



# COP 2017

**Mitr Phol Sugar Corp.,Ltd**

## **Message from the CEO and President**

One of great change for businesses, with technological advancements moving faster than ever. To stay competitive and adaptable to change, organizations must undergo transformations, and Mitr Phol is no exception. With its vision to become a world-class organization and a leader in the agro-industrial sector, Mitr Phol has continued to improve its business foundation, particularly in the IT infrastructure and resources management areas, in order to maximize efficiency and competitiveness. We further expanded into the bio-economy business as a new targeted industry (New S-Curve) of the government and in line with the Thailand 4.0" policy. Finally, digital innovation and technology remain at the core of the group's business operations.

The Mitr Phol ModernFarm project promoted innovative agricultural methods and efficient farming management, uplifting cane growers in Thailand to become smart farmers. Using technology in place of manual labor and working to increase cane productivity and quality, the ModernFarm project has helped Mitr Phol Group become the 4<sup>th</sup> largest sugar producer in the world.

Modern cane farming management helps to alleviate labor shortages, which will only grow in importance as Thailand advances toward becoming an aging society. Incorporating agricultural technology and machinery is also crucial in attracting younger generations of farmers. Mitr Phol continues to care for the surrounding communities, by expanding existing programs to cover more areas and local people. This includes the sustainable development program, which has grown from 9 sub-districts to 21, job creation assistance for the disabled, and a project that encourages local residents to produce and sell their fruit, vegetable and hand-crafted items as a means of additional income in order to strengthen local community.

The Mitr Phol ModernFarm methods also lead to a reduction in the usage of chemical pesticides, helping to significantly decrease farmers' costs while improving the environment and protecting delicate ecosystems. All of our sugar mills also feature state-of-the-art waste management systems, which helps to protect the environment.

This year also brought about great achievement and recognition for Mitr Phol Group. We received 3 Best Employer 2017 awards from global consulting firm Aon Hewitt. We will continue to build and maintain strong employee relations and engagements, while helping to enhance the competency of our staff to drive business growth. And as our business continues to grow in a sustainable way, we will persist in taking care of the environment and our society, and do our

part in contributing to the Thai economy. We remain committed creating value for better life to all stakeholder groups and in growing together with them.

Moreover, We are Global Compact Network Thailand (GCNT) founder member and have an intention to support GCNT operation and driving UN SDGs in Thailand. Management and staff are key success factors to make us achieve goals. To ensure the understanding of Mitr Phol's employee regarding the Ten Principle of the United Nations Global Compact in the areas of Human Rights, Labour, Environment and Anti-Corruption, we communicate them in all internal communication channels i.e. website, intranet, publication, and etc.

derstand and always follow the Ten Principle of the United Nations Global Compact in the areas of Human Rights, Labour, Environment and Anti-Corruption in order to strongly support and driving UN SDGs in Thailand.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Krisda Monthienvichienchai".

Mr.Krisda Monthienvichienchai

Chief Executive Officer and President

## **Mitr Phol Sugar Corp., Ltd.**

Mitr Phol was established in 1946 in the Grab Yai sub-district of the Baan Pong district in Ratchaburi province. From its humble beginnings as a small family-owned operation that produced concentrated syrup for sugar plants, the company eventually grew to become the sugar producer by itself in 1956. Finally Mitr Phol becomes the Thailand's largest sugar producer and exporter, and a global leader in the sugar industry.

Mitr Phol is committed to operating its business to add value to cane - a locally and nationally important economic crop – while also protecting the environment and promoting community development in line with international standards. While adhering to this commitment for more than 60 years, today Mitr Phol is the largest sugar producer in Thailand and the 4<sup>th</sup> largest in the world.

Furthermore, it can create value for waste by using innovation via the “From Waste to Value” beliefs, which include renewable energy, alternative energy, and smart fertilizer production. For example, bagasse (the matter that remains after sugarcane stalks are crushed) is used as fuel in the production of bio power. Molasses is fermented with yeast to produce ethanol, which is used in the production of eco-friendly gasohol, and by-products from ethanol and sugar production -- vinasse and filter cake -- are converted into bio-fertilizers to be reused in cane plantations. The company is also exploring ways to add value to yeast to produce animal feed products, in order to further develop to future products (New S-Curve) initiative to promote high-value industries.

Today, Mitr Phol operates businesses in Thailand, People's Republic of China, Lao PDR, Australia and the United States. Its businesses cover 8 groups: Sugar business, Energy business, Wood substitute business, Fertilization business and Logistic and Warehouse business.

### **Our 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**

### **1. 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.

### **2. 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.

### **3. 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.

### **4. Responsible for Society**

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

## **Culture**

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:

### **1. Excellence**

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

## 2. 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.

## 3. Trustworthiness

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

## 4. Care and 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.

## 5. 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.



## **COP 2017**

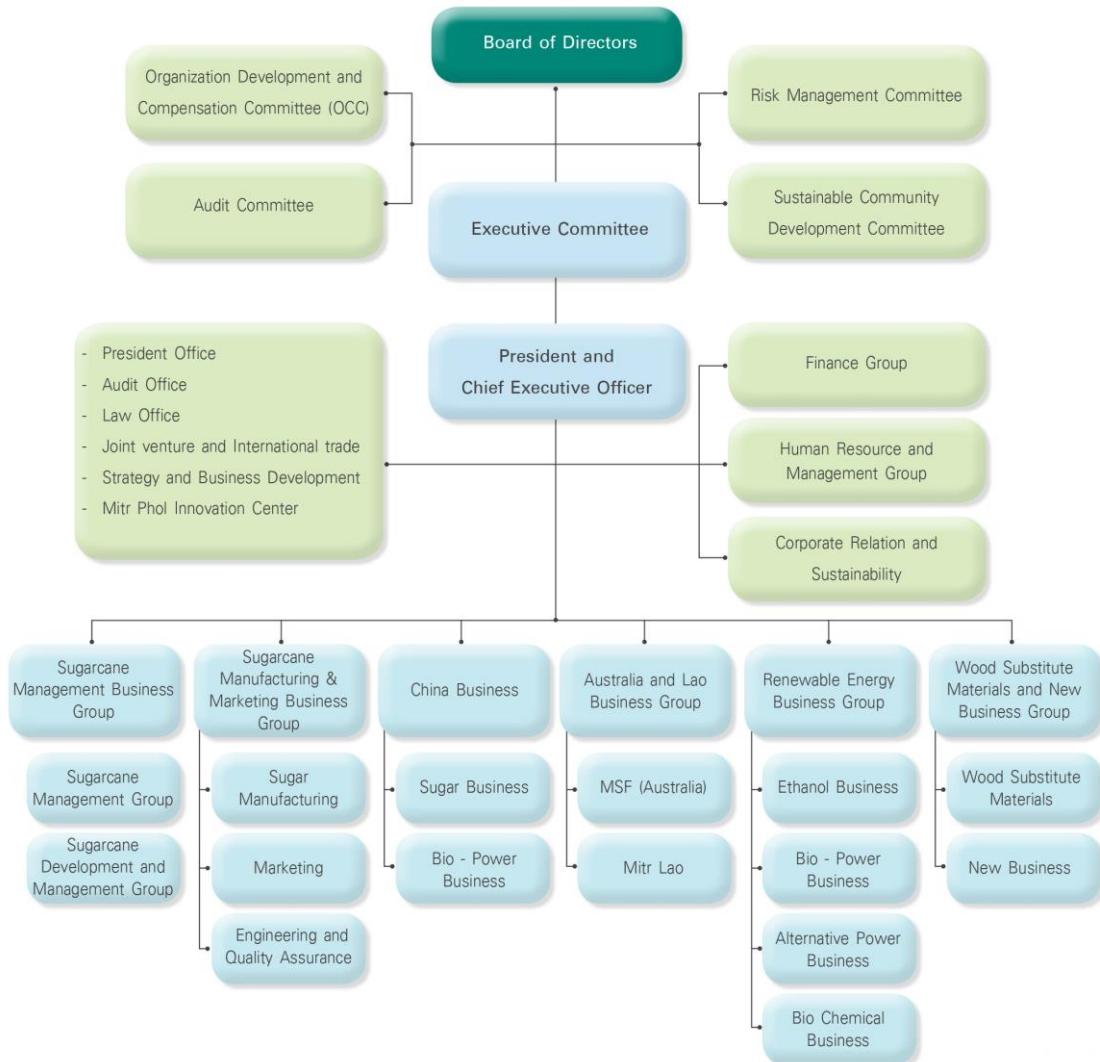
### **Corporate Governance**

Mitr Phol Group places great importance on efficient, transparent, and accountable business operations, as well as treating stakeholders with equality and fairness, in line with good governance practices.

As per company policy, the company Board of Directors and the Executive Board have clearly-defined and distinct functions. The Board of Directors comprises 13 highly experienced members, who are tasked with outlining the company's vision, goals, strategies, policies, regulations and internal systems, as well as monitoring the Executive Board to ensure its decisions lead to a sustainable and continued growth of the company. The Board of Directors meet at least six times per year to keep up with the company's progress and consider any matters proposed by the Executive Board. An annual shareholder meeting is also held to inform shareholders of the company's business performance and future plans.

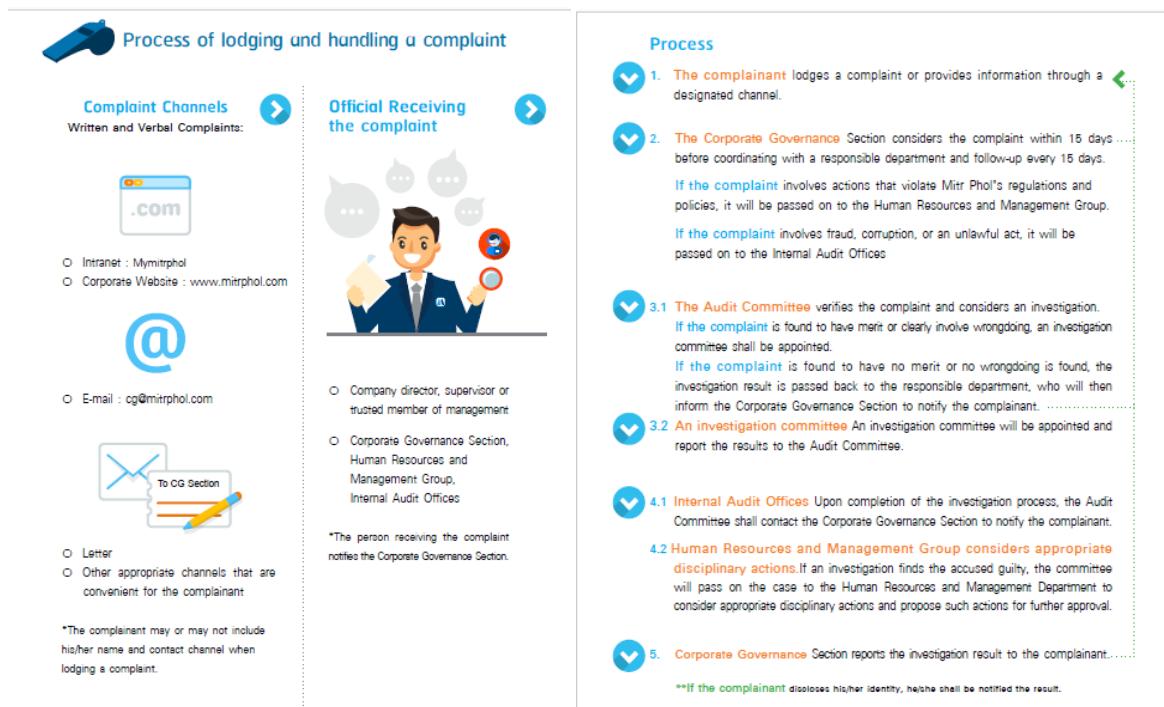
The Executive Board is comprised of eight members, each of whom leads different functions within the company, from raw material sourcing, production, marketing, and finance. The board is tasked with devising business plans, managing the company's operation, ensuring goals are achieved and policies are closely followed, making business decisions, and analyzing the actions of and proposing important matters to the Board of Directors.

## Mitr Phol Group Organization Chart



In its efforts to ensure sustainable growth, Mitr Phol Group realizes the importance of building a corporate culture in which management and employees carry out their duties in an ethical, transparent and accountable manner. The company has established a corporate governance division to increase awareness of the importance of good governance. The Mitr 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 company also provides opportunities and channels through which employees can lodge complaints about improper or unethical actions, after which an investigation is launched. The Ethics Committee handles such complaints and ensures that proper processes are followed. Employees are encouraged to lodge their complaints via the following channels, if they suspect wrongdoing:



### Remark:

By post: Corporate Governance Section

Mitr Phol Sugar Corporation Ltd., 3<sup>rd</sup> Floor Ploenchit Center Building, 2 Sukhumvit Road, Klongtoey 10110

By email: cg@mitrphol.com

## Anti-Corruption

Corruption is a serious matter that plagues many organizations and threatens a company's long-term stability and sustainability. Mitr Phol Group has put in place anti-corruption policies and measures to prevent any corrupt acts that can occur at any link of the business chain. Key anti-corruption policies are as follows:

- 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 policies 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 policies, 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 policies 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.

In order to raise awareness and promote the importance of anti-corruption conduct, Mitr Phol Group communicated its good governance policies to employees through multiple channels such as the Mitr Samphan internal publication and signage boards on company premises.



## Human Resources Management

One of the goals of Mitr Phol Group is to become a world-class organization by focusing on six key aspects of corporate development.



In order for Mitr Phol Group to achieve the status of a truly world-class organization, human resources management must be carried out in tandem with effective administration of all other aspects of the business. In our effort to become a high-performance organization, Mitr Phol Group has developed strategic approaches for several areas of the business to move on a path toward the new S-Curve industries. Through restructuring, work process integration, and the utilization of digital technology, the group has increased management efficiency and is achieving sustainable growth.

## Labor Practices

One of the keys to being recognized as a world-class organization is human resources. Mitr Phol Group places great importance on the entire process, from recruitment, remuneration evaluation, fair performance reviews, skills and capability development, building a successful corporate culture, and sustainable development, through to ensuring quality of life, equality, and personal fulfillment according to the group's "Enhancing World Class Organization" strategy.



## Employment

In 2017, Mitr Phol Group employed a total of 8,760 full-time workers, as shown in the below table.

Employees	Employees	
	Persons	Percentage
Male	6,249	71.34
Female	2,511	28.66
Total	8,760	100.00

As shown in the data above, male workers make up 71.34 percent of the total number of employees, while female staff account for 28.66 percent.

Mitr Phol Group creates employment opportunities for people in local communities surrounding the sugar mills, in addition to engaging in activities that promote self-reliance and an improved quality of life, particularly for the disabled. Aside from creating local jobs, Mitr Phol Group's compensation policy is in line with the standards required by law.

## **Welfare and benefits for permanent and temporary employees**

The health, well-being and satisfaction of our employees is integral in helping Mitr Phol Group achieve our long-term goals. The below table shows employee welfare and benefits provided to all our employees.

Welfare and benefits		Permanent employees		Temporary employees
		Monthly	Daily	
<b>Leave</b>	Annual leave	✓	✓	✓
	Special leave	✓	✓	✓
	Ordination leave/religious leave	✓	✓	✓
	Maternity leave	✓	✓	✓
<b>Benefits</b>	Provident fund	✓	-	-
	Life and accident insurance	✓	✓	✓
	Medical treatment	✓	-	-
	Dental treatment	✓	-	-
	Annual health check-ups	✓	✓	✓
	Employee stock option scheme	-	-	-
	Clinic with doctors and nurses on site	✓	✓	✓
	Employee housing	✓	-	-
	Gift basket during illness	✓	✓	✓
	Uniforms	✓	✓	✓
	Food	✓	-	-
	Training and development program	✓	✓	

Welfare and benefits		Permanent employees		Temporary employees
		Monthly	Daily	
<b>Financial aid</b>	Wedding	✓	-	-
	Death of family member	✓	-	-
	Death of employee	✓	✓	✓
	Money for buying gifts to visit sick employees	✓	✓	✓
	Disaster relief financial aid	✓	✓	✓
	Mobile phone expenses	✓	-	-
	Transportation costs	✓	-	-
	Scholarships	✓	-	-
	Financial aid for employees' children's education	✓	-	-
<b>Others</b>	Employee clubs	✓	✓	✓
	Sports Day	✓	✓	✓
	Appreciation parties	✓	✓	✓

In addition to the basic welfare and benefits packages provided for employees, including paid leave, uniforms, medical and dental treatment, and financial support such as employee provident fund, scholarships for children and emergency loans, Mitr Phol Group has also established the “Happiness Committee.” This employee-run group was created to ensure that the worker welfare and benefit packages meet the needs and lifestyles of employees. A formalized whistle-blowing system has also been set up for employees to anonymously report any illegal or unethical activity that may be damaging to workers or the company as a whole. A special taskforce keeps the information confidential to ensure justice for all involved.

Mitr Phol Group initiated activities to strengthen relationships between workers and management, and foster employee engagement to make the organization a better place to work. These include CEO/COO Town Hall events to exchange ideas and bring people closer, the CEO SEE YOU project for Gen Y employees to engage with management, and other activities that allowed employees to express their opinions openly.

Mitr Phol Group also joined the Thai Future Network to promote sufficiency among employees and help them reduce personal debt in a systematic and sustainable way. The company's "Free Your Debt, Free Your Life" campaign encouraged employees to decrease expenses, increase income, and live in a sustainable way. Coaching was also provided for employees approaching retirement to prep them on how to plan for their lives after work, including managing their social security benefits and living a self-sufficient lifestyle.

Stakeholder and partnership engagement is another area of focus for Mitr Phol Group. Several projects were carried out to promote a better life for farmers. The company was recognized by Human Resources firm Aon Hewitt's 2017 list of the best employers in Thailand, with Mitr Phol Group winning the award for "Best Employer".



## Safety, Occupational Health and Environmental

Mitr Phol Group strictly adheres to safety, occupational health and environmental policies, and operates its business within the SHE Framework. Safety, occupational health and environmental protection targets are set for each company within the group, and all must comply with internationally-accepted standards including ISO14001 and OHSAS 18001. The board of directors, management, employees, partners, suppliers and communities are all encouraged to take part in holding up and adhering to Mitr Phol Group's SSHE standards.

## **Ratio of employee representatives in the SHE Committee**

The SHE Management Committee was established to ensure that working conditions are compliant with legal requirements and internationally-accepted standards. Each business unit has designated representatives that are involved in SHE management, and the number of representatives is on par with or above the legally required standards.

<b>Number of total representatives of operational level employees (persons)</b>	<b>Legal requirements (persons)</b>
229	115

The number of operational level employee representatives in the SHE Committee is more than is legally required, which reflects the level of involvement of operational workers in ensuring that the standards are met. It is the responsibility of employees of all levels to strictly adhere to SHE standards.

## **Safety, occupational health and environmental policies**

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

Mitr Phol Group has published the policies and distributed the documents to management, employees, contractors, and other stakeholders, so they can all be in compliance and help to reduce risks for Mitr Phol Group employees.

## **Safety, Occupational Health and Environmental management performance**

Mitr Phol Group collects monthly data from the SSHE Committee. The data is shown in the table below.

### **Mitr Phol Group's workplace injuries, illness and fatality statistics**

Workplace injuries, illness and fatality statistics	Year 2017		
	Male	Female	Total
Occupational diseases (persons)	0	0	0
injuries (persons)	102	18	120
Death (persons)	0	0	0
Total (persons)	102	18	120

### Mitr Phol Group's workplace injuries and illnesses by gender

Details	Year 2017
<b>Injury Rate (IR) unit: person/1,000,000 hours worked</b>	
- Male	4.60
- Female	1.99
<b>Occupational Diseases Rate (ODR) unit: person/1,000,000 hours worked</b>	
- Male	0
- Female	0
<b>Lost Day Rate (LDR) unit: person/1,000,000 hours worked</b>	
- Male	155.86
- Female	0.55
<b>Absentee Rate (AR) unit: person/1,000,000 hours worked</b>	
- Male	0.18
- Female	0

In 2017, there were no workplace fatalities at any Mitr Phol Group facilities. However, injuries, lost days, and absentees still persisted, and this was attributed to a lack of understanding about occupational health and safety. Also in 2017, Mitr Phol Group intensified its policies regarding serious accidents, fatalities, and property damage for employees, contractors and stakeholders, to promote safety, physical and emotional well-being. In order to prevent further serious accidents, fatalities and property damage, the following standards were implemented:

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

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.
- Other activities promoting safety, occupational health and environmental protection include:
  - Competitions for employees to submit stories about near misses, encouraging them to share their experiences, raise awareness and devise prevention techniques to lower the risk of future occurrences.
  - SHE Day events with activities for employees and contractors at each site, to promote safety, health and environmental protection.

## Human Rights Performance

Mitr Phol Group values human rights protection, promotes equal treatment, supports gender equality, and is against all forms of child labor, slavery and corruption. The group upholds the United Nations' Universal Declaration of Human Rights and operates its business with the

strictest compliance to human rights protection laws. In addition, Mitr Phol Group has human rights protection policies as below;

## **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.

Moreover, Child labor and forced labor in sugar cane plantations are two areas of the highest priority, and Mitr Phol Group institutes continuous efforts to ensure that these illegal acts do not exist within the group's own operations or in the cane and sugar industries in Thailand as a whole. As part of this commitment, Mitr Phol Group has published a set of guidelines to prevent child labor and forced labor.



**Mitr Phol Group's 8 standards**

## Environmental performance

One of our main responsibilities as a citizen of the world is to protect the environment and use natural resources as efficiently as possible. Mitr Phol Group places great importance on effective resource management and environmental protection, ensuring that the organization can co-exist with society and the environment.

Mitr Phol Group has sustainably protected the environment and prevented pollution caused by the manufacturing of the group's products and services. In addition, efforts have also been made by Mitr Phol Group to reduce climate change, and protect biodiversity and the ecosystem using ISO 14001 certified environmental management standards. The group also strictly complies with Thai and international environmental protection laws as part of its commitment to operating its business in an environmentally-friendly manner.

Mitr Phol's From Waste to Value model is one of several systems used by the group in its business operations, forming an important foundation for the entire supply chain. As part of this model, 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 sugar cane. Mitr Phol's From Waste to Value model involves the use of the following byproducts:

- Molasses: a byproduct of sugar production

Adding value to molasses, the byproduct from sugar production, by using it as a raw material to make 99.5% ethanol, which is a key ingredient in gasohol – an environmentally-friendly alternative to benzene.

- Bagasse: leftovers from the cane juicing process

Bagasse is utilized in the production of bio mass energy.

- Filter Cake and vinasse: waste from sugar and ethanol production

The leftovers from sugar and ethanol production are full of nutrients for plants. Mitr Phol Group turns filter cake and vinasse into bio-fertilizers to be used in place of chemical fertilizers in cane fields. This helps to increase productivity while also decreasing operating costs for cane farmers.

- Waste water: waste water from the production processes

Waste water is treated and reused in other non-food production processes.

In order to ensure that the group's business operations are not harmful to the environment, Mitr Phol Group also promotes other environmental protection efforts, such as reducing environmental impacts from production processes, using natural resources sustainably, and promoting other environmentally-friendly initiatives. These efforts are carried out consistently, with key initiatives in 2017 as follows:

## **Environmental protection**

Mitr Phol Group places great importance on environmental protection and the prevention of all forms of pollution caused by the group's production processes. Continued efforts have been made to improve upon existing solutions and develop new methods to reduce any environmental impact.

### **1. Dust pollution management**

Sugar production typically causes dust pollution from furnace chimneys, conveyor belts, and bagasse piles. Mitr Phol Group has carried out dust pollution management at the sources where the dust occurs, using the following systems and measures:

1. Measures to reduce furnace chimney dust
  - Wet scrubbers to remove dust and particles from burning
  - Electrostatic precipitators
2. Measures to reduce conveyor belt dust
  - Leakage inspection
  - Installing conveyor belt covers
  - Using mobile belts
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

Thanks to the above measures and initiatives, in 2017 Mitr Phol Group were 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>.

## 2. Surplus and 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.

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% utilised for purposes including bio-energy production, bio-fertilizer production, reusing in cane fields, and reusing in production processes.

### **3. Waste water management**

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.

### **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 Labour Protection and Welfare.

## **5. Cane transportation and traffic management**

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

The necessity to quickly move sugar canes to sugar mills has led to several problems, from overloading trucks to traffic congestions around the facilities. Mitr Phol Group has implemented the following measures and policies to lessen the impact from 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 termination of agreements.
3. Putting up signage and setting up a call center to facilitate cleaning up public roads where sugar cane has fallen. Sub-stations have also been established for cane farmers with smaller volumes.
4. Promoting the correct methods of transporting sugar cane. Controlling the height of the load on trucks to ensure the top does not exceed 4.2 meters from the ground. Using straps to tie down the sugar cane and hold the loads in place.
5. Setting purchase price deductions for different types of cut sugar cane.

<b>Canes</b>	<b>Price deductions</b>
Long fresh cut canes	Deduction of 20 baht/ ton
Fresh cut canes with impurities	Deduction of 20 baht/ ton
Long top Fresh canes with impurities	Deduction of 40 baht/ ton
Burnt canes	Deduction of 20 baht/ ton
Long top Burnt canes	Deduction of 40 baht/ ton
Burnt canes with impurities	Deduction of 40 baht/ ton
Burnt canes with impurities (sugarcane tops/ leaves/ roots/ dirt/ sand)	Deduction of 60 baht/ ton

## 6. Promoting fresh cane cutting

Cane farmers upstream of the sugar industry continue to be challenged by labor shortages in their local communities, resulting in delays in getting sugar cane to the mills. This has led farmers to use cane burning, which reduces the harvest times by eliminating the need to cut the cane leaves. Despite the quicker harvesting process and lower labor costs, cane burning causes immense environmental damage including emissions of carbon dioxide and other greenhouse gases. Cane burning also has a negative effect on sugar quality.

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
- 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.

Mitr Phol Group's efforts resulted in fresh cut cane making up **45.21** percent of the total sugar cane purchased. The Mitr Phu Khieo and Mitr Phu Viang sugar mills in northeastern Thailand ranked first and second among all sugar mills for the percentage of fresh cut cane purchased.

Area	Unit	Volume of cane for juicing		
		Fresh cut cane	Burnt cane	Total cane
Mitr Dan Chang Sugar Mill	Tons	937,589.470	2,805,953.610	4,438,791.28
	Percentage	25.05	74.95	100.00
Mitr Singburi Sugar Mill	Tons	433,744.210	1,052,494.890	3,743,543.080
	Percentage	29.18	70.82	100.00
Mitr Phu Khieo Sugar Mill	Tons	2,617,993.820	1,005,402.530	3,623,396.350
	Percentage	72.25	27.75	100.00
Mitr Phu Viang Sugar Mill	Tons	1,894,725.050	1,398,485.970	3,293,211.020
	Percentage	57.53	42.47	100.00
Mitr Kalasin Sugar Mill	Tons	1,063,897.540	2,114,876.205	3,178,773.745
	Percentage	33.47	66.53	100.00
Mitr Phu Luang Sugar Mill	Tons	952,037.700	1,197,426.060	2,149,463.760
	Percentage	44.29	55.71	100.00
<b>Total cane from all Mitr Phol sugar mills</b>	Tons	7,899,987.790	9,574,639.265	17,474,627.055
	Percentage	<b>45.21</b>	<b>54.79</b>	100.00

## Complaint process and channels

Mitr Phol Group has established channels of communication for stakeholders to provide suggestions or lodge complaints regarding environmental impacts as part of the complaint management system, with channels available by region:

<b>Company / factory</b>	<b>Telephone number</b>	<b>Address</b>
Mitr Phol Sugar Corporation (Head Office)	02-794-1000	2, 3 <sup>rd</sup> floor, Ploenchit Center, Sukhumvit Road, Khlong Toei, Bangkok 10110
Mitr Dan Chang Sugar Mill	035-418-103-7	109, Moo 10, Nhong Ma Ka Mong Subdistrict, Dan Chang District, Suphan Buri 72180
Mitr Singburi Sugar Mill	036-591-475-6	24/2, Moo 2, Mai Dad Subdistrict, Bang Rajan District, Sing Buri 16130
Mitr Phu Khieo Sugar Mill	044-881-111-4	99, Moo 10, Koke Sa-ad Subdistrict, Phu Khieo District, Chaiyaphum 36110
Mitr Phu Viang Sugar Mill	043-294-202-4	365, Moo 1, Maliwan Road, Nhong Ruea Subdistrict, 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 Subdistrict, Kuchinarai District, Kalasin 46110
Mitr Phu Luang Sugar Mill	042-810921-3	199, Moo 1, Maliwan Road, Koke Kamin Subdistrict, Wang Sapung District, Loei 42130

## Sustainable Resource Management

Mitr Phol Group has grown to become the world's fourth largest sugar exporter. The group has ensured sustainable use of natural resources and effective management in order to reduce the risks of shortages in the future.

A key component in the group's natural resources management is the implementation of environmentally-friendly procurement policies, which help to ensure that Mitr Phol Group's production processes are harmless to the environment from the upstream. The policies stipulate that employees in the procurement department must:

1. Utilize resources to their full potential and in an environmentally-friendly way.
2. Procure products and services that do not cause a negative impact on the environment throughout the life chain, including the sourcing of raw materials, production, transportation, usage, and disposal.

3. Promote the use of environmentally friendly products made from renewable resources such as green label products.
4. Select vendors and service providers with an emphasis placed on their certification of environmental standards.
5. Ensure that procurement processes are fair and equal for all organizations.

Mitr Phol Group's natural resources management ensures that raw materials, water and energy resources are utilized to their maximum efficiency.

## **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: non-renewable materials (fuels and chemicals) and non-renewable materials (sugar cane). In 2017, Mitr Phol Group's main raw materials consumption was as follows:

## **Water resources management**

Water is essential to life. Climate change has contributed to unpredictable and extreme weather patterns resulting in severe drought and other types of natural disasters. In response to this, Mitr Phol Group has implemented water resources management policies that focus on using less water and reusing water where possible, in order to achieve the most efficient water usage and minimize unnecessary losses across all sugar factories and offices.

Mitr Phol Group's water consumption from natural sources is relatively high. The group works in close collaboration with relevant and responsible government offices to seek permission to use such water sources, including the Sub district Administrative Organizations, municipalities, and the Provincial Waterworks Authority. Upon request by governmental authorities due to droughts, Mitr Phol Group readily controls and limits the consumption of water from natural sources to ensure that local communities are not adversely affected by the group's sugar production.

Under the 3R initiative, Mitr Phol Group recycles water from sugar production for other non-food production processes and for use in offices, to ensure the natural resource is utilized to its maximum efficiency.

## **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. In 2017, renewable energy made up more 95 percent of the total energy consumption by Mitr Phol Group.