source:** using efficient machinery and ensuring proper maintenance and care of all machinery and equipment.
- **Preventative measures on the production line:** using factory safety lines, soundproofing, installing noise-reduction equipment, displaying noise level and control zoning signage, planting trees to absorb noise, and conducting regular checks in problem areas to ensure noise levels do not exceed standards. The checks are performed during operation on the premise as well as in surrounding communities on an annual and bi-annual basis.

#### Overall machinery noise pollution management



To ensure optimal efficiency of noise pollution management, Mitr Phol Group participates in the Hearing Conservation Program. This program promotes safety for all employees, but particularly those who work in areas where noise exceeds 85 dB(A), which is the standard level required by the Department of Labor Protection and Welfare.

## 5. Cane transportation and traffic management

Traffic congestion caused by transporting sugarcane from fields to the sugar mills is a challenge in our industry. Cane harvesting season runs from November to April, during which time farmers must transport their sugarcane to the mills to be juiced as soon as possible. Failure to do so in a timely manner can result in continually decreasing sweetness, which can in turn have an effect on cane prices.

Cane transportation and traffic management cover several aspects including ensuring trucks do not exceed load limits, minimizing cane falling off trucks and littering the streets, lowering dust pollution from trucks, and controlling traffic congestion around sugar mills.

Mitr Phol Group has implemented the following measures and policies to lessen the impact of cane transportation:

1. Designating responsible persons and communication channels to provide assistance.
2. Providing contracts for trucks with clearly-defined terms and conditions. Failure to adhere to these terms and conditions may result in withholding security deposits and terminating agreements.
3. Putting up signage and setting up a call center to facilitate the cleaning up of public roads where sugarcane has fallen. Sub-stations have also been established for cane farmers with smaller volumes in order to reduce transportation.
4. Promoting the correct methods of transporting sugarcane. Controlling the height of the load on trucks to ensure the tops do not exceed 4.2 meters from the ground. Promote using straps to tie down the sugarcane and hold the loads in place.

## 6. Promoting fresh cane cutting

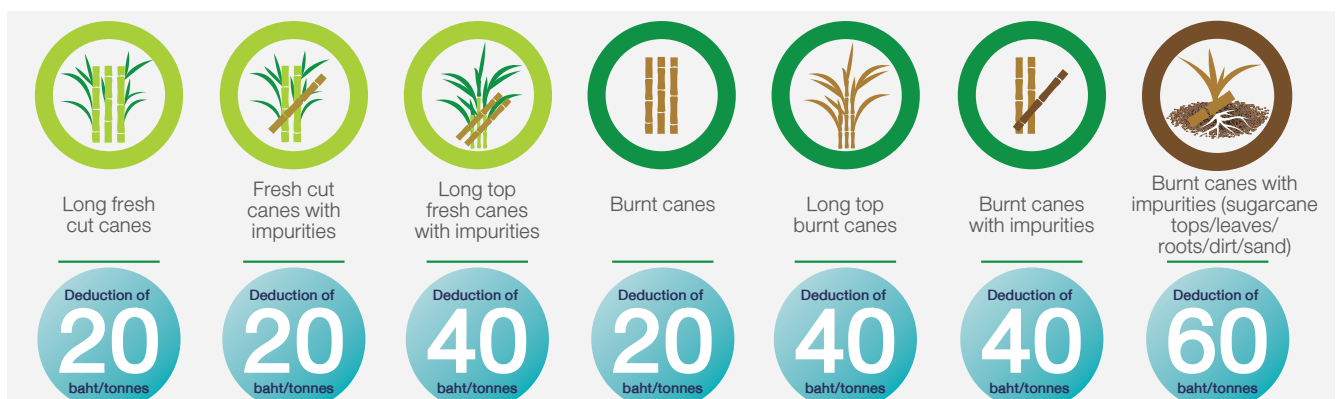
Cane farmers are faced with labor shortages, which result in a delay in getting cane to sugar mills. To resolve the problem, some farmers resort to cane burning to bypass the process of removing leaves, thereby make the process of cutting cane faster, cheaper and more convenient. However, cane burning has an immense impact on the environment, from air pollution in around farms and the emissions of greenhouse gases into the atmosphere, worsening climate change. Aside from environment impact, cane burning also affects sugar yield.

Mitr Phol Group actively encourages cane farmers to reduce burning and promotes fresh cut cane as a way for them to increase their income. The group has worked with the government sector on several measures:

- Knowledge transfer about cane farming
- Providing financial incentives for freshcane
- Purchase price deductions for burnt cane
- Promoting the use of machine harvesters
- Setting cane field as firebreaks
- Providing fire engines to local communities

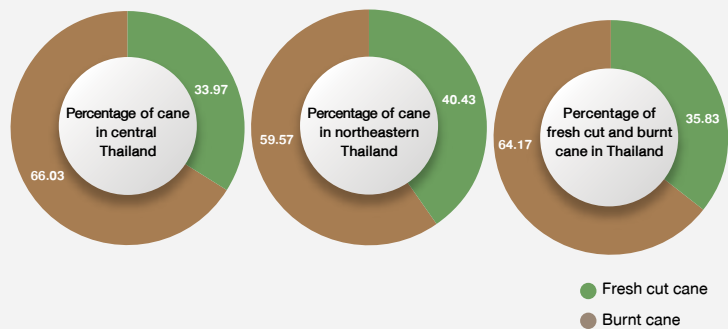
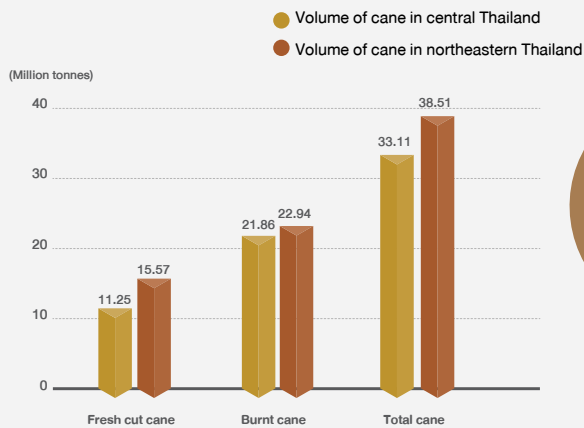
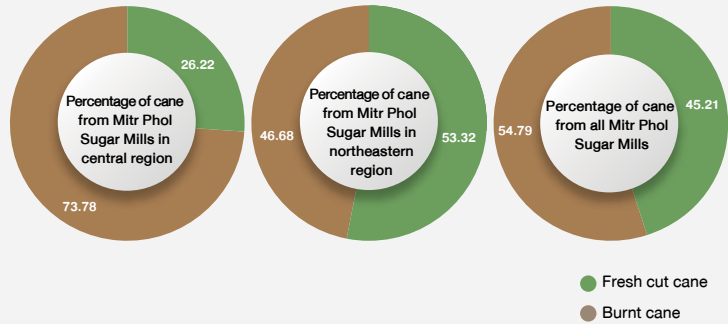
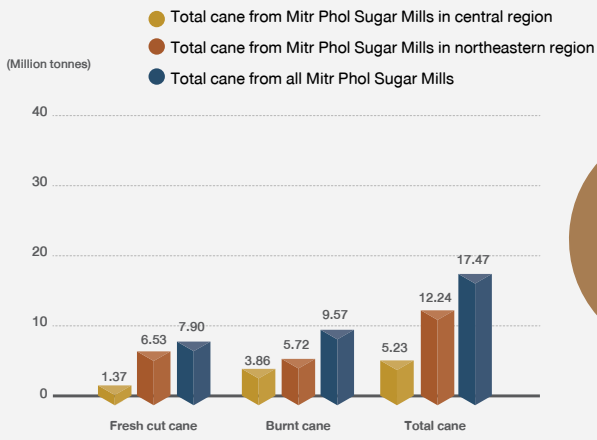
The above measures have proven effective in reducing cane burning, thereby helping to preserve natural ecosystems while also leading to a decrease in operational costs from fertilizers and pesticides. Mitr Phol Group also provides funding in research and development efforts to ensure optimum farming efficiency, from soil preparation and cane planting, to the improvement of cane species and harvesting. The goal is to yield high-quality, clean, and safe raw materials for sugar production.

In addition, Mitr Phol Group uses a pricing strategy to discourage farmers from burning cane. Prices for each cane type are as follows:



The group's efforts to promote fresh cane cutting in 2017 had a significant impact, as fresh-cut cane made up 45.21% of total cane volumes, higher than the national average of 35.83%.

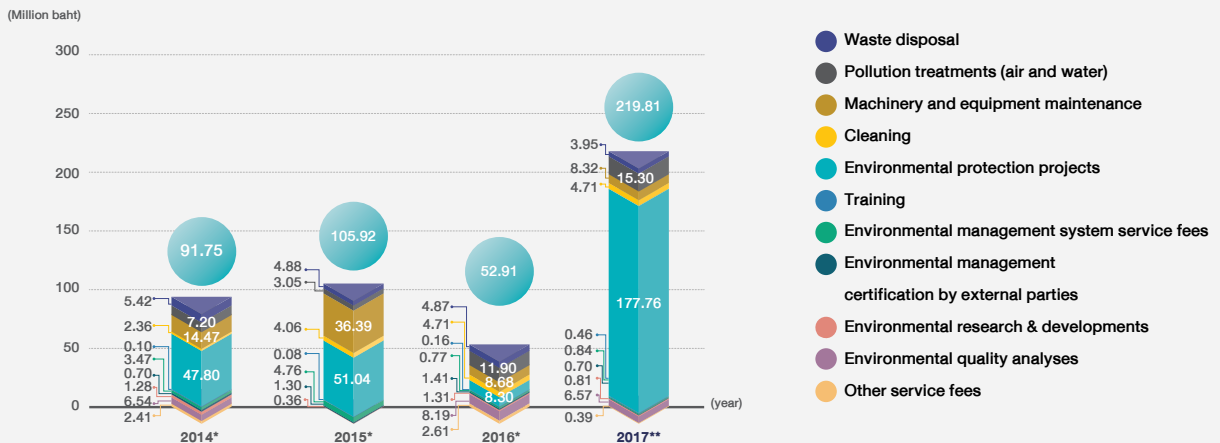
## Volume of cane for juicing



In 2017, Mitr Phol Group spent a total of 256.70 Million baht on machinery improvements and maintenance, employee training, and environmental management programs to reduce environmental impacts in all aspects. Details are in the below table:

## Expenses for environmental

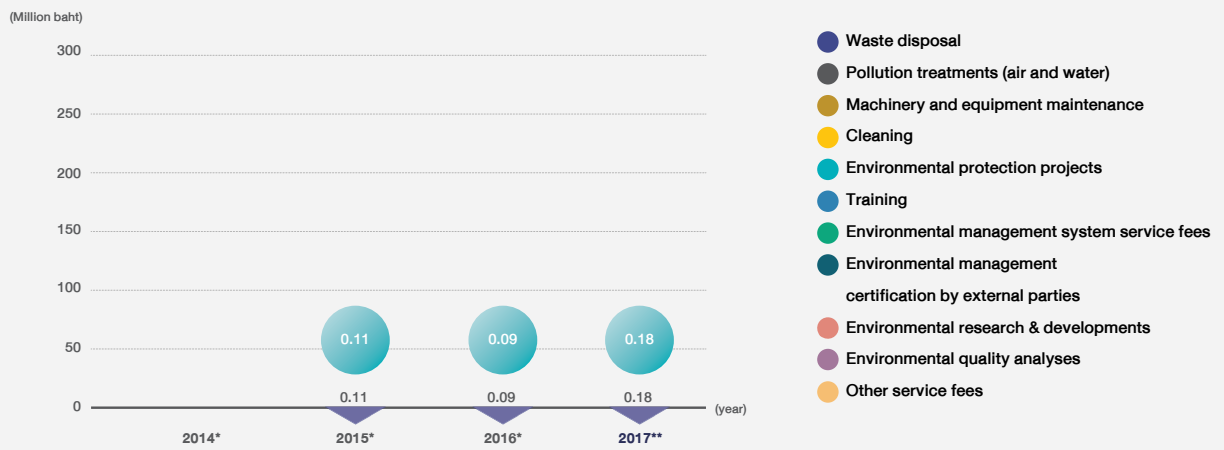
### Sugar Business



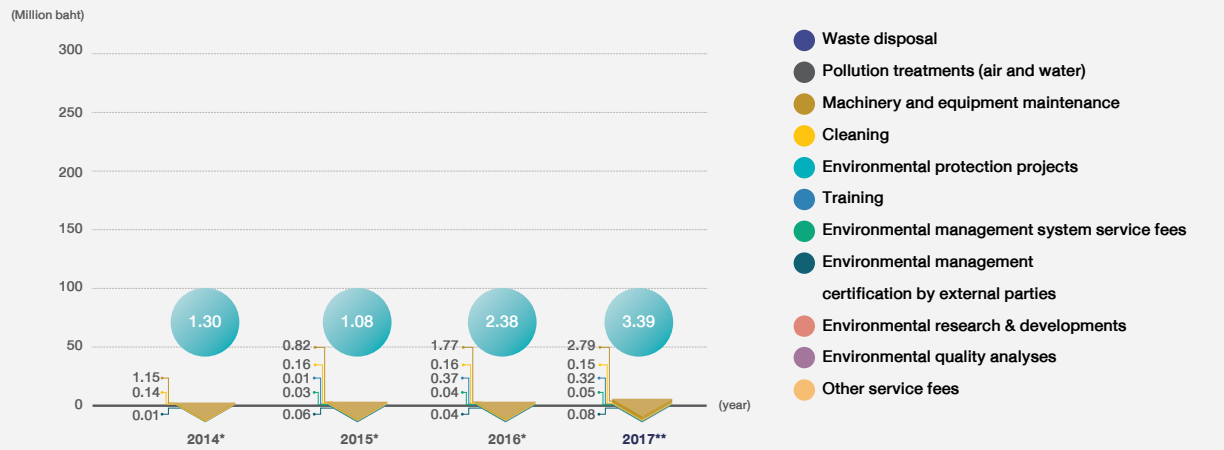
### Renewable energy Business



### Wood Substitute Materials Business



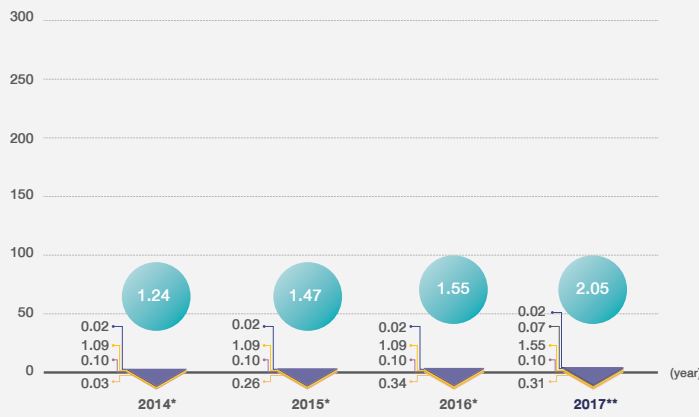
### Fertilizer Business





### Logistics Business

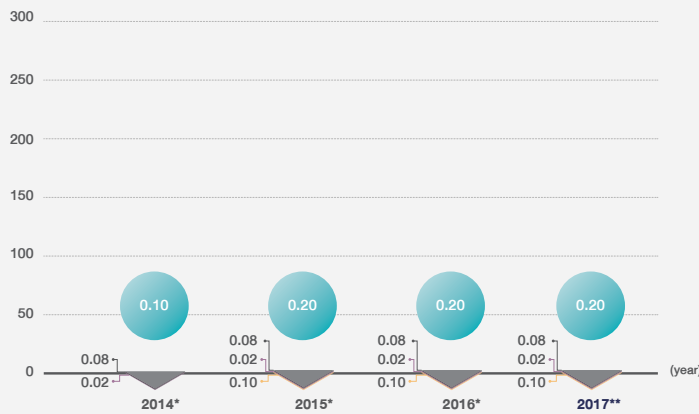
(Million baht)



- Waste disposal
- Pollution treatments (air and water)
- Machinery and equipment maintenance
- Cleaning
- Environmental protection projects
- Training
- Environmental management system service fees
- Environmental management certification by external parties
- Environmental research & developments
- Environmental quality analyses
- Other service fees

### Other Businesses

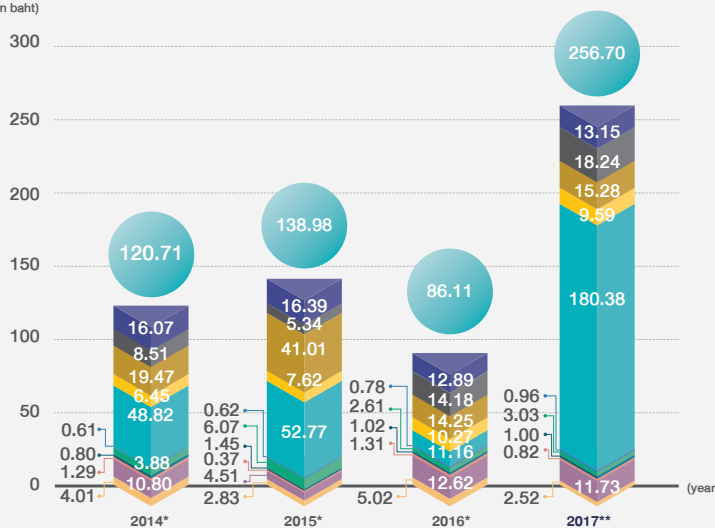
(Million baht)



- Waste disposal
- Pollution treatments (air and water)
- Machinery and equipment maintenance
- Cleaning
- Environmental protection projects
- Training
- Environmental management system service fees
- Environmental management certification by external parties
- Environmental research & developments
- Environmental quality analyses
- Other service fees

### Total expenses of Mitr Phol Group

(Million baht)



- Waste disposal
- Pollution treatments (air and water)
- Machinery and equipment maintenance
- Cleaning
- Environmental protection projects
- Training
- Environmental management system service fees
- Environmental management certification by external parties
- Environmental research & developments
- Environmental quality analyses
- Other service fees

Remark: \* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

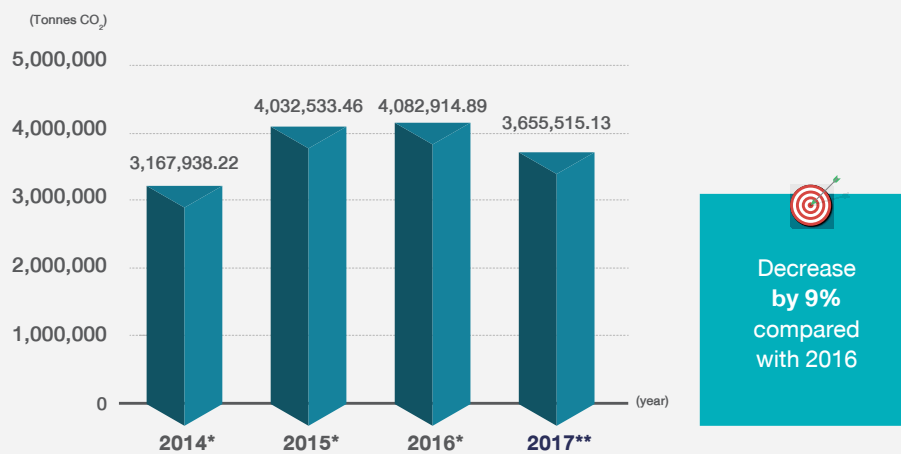
## 7. Greenhouse gas emissions reductions and climate change management <sup>(305-1)(305-5)</sup>

We continue to see worsening impacts of climate change through extreme weather patterns occurring more frequently, and the ensuing direct and indirect effects caused to life, economies, and society. Most activities contribute to climate change due to excessive emissions of greenhouse gases resulted in higher earth surface temperature, as we commonly known as "Global Warming".

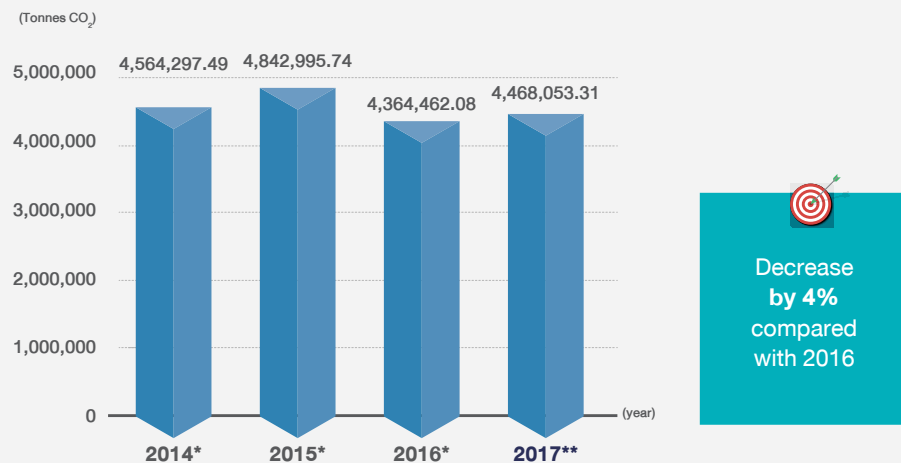
Mitr Phol Group realizes the severity of these impacts and is committed to reducing greenhouse gas emissions. We adopted and utilized biomass as a main energy resource for all production processes in every business units. By doing so, in 2017 greenhouse gas emission has been reduced 1,937,102 tonnes of CO<sub>2</sub>. Furthermore, we have been incorporating an effective climate change management strategy into the group's Security, Safety, Occupational Health and Environmental (SSHE) management policy. This is to ensure that all of Mitr Phol Group's business operations contribute to reducing impacts of climate change in a meaningful way.

In 2017, we have the performance of Mitr Phol Group in greenhouse gas emission as below;

### Direct greenhouse gas (GHG) emissions (scope 1) Greenhouse gas emission



### Indirect greenhouse gas (GHG) emissions (scope 2) Greenhouse gas emission



Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

And the group's performances in greenhouse gas emissions reduction attempts were as follows:

1. Reducing direct Greenhouse Gas (GHG) emissions (Scope 1)<sup>(305-5)</sup> by 9% compared to 2016

Mitr Phol Group is committed to improving energy efficiency, reducing the usage of thermal power, and lowering direct GHG emissions (Scope 1). In 2017, the group was able to reduce direct GHG emissions by 401,470 tonnes of CO<sub>2</sub>/year. Examples of measure implemented in 2017 for reducing direct GHG emissions were:

- **Measure 1: Controlling bagasse humidity in steam production for biomass electricity generation**

Bagasse quality is deteriorated towards the end of the year due to rain, humidity, and sunlight. Resulting, a larger volume of bagasse is required in order to produce the same amount of steam. Therefore, we have established bagasse humidity specification. Humidity levels are analyzed every 4 hours and shall be less than 50% in order to reduce energy losses. Furthermore, the warehouse facility has also been expanded to be able to store 40,000 tonnes of bagasse to protecting bagasse from rain and humidity. This measure helped to reduce direct GHG emissions by 132,500 tonnes of CO<sub>2</sub>/year.

- **Measure 2: controlling the heating value of wood chips before feed to the boilers**

We have established the heating value specification of wood chips before feed to the boilers. It shall be not less than 8,710 kJ/kg. Therefore, the following measures were adopted to achieve this specification:

- The wood chip piles shall be dried by sunlight until wood chip thickness is approximately 10 centimeters;
- Every 3 hours, the top layer of the pile is turned upside down for even drying;
- Wood chips should be sunlight dried for at least 2 days

This measure has helped to reduce direct GHG emissions by 3,767 tonnes of CO<sub>2</sub>/year.

2. Reducing indirect GHG emissions (Scope 2)<sup>(305-5)</sup> by 8.2% compared to 2016.

Mitr Phol Group implements measures to reduce electricity usage in the production processes. In 2017, the group was able to reduce indirect GHG emissions (scope 2) by 160,000 tonnes of CO<sub>2</sub>/year.

Examples of measures implemented in 2017 for reducing indirect GHG emissions were:

- **Measure 1: Installation of Automatic Power Factor Correction (APFC) units** to help improve power supply network and conserve energy due to wide variety of electric loads or power electronics loads resulting in fluctuations of power demands (Power Factor<sup>1</sup>) and hence energy losses. APFCs have be set to stabilize power factors at 0.85, leading to energy conservation equivalent to a reduction of GHG emissions 60 tonnes of CO<sub>2</sub>/year.

- **Measure 2: Replacing 400w fluorescent light bulbs with 100w LED bulbs.** By doing so, 130.5 tonnes of CO<sub>2</sub> emission equivalent have been reduced.



Furthermore, Mitr Phol Group also encourages and supports the efficient energy utilization and energy conservation to employees and other stakeholders. The group's has been adopted the ISO 50001:2011, Energy Management Systems as a guidance for continuous optimizing energy utilization and reducing GHG emissions that impact the environment. Besides, the energy conservation efforts also help to reduce energy expenditures.

Mitr Phol Group's Bio-Power business stand as a proof for our attempts for energy conservation endeavor by receiving ISO 50001:2011, Energy Management System compliance certificate since 2014.

<sup>1</sup> Power Factor is the ratio between the kW and kVA drawn by an electrical load where the kW is actual load power and the kVA is the apparent load power.

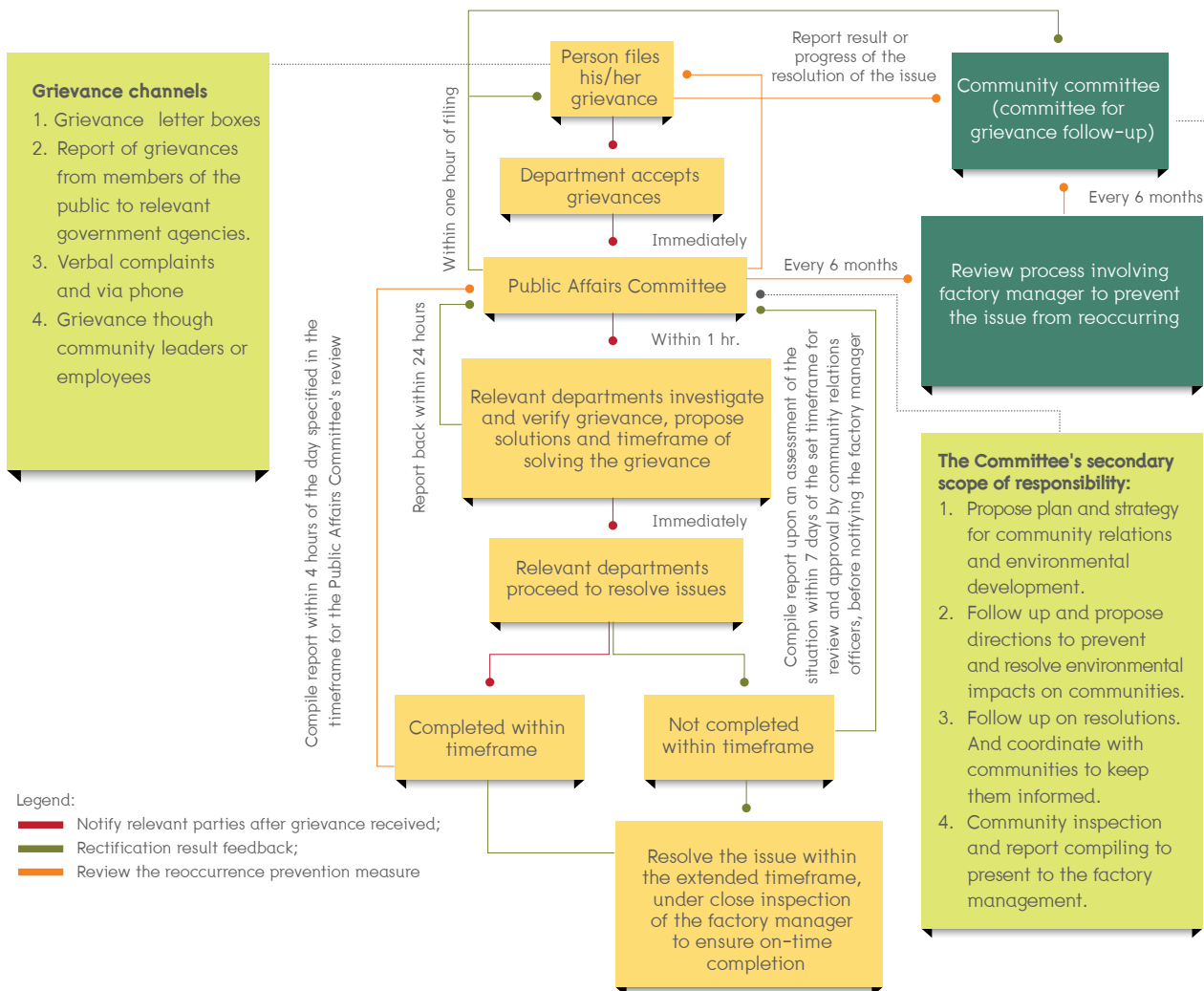
## 8. Lodging complaints process and channels

Mitr Phol Group provides channels through which stakeholders can make suggestions or lodge complaints about environmental impacts. Channels are available by region and factory.

Businesses	Company/factory	Telephone number	Address
Sugar Business	Mitr Phol Sugar Co., Ltd. (Head Office)	02-794-1000	2, 3 <sup>rd</sup> floor, Ploenchit Center, Sukhumvit Road, Klongtoey, Bangkok 10110
	Mitr Phol Sugar Mill	035-418-103-7	109, Moo 10, Nhong Ma Ka Mong Sub-district, Dan Chang District, Suphan Buri 72180
	Singburi Sugar Mill	036-591-475-6	24/2, Moo 2, Mai Dad Sub-district, Bang Rajan District, Sing Buri 16130
	Mitr Phu Khiao Sugar Mill	044-881-111-4	99, Moo 10, Koke Sa-ad Sub-district, Phu Khiao District, Chaiyaphum 36110
	Mitr Phu Wiang Sugar Mill	043-294-202-4	365, Moo 1, Maliwan Road, Nhong Ruea Sub-district, Nhong Ruea District, Khon Kaen 40210
	Mitr Kalasin Sugar Mill	043-134-101-4	99, Moo 1, Bua Khao-Pone Thong Road, Som Sa-ad Sub-district, Kuchinarai District, Kalasin 46110
	Mitr Phu Luang Sugar Mill	042-810-921-3	199, Moo 1, Maliwan Road, Khoke Kamin Sub district, Wang Sapung District, Loei 42130
Renewable Energy Business	Dan Chang bio-power plant	035-418-217	109, Moo 10, Cholapratam Saykraseaw-Samchuk Rd., Nongmakamong Sub-district, Dan Chang District, Suphan Buri 72180
	Mitr Phol bio-power plant (Singburi)	036-591-475-6	24/2, Moo 2, Mai Dat Sub-district, Bang Rajan District, Sing Buri 16130
	Phu Khiao bio-power plant	044-881-261-2	99, Moo 10, Khoke Sa-ad Sub-district, Phu Khiao District, Chaiyaphum 36110
	Phu Wiang bio-power plant	043-294-202-4	365, Moo 1, Maliwan Road, Nhong Ruea Sub-district, Nhong Ruea District, Khon Kaen 40210
	Kalasin bio-power plant and Kuchinarai bio-power plant	043-134-101-4	99, Moo 1, Bua Khao-Pone Thong Road, Som Sa-ad Sub-district, Kuchinarai District, Kalasin 46110
	Mitr Phol bio-power plant (Phu Luang)	042-810-921-3	199, Moo 1, Maliwan Road, Khoke Kamin Sub-district, Wang Sapung District, Loei 42130
	Power Prospect power plant	035-343-020	118, Moo 1, Salaloi Sub-district, Tha Ruea District, Phra Nakhon Si Ayutthaya 13130
	Dan Chang ethanol plant	035-466-651-2	109, Moo 10, Cholapratam Saykraseaw-Samchuk Rd., Nongmakamong Sub-district, Dan Chang District, Suphan Buri 72180
	Phu Khiao ethanol plant	044-881-371-2	99, Moo 10, Khoke Sa-ad Sub-district, Phu Khiao District, Chaiyaphum 36110
	Kalasin ethanol plant and Kuchinarai ethanol plant	043-134-051-4	99, Moo 1, Bua Khao-Pone Thong Road, Som Sa-ad Sub-district, Kuchinarai District, Kalasin 46110
	Mae Sod Clean Energy ethanol plant	055-518-050	123, Moo 6, Maetao Sub-district, Maetao District, Tak 63110
Ratchasima Green Energy plant	044-756-392	99, Moo 17, Huai Bong Sub-district, Dan Khun Thot District, Nakhon Ratchasima, 30210	

Businesses	Company/factory	Telephone number	Address
Wood Substitute Materials Business	Panel Plus Factory, Samut Sakorn	034-830-330-3	53/5, Moo 5, Settakit 1 Rd., Nadee Sub-district, Mueang District, Samut Sakorn 74000
	Panel Plus Had Yai Factory and Panel Plus (MDF) Factory	074-291-130-4 Hotline: Community Relation Exceutive 084-862-6431	417/14, Moo 1, Kanjanavanich Rd., Phatong Sub-district, Had Yai District, Songkhla 90230
	Panel Decor Factory	074-291-019-20 Hotline: Community Relation Exceutive 084-862-6431	417/116, Moo 1, Kanjanavanich Rd., Phatong Sub-district, Had Yai District, Songkhla 90230
Fertilizer Business	Dan Chang Fertilizer plant	035-969-912-13	214 Moo 4, Nongmakamong Sub-district, Dan Chang District, Suphan Buri 72180
	Phu Khiao Fertilizer plant	044-109-765	99/2, Moo 10, Khoke Sa-ad Sub-district, Phu Khiao District, Chaiyaphum 36110
Logistics Business	United Standard Terminal Public Company Limited Mitr Phol Warehouse Company Limited	02-861-7888	78/2, Moo 2, Wat Kae Soi, Suksawat Rd., Phra Samut Chedi District, Samut Prakan 10290
	Aawthai Warehouse Company Limited	033-004-888	Laem Chabang, Terminal A4 Toongsukhla Sub-district, Sriracha District, Chonburi 20230

### 9. Environmental / social impact complaints management system



### The Committee's secondary scope of work

- (1) Inspecting the needs of community members, establishing strong relationships between the community and the project, and coordination with other organizations or stakeholders.
- (2) Inspecting the projects, understanding the process of environmental impact assessments in line with international standards for a transparent project environment management.
- (3) Processing and managing grievances.
- (4) Discussing and mapping preventive measures and resolutions for environmental and health issues.
- (5) Checking and reviewing compensation for affected communities resulting from a factory's impacts on natural resources, the environmental, agricultural produce, livestock and health.
- (6) Negotiating and resolving environment impact issues between the factory and the community.
- (7) Considering and reviewing suggestions and grievances from the community, representatives from the residents and local government sectors, about environmental and health impacts caused by the factory's operations.
- (8) Setting standards and building networks to efficiently follow up on and mitigate risks of environmental and health impacts.
- (9) Promoting understanding and relationships between the community and factory, and working with other organizations and stakeholders.

#### Remark: \*

- (1) Establishing causes, directions and timeframes to resolve issues within 24 hours.
- (2) Reporting on progress every seven days, for cases in which resolving issues requires a longer timeframe.
- (3) Notifying the persons lodging the grievance about the progress within the indicated timeframe and setting up inspection trips to ensure the issues have been resolved.
- (4) For cases in which issues cannot be resolved within the timeframe, an advanced notice of at least seven days must be given, along with reasons why the issues cannot be resolved in time. The responsible team must meet with the person lodging the grievance and inviting him/her to inspect the progress of the resolution, before informing them of the expected timeframe. Notifications of progress must be given every seven days, until the issues are resolved.

Mitr Phol Group uses information technology in its complaint management system to efficiently and responsibly manage grievances about environmental and social impacts caused by the company's operations. Between 2014 and 2017, no fines or penalties (>USD \$10,000) were imposed on Mitr Phol Group for violating environmental laws or regulations. <sup>(307-1)</sup>

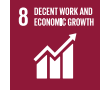








## Friends of Employees



Employee Data



Synchronized Employee and Organizational Development



Performance Evaluation



Employee Care



Human Rights Practices



Safety, Occupational Health, and Environment at Workplace

# Friends of Employees

Believing in human dignity is one of Mitr Phol Group's business philosophies. Emphasis on employees is the heart of the organizational and human resource administration. Mitr Phol employees are reminded of the organization's friendliness to all and unite them in turning the enterprise to a world-class organization.

Mitr Phol Group's path towards a world-class organization puts emphasis on 6 key development dimensions.



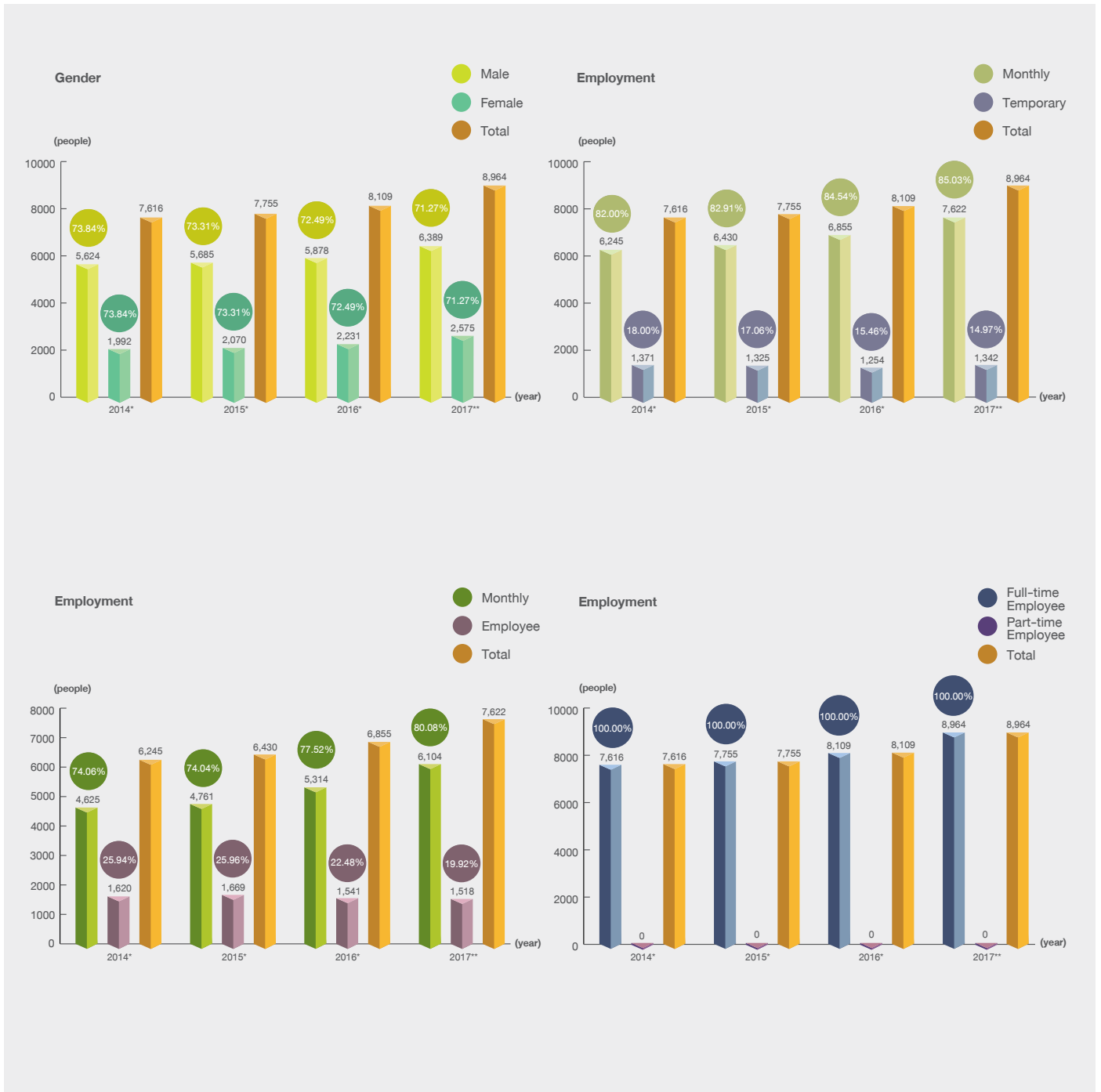
Mitr Phol Group sets the goal to become a full-fledged world-class organization in 2020, on the back of 6 key development dimensions. One dimension entails the development to a high-performance organization (HPO), to support the company's vision in expanding business to

new S-curve industries. This requires management restructuring, system development, work process alignment in all business units, and inclusion of digital technologies, for greater efficiency in growing the organization in a sustainable manner.

# Employee data <sup>(102-8)</sup>

Mitr Phol Group currently hires 8,964 employees, 67% being Generation-Y employees. Key human resource statistics are as follows:

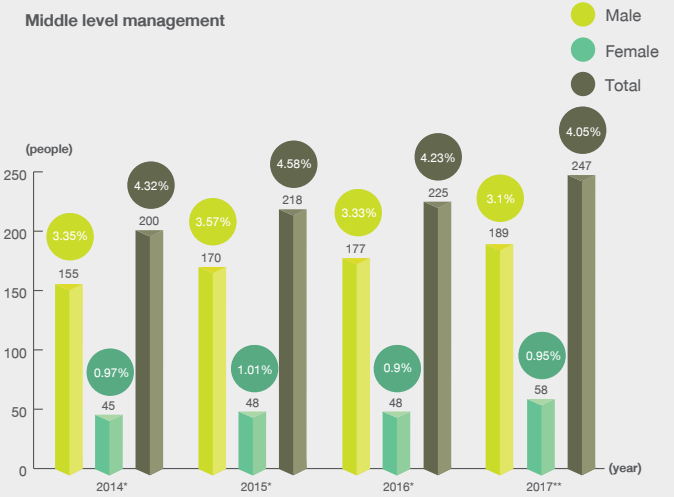
## Breakdown of Mitr Phol Group employees <sup>(405-1)</sup>



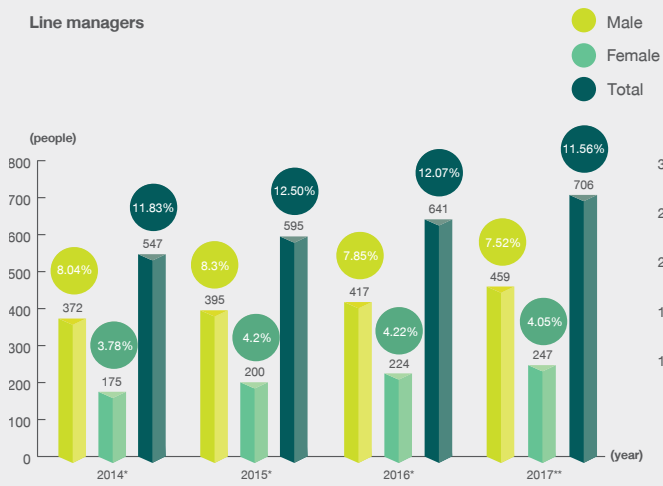
### Top level management



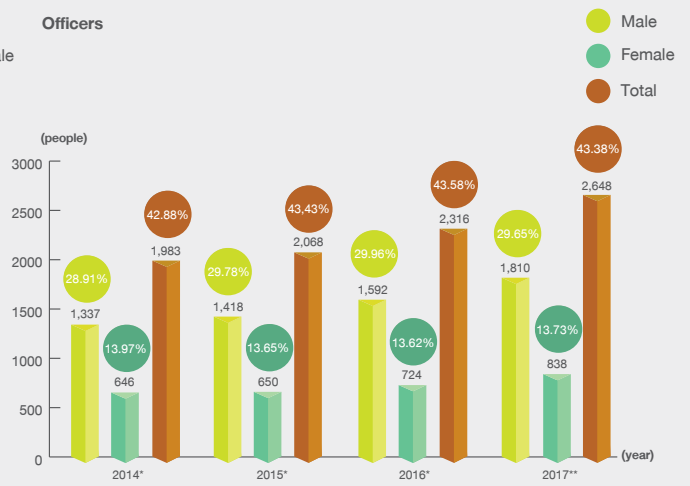
### Middle level management



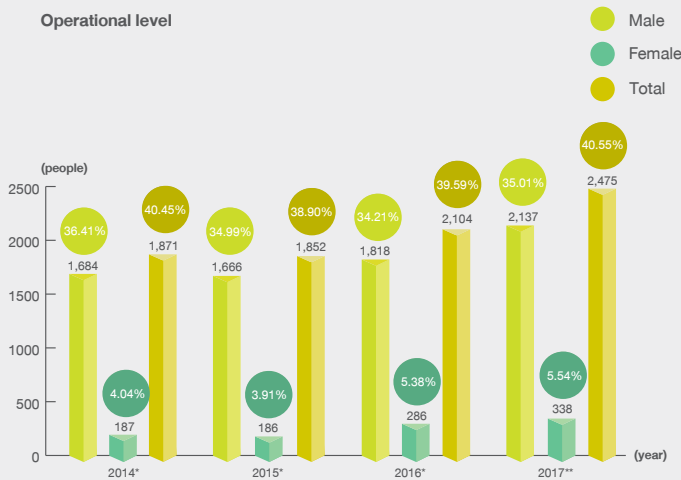
### Line managers



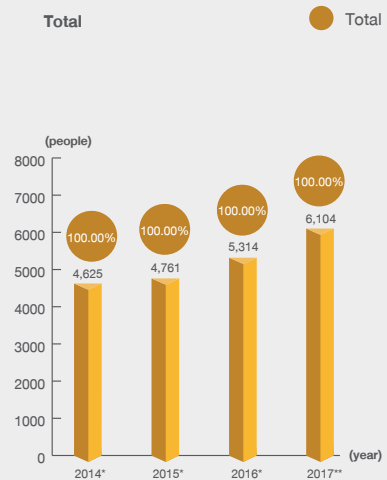
### Officers

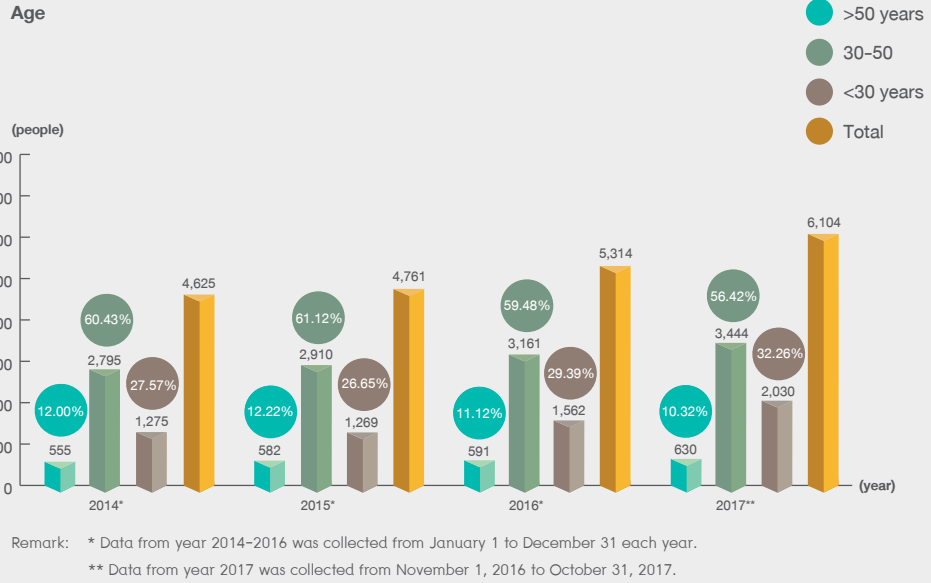


### Operational level



### Total

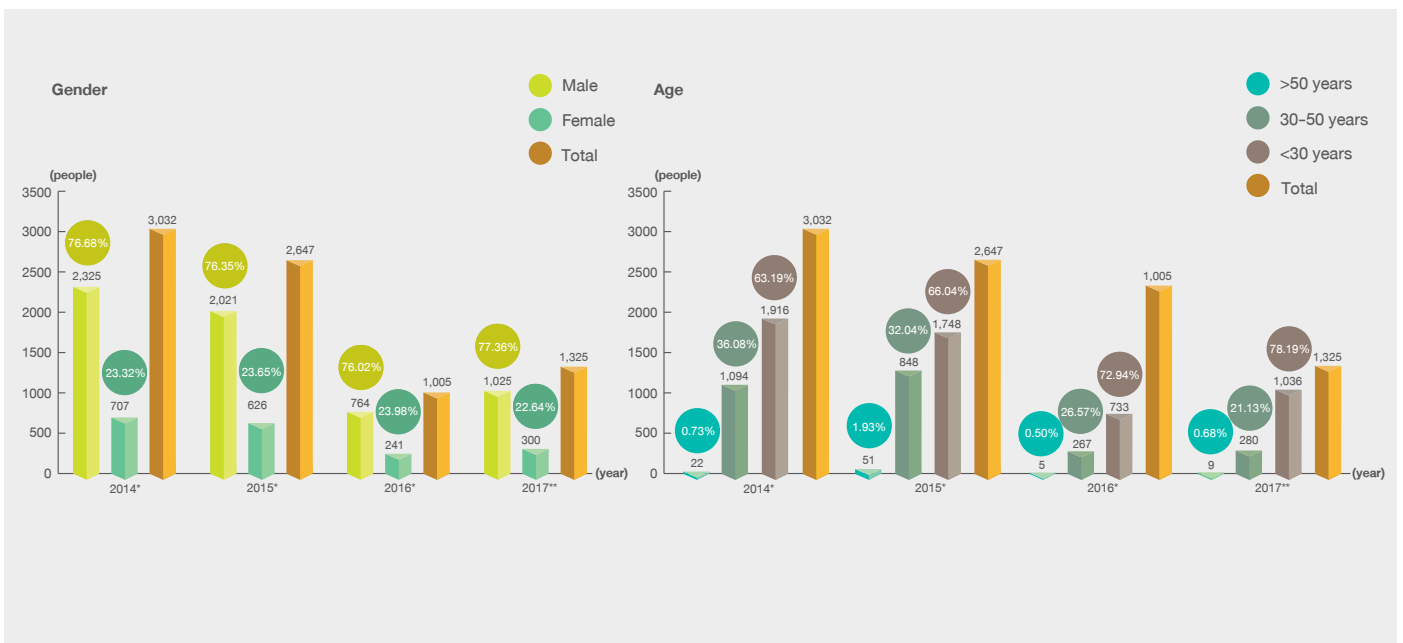




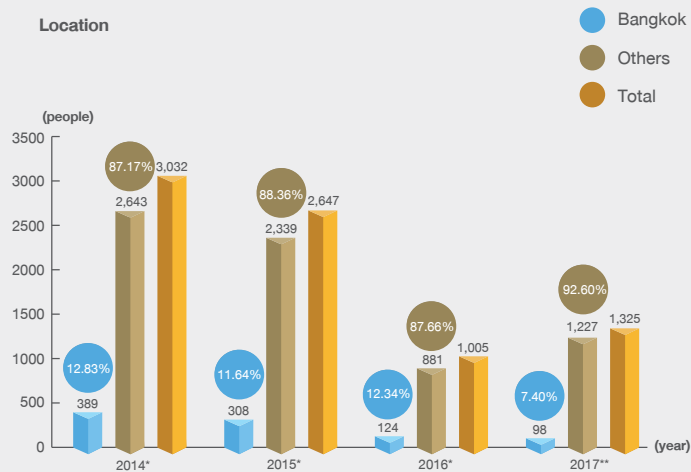
The latest data shows male employees accounted for 71.27% and female employees 28.73%.

Mitr Phol has the policy to recruit people residing near its premises and support career-development activities to improve the locals' quality of life, as a way to distribute income to nearby communities, promote relationship and sow community acceptance. In addition, Mitr Phol Group assures returns relevant to legal requirements.

## New hires of Mitr Phol Employee<sup>(401-1)</sup>



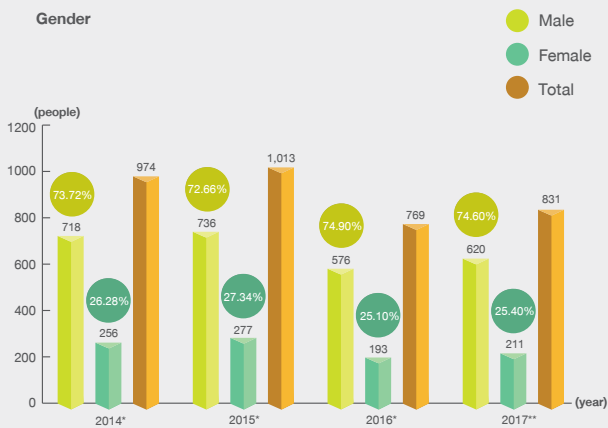
### Location



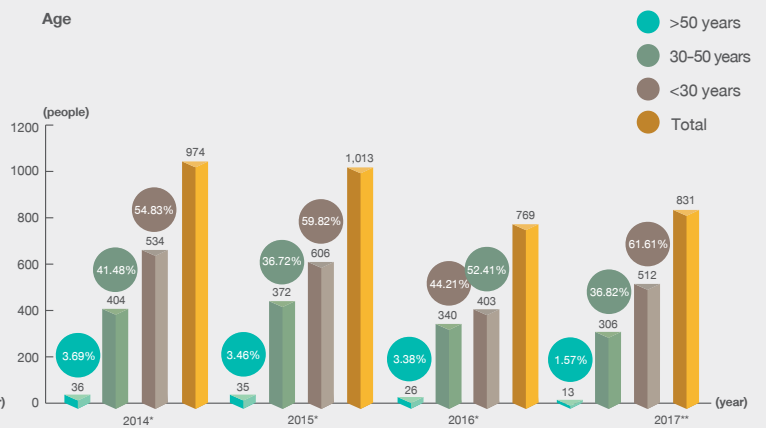
Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.  
 \*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Attrition of Mitr Phol Employee (401-1)

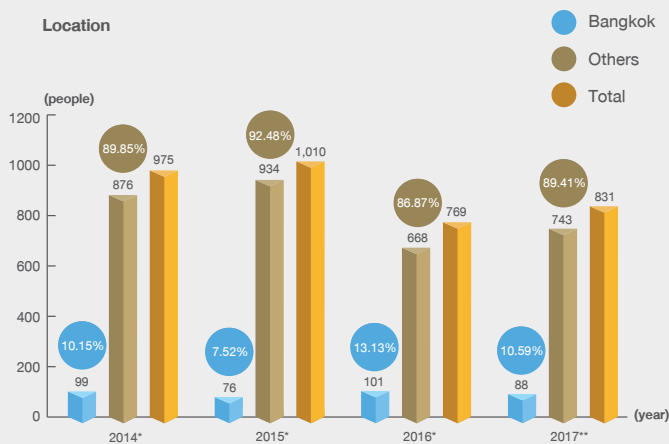
### Gender



### Age



### Location

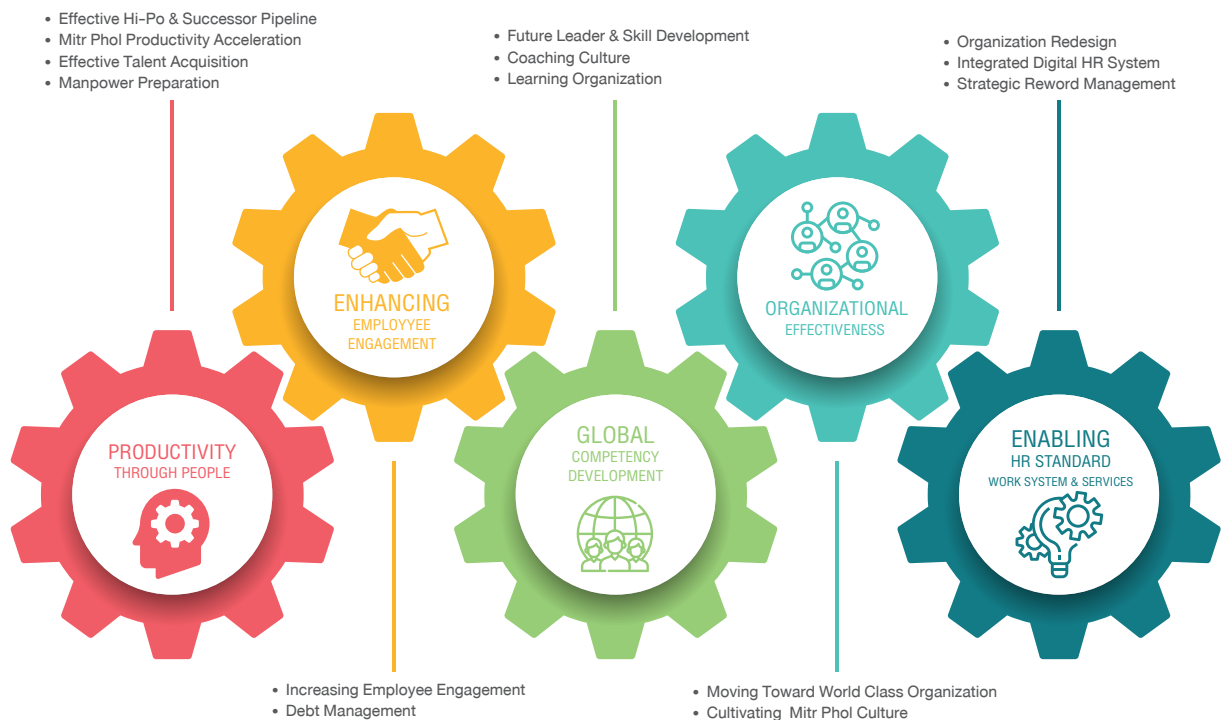


Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.  
 \*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

# Synchronized employee and organizational development <sup>(404-2)</sup>

Leading the company towards a world-class organization is one of Mitr Phol's strategies and employees are the key in achieving world-class performance. The Best Employer concept is being deployed in handling and developing employees. Chiefly focusing on individual employees, the concept is aimed at strengthening employees' bond with the company and promoting their dedication to meet international-standard performance and push the organization towards success. Leading human resources towards the path is an utmost challenge for all businesses, striving to become a world-class organization.

## HR STRATEGIC ROADMAP 2017/18 – 2019/20 ENHANCING WORLD CLASS ORGANIZATION



Mitr Phol Group's strategies emphasize the selection process, remuneration setting, fair performance evaluation, enhancement of new employees' potential, and high-talent management. The human resources roadmap deploys 5 Strategies which entail productivity enhancement, employee relations, competency enhancement to meet international standards, organizational effectiveness, and enabling HR standard with system and services. Mitr Phol Group believes that the strategies will bolster employees' potential and hence boost the organization's competitiveness.

### Mitr Phol Group's competency development for employees

Mitr Phol believes that the direct experiences are the best employee development program. It helps employee to be the really successful learners. Mitr Phol Group adopts a "70:20:10" approach as;

- 70% of the competency development effort is dedicated to direct experiences from assignments and job rotation.
- 20% is devoted to coaching, and the remaining.

- 10% comes from training and seminars. Line managers play an integral role in the success of the program, as they plan the development goals of their direct reports, encourage their progress, and act as good role models.

Mitr Phol Group's employee skills development program is competency-based and made up of the following components:



## 1. Functional Competency Development



Functional competency development helps to increase the skill sets of employees in order for them to work more efficiently. The program focuses on seven core functions:

### 1.1 Cane Academy

The academy provides knowledge about stakeholder relationship management, information technology, cane assessment and tracking, and agricultural machinery, with the goal being to maximize production efficiency and productivity.

### 1.2 Bio/Cassava Academy

The academy provides knowledge about cassava species, diseases and pests, and the tapioca flour production processes.

### 1.3 Production Academy

Mitr Phol Group partnered with educational institutes in Thailand and abroad, including Australia's Queensland University of Technology and King Mongkut's University of Technology in Thonburi province, to develop the High Level Design-Sugar Milling Technology program, which builds core competencies for employees who specialize in sugar technology and sugar chemistry. Technical training centers were established at all sugar mills to provide instruction and practical expertise for factory employees in skills such as repairing valves, motors, and electrical circuits. The centers also provide individual assessments to help each employee progress effectively.

### 1.4 Energy Academy

The Energy Academy provides knowledge about energy management and water quality for electricity generation.

### 1.5 Marketing Academy

This academy provides knowledge about successful branding techniques and practices.

### 1.6 Financial/IT Academy

The academy provides knowledge about cost management, tax management, and financial analysis.

### 1.7 Safety and Productivity Academy

The academy provides knowledge about safety, occupational health, work environment, and occupational health and safety laws.

## 2. Leadership and Managerial Competency Development



Leadership and managerial competency development aims to increase competency and leadership skills, while promoting employee relations so they are able to work efficiently, enjoy a healthy work-life balance, and be ready for career advancements. Through two core programs, Mitr Phol Group focuses heavily on building leadership skills for employees across all levels:

### 2.1 Signature Development Program

This unique program was designed to help build leadership skills and networking by having employees work together in projects. The program focuses on a blend of learning techniques and includes information from business case studies, project-based learning, and knowledge sharing from top-level management, guest speakers and experts from several fields. Progress is tracked and measured, while the skills and knowledge learned can be used to help promote individual success and achieve business advantages. The curriculum is made up of four programs to serve the development needs of each employee level.

## Program

Basic Development Program (BDP)



## Target group

1. Operational employees who contribute in driving a team's targets, under the supervision or a manager.

## Program objectives

1. Building basic leadership skills and adopting more efficient work practices.
2. Promoting an understanding about Mitr Phol Group's business strategies and operations to help the employee carry out his/her duties in line with the needs of the business.
3. Building communication and interpersonal skills to help the employee to work better with others.

Supervisor Development Program (SDP)



1. Supervisors, assistant managers or equivalent who are tasked with managing a team, setting team goals, delegating work, and overseeing the quality of work for an entire team.
2. Supervisors who have been promoted from operational positions to being in charge of other team members. They require training to give them new perspectives and build leadership skills.

1. Building management competency and effective supervisory skills.
2. Promoting knowledge about business administration that can be applied to daily work.
3. Developing interpersonal, social, and communication skills, in order to enhance professionalism and motivate their team.

Management Development Program (MDP)



1. Management-level or equivalent who are responsible for planning and setting direction, and supervising and developing his/her team.
2. Managers who require training in strategic business administration and learning from business case studies.

1. Enhancing high-level leadership skills in order to effectively meet business targets.
2. Building knowledge and competency in strategic thinking, business administration, and corporate and resources management, to increase the group's competitive edge.
3. Developing communication, presentation, interpersonal, social, and motivational skills.

Executive Development Program (EDP)



1. Directors or equivalent who are responsible for setting the vision and direction for the business, leading the organization through change, and building the group's sustainable competitiveness on an international level.

1. Developing skills in change management, competency building for team members, and promoting brand engagement to steer the organization toward success.
2. Enhancing strategic thinking skills, promoting an understanding about international policies and management, and understanding paradigm shifts in business administration.
3. Developing interpersonal, social, communication, and leadership skills to motivate employees and steer them through change in order to grow with the organization.

## 2.2 Coaching skills development program for supervisors

Mitr Phol Group provides continuous development programs for supervisors. This consists of:

- Top and middle level management development programs and one-on-one coaching for executives.
- Hands-on coaching for upper-level management through the Mitr Phol Coaching Certification Program.

## 2.3 Constructionism Empowerment-Mitr Phol Learning Camp program

This program teaches employees the "constructionism" learning theory and project-based learning (PBL) which develop the learning skill for employee.

## Employee development results

Mitr Phol Group in 2017 achieved the following results from its 70:20:10 employee development approach emphasizing employees' learning:

### 1. Competency enhancement through direct experiences (70%)

Projects deriving from employee development programs cover:

- Development through Constructionism Empowerment-Mitr Phol Learning Camp

(CE-Mitr Phol Learning Camp) which promotes project-based learning (PBL). Throughout the year, there were a total of 52 projects under this program.

- Development through Signature Development Program (BDP, SDP, MDP, EDP). Eight classes were held this year with 262 participants for 61 projects.

Program	Results	Participants			No. of proposed projects	Expected project returns (Million baht)
		Classes	Person	Percentage		
Basic Development Program (BDP)	<ol style="list-style-type: none"> <li>1. Learning and understanding leadership skills and enhancing individual leadership for efficient job handling.</li> <li>2. Learning and understanding Mitr Phol Group's business strategies and operations from the beginning through the expansion period and introduction of value-added businesses, and ably performing accordingly to the group's requirements.</li> <li>3. Improving communication skills and relationship with other employees, to ensure efficient cooperation and maximum business benefits to Mitr Phol Group.</li> <li>4. Applying knowledge and understanding from Basic Development Program in designing projects that support Mitr Phol Group's business policies and strategies.</li> </ol>	4	140	5.29	31	173.92
Supervisor Development Program (SDP)	<ol style="list-style-type: none"> <li>1. Instilling supervisors with knowledge and leadership competency, enabling them to efficiently lead their teams towards the goals of their business units.</li> <li>2. Equipping supervisors with knowledge and understanding in business administration strategies for their daily use and their respective business units' success.</li> <li>3. Enhancing skills in communication and building good relationship with people in their own teams and other teams as well as improving personality for positive image and professionalism among Mitr Phol's leaders.</li> <li>4. Applying knowledge and understanding from SDP Program in devising projects that support Mitr Phol Group's business policies and strategies.</li> </ol>	3	93	13.17	21	1,185.15
Management Development Program (MDP)	<ol style="list-style-type: none"> <li>1. Obtaining high-level leadership knowledge and skills, enabling efficient exercise of leadership in managing tasks for the success of respective business units.</li> <li>2. Improving knowledge and ability in strategic thinking, strategy management and business management to create the organization's competitive advantages.</li> <li>3. Improving skills in communication, relationship building and inspiring employees.</li> <li>4. Applying knowledge and understanding from MDP Program in devising projects that support Mitr Phol Group's business policies and strategies.</li> </ol>	1	29	11.74	9	756.93

- Development under Pracharath–Leadership in Sustainable Education Project (Connex-ED), which allows volunteering employees to initiate 1-year development projects in collaboration with 17 schools. The collaboration not only enhances the participating employees' competency in project management, leadership, direct experiences as well as skills in management, trouble solving and decision making, but also helps support national education and runs along Mitr Phol Group's sustainable development philosophy.

## 2. Coaching (20%)

Supervisors' coaching skills had been continually improved through the following key projects:

- High-level and mid-level executive development project and Executive One on One Coaching Project for individual executives.
- A coaching skill improvement project for mid-level executives who exercised the knowledge through Mitr Phol Coaching Certification Program.
- Organizing Mitr Phol Coaching Day to recognize coaches and promote their learning from experience. Activities included the sharing of experiences of professional coaches and coaches passing Hall of Fame Program.



## 3. Training and seminars (10%)

The remaining 10% of development was completed by training and seminars, emphasizing learning approaches that fit different knowledge levels of employees and new learning technologies. Details are as follows;

- Blended Learning Approach that blended

theoretical knowledge development and exercise through Case Based Learning, Coaching by Executive, experience sharing, field trips to observe exemplary models, and the process to equip employees with skills and support self learning.

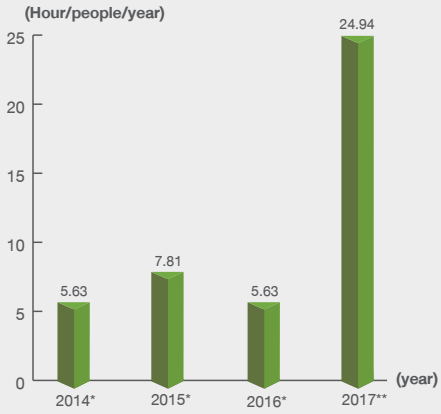
- Focus placed on promoting executives' role in employee development by using internal coaches/project advisors and organizing experience sharing by high-level executives.
- Leadership skill development through self development under the Mindfulness Organization approach, for the happiness of the organization and teams.
- Applying more digital technology in the development and learning process such as Learning Passport for new employees using Mitr Phol Together Project's Mitr Phol Competency Lane and QR Code to obtain seminar papers, survey and evaluation documents and other papers.
- Intense evaluation that spurred learning in the entire organization and among individual employees through various tools including Yammer's Individual Learning Report.
- Efficient training and seminar budget management.

As mentioned above, the adjusted development approach produced varieties and attractiveness of development programs, hence drawing positive responses from seminar participants and high-level executives attending closing presentation session.

In 2017, Mitr Phol Group emphasized training on Total Productive Maintenance (TPM) for all business units and employees at all levels. On average, employees received 24.94 hours of training. Details are as follows;

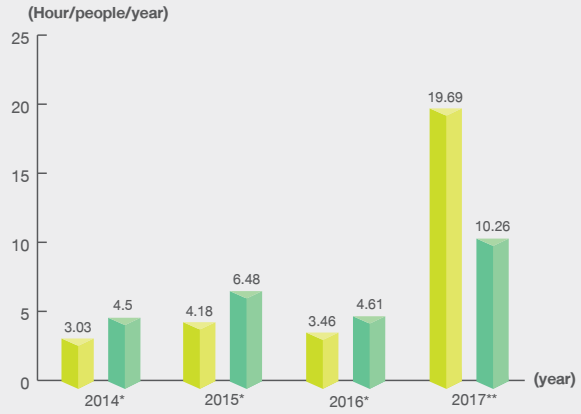
## Training hours of employee <sup>(404-1)</sup>

Average training hours of employee by year



Average training hours of employee by gender

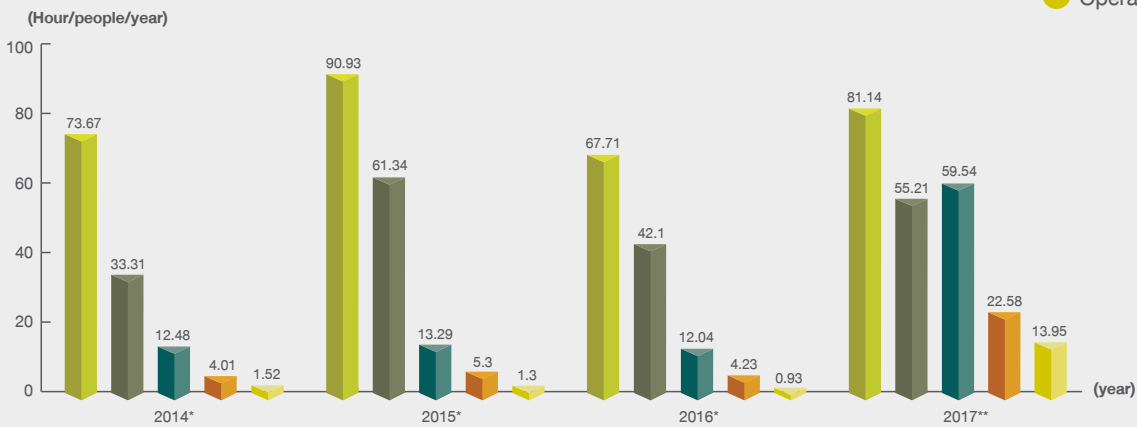
- Male
- Female



## Average training hours of employee by level

Level

- Top level management
- Middle level management
- Line managers
- Officers
- Operational level



Remark : \* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Performance evaluation<sup>(404-3)</sup>

Aside from human resource development, Mitr Phol Group's emphasis is on growing personnel and business concurrently. In 2017, the group adopted the 180-degree and 360-degree performance evaluation methods depending on staff's work levels, for the most efficient assessment of their performance and career development on an individual basis. The evaluation is based on their performance and relevance to Mitr Phol culture, to ensure the improvement of their career path and capacity along the organizational growth.

Furthermore, Chief Executive Office and President is evaluated the performance as Mitr Phol's employee. In 2017, CEO had been evaluated by Mitr Phol's culture, Managerial Competency and Key performance indicators which are:

- Economic Value Added (EVA) of sugar business in Thailand, renewable energy business and wood substitute materials business.
  - Earnings Before Taxes (EBT) of fertilizer business, sugar business in Asean and Australia, business in China.
  - Growth : Completion of plan: Strategic direction, Social and environment plans.
- Besides annual KPIs setting of CEO & President, a medium term KPIs & targets in 3 years are also identified including action plans and budgets. The targets are also updated and adjusted every year in order to suit with situation.

## Employee care

Mitr Phol Group emphasizes diversity at work, particularly age and new employees' attitude toward life. Gen Y employees\* currently make up 62% of Mitr Phol Group's workforce and the percentage is expected to hit 70% in the next 2 years. Aiming to sow understanding and accessibility, Mitr Phol hosts familiarization programs like "CEO See You" or a high-level executive forum for consultations on workplace and personal issues.

Remark: \*Gen Y was born between 1980-1997

Organizational relationship is part of Mitr Phol Group's management strategies, which have been continually upgraded, beside the observation of employees' 3 behavioral expressions.



### SAY

Employees express positive comments on the organization when conversing with their colleagues, outsiders who may join the organization and customers.



### STAY

Employees are committed to share good and bad times with the organization.



### STRIVE

Employees are eager to put best efforts for the best work results, for the organization's success.

Mitr Phol also emphasizes the following 6 factors to raise the relationship, for greater employee satisfaction and an improvement of their relationship with the organization:



## EMPLOYEE ENGAGEMENT

### Mitr Phol Group’s employee engagement survey

Employee Engagement	2014	2015	2016	2017	Target 2017
% of actively engaged employees	63	64	68	74	68
% of employees participating the engagement survey	81	89	93	97	
% of actively engaged male employees	NA	68	73	77	
% of actively engaged female employees	NA	51	55	75	
% of male employees	NA	90	93	99	
% of female employees	NA	88	92	95	

Mitr Phol's emphasis on employees continually raised the percentage of employee engagement showing relationship with the organization. Mitr Phol Group has been awarded Best Employer in Thailand consecutively in the survey by Aon Hewitt, the global talent and organizational development consultancy firm, in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University.

In 2017, Best Employer Thailand awards were presented to Panel Plus Co., Ltd. and Mitr Phol Sugar Mill (Kalasin). In the small-sized organization category, Mitr Phol Bio Fuel Co., Ltd was crowned Best Employer in 2017, after winning Best Employer Award for Gen Y in the previous year which reflected its attractiveness to Gen Y and high organizational relationship.



## Employee welfare <sup>(401-2)</sup>

As employees are the organization's main driving engine, Mitr Phol Group's welfare is extended beyond legal requirements. The group's welfare entails financial supports for various causes such as wedding, the death of employees' family members, employees' death, damage from natural disasters, provident funds, scholarships to employees' children, emergency loans, uniforms, medical and dental care, as well as travel allowances and expenses. The welfare committee was established, consisting of at least 5 elected employees from each business unit. The committee promotes human rights and works with the group in devising welfare accordingly to employees' true needs. For instance, activity clubs are formed, while employees are invited to Sport Day and Thank

You Party. There are sessions where executives and employee representatives discussed, recommended and exchange opinions on employment status, work, and the betterment of employees' quality of life, which nurture the good relations between employees and the group. In 2017, There are 0% of total employees covered by collective bargaining agreement.<sup>(102-41)</sup> Moreover, a whistleblowing channel is in place to receive employees' complaints on the violations of the group's policies, laws or ethics which may cause impacts or damage to employees or the group. Meanwhile, the inquiry panel is ready to deliver fairness to all parties. The process serves as a channel whereby all employees can take part in monitoring the organization's interests.

## Percentage of employees engaged in negotiation (Labor Welfare Committee) <sup>(402-1)</sup>

Labor Welfare Committee	2014*	2015*	2016*	2017**
Percentage of employees engaged in negotiation (Labor Welfare Committee)	100	100	100	100

## Rate of returning to work for female employees after maternity leave <sup>(401-3)</sup>

Maternity leave incidents	Gender	2014*		2015*		2016*		2017**	
		people	percentage	people	percentage	people	percentage	people	percentage
The number of female employees eligible for maternity leave	Male	0	0	0	0	0	0	0	0
	Female	1,992	100.00	2,070	100.00	2,231	100.00	2,575	100.00
The number of female employees who took maternity leave	Male	0	0	0	0	0	0	0	0
	Female	33	1.66	60	2.90	65	2.91	69	2.68
The number of female employees who returned to work after taking maternity leave	Male	0	0	0	0	0	0	0	0
	Female	33	100.00	59	98.33	62	95.38	67	97.10
Percentage of female employees who returned to work after taking maternity leave	Male	0	0	0	0	0	0	0	0
	Female	29	87.88	51	86.44	56	90.32	65	97.01

Remark: \* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

Mitr Phol Group's concerns about employees extend beyond their skills and capacity to cover morality. The "Debt Free -Happy Life" project has been ongoing to solve employees' debts in a systematic and sustainable way, seeking to help them reduce expenses, increase income and ensure a quality of life in line with the sufficiency philosophy. Retiring employees are assisted on retirement funds and trained on financial planning, physical and mental care, retirement life, and eligible Social Security benefits so that they can spend the retirement life happily and sufficiently.

## Human rights practices

Mitr Phol Group commits and respect to human rights, human dignity, freedom and equality by complying with the local laws, regulations and United Nations Guiding Principle on Business and Human Rights. We this as a part of business practice and not only company that complied with this norm but could be a partnership.

In order to maintain competitiveness and properly take care of employees, Mitr Phol Group has been carried out risk assessment from the human rights point of view to address the potential treats to business and introduce risk mitigating measure and closely monitoring e.g. child labors, overtime work etc. We have established operating standard incorporating local labor laws including other relevant laws and regulations to tackle this matter. Moreover, we have also been adopted SMETA Ethical audit program and SEDEX to build trusts amidst our business partners.

Furthermore, we monitored major treats continuously through "Key Risk Indicator" to ensure that current mitigating measures still valid and applicable to control and reduce risk to acceptable level. Risk assessments have also been revisited and assessed regularly to ascertain that it is in line with its current business circumstance.

Mitr Phol Group has established the human rights policy as our principles of operation and enforces it throughout the group. The policy is detailed as follows;

### Human Rights Policy

Mitr Phol management and staff commit and respect to human rights, human dignity, freedom and equality by complying with the laws, regulations and United Nations Guiding Principle on Business and Human Rights. The Human Rights Guideline are as follows;

1. Treating people with equality in accordance with human rights principle. No discrimination by race, religion, sex, language, ethnicity or any other status.
2. Avoiding any actions that would violate human rights of any person.
3. Monitoring and evaluating risk and impact on human rights issues, together with determining appropriate measures to manage them. Besides, when there are inevitable incidents occurred, fair judgment will be implemented.
4. Supporting management and staff to act in accordance with human rights principles both within and outside the organization.
5. Communicating knowledge of Human Rights policy to business stakeholders. By respecting and treating everyone in order to promote practices in accordance with Human Rights policy.

## Safety, occupational health, and environment at workplace

Mitr Phol Group combines the policies on safety, occupational health and environment and outlines SHE Framework, consisting of targets and operating plans whereby each subsidiary can apply, on top of routine exercise of international standards like ISO14001 and OHSAS18001. The group encourages the Executive Board, executives, employees, suppliers, contractors and communities to take part in upgrading the occupational health, safety and environmental standards.

Mitr Phol Group distributes the written safety, occupational health and environment policy to executives, employees, contractors and all related persons, to raise their awareness in strict compliance to the standards which will reduce work-related risks among employees.

### Results of safety, occupational health and environment activities

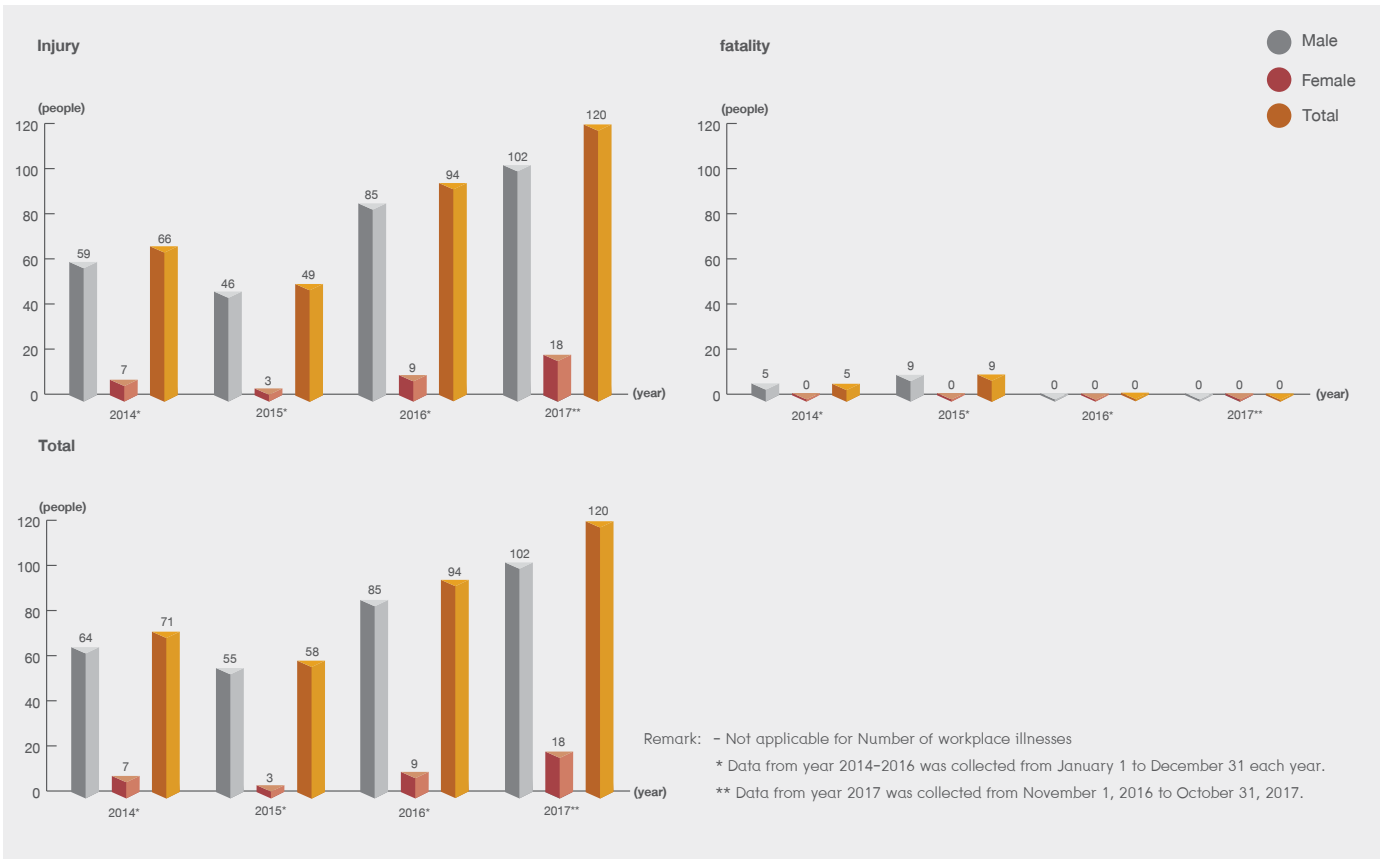
Mitr Phol Group has collected employee and contractor statistics on a monthly basis from the Safety, Occupational Health and Environment Committee. The statistics are as follows:

### Mitr Phol Group’s workplace near miss statistics <sup>(403-2)</sup>

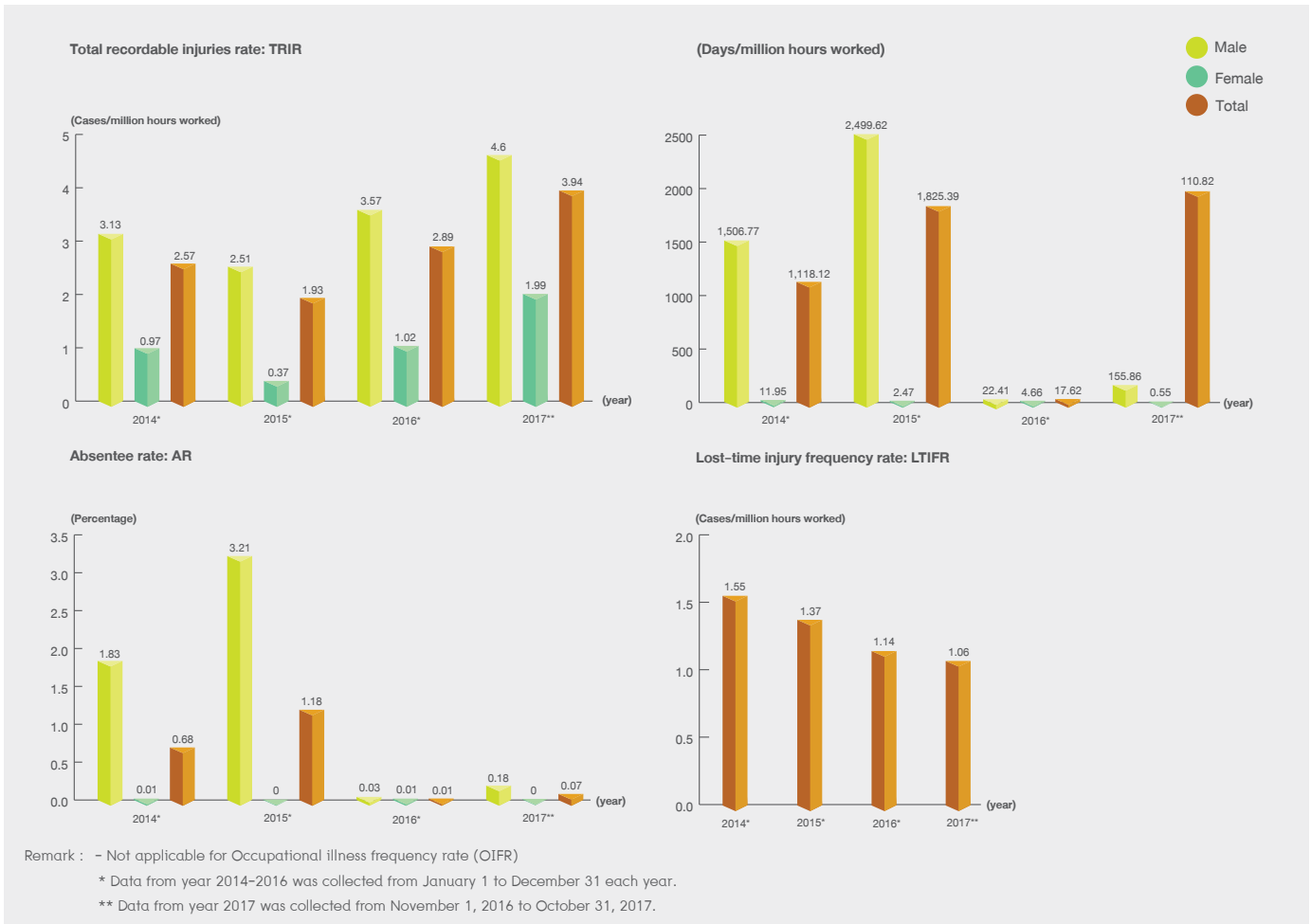
Near miss	Number of near miss by year			
	2014*	2015*	2016*	2017**
Number of near miss	NA	NA	347	2,293

Remark: \* Data from year 2014–2016 was collected from January 1 to December 31 each year.  
 \*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

## Mitr Phol Group's workplace injuries, illness and fatality statistics <sup>(403-2)</sup>



## Mitr Phol Group's workplace injuries and illnesses by gender <sup>(403-2)</sup>



In 2017, Mitr Phol Group reported zero work-related death and some work-related injuries, days lost and absence thanks to awareness, knowledge and understanding in safety at work. Raising awareness among employees has thus been Mitr Phol's emphasis. In 2017, the Life Saving Rule was outlined, binding employees, contractors and all related individuals for safety at work. The rule is a measure to raise awareness and prevent serious accidents that may result in loss of life or property damage. In 2017, the rule was exercised by sugar, renewable energy and wood substitute material businesses and it will cover all businesses in the following year.

The Life Saving Rule specifies 7 key rules as follows:

1. **Must** wear full-body safety harnesses with double hooks and keep the hooks locked all the time when working at height greater than 2 meters.
2. **Must** obtain work permits for risky tasks (for example, work that involves heat or sparks, work at height greater than 2 meters, or work at spots with poor ventilation).
3. **Must** switch off electric, air and hydraulic machinery and hang the "stop machinery" sign every time before carrying out machinery maintenance or cleaning tasks.
4. **Must** fasten safety belts (driver and all passengers) prior to moving vehicles from parking lots and keep safety belts fastened throughout the journey. Factory vehicles are included.

5. **Must** not smoke in factory except in provided areas and must throw cigarette butts only to the provided trash.
6. **Must** not modify machinery and equipment or bypass safety interlocks without permission from supervisors (manager level or higher).
7. **Must** not use telephone (no call/photo taking/typing/listening) in areas prone to fires and explosions while operating machine and driving all types of vehicles.

The rules can be applied, modified and improved to fit the work conditions of each business unit.



The infographic is titled "Life saving rules in Wood Substitute Material Business" and features the PANEL PLUS logo. It lists 8 rules with corresponding icons:  
 1. **Must** wear full-body safety harnesses with double hooks and keep the hooks locked all the time when working at height greater than 2 meters.  
 2. **Must** obtain work permits for risky tasks (for example, work that involves heat or sparks, work at height greater than 2 meters, or work at spots with poor ventilation).  
 3. **Must** switch off electric, air and hydraulic machinery and hang the "stop machinery" sign every time before carrying out machinery maintenance or cleaning tasks.  
 4. **Must** fasten safety belts (driver and all passengers) prior to moving vehicles from parking lots and keep safety belts fastened throughout the journey. Factory vehicles are included.  
 5. **Must not** drive forklift without forklift driving license.  
 6. **Must not** smoke in factory except in provided areas and must throw cigarette butts only to the provided trash.  
 7. **Must not** modify machinery and equipment or bypass safety interlocks without permission from supervisors.  
 8. **Must not** use telephone (no call/photo taking/typing/listening) in areas prone to fires and explosions while operating machine and driving all types of vehicles.

Mitr Phol Group has also outlined the following operating guidelines based on various safety practices and standards, to ensure maximum safety of all related individuals:

1. Safety standards for visitors, suppliers and contractors (see MP-QP-8002-012 for details).
2. Height permits must be obtained when working in high places (see MP-QP-8002-010 for details).
3. Permits must be obtained when working near high heat sources and sparks (see MP-QP-8002-007 for details).
4. Standards for working near high-voltage power lines, lockout/tagout policy, and signs on machinery (see MP-QP-8002-003 and MP-QP-8002-006 for details).
5. Working in a poorly ventilated area (see MP-QP-8002-002 for details).
6. Fork lift operation (see MP-QP-8002-009 for details).
7. Safety standards when working near cane dumping areas.
8. The prevention of explosions caused by dust, biogas and LPG.

### Promoting awareness about safety, occupational health and environmental protection

Building a corporate culture around occupational health and environmental protection is of the utmost importance to Mitr Phol Group. All stakeholders, from the board of directors and management to employees, suppliers, contractors and communities, must be aware of Mitr Phol Group's commitment to occupational health and environmental protection, and all can play a part in upholding the standards. The following activities help to promote knowledge and awareness about occupational health and environmental protection:

- Basic training about fire protection, including the conducting of fire drills.
- Safety training for work-related and non-work-related operations for employees and contractors on-site. Promoting safe behaviors for contractors.
- A knowledge management system on Mitr Phol Group's intranet.
- Appointing SSHE Men - designated persons who are responsible for monitoring and reporting on safety operations when employees and contractors work in risky areas. Also, ERT Men, who are designated persons for emergency response, receive training about fire protection and emergency response procedures and are responsible for ensuring the readiness and viability of fire equipment at work sites.
- Activities on occupational health, safety and environment including;
  - SHE DAY where executives express commitment on occupational health, safety and environment (SHE commitment) and communicate occupational health, safety and environment to employees and contractors at all plants via PR boards and booths at safety campaign activities to promote Life Saving Rule at SHE Day.









## Friends of Suppliers



### Key Actions on Suppliers



### Sugarcane Farmer Development for Sustainability



# Friends of Suppliers

Mitr Phol Group operates in the agribusiness and agricultural produce is primary raw materials. Demand for the raw materials has continually increased in line with the growing number of global population amid limited resources. "Sustainable supply chain management" thus deserves greater attention concerning human rights, child labor, environment management, to build confidence among all stakeholders in engaging with Mitr Phol Group.

In 2017, Mitr Phol Group devised raw material procurement policy, chiefly concerning environmental-friendly procurement and sourcing, taking into account suppliers' good governance, the environment, safety, Thai suppliers, and etc. Besides, supplier evaluation and development is initiated for sustainable and mutual growth.

The supplier evaluation takes place on an annual basis and the criteria cover various aspects and produce different scores. The aspects include product and service quality, logistics and delivery, safety standards, environmental standards and social responsibility standards.

To spread Mitr Phol Group's sustainable development throughout the primary supply chain, the group has imposed the Supplier Integrity Pact since 2015, giving suppliers business guidelines and helping upgrade their responsibility to community, society and the environment.

Mitr Phol Group Supplier Integrity Pact was stipulated in accordance with the context and frameworks of relevant laws and regulations. The agreement promotes compliance with ethical business practices, respect for human rights, occupational health and safety, and sustainable environmental management.

1. The business ethics code governs business transparency, confidentiality, social responsibility, and conflicts of interest.
2. The human rights code governs labor freedom, child labor, compensation and benefits, working hours, equal treatment, and termination of employment. The humanity code governs freedom of association.
3. The occupational health and safety code governs safety and work environment, emergency preparedness, occupational health, work-related injuries and illnesses.
4. The environmental management code governs environmental management throughout the product/service life-cycle, waste and toxic waste management, water and air pollution, greenhouse emissions, soil contamination and underground water resources.

All suppliers are demanded to study and accept "Mitr Phol Group Supplier Integrity Pact". <sup>(308-1)(414-1)</sup>

Besides, they enjoy development and support on plantation and harvest technology and relevant standards such as Bonsucro Production Standard and Forest Stewardship Council standard, to help suppliers enhance production efficiency and competitiveness, improve product quality and reduce their operational obstacles. This ensures the delivery of best products and services to consumers under sustainability framework.

## Key Actions on Suppliers <sup>(204-1)</sup>

Mitr Phol Group has 2 types of suppliers—central suppliers and raw material suppliers. Details are as follows:

1. Central suppliers are the suppliers of products and services or contractors based in Thailand and overseas. Details in 2017 are as follows:

Type	Unit	Year			
		2014*	2015*	2016*	2017**
Newly-registered Mitr Phol suppliers	No.of suppliers	473	150	372	449
Newly-registered Mitr Phol suppliers in local areas	No.of suppliers	186	75	191	270
% of suppliers in local areas	Percentage	39.32	50	51.34	60.13
% of procurement in local areas	Percentage	67.07	83.1	70.31	81.35

Remark : \* Data from year 2014-2016 was collected from January 1 to December 31 each year.

\*\* Data from year 2017 was collected from November 1, 2016 to October 31, 2017.

Mitr Phol Group's suppliers were numbered 1,355, including 668 provincial suppliers or 49.30% of total. As seen in the table, the number of local suppliers increased every year.

2. Raw material suppliers cover 2 main segments: rubber farmers that supply old rubber trees to the wood substitute material production plant and sugarcane farmers that supply sugar to sugar mills.

#### 2.1 Rubber farmers

Rubber growers supply old rubber trees for Mitr Phol Group's wood substitute material production business are the main raw suppliers. The production relies on old rubber trees which no longer yield latex. In 2017, a total of 1.027 tonnes old rubber trees were procured at the value of 910 million baht.

Aside from procuring old rubber trees, Mitr Phol Group helps educate rubber farmers on plantation area management and standards on several aspects as well as jointly implement projects under Forest Stewardship Council standards which certify wood and wood products are from natural forests or legally and responsibly-operated forests. The initiatives are aimed at enhancing rubber growers' economic potential, improve the quality of raw materials and express responsibility in social and environmental dimensions.

#### 2.2 Sugarcane farmers

Mitr Phol Group has given importance to sugarcane farmers and taken great care of them for an extensive period. In 2017, Mitr Phol Group purchased 17.5 million tonnes from farmers worth 22,083.95 million baht by Large Scale sugarcane farmer 29% Details are as follows:

Item	Total of volume and value of sugarcane
Total volume of sugarcane purchased (Million Tonnes)	17.5
Total value of sugarcane purchased (Million Baht)	22,083

Mitr Phol Group has given equitable importance to all farmers, procuring sugarcane from all groups to distribute income directly to the grassroots. The procurement categorized by farmers' farmland areas that Mitr Phol procures from 35,666 sugarcane farmers which are 1,213 the large scale sugarcane farmers.

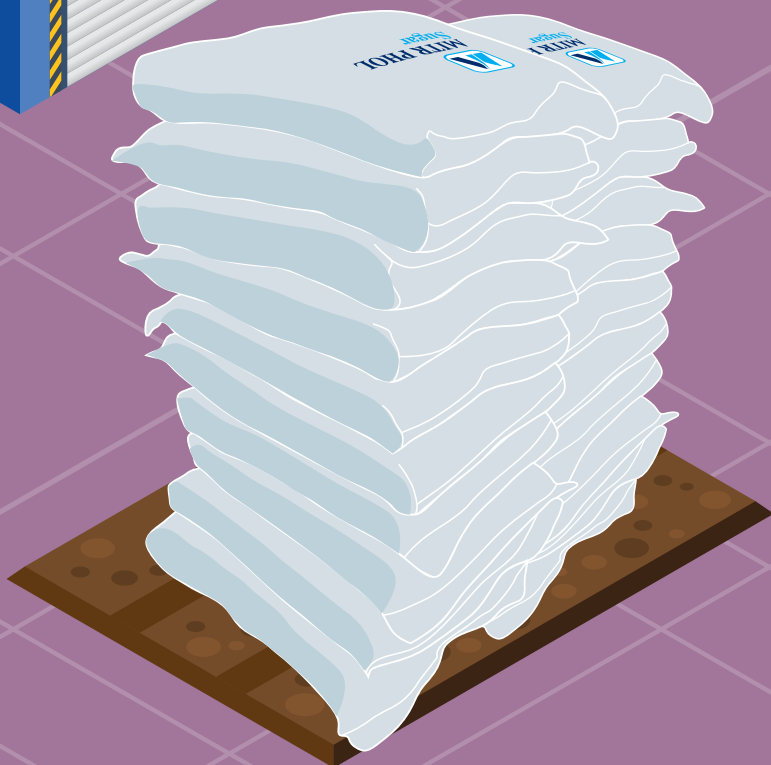
## Sugarcane Farmer Development for Sustainability

The significance of sugarcane farmers which form the beginning of the value chain coupled with Mitr Phol Group's "Grow... Together" corporate philosophy and Bonsucro Production Standard inspires Mitr Phol to give importance to farmers and communities. Sugarcane farmers are encouraged and supported to gain the best access to production technology, to raise their standard of living, increase outputs and enhance production efficiency and precision while production cost is efficiently controlled. Farmers hence enjoy higher income and greater farm management capacity. Mitr Phol Group's sugarcane farmer development pattern is shown below:

# Sugarcane Farmer Development Pattern

Project period	Objectives	Details	Results
<p><b>Stage 1: Increasing output with technology via Mitr Phol Group's Fair Contract Farming agreement</b></p>	<ol style="list-style-type: none"> <li>To tackle production challenges driven by lack of knowledge, poor management, and lack of proper tools with specialized output-oriented technology.</li> <li>To build farmer networks for greater bargaining power against the suppliers of raw materials and production factors, resulting in higher-quality and cheaper raw materials and production factors for their own benefits.</li> </ol>	<p>Enforce "Fair Contract Farming" agreement</p>	<p>In 2017, Mitr Phol Group signed the agreement with more than 30,000 sugarcane farmers, committed to jointly enhance production efficiency, buy a certain amount of output, and extend other significant supports including financial supports, provision of production factors, and training to improve their knowledge, skills and experience. Details are as follows:</p> <ul style="list-style-type: none"> <li>● Provide supporting funds.</li> <li>● Provide production factors.</li> <li>● Provide training to improve skills, knowledge and experience.</li> <li>● Agree to purchase the produce.</li> </ul>
<p><b>Stage 2: Irrigation and water usage management in sugar farms</b></p>	<ol style="list-style-type: none"> <li>To reduce water shortage and water usage inefficiency through an efficient irrigation and water usage management system.</li> <li>To mitigate drought-related risks.</li> </ol>	<p>Formulate the irrigation plan for sugarcane farmland in cooperation with local sugarcane subcommittees, Bank for Agriculture and Agricultural Cooperatives and Office of the Cane and Sugar Board, to ensure sufficient water supply. The task has been ongoing since 2006.</p>	<ol style="list-style-type: none"> <li>The project covered 1,724,966 rai in 2017 and 479,760 rai or 28 percent were irrigated.</li> <li>Provide supports on knowledge, funds, and the formation of water user groups to ensure sufficient water supply and self-sufficiency.</li> <li>Support and educate farmer communities in key issues <ul style="list-style-type: none"> <li>- Provision of water sources for plantation such as the construction of ponds, drilling of underground water wells, pumping stations, and distribution of water to farmland.</li> <li>- Efficient watering technique such as Center-Pivot irrigation.</li> </ul> </li> <li>Locate water sources, reuse water from farmland and factories.</li> <li>Full Coverage irrigation increased involved farmers' yield from 10 tonnes to 16 tonnes per rai, or 60 percent. Mitr Phol Group in 2017 in extended a total of 6,870 million baht to support sugarcane plantation.</li> </ol>

Project period	Objectives	Details	Results
<p>Stage 3: Farmland management for higher efficiency and maximum yields through Mitr Phol ModernFarm innovation</p>	<p>To equip farmers with integrated farmland management tools for higher efficiency and maximum yields.</p>	<p>Mitr Phol ModernFarm improves farmers' knowledge and skills by</p> <ul style="list-style-type: none"> <li>- Brochures and training.</li> <li>- Training for contracted farmers on farmland management by Mitr Phol Group officers. 105 coordination centers were set up to facilitate farmers. Participating are 409 staffs keen on farmer support.</li> <li>- Iron Man project to equip Mitr Phol Group's personnel with knowledge about Mitr Phol ModernFarm to facilitate the transfer of knowledge to farmers in their respective areas for maximum plantation efficiency. Mitr Phol Group targets to achieve at least 500 experts (so-called Iron Man) within 2019.</li> <li>- Field trips to successful farms in Thailand and overseas on modern management techniques as well as joint business planning with farmers of all sizes to help farmers and grow business.</li> </ul>	<p>Equip farmers with farm management knowledge focusing on farm design.</p> <ol style="list-style-type: none"> <li>1. 75 percent of land for primary crop plantation.</li> <li>2. 8 percent for main road, cane unloading station, and primary/secondary transport route.</li> <li>3. 5 percent for reservoir.</li> <li>4. 12 percent for secondary farmland (secondary crop/fruits/vegetables/farm animals).</li> </ol>
<p>Stage 4 : Sustainable community development for social development</p>	<p>To lift the quality of living of sugarcane farmers' communities.</p>	<p>Implement the project in collaboration with Tambon Mitr Phol Ruampattana council, small-sized farmers and communities in target areas.</p>	<p>Implement the project in target areas which are expanded to 21 Subdistricts in 8 provinces (from 9 Subdistricts in 7 provinces).</p>





## Friends of Customers



Sugar Business



Renewable Energy Business



Wood Substitute Material Business



Fertilizer Business



Logistics Business



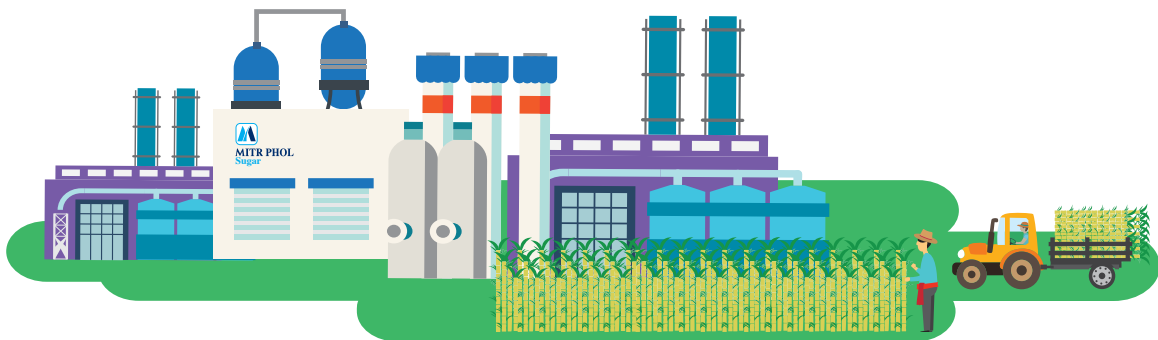
Health and Safety of Customers

# Friends of Customers

Customers and consumers are one of Mitr Phol Group's stakeholders. We thus give great care in every detail starting with the sourcing of qualified and safe raw materials which show no genetic modification throughout the production process, to assure customers of quality products and services. Innovation and modern technology is also introduced, to be friendly to customers and assure consumers of international-standard products and services. The ISO 9001 quality management is implemented at all business units of Mitr Phol under the following guidelines:

1. Instill employee awareness on system and methodologies, efficient work and commitment towards improvement to produce the best results; and improve the process to achieve the effectiveness under the ISO 9001 standard.
2. Quality and service is the responsibility and duty of all employees which must be continually reviewed and improved for customer satisfaction.
3. The company is responsible for society through concerns about the welfare of employees and workers as well as communities' quality of life.
4. Outline the company's objective and target on quality, to ensure the operations meet the company's policy, and have them reviewed every 6 months.

Mitr Phol Group consists of the following businesses which entail customers as shown below:



## Sugar Business

Mitr Phol Group produces sugar products for Thai and international markets, Mitr Phol Refined Sugar, Mitr Phol Refined Sugar in Hygiene Pack, syrup, flavored syrup-Mitte, coffee sugar, icing sugar sachets, low-calorie sugar, Mitr Phol Gold sugar, coconut paste sugar, rock sugar, brown sugar, and natural cane sugar. Mitr Phol Group has broadened marketing channels to cover, for example, Online channel, to address customers and consumers' behavioral change driven by today's technology and digitalization. The store offers some Mitr Phol products particularly the newly-launched which cannot reach all consumers including Mitte syrup. The channel is also initiated for customers' convenience.

## Satisfaction survey result

Mitr Phol Group since 2016 has undertaken product and service satisfaction surveys with Net Promoter Score (NPS) which has been popular among leading industries. The surveys are conducted via phone calls, questionnaires by e-mail and faxes, and online questionnaires covering 390 customers from all customer groups. The customer groups are as follows:

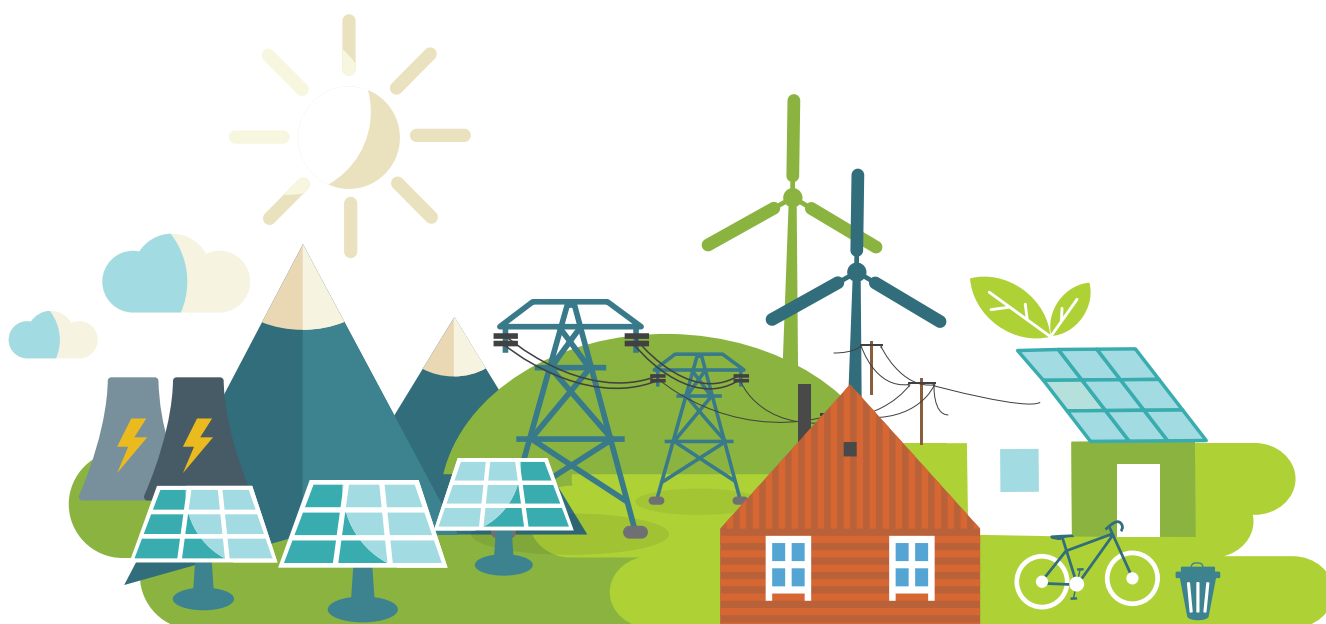
- Corporate customers/industry (Business To Business)
  - Customers in Thailand, Cambodia, Laos, Myanmar, Vietnam and Singapore
  - Regional and international customers
  - Molasses buyers
- Consumers (Business To Customer)
  - Online customers: Lazada
  - Customers who are Mitr Phol employees

The satisfaction survey result is summarized as follows:

	Year				Target 2017
	2014	2015	2016	2017	
% of satisfied customers	NA	71.04	64.51	68.84	66.00
% of total customer surveyed	NA	40.55	47.01	53.35	

Remark: NA = Not Applicable

The satisfaction survey in 2015 covered only the customers in Thailand and other countries as well as molasses buyers. The 2016 survey was extended to cover online customers. In 2017, the survey showed 68.84 percent satisfaction. Mittr Phol Group uses the results in improving production and services to comprehensively address the demands of all customer groups. Mittr Phol Group also improves products and services as recommended by customers through the non-conformity reporting system. The reports are transferred directly to relevant business units for precise and timely actions. Meanwhile, Mittr Phol expands marketing channels and product information search channels for customers' maximum accessibility to products and information. These include a website for product information search.



## Renewable Energy Business

Exploring alternative energy business and improving the sugar business in Thailand is one of Mittr Phol Group's ideas in returning benefits to society. The idea is to turn waste into valuable products, hence creating a new business which addresses Thailand's energy needs. Mittr Phol's energy business encompasses electricity generating and ethanol production which have different groups of customers as summarized below.

- **Electricity Business**

Mittr Phol Group's idea to convert waste to value gave birth to the bio-fuel power business. Electricity generated from bagasse was first for internal consumption. Higher capacity allows the group to sell excess supply. The power business's customers are segmented into 2 groups: internal customers which are Mittr Phol Group's business units and external customers which are the Electricity Generating Authority of Thailand (EGAT) and the Provincial Electricity Authority (PEA). The power is sold through firm contracts (running 21 years and specifying a certain amount of power) and non-firm contracts (running 5 years and not specifying the amount of power). Mittr Phol Group currently operates 8 biomass power plants with capacity of 537 Mwh.

The electricity business's customer satisfaction survey is conducted through questionnaires distributed to all customers, covering their satisfaction with service and the quality of power and steam.



The summarized results are as follows:

	Year			
	2014	2015	2016	2017
% of satisfied customers	85.00	98.33	98.33	99.00
% of total customer surveyed	100.00	100.00	100.00	100.00



#### • Ethanol Business

Thailand's energy needs keep expanding, partly from the transport segment. Ethanol is being used to produce gasohol for this segment. Realizing the opportunity, Mitr Phol Group has continually improved ethanol quality and production quality to cope with an increasing demand for gasohol. We carry out research and development projects to maximize the value of natural materials and minimize production waste. The ethanol capacity is continuously increased in response to increasing demand. The ethanol business' customers are:

- Local market

Ethanol is directly distributed to customers who are entirely oil companies, through 3-month forward contracts which specify fixed volume and price. Focus is placed on the quality of service and coordination, to assure oil companies of supply security. The strategy emphasizes long-term relationship, giving more attention to oil companies which are more than customers in general.

- Overseas market

Ethanol is directly supplied to foreign buyers and distributors as such shipment demand fleet management expertise.

The ethanol business's customer satisfaction survey is conducted through questionnaires distributed to all customers, covering their satisfaction with shipments and product quality. The results are used in upgrading service and product.

The summarized results are as follows:

	Year			
	2014	2015	2016	2017
% of satisfied customers	100.00	100.00	100.00	100.00
% of total customer surveyed	100.00	100.00	100.00	100.00



## Wood Substitute Material Business

Panel Plus Co., Ltd. a subsidiary of Mitr Phol Group, is a leading manufacturer and distributor of particleboards, MDF products and melamine-coated panel in Thailand, boasting experience, efficient management and readiness to address customer needs. The products are branded "PANEL PLUS", being a symbol of professional management for customers and nature's balanced benefits. The wood substitute material business's customers are small furniture makers and distributors in Thailand and overseas.

Panel Plus in collaboration with universities design curriculums on the properties of wood substitute materials and applications, spreading knowledge to university students who will expand the market to new generations and become good customers in the future. Panel Plus also explores opportunities to penetrate healthcare-related projects, the market that shows high growth potential.

### Satisfaction survey result

The wood substitute material business surveys local and foreign customers' satisfaction by sending questionnaires to customers and 47 joined the survey that focuses on the quality of products and services.

The survey in 2017 showed the 99 percent satisfaction with services — sale document, shipments and sale staff's services. The results are used in improving product and service quality as recommended by customers. The result is summarized as follows:

	Year			
	2014	2015	2016	2017
% of satisfied customers	84.00	98.00	98.00	99.00
% of total customer surveyed	79.00	88.00	83.00	100.00



## Fertilizer Business

Mitr Phol Group realizes sugarcane farmers' hardship concerning the high price of fertilizers which may be sub-standard or unsuitable for crop and plantation areas. Mitr Phol thus produces organic fertilizer to substitute chemical fertilizers for farmers' good health. The organic fertilizer is of high quality and comes with a reasonable price. The fertilizer business's customers are Mitr Phol Group's contracted farmers and farmers in nearby areas.

Fertilizer Business have demonstrated commitment to meet customer needs and maximize customer satisfaction Due to its new business, the economy has not surveyed customer satisfaction efficiency yet. But In the past year, none was subject to significant punishment or fine for violating laws or regulations. No violation of marketing rules and regulations was reported. Mitr Phol Group remains committed to operating with responsibility for related stakeholders and upholding business ethics.



## Logistics Business

The transportation and warehousing business offers transportation, berthing and warehousing services in Samut Prakan and Chon Buri provinces, to serve Mitr Phol Group and other customers.

The nature of business:

- Rental space for storage of goods
- Product shipment to the storage and to vessels

The shipments to the storage involve mainly export-oriented products and imported products which are sugar, fertilizers and feed meal. Customers are in the sugar and feed meal businesses and others. The service deals with bulk and bagged cargoes.

A comprehensive pre-storage service is on offer, covering truck weighing and shipment via conveyor belts. The shipment to vessels involves similar services with adjustments to fit product types. Services include container loading and bagging of cargo for convenient and speedy storage and transportation.

- **Berthing service**

The business offers berthing services to serve customers in the sugar, molasses, feed meal and other businesses. Cargoes can be loaded or unloaded from vessels. Major cargoes for export are sugar and molasses while imports include feed meal and other products.

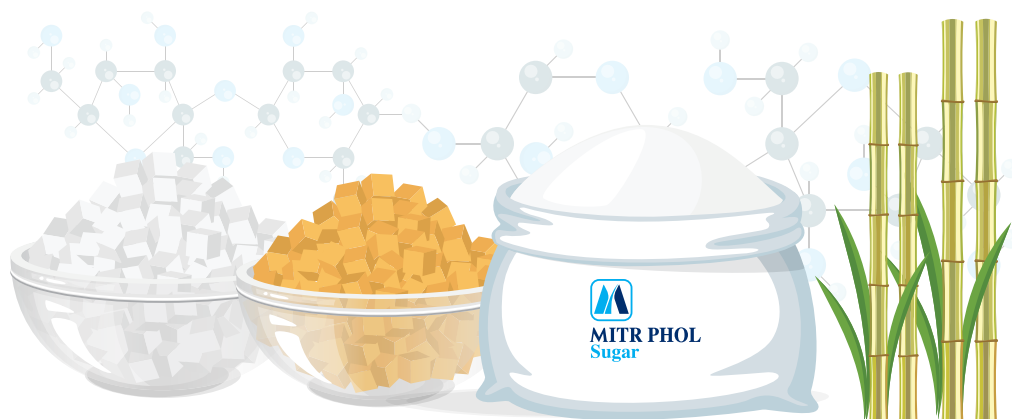
The transportation services cover land transportation and services at a warehouse in Laem Chabang Port. Mitr Phol is exploring related services to serve customers with an integrated service, including transportation from discharging point to destination, customs service, unloading and loading, and provision of packaging containers.

## Satisfaction survey result

The business has 2 groups of customers: high-volume and low-volume customers. Their satisfaction survey involving product and service aspects is conducted through questionnaires sent to high-volume customers.

	Year			
	2014	2015	2016	2017
% of satisfied customers	85.57	83.94	88.39	91.10
% of total customer surveyed	51.61	88.88	75.00	70.00

In 2017, 91.10 percent of customers were satisfied and the results are used to improve its services, to address the needs of all customers and improve services as recommended by customers.



## Health and Safety of Customers

Aside from customer satisfaction, Mitr Phol Group emphasizes product value, taking into account raw materials from bio-technology and the delivery of nutritious, safe and traceable products.

The sugar business serves with international-standard sugar production process with traceability for all products. The operations are certified by the following international standards.

- ISO 9001 Quality Management, ISO 22000 Food Safety Management System and Good Manufacturing Practices (GMP)
- Food Safety System Certification 22000 (FSSC 22000) and Hazard Analysis and Critical Point System (HACCP)
- HALAL (Halal Standard) and KOSHER (Kosher Dietary Law)

While sugar products are 100 percent certified for international safety standards, Mitr Phol Group applies the Bonsucro Production Standard for the sustainability of sugarcane and sugar industry. The standard is applied with sugarcane production through the delivery of products to consumers, to assure large customers like Coca-Cola, Pepsi, Nestle, Purac and Mars as well as consumers that their products are a result of great care for farmers, controlled chemicals and fertilizer use, standard production, and environmental management on top of traceability.

The wood substitute material business's production of particleboards, MDF products and melamine-coated panel meets international standard with traceability. It is certified with international standards like Europe standard - EN, Japan's JIS and United States' CARB. The business is also certified for sustainable forests management with FSC™ FM certificate from Forest Stewardship Council. In 2015, it received FSC™ COC certificate (FSC™ C125420) issued to a business producing or selling forest products. Its customers are assured that certified wood and wood products are from sustainably-managed forests. Aside, the business focuses on the distribution of value-added products for all product categories through all channels, to meet local and foreign customer demand.

The transportation and warehousing business will deploy ISO 9001 standard which will not only guarantee standard services but also introduce safety features that concern the safety of employees and the safety of products and services.

The fertilizer business meets production standards, with the certification by the Ministry of Agriculture and Cooperatives and Organic Agriculture Certification Thailand's IFOAM certificate. The certificates assure farmers of zero contamination of chemicals in the organic fertilizer, shutting down the possibility of contamination that will harm their health and their farmland.





## Friends of Communities



Community Sustainable Development Program



Disability Support Program



"Follow Our Father's Footsteps...Plant with happiness" program



Other Projects to Support Social Well-being

# Friends of Communities

Mitr Phol Group strives to co-exist with communities surrounding our sugar mills and plants by involving local people in our community development programs. Our goal is to bring positive contributions to the local people, because we consider them to be our neighbors. As such, the Community development for sustainable development department has been established specifically to work closely with local communities across Thailand to uplift the quality of life of their residents.

As part of our community development initiative, tri-partite meetings, as well as dialogue and discussions between local representatives and Mitr Phol Group management, are regularly held to exchange information and strengthen relationships between both parties using two-way communication. Joint activities and surveys are also regularly conducted for the purpose of gaining feedback and gauging the opinions of cane and rubber farmers surrounding our factories. Feedback collected from meetings, discussion panels, and surveys is valuable in providing Mitr Phol Group with the knowledge and insights of local stakeholders' expectations of the company. The information is used to map out activities and promote the involvement of local people in our community development initiatives. It also allows Mitr Phol Group to be involved in finding solutions to problems faced by the local residents.



Our surveys of local communities' expectations have found that residents want Mitr Phol Group to help lift living standards and provide a better environment. As a result, Mitr Phol Group adopted the wisdom of the late King Bhumibol Adulyadej for our community development plan by focusing on inspiring local residents to be involved in improving their own communities. Mitr Phol Group also utilizes the late king's philosophy of "understanding first" to engage local people in helping to drive developments, in order to "grow together" and achieve sustainable development goals.

A committee on sustainable community development comprised of top-level executives from Mitr Phol Group closely monitors and provides support to projects. There are future plans to appoint this committee to become Mitr Phol Group's official Sustainability Committee. The work carried out by the committee is aligned with Mitr Phol Group's sustainable development policy, which has guided the way the company does business since coming into effect in 2015.

In 2017, the committee carried out three projects to promote sustainable development: the Community Sustainable Development Program, the Disability Support Program, and the Follow Our Father's Footsteps Program. Other initiatives were also carried out to establish and maintain good relationships between the company and local communities.

Types of contribution	Amount (Baht)
Cash contributions	11,245,388.26
Time: employee volunteering during paid working hours	17,496,080.69
In-kind giving : product or service donations, projects/partnerships or similar	10,719,630.00
Management overhead	16,182,912.00

## Community Sustainable Development Program

The Community Sustainable Development Program was initiated based on Mitr Phol Group's commitment to corporate governance, social responsibility, and the involvement of all stakeholders at every link of the supply chain—from cane farmers, suppliers, customers, public and private sectors, communities, society, and the environment—to bring about





true sustainable development and a peaceful co-existence. The group's commitment is evident in the "Grow Together" philosophy, which has been applied across several community development programs. A particular focus is on Mitr Phol Group's key stakeholder group—the more than 30,000 cane farmers that work with the company. We strive to improve their living standards, promote sustainable farming practices, and eradicate poverty. A program to help increase cane productivity for farmers was initiated in 2002, and in 2012 the program was intensified to also promote sustainable development and strengthen communities. Sustainable development is the fourth pillar of the program, and the goals are to lessen the income divide, provide access to opportunities, and improve physical and spiritual well-being, in order for local communities to live happily and become stronger. Sustainable development is focused on five aspects: economic, social harmony, general welfare, natural resources and environment, and spiritual well-being.

The five-year community sustainable development plan from 2017 to 2021 focuses on three key aspects: sustainable community management, community agricultural systems and food safety, and community economic development.

- **Sustainable community management**

This aspect of community development includes promoting supplementary income for improved living standards, knowledge transfers to increase cane productivity while minimizing operating costs and maximizing profits, and promoting five aspects of sustainable development (namely: economic aspect, environmental aspect, educational aspect, health aspect, sports aspect and art and cultural aspect) in order for every family to become stronger.

- **Community agricultural system development and food safety**

This aspect of community development includes providing knowledge to farmers in order to increase their capabilities to become small business operators, encouraging farmers to establish community enterprises to turn crops into value-added products, and uplifting manufacturing standards using the Participatory Guarantee System (PGS).

- **Developing community economic systems**

This aspect aims to equip people in local communities to become professional operators by uplifting their manufacturing standards, creating uniqueness and differentiation for their products, enhancing competitiveness, expanding market channels, and helping to improve community economic systems.

In 2017, Mitr Phol Group increased the number of communities it worked with under this program from nine sub districts to 21 sub districts in eight provinces, comprising 1,612 families, 105 of which now serve as program ambassadors for

their neighbors. Under the program, there are 45 groups that grow vegetables and 21 local markets, which together generate a combined supplementary income of 1,410,239 baht per year, and help to promote community strength and self-reliance.

## Disability Support Program

Mitr Phol Group employs disabled people in its business operations, as it recognizes the value and contributions this group of people can bring to their local communities. Employment of the disabled also helps to alleviate social inequality and provide better access to opportunities for them, and is in line with the government's Empowerment of Persons with Disabilities Act. Mitr Phol Group has initiated the Disability Support Program in six communities surrounding the company's factories in six provinces. As part of the program, knowledge and training is provided to equip disabled people with the skills they need to be able to become independent. Mitr Phol Group employs disabled people on a contract basis for work near their homes, such as in local sub district administration organizations, hospitals, schools, and temples. Support is provided by a dedicated team of officers.

In addition to employment opportunities, Mitr Phol Group encourages disabled people to form groups to drive agendas to improve their well-being, and is also promoting job opportunities, establishing learning centers, and drafting action plans to promote self-dependence.

Currently, Mitr Phol Group employs 87 disabled people by male 58 disabled people and female 29 disabled people (84 disabled people compliant with Section 33 of the Persons with Disabilities Empowerment Act B.E. 2550 and 3 disabled people compliant with Section 35 of the Persons with Disabilities Empowerment Act B.E. 2550). We believe that by providing equal opportunities for the disabled, they are empowered to make contributions to their own communities, the wider society, and the country at large.

## "Follow Our Father's Footsteps... Plant with happiness" program

Mitr Phol Group promotes sustainable development by adopting the late King Bhumibol Adulyadej's philosophy regarding self-reliance and new theory of agriculture. The Follow Our Father's Footsteps...Plant with happiness program" focuses on education about new theory of agriculture. A working group and eight "agricultural guru" have been appointed in the provinces of Suphan Buri, Sing Buri, Khon Kaen, Chaiyaphum, Kalasin, Loei, Amnat Charoen, and Tak to be new theory of agriculture advocates who coach and share knowledge with locals. In addition, 70 farmers who are knowledgeable about new theory of agriculture have also been appointed to spread knowledge at 70 learning centers. The goal is to educate 700 farming families in 2018 and 7,000



families the following year. Aside from developing farming capabilities, Mittr Phol Group is also aiming to promote the simple happiness of rural life to urban residents. Useful tips and inspirational stories about sustainable happiness are published in a booklet that explains how the principles of sufficiency economy and new theory of argiculture can be applied even by city dwellers to achieve five dimensions of happiness: economic aspect, environmental aspect, educational aspect, health aspect, sports aspect and art and cultural aspect as part of a society, maintaining a good lifestyle, and living in a happy environment.



## Other Projects to Support Social Well-being

At each of Mittr Phol Group's mills and factories, a dedicated team is responsible for establishing and maintaining healthy relationships between the company and the surrounding communities. The team is tasked with ensuring that communities, the society, and the environment are well protected. Through a variety of joint activities with local residents, the community relations teams engage local people to achieve six key aspects of sustainable development: economical, social and environmental, educational, health, sports, and cultural.



### Economy

- Community wet markets

In 2017, Mittr Phol Group extended this program to communities of rubber tree growers around the Panel Plus factory in the Hat Yai district of Songkhla province. Due to low rubber prices, growers were struggling to provide for their families. Mittr Phol Group's community relations teams provided knowledge to rubber growers about how to reduce household expenses, and helped them to increase their income by providing vocational training courses such as cooking, gardening, and handicraft making. Their wares-vegetables, snacks, and household objects-were sold in flea markets around the factories.

Training was also provided to company employees who wanted to earn a supplementary income, as well as to workers who were nearing retirement age, so that they could continue earning a living after they left the workforce.

The community flea markets continued to be successful, with two located at the Mittr Phol Sugar Mill in Suphan Buri and the Mittr Phu Wiang Sugar Mill in Khon Kaen being upgraded to "green markets". The markets provide a venue for villagers and workers to bring a variety of vegetables, snacks, and other products and sell them to Mittr Phol Group employees and members of the public. Customers were able to purchase great products including chemical-free vegetables and other household goods at reasonable prices, while villagers and workers were able to earn extra income.

Green markets	Number of stalls operated by employees	Number of stalls operated by local residents	Number of times market has taken place	Revenue from sales (baht)
Green market in front of Mittr Phol Sugar Mill in Suphan Buri province	20	12	86	1,015,310
Green market in front of Mittr Phu Wiang Sugar Mill in Khon Kaen province	8	15	56	217,275

As shown in the table above, the two green markets allowed residents and employees to generate a combined income of more than 1,232,585 baht from sales.



### Society and environment

- Volunteer project to ride bicycles and build dams

Ensuring natural resource security is high on Mitr Phol Group's agenda. The company has partnered with local volunteers to build dams using resources that are locally available such as bamboo, ropes, sand, and old sugar sacks. In 2017, Mitr Phol Group donated more than 50,000 sugar sacks to build water dams, while employees also volunteered their time by biking to the Khon San district in Chaiyaphum province to build a dam. The project combines the strengths of the public, private, and people sectors. A covenant has also been drawn up and agreed upon by all parties for the use and maintenance of the dam throughout its life expectancy of between 7 and 10 years. The dam helps to slow down water flows and prevent flooding during the rainy season, while also reserving water during dry seasons for the surrounding communities. It also helps to enhance the quality of underground water and keep the ecosystem balanced. In addition, it instills a sense of pride among local residents about the protection of natural resources.



### Education

- Scholarships from Mitr Phol Group

Mitr Phol Group believes that education provides a solid foundation upon which Thailand's future will be built. In 2017, Mitr Phol Group provided more than 11 million baht for Career Camp scholarships to the children of farmers, as well as scholarships from other joint programs. The goals are to promote knowledge about modern farming methods and to encourage Thai youth to appreciate the value of farming, in order to prep them to become smart farmers who will drive Thailand's agricultural sector forward in the future. The company's work in promoting education is aligned with the 4<sup>th</sup> sustainable development goal of making quality education available for all. Aside from making contributions to society by increasing access to education for children, Mitr Phol Group's programs to promote education also help to mold future generations of Mitr Phol Group employees, as scholarship holders also are given the opportunity to work for the company upon graduation.



- Mitr Phol Group's joint education program
 

Mitr Phol Group, together with the Office of Vocational Education Commission and the German-Thai Chamber of Commerce, have developed a joint curriculum for vocational students in and around areas where Mitr Phol Group operates sugar mills and factories. The curriculum adopts the German educational method in which students are encouraged to learn classroom theories as well as gain hands-on experience. The program produces highly-competent and knowledgeable human resources in the sugar and bio-energy fields, helping to reinforce Mitr Phol Group's strength and drive the company to achieve effective modern farming management and world-class manufacturing standards.

  - Benefits of the program for Mitr Phol Group
 

The program allows Mitr Phol Group to increase its capability by having access to knowledgeable human resources, while also giving students the knowledge and skills they need to thrive in their future career. As part of the program, students learn about the sugar and bio-energy industries, manufacturing processes, food and quality management, occupational health and safety, and world-class environmental protection standards. Upon completion of the program, students are hired by Mitr Phol Group and they can immediately begin utilizing the knowledge.
  - Benefits of the program for Thai society
 

The program promotes an exchange of knowledge and capability development both for

the schools and the private sector. Educational institutes are able to better prepare students to meet the demands of the labor market. The project is considered a successful partnership between the public and private sector. It also inspires more Thai youth to study fields in which there are labor shortages, as they see that the skills can help further their career both in Thailand and abroad.

Mitr Phol Group, in partnership with vocational colleges in regions where the company operates its business, has trained a total of 399 students in four groups. The first group has already graduated, and 113 students, or 76.3% of the total number of participants (148), have begun working at Mitr Phol Group by the middle of 2017. The second group of students has also completed the program and is in the process of being recruited in 2018.

Mitr Phol Group scholarship holders spend the first year studying the basic curriculum designed by the Education Ministry in their college. The next year is spent learning core skills according to the field that they have chosen and gaining work experience at Mitr Phol Group to ensure that all students meet the criteria that is on par with international requirements. The German-Thai Chamber of Commerce then provides German-standard accreditation and certification. Students who complete the program and successfully become certified are eligible for a higher pay scale and have an opportunity to grow within Mitr Phol Group's business operations in Thailand and overseas.

- Leadership for Sustainable Education Development (Connex ED) under Public Private Collaboration Committee
 

Alongside some of Thailand's leading corporations, Mitr Phol Group participates in this program to drive the development of the Thai education system, in line with the national strategies. The program serves as a model for uplifting standards in the education system and is a tri-partite collaboration between the public, private and people sectors. Mitr Phol Group managers join the management teams of 11 other companies as "school sponsors" to provide strategic advice and funding to "school partners". The program-in its second phase in 2017-has expanded to cover more than 4,600 schools across Thailand. Its goals are to develop capabilities, lessen the income divide, and increase competitiveness, in line with the government's 10 strategies under the 12<sup>th</sup> national economic and social development plan. The strategic initiatives have clear KPIs for each pillar and use the "quick win" approach.

- Job Demand Platform-building a market database for all industries to prepare human capital and develop skills and capabilities that are required by current and future labor markets.
- 2<sup>nd</sup> phase of Pracha Rath school project-expanding the support to an additional 1,246 schools, inching towards achieving 10-15% of the total schools in Thailand.
- Capability Center-having the private sector take part in establishing a Capability Center at vocational colleges, funded by the government. to be the center for learning and skill development
- Partnership Schools-building on the Pracha Rath school model, the "Partnership School Project" invites collaboration from other parties in school management.
- Media and digital media-allocating an additional minute per hour during prime time programming to communicate content related to education and using media and digital media to create awareness about involvement from all parties in the development of Thailand's education system.





**Public health aspect**

- Mitr Phol Group cares about the health of communities  
 Mitr Phol Group cares about the health and well-being of communities surrounding the company's sugar mills and factories. Our goal is to promote good health and strong communities. Each year, annual health check-ups are provided to more than 3,000 local residents by medical personnel from local hospitals.



- Knocking on the doors of the disabled project  
 Ratchasima Green Energy Company Limited, a subsidiary of Mitr Phol Group, has initiated a volunteer project in which employees make visits to the homes of disabled people in their local areas. The goal is for disabled people to become self-dependent and increase their living standards. Clothing and medicine are also donated to provide support to care givers of the disabled.





## Sports

### - Mitr Phol Football Clinic

Mitr Phol Group uses sports as a way to engage youth and prevent drug use. The program also helps to uplift the standards of youth football in Thailand. For the past six years, more than 2,600 children across the provinces of Suphan Buri, Sing Buri, Leoi, Chaiyaphum, Khon Kaen and Kalasin have participated in the football clinics. As part of the program, participants

learn from and train with coaches and professional players from Ratchaburi Mitr Phol Football Club. In 2017, competitions were also held to select talented footballers to represent their schools and regions in a tournament. The winning team receives an opportunity to train at Ratchaburi Mitr Phol Football Club's stadium.







**Arts and culture**

- The 4<sup>th</sup> Mitr Phol Art Camp

Mitr Phol Art Camp 2017—held for the fourth consecutive year—invited talented youth to hone their artistic skills and participate in a mixed media competition. The children learn techniques and tips from Sangkom Thongdee, a renowned art teacher and recipient of the Outstanding Individual in Art award. The theme of this year's competition was "Happiness... from what Father did" to commemorate the contributions to the country from the late King Bhumibol Adulyadej—the Father of the Nation. His actions and words will live on not only through the art pieces, but also his several initiatives including the Royal Project Foundation and his sufficiency economy philosophy.

The Mitr Phol Art Camp was held this year for local children in four provinces: Loei, Suphan Buri, Khon Kaen and Kalasin. Aside from activities to promote arts and creativity, the children also learned about local cultures and cultural diversity.







## Friends of Innovation



Human Resources Innovation



Process Innovation



Business Innovation



Product Innovation

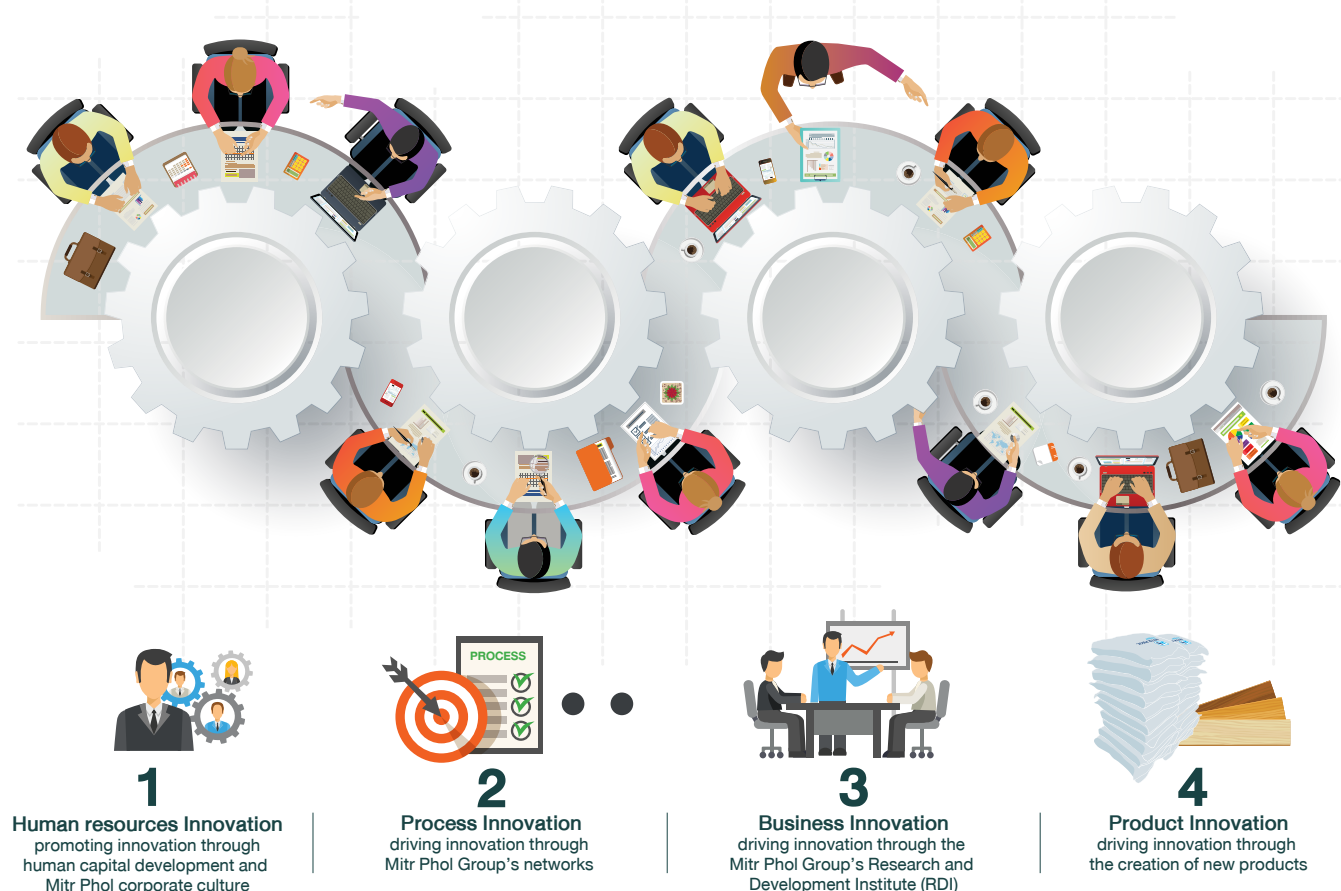


# Friends of Innovation

Mitr Phol Group relies sugarcane-as raw materials within the group's businesses. Factors including climate, water, species, harvesting technology, and manufacturing processes affect productivity and business success. Mitr Phol Group pays close attention to the changes-both positive and negative-that occur, from climate change to crop diseases and pest

problems, as these can affect crop yields. Other factors such as digital connectivity and technological advancements pose both threats and opportunities for Mitr Phol Group's business operations.

Research & development as well as innovation are crucial in ensuring business continuity and sustainable growth. Mitr Phol Group's efforts in R&D and innovation are focused on four core areas.



## 1. Human Resources Innovation – promoting innovation through human capital development and Mitr Phol corporate culture

Mitr Phol Group has a clear roadmap to drive innovation. The culture of innovation is deeply ingrained in Mitr Phol Group's people, with those who work in manufacturing driving innovation, then expanding to other key departments, until innovation permeates throughout the entire organization.

Innovation is also incorporated into every business and operational process, such as capability and skills development for employees of all levels, closely aligning with Mitr Phol Group's Strategic Competency and Leader Attributes. Curricula are also designed to be adaptable to the changes of today and tomorrow, such as S-curve and digital disruption. Examples of project-based learning with returns on investment from development costs include:

## CE-Mitr Phol Learning Camp

Using the constructionism approach to learning, this camp is focused on teaching five core disciplines, along with project-based learning with measurable results, and using the Collaboration Tool to create a knowledge management system.



## The Signature Development Program

Comprised of BDP, SDP, MDP, and EDP courses, this program aims for participants to exchange ideas and learn how to apply them in their everyday lives. The program uses a blended learning approach, with classroom theory mixed with case studies and real-life experiences. As part of the program, participants engage in a project that is later implemented.



## Mitr Phol Accelerate Program

Dedicated to the development of generation Y, this program grooms young workers to have an entrepreneurial mindset in their approach to business and use creativity and innovation in their work.



As part of the program, participants take part in a four-day Idea Generation Bootcamp to brainstorm new ideas that may be applied within Mitr Phol Group's businesses. Participants are assigned a group and mentor who provides advice and feedback before the ideas are pitched to Mitr Phol Group executives. Teams with winning ideas receive cash prizes and are assigned a project sponsor to help develop the idea into a complete project with market analyses, a business model, and feasibility study.

In 2017, the first Mitr Phol Accelerate Program saw more than 30 ideas. Of those, 17 projects received mentorship, 10 were pitched to management, and nine received approvals to conduct feasibility studies.



## 2. Process Innovation—driving innovation through Mitr Phol Group’s networks

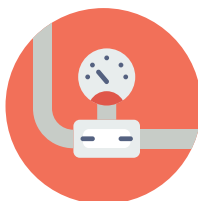
Mitr Phol Group is committed to ensuring the manufacturing process is supported by advanced and innovative technology in order to increase productivity and add value for customers. Mitr Phol Group and King Mongkut's University of Technology Thonburi have signed a memorandum of understanding to create the Mitr Phol Career Camp for the purpose of skills development for students, farmers and company employees. The joint project grants scholarships to third year students who join the program. Under the mentorship of their advisors, students work on projects to improve Mitr Phol Group's manufacturing processes, using technology to create change. Upon graduation, the students are hired by the company. To date, 27 students have received the grants.

Mitr Phol Group also carries out the Talent Mobility project, supporting academic and research studies to help create new innovations that improve the company's manufacturing processes. Projects include:



### Programming and analytics of manufacturing processes in sugar mills and bio-power plants

Using advanced technology and software to analyze sugar production and electricity generation processes in order to improve efficiency and fix problems accurately and quickly.

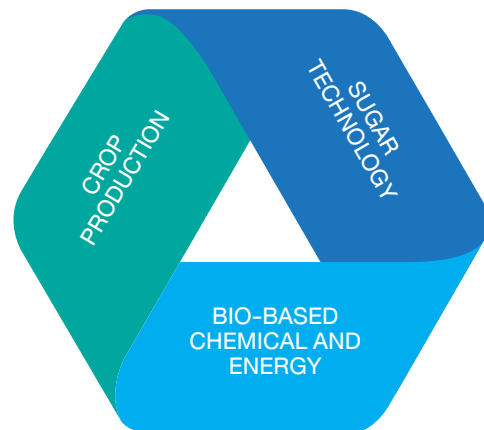


### 3D pipes and valves systems development for sugar production

A 3D software program was created to monitor and control the pipes and valves systems, giving the control room better visibility of the work process, while helping to enhance speed and precision, and reducing human error through mechanization.

## 3. Business Innovation—driving innovation through the Mitr Phol Group’s Research and Development Institute (RDI)

The Mitr Phol Research and Development Institute was established in 1997 with the goal of using technology and innovation to drive Mitr Phol Group's businesses and achieve sustainability and leadership in the sugar industry. RDI's research focuses on three core areas:



# 1

### CROP PRODUCTION

The goal of this area is to improve crop productivity by focusing on cane breeding, clean species, bio pest and disease controls, and farm management.

# 2

### SUGAR TECHNOLOGY

This area is focused on sugar technology to uplift product quality, create new products, and solve problems in sugar mills.

# 3

### BIO-BASED CHEMICAL AND ENERGY

Research in this area is aimed at adding value to byproducts from the sugar production process, such as using bagasse to generate bio-power, utilizing molasses to produce ethanol, and employing bio-technology to create new businesses. RDI's research initiatives help the company stay up to date with technological advancements and are aligned with the government's new push to focus on "S-curve" industries.



## 4. Product Innovation—driving innovation through the creation of new products

In order to create product differentiation and expand Mitr Phol Group's customer base, in 2017 Mitr Phol Group developed the following new products:

In 2017, Mitr Phol Group worked with universities and leading research centers in Thailand and overseas on several research and innovation projects.

### 3.1 Domestic partnerships

- King Mongkut's University of Technology Thonburi
- Faculty of Agriculture, Kasetsart University Kamphaeng Saen Campus
- Prince of Songkla University
- Khon Kaen University
- Suranaree University of Technology
- Department of Biotechnology, Faculty of Agro-Industry, Kasetsart University
- Food Innopolis, a government-sponsored research center for food innovation
- The National Science and Technology Development Agency
- The Thailand Research Fund
- Agricultural Research Development Agency

In addition to these partnerships, Mitr Phol Group also signed memorandums of understanding with the Tobacco Authority of Thailand under the Commerce Ministry, and the Thailand Institute of Nuclear Technology. The company will collaborate with the agencies on specific research and innovation studies, such as for the development of products for soil enrichment and cane growing.

### 3.2 Partnerships with international organizations

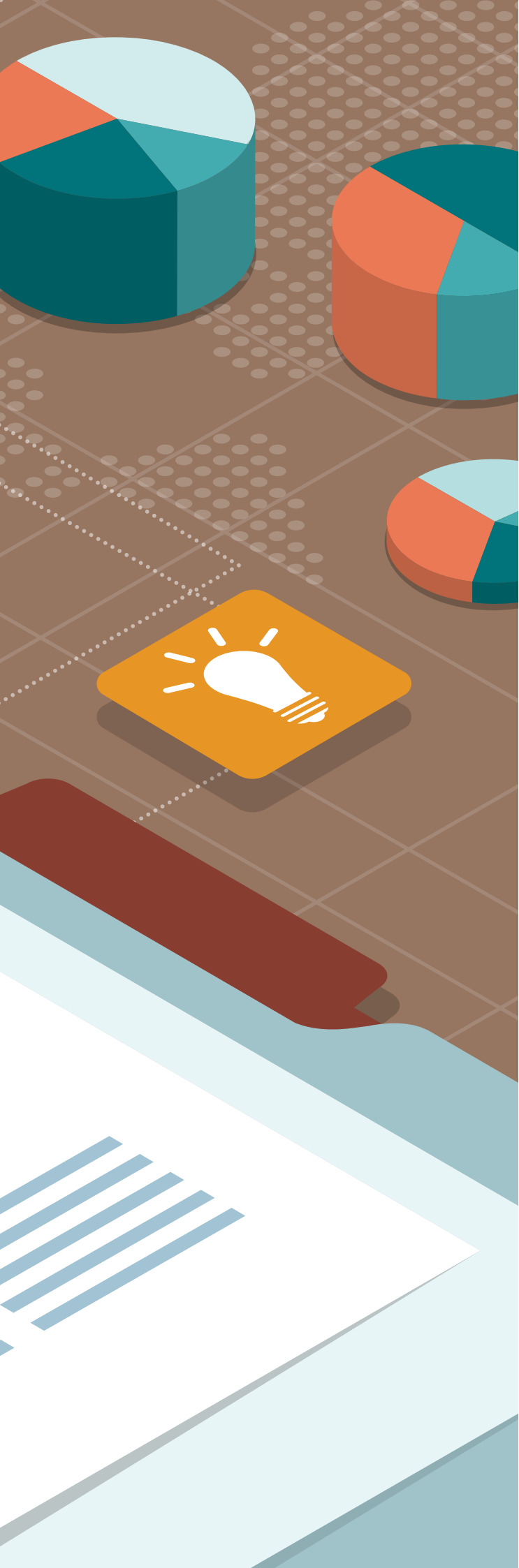
- The Commonwealth Scientific and Industrial Research Organization in Australia, to work on phenomics and precision agriculture research.
- CIRAD, a French agricultural research and international cooperation organization, to work on species tests and the management of economic crops including sugarcane, tapioca, and sweet sorghum.
- France-based Montpellier SupAgro, to work on joint research and technology transfers between the two organizations.
- National Chung Cheng University in Taiwan, to work on oligosaccharides research for the creation of prebiotic products for animals.

- Mitte flavored syrups and sugar substitutes
  - The Mitte Thai series of syrups features four flavors: coconut water, royal lotus, lemongrass and tamarind. Formula and special ingredients development gives Mitte syrups natural flavors and fragrances, making them perfect for mixing into drinks for households or parties. The syrups can also be used to create a variety of interesting drinks for cafes and restaurants, or for welcome drinks at hotels and tourist attractions.
  - Through a joint venture with Dynamic Food Ingredients, Mitr Phol is manufacturing erythritol and xylitol, which are healthy sugar alcohols made from natural ingredients. With its great flavor, the sugar alcohols are different from other chemically-produced sugar substitutes. The partnership between the two companies aims to create new sugar production technology that develops low-calorie sugars from natural ingredients to be used in place of chemical sweeteners.
- Soil Mate bio-fertilizer 1 kilogram packs
 

Soil Mate is a market leader in high-performance chemical fertilizers, produced in batches of only 50 kilograms at a time to ensure consistent quality. The company created a new type of bio-fertilizer with improved nutrient absorption power by using byproducts from within Mitr Phol Group's production lines, such as filter cakes from sugar mills and ethanol plants. All fertilizers have received certifications from the International Federation of Organic Agriculture Movements as being suitable for organic farming both commercially and in households.
- KOBOTEN animal feed yeast
 

KOBOTEN is an inactive dried yeast for animal feed, an innovative product made from raw materials used in ethanol production. By adding value to the raw materials, the product helps to increase Thailand's raw material security. KOBOTEN products were the first in Thailand since 2016 to receive the GMP+ certification. In 2017, more than 8,000 tonnes of KOBOTEN products were used domestically.





## GRI Content Index

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Mitr Phol Group  
2 Ploenchit Center, 3<sup>rd</sup> Floor.  
Sukhumvit Road, Klongtoey, Bangkok 10110  
Tel. +66 2794 1000 Fax. +66 2656 8494  
[www.mitrphol.com](http://www.mitrphol.com)



Sustainability Report 2017  
**Mitr Phol Group**