

Part 1

Business Profile

1. Overview of Business Operation and Policy
1.1 Vision & Mission
Vision

KTIS Group is a leading organization with an outstanding world-class identity. It has maintained good governance, integrated closely with agricultural and industrial industry, maintained social awareness, added values and quality to sugar and its by products, and utilized clean and eco-friendly energy to sustain stability.


Mission

- The company operates its businesses with keen knowledge and experiences, creative ideas and professionalism in order to generate innovation and value to its products and services ranging from upstream to downstream.
- The company creates a sustainable source of raw materials in order to support a fully integrated business network for the production of high-quality products as well as the generation of clean and eco-friendly biomass energy.
- The company conducts its business with high ethics and integrity while maintaining good governance in both existing and new business investments for valuable return in both financial and non-financial forms back to the community, investors, customers, employees, farmers and stakeholders.


1.2 Business Overview

The Company and companies in KTIS group operate a fully-integrated sugar production and distribution business as No. 3 leader in Thailand. In addition to 3 sugar factories, of which 2 are owned by the Company and 1 is leased, the Company also have ethanol plant, bleached bagasse pulp plant, power plant and bio soil conditioner plant.

The Company's businesses can be divided into 2 fields:

1. Sugar Production and Distribution Business

The Company produces sugar and distributes its sugar products to domestic and international customers through KTIS, TIS and KTIS (Branch 3). Sugar products of the Company are refined sugar, white sugar and raw sugar.

2. Downstream Business

Byproducts such as molasses and bagasse from the Company's sugar production process lead to many downstream business opportunities as listed below:

(1) Bleached Bagasse Pulp and Pulp Mold Production and Distribution Business

The Company operates bleached bagasse pulp production and distribution business through EPPCO. The group's pulp factory is located near the Company's sugar plant and can produce pulp from bagasse which is a byproduct from the sugar production process. EPPCO has 3 types of bleached pulp products: dry pulp, wet pulp and packaging products from bagasse pulp (Pulp Mold).

(2) Ethanol Production and Distribution Business

The Company operates ethanol production and distribution business through KTBE and uses molasses derived from the group's sugar factories as a primary raw material. At present, KTBE manufactures and distributes 2 different grades of ethanol products: industrial alcohol and fuel alcohol.

(3) Electricity Generation and Sale Business

At present, the Company's sugar factories and bleached bagasse pulp factories are equipped with electricity and steam generating modules which use bagasse, a byproduct from production processes, as primary feedstock. The electricity and steam generated are used in the production processes of our 3 sugar factories and other factories. The surplus electricity is sold to the Electricity Generating Authority of Thailand (EGAT) and the Provincial Electricity Authorities (PEA) under the power purchase agreements (PPAs). KTBP, TEP and RPBP have also been established to operate the 60MW, 50MW and 50MW biomass power plant which are currently in commercial operation.

(4) Bio Soil Conditioner Production and Distribution Business

The Group produces bio soil conditioner production and distribution business through KTBF and uses recycling filter cake from sugar production process and vinasse from the biogas and ethanol production process to be raw materials in bio soil conditioner products. KTBF has 2 types of bio soil conditioner products: powder and pellet.

1.3 Business Goals

The Company is committed to continuous development to build a solid foundation for its sustainable growth and development and to become a leading organization in vertical integration from Agricultural products to Industrial products by expanding our internal and external business links. The Company aim to create a superior value chain for the Company's businesses which include sugar and sweetener production, biomass power generation, ethanol production, bagasse pulp production, and bio soil conditioner production. All of the Company's products and by-products are eco-friendly and safe for consumers.

Business Goals :

Leader of Cane Business - The Company initiated a wide range of activities with an aim of developing the upstream businesses. Such activities include the cane breeding selection, the application of cane plantation management technology, the technical training for cane farmers, the development of farming tools and machineries, the use of soil conditioner which is a by-product in order to strengthen in security of supplies used in the production process.

Leader of Sugar Business – The Company has consistently invested in the sugar production business. Thanks to its massive production capacity, the Company commercially benefits from the economies of scale driven by its production effectiveness, lower costs of energy, and added value of products. Raw sugar is processed into high quality refined sugar and liquid sucrose for the food industry. This is an example of how the Company adds value to its products and reflect the Company's leadership in the sugar industry.

Leader of Bio Energy Business – With the expansion of its biomass power plant business, the Company has a large-scale electricity production capacity and earned extra income from its power generation business. Bagasse, which is a by-product of the sugar production process and complement the integrated value chain of our industrial and agricultural businesses.

Leader of Bio Product Business – The Company has allocated investment to the development of bagasse pulp products into high-quality and food-grade packages to add value to the Company's business and the society at large.

Leadership of Ethanol Business – For value-added creation, the Company uses molasses to produce fuel-grade and industrial-grade ethanol; and enhances its ethanol production process to effectively generate and make use of bio gas which is a by-product from the ethanol production. As a result, the Company's production and business chains are fully integrated and eco-friendly at every step, and contributes to the Company's leadership in this business.

Leadership in Bio Soil Conditioner Business – By-products from the sugar and ethanol production processes are developed into valuable bio soil conditioner products which are good to enrich the soil quality, the farmers can save farming costs and increase the productivity effectively.

Journey to Sustainable Growth :

(1) Research and Development – The Company has invested in research and development initiatives, focusing on the cane breed improvement, and the development of energy crops, production technologies and machinery to sustain its growth momentum and leadership in the business complex through the diversification of products in consistent with the word “More Than Sugar”. The company’s portfolio includes the cane business, agricultural business, sugar and sweetener manufacturing business, biomass power business, and biomass product business.

(2) Development of Cane Farmers, Cane Farmer Network, and Raw Material Source - The Company has substantially invested in technical and R&D projects with a view to enhance the knowledge of cane farmers and the members of farmer network. In addition, the Company extended financial support to cane farmers to boost productivity in terms of the cane output per rai and the plantation area expansion. In addition to creating greater job opportunities for agricultural workers, the Company has also introduced and integrated advanced farming technologies to develop agriculture to new horizon. Farmers are encouraged to work as partners who help each other.

(3) Personnel Development – Human resources are one of its greatest assets for the Company and employees at all levels are continuously provided with learning opportunities which can help sharpen their functional skills and complement technique. Employees are encouraged to invent and be involved in innovation projects. As a part of its proactive human resources management process, the Company has worked with local and central educational institutes to offer opportunities to learn skills and knowledge relevant to the Company’s business to students to build a pool of qualified candidates.

Journey to Professional Integrity and Corporate Governance :

Corporate Transparency - The Company has in place the Corporate Governance Handbook and has properly disclosed relevant information in accordance with applicable requirements in the spirit of transparency and integrity. As a result, every step of the Company’s processes is verifiable. The Company respects all of its stakeholders which include shareholders, executives, investors, employees, farmers, clients, suppliers, contractors, communities, governmental agencies, etc. In addition, the Company’s activities have been regularly audited by internal auditors and external auditors who are independent.

Contribution to Social, Educational and Environmental Development – The Company has put importance to activities which contribute to the development of the society, education, and environment, and has encouraged relevant parties to join such activities. The Company’s corporate social responsibility programs such as “The Home, Temple, School and Factory Participation Program” which the participated local temples, communities and schools will be trained proper sugar cane farming knowledge. The society will be more wealthy from sugarcane and breeding species.

“The Green Village Program” will also bring benefits for the participated farmers and communities by joining hands in the fire prevention from burning cane during harvesting season. From the program the farmers will get better price by selling unburned cane. The factory will get better cane quality and also the reduction of pollution from smoke of fire on society etc.

Promotion of Health and Occupational Safety – The wellness, life quality, and safety of the employees and surrounding communities are one of the Company’s main focuses which the Company has to strictly comply with the Health and Safety Law. Additional to the Law, the Company set up the teams to visit the community leaders, the religious leaders, including the nearby schools, and provide periodic medical check-up services to the residents of nearby communities. These activities has become the Company normal and continuous practice.

1.4 History and Milestones

Kaset Thai International Sugar Corporation Public Company Limited (“the Company”), formerly known as Kaset Thai Sugar Industry Company Limited, and companies in KTIS group are founded by Mr. Jaroon and Mrs. Hathai Siriviriyakul. With more than 53 years of professional experience in sugar business, KTIS group has extended into integrated sugar production business.

In 2013, the Company has converted into a public limited company and increased its registered capital from Baht 3,274,573,000 to Baht 3,888,000,000. In 2014, the Company has been listed on the Stock Exchange of Thailand which Baht 3,860,000,000 has been paid up and the security symbol “KTIS” on the Stock Exchange of Thailand. In 2015, the Company has increased its registered capital to Baht 3,888,000,010 and paid up capital Baht 3,860,000,010.

At the beginning, the group’s sugar business was limited only to a sugar distribution in Nakhonsawan province. In 1967, Mr. Jaroon Siriviriyakul and a group of local distributors in Nakhonsawan province jointly acquired Mahakun Industry Company Limited, which has a sugar factory with the production capacity of 500 tons per day as a core asset, and renamed the company “Ruampol Enterprise Company Limited (“RPE”). With continuous improvement and development, the company’s crushing capacity has increased from 500 tons of cane per day to 15,000 tons of cane per day.

In 1981, the Company acquired Thai Identity Sugar Factory Company Limited (TIS) and has continuously increased the production capacity of TIS's sugar plant to the level of 18,000 tons of cane per day.

In 1988, the Company further acquired Kaset Thai Sugar Company Limited which then had the production capacity of 6,000 tons of cane per day. To strengthen the financial structure and liquidity position of Kaset Thai Sugar Company Limited, our leadership has forged business partnership with UT Group Partnership Limited, a Singapore-based company, in 2008 to establish Kaset Thai Sugar Industry Company Limited which has incorporated sugar factory of Kaset Thai Sugar Company Limited in its umbrella and has further expanded its production capacity to stand today as the world's largest sugar factory with the capacity of 55,000 tons of cane per day.

In 2003, the Siriviriyakul family expanded into downstream business by establishing a joint venture with Permsinpattana Company Limited and 2 Singapore-based companies, i.e. King Wan Corporation Limited and Xylem Investment Partnership Limited. The JV was named Environmental Pulp and Paper Company Limited ("EPPCO") to produce bleached pulp from bagasse which is a by-product of the sugar production process. EPPCO can produce up to 100,000 tons of bleached pulp annually.

In 2004, the Siriviriyakul family founded a new company, namely Ekarat Pattana Company Limited ("EPC") under a joint venture with King Wan Industries Partnership Limited, Far East Distillers Partnership Limited and Sinotac Group Partnership Limited which are Singaporean entities to produce and sell ethanol from molasses. EPC has the production capacity of 230,000 liters per day. In 2017, changed its name to KTIS Bio Ethanol Co., Ltd. ("KTBE")

In 2010, the Siriviriyakul family commenced a new project that utilizes bagasse, a by-product from sugar production, for electricity generation. Kaset Thai Bio Power Company Limited ("KTBP") was established to run a 60MW biomass power plant which has commercially operated on 7 October 2013.

In 2011, the Siriviriyakul family furthered the advancement by recycling filter cake from sugar production process and vinasse from the biogas and ethanol production process into bio soil conditioner products. Kaset Thai Bio Fertilizer Company Limited ("KTBF") was established as a wholly-owned subsidiary of EPC in order to expand its integrated sugar business. KTBF has commercially operated and has the production capacity 15,000 tonnes of powder per year, 6,150 tons of pellets per year and 200,000 m³ of water per year. In 2017, changed its name to KTIS Bio Fertiliser Co., Ltd. ("KTBF")

To foster business growth through enhanced cane productivity and quality, in 2012 the Company furthered its cane farming and harvesting by purchasing 40 John Deere cane harvesters from T.K. Equipment Company Limited, an authorized dealer of John Deere in Thailand. As a condition under the cane harvester purchase agreement, John Deere will provide us training and consultation on the maintenance, repair, and development of our farming tools and equipment in order to increase the crop productivity of our farmers and in turn supply for our business operations.

In 2013, the Board and the shareholders' meeting approved the Company's acquisition of Thaiekaluck Power Company Limited ("TEP") to operate a 50MW biomass power plant with bagasse provided directly by TIS. In addition, the Company has established Ruampol Bio Power Company Limited ("RPBP") to operate a 50MW biomass power plant with bagasse provided directly by Ruampol factory.

The Board and the shareholders' meeting also approved the establishment of Sapsirikaset Company Limited ("SSK") to be in charge of the acquisition of lands to support KTIS group's business expansion. In 2013, SSK has purchased a total of 2,629-1-16 rais from parties not related to the Company.

In 2013, Sumitomo Corporation and Nissin Sugar Company Limited entered into the investment agreement to purchase the Company's ordinary shares worth up to Baht 2,650.0 million via 3S Holding Company Limited. As the companies are globally renowned trader and sugar manufacturer, the Company expects that the trilateral synergy will help strengthen the Company's competitiveness in the global market and business expansion in the Southeast Asia region.

In 2013, the Board approved the establishment of (1) Lopburi International Sugar Company Limited ("LIS") to support the group's sugar business expansion, (2) Lopburi Bioethanol Company Limited ("LBE") to support the ethanol business expansion, and (3) Lopburi Biopower Company Limited ("LBP") to support the power business expansion.

In 2014, the Board approved the establishment of (1) KTIS Biogas Power Company Limited ("KBGP") to support the power business expansion, and (2) KTIS Bio Power Company Limited ("KBE") to support the ethanol and biomass power business.

In 2015, the Board of Directors approved the establishment of: (1) Kaset Thai Wiwat Co., Ltd. ("KTW") to support KTIS Group's asset management, and (2) KTIS Research and Development Co., Ltd. ("KTIS R&D") to support KTIS Group's businesses and its growth aspiration.

Events and major activities in the year 2018

February 6, 2018 - Company signed Memorandum of Agreement with Global Green Chemicals Plc. to drive Biocomplex investment in order to develop Bioeconomy in Nakhon Sawan Province as a pilot area.

June 11, 2018 - Company welcomed Dr. Suwit Maesincee, Minister of Ministry of Science and Technology and others who visited Organic Fertilizer Project from residue of sugar industry and continuous production industry, including Chemical Organic Fertilizer Project for improving soil and using in place of chemical fertilizer in order to reduce cost of sugar cane plantation. Such research and development project is the cooperation between Ktis Bio Fertilizer Co., Ltd. (KTBF) and Thailand Institute of Scientific and Technological Research.

June 11, 2018 – Company welcomed Dr. Siri Jirapongphan, Minister of Ministry of Energy and others who visited Ethanol Biofuel Manufacturing from molasses which is by-product of sugar processing of Ktis Bio Ethanol Co., Ltd. located at Nong Pho Sub-district, Takhli District, Nakhon Sawan Province.

June 12, 2018 – Company welcomed General Prayut Chan-o-cha, Prime Minister and Mr. Kritsada Boonrach, Minister of Ministry of Agriculture and Cooperatives while visiting a booth of Biocomplex Project of KTIS-GGC Group after a field trip of official cabinet meeting (Cabinet field trip) No. 4/2018 at Nakhon Sawan Province.

August 22, 2018 – Company signed Memorandum of Understanding to study the feasibility in using cellulose technology to produce bagasse build on product in order to build on Nakhon Sawan Biocomplex Project phase 2 between Global Green Chemicals Plc. and Kem Polise Co., Ltd. from Finland.

Presently, the Company had invested in 16 subsidiaries and leases fixed assets from Ruampol Enterprise Co., Ltd.(RPE) as detailed following : (As at September 30,2018)

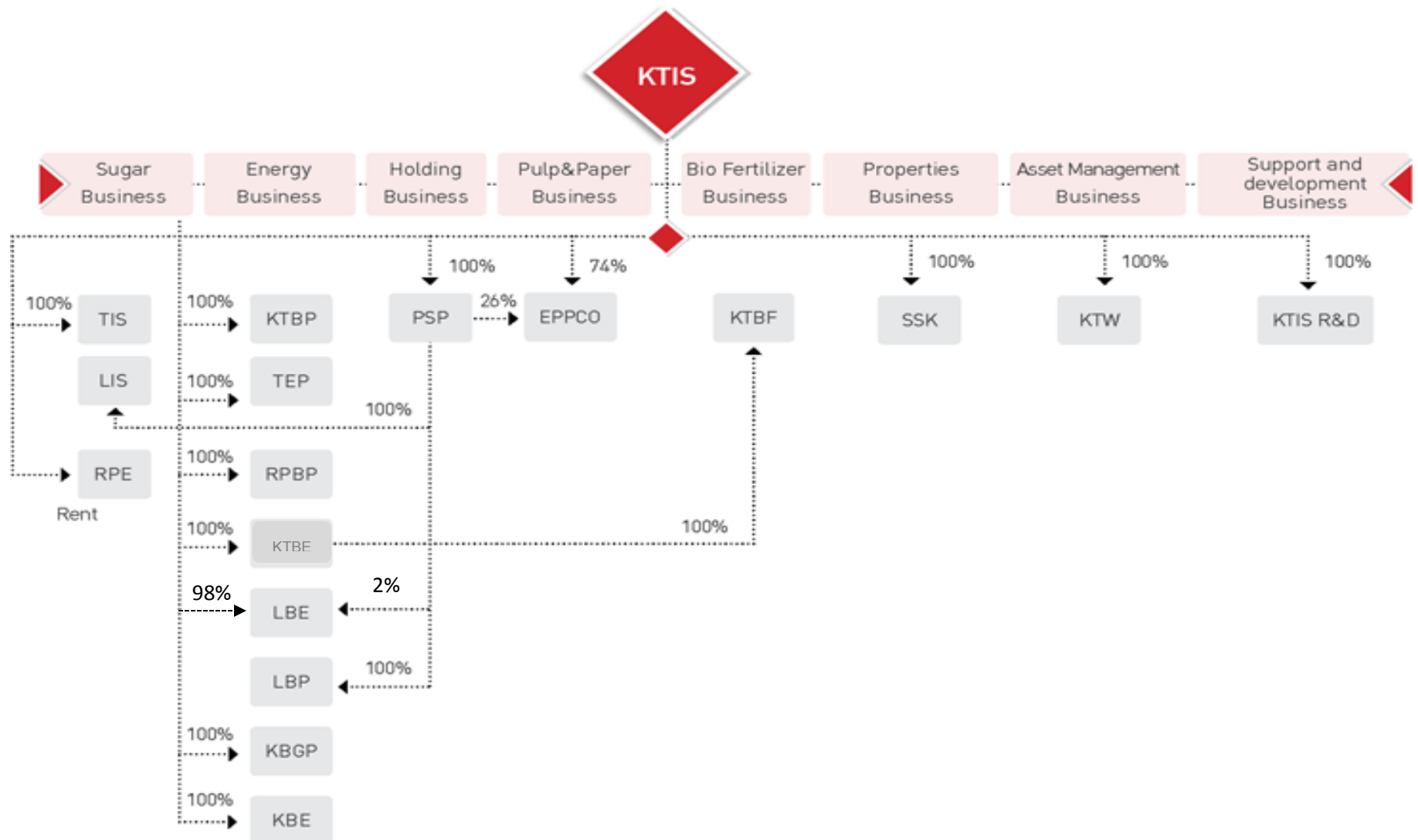
Subsidiary	Type of Business	Shareholding (%)
Thai Identity Sugar Factory Co., Ltd.(TIS)	Sugar production and distribution to domestic and international markets	100.0
KTIS Bioethanol Co., Ltd. (KTBE)	Molasses-based ethanol production and distribution to domestic and international markets	100.0
Environment Pulp and Paper Co., Ltd.(EPPCO)	Production and distribution of bleached bagasse pulp and Pulp Mold to domestic and international markets	100.0 ¹
Kaset Thai Bio Power Co., Ltd. (KTBP)	Electricity generation	100.0
Permsinattana Co., Ltd.(PSP)	A holding company which holds 26.0% shares of EPPCO	100.0
KTIS Bio Fertiliser Co., Ltd.(KTBF)	Production and distribution of bio soil conditioner products	100.0 through KTBE
Thaiekaluck Power Co., Ltd.(TEP)	Electricity generation	100.0
Sapsirikaset Co., Ltd.(SSK)	Land acquisition to support the group's business expansion	100.0
Ruampol Bio Power Co., Ltd.(RPBP)	Electricity generation	100.0
Lopburi International Sugar Co., Ltd.(LIS)	Sugar production and distribution (under consideration)	100.0 through PSP
Lopburi Bioethanol Co., Ltd.(LBE)	Ethanol production and distribution (under consideration)	100.0 ²

Subsidiary	Type of Business	Shareholding (%)
Lopburi Biopower Co., Ltd.(LBP)	Electricity generation and sale (under consideration)	100.00 through PSP
KTIS Biogas Power Co., Ltd.(KBGP)	Electricity generation and sale (under consideration)	100.0
KTIS Bio Energy Co., Ltd.(KBE)	Ethanol production and distribution (under consideration)	100.0
Kaset Thai Wiwat Co., Ltd. ("KTW")	Support company's asset management	100.0
KTIS Research and Development Co., Ltd. ("KTIS R&D")	Support company's businesses and its growth aspiration.	100.0

¹Directly holds 74.0% of the total shares and directly holds 26.0% of the total shares through Permsinpattana Co., Ltd.

²Directly holds 98.0% of the total shares and directly holds 2.0% of the total shares through Permsinpattana Co., Ltd.

Diagram1 : Corporate Business Structure (As at September 30,2018)



2. Nature of Business
2.1 Revenue Structure

In 2018 (9 months), the Company's income from sugar production and distribution was 75.4% of total revenues from sales and services of the Company. Moreover, the business income from the by-products of paper, pulp, ethanol and fertilizer 24.6% of the Company's sales and services. Details for 3 years were as follows:

	2016 (12 months)		2017 (12 months)		2018 (9 months)	
	Revenue (MB)	Percentage	Revenue (MB)	Percentage	Revenue (MB)	Percentage
1. Sugar and molasses sales revenue						
Domestic	5,261.9	35.1	5,326.6	30.4	3,878.5	22.4
International	6,074.1	40.5	8,178.0	46.7	9,178.4	53.0
Benefit from production and distribution of sugar	17.0	0.1	-	0.0	-	0.0
Total sugar and molasses sales revenue	11,353.0	75.7	13,504.6	77.1	13,056.9	75.4
2. Pulp sales revenue						
Domestic	220.8	1.5	259.6	1.5	213.2	1.2
International	675.4	4.5	1,001.2	5.7	1,003.4	5.8
Total pulp sales revenue	896.1	6.0	1,260.8	7.2	1,216.6	7.0
3. Ethanol sales revenue						
Domestic	1,634.4	10.9	1,654.2	9.4	1,313.4	7.6
International	-	0.0	-	0.0	-	0.0
Total ethanol sales revenue	1,634.4	10.9	1,654.2	9.4	1,313.4	7.6
4. Other sales revenue						
Electricity sales revenue	699.6	4.7	583.7	3.3	1,131.2	6.5
Revenue from other sales and services	422.5	2.8	521.4	3.0	587.5	3.4
Total other sales revenue	1,122.1	7.5	1,105.1	6.3	1,718.7	9.9
Total revenue	15,005.6	100.0	17,524.6	100.0	17,305.7	100.0

Source: The Company's financial statements.

Nature of Business
Sugar : Production and Distribution Business

The capacity of the Company's sugar factories is approximately 88,000 tons of cane per day. The Company produces and sales sugar to domestic and international customers. The products can be categorized into 3 types: refined sugar, white sugar, and raw sugar.

(1) Raw Sugar

Raw sugar crystals are dark brown in color and the color index of raw sugar ranges from 1,001- 3,800 ICUMSA¹. This type of sugar must be purified and processed into white sugar or refined sugar and cannot be consumed directly.

The Company specially produce J-spec raw sugar according to the Japanese regulatory standards, for export to Japan and acquires high J-spec raw market share.

¹ ICUMSA is a standard unit for measuring sugar color factor. Sugar with higher purity has lower color index level.

² Polarization is the apparent sucrose content of sugar i.e. sugar with 99.5% polarization value has 99.5% of sucrose in its mass content. A higher level polarization means higher sucrose content or higher level of sugar quality .

(2) White Sugar

White sugar is raw sugar that has been purified to remove impurities in sugar crystals. Its color is lighter than raw sugar, either light brown or white, and ranges from 46 – 1,000 ICUMSA. This type of product is typically used in soft drinks and convenience food businesses as well as household consumption.

(3) Refined Sugar

Refined sugar is raw sugar that, similarly to white sugar, has been processed to remove impurities in sugar crystal. Refined sugar has a higher level of purity than white sugar and is crystal white in color with the color index of 0 - 45 ICUMSA. This type of product is suitable for industries which required sugar with high purity index such as pharmaceutical industry and beverage and energy drinks industry.

Details of the Company's sugar products are shown in the table below:

Product	Color (ICUMSA)	Polarization ² (%)	Moisture (%)
J-Spec Raw Sugar	1001 - 3800	96.00 – 97.99	Not exceeding 0.6
Raw Sugar	1001 - 3800	Not less than 98.00	Not exceeding 0.6
White Sugar	46 - 1000	Not less than 99.50	Not exceeding 0.04
Refined Sugar	0 - 45	Not less than 99.80	Not exceeding 0.04

Source: KTIS.

Sugar : Market Conditions and Competition

Global Market Conditions

Sugar is one of the most important commodities in the world. Major sugar producers are Brazil, India, European Union, Thailand and China. Asia is the continent that records the highest sugar output, accounting for 38.2% of the global output in the production year 2017/2018. Thailand is the world's 3rd largest sugar producer but the domestic sugar consumption rate of Thailand is relatively small for its production. As a result, Thailand can export sugar in large quantity, being the 2nd largest sugar exporting country in the world.

Major Changes in Global Sugar Market in Past Decade

Sugar Trade Liberalization in Brazil

When the sugar trade liberalization was first introduced and the controls were eventually relinquished in Brazil, it had caused structural changes to Brazilian sugar industry and significant increase in the country's sugar exports. As Brazil is the largest exporter in the world market, any factors effect Brazilian sugar industry, will have material impact on the global sugar market such as the movement of Brazilian Real, Brazil's sugar and ethanol policies by Petrobras etc. In 2018 Brazilian producer is trying to maximize ethanol production due to world sugar price drop. On the other hand weaker Brazilian Real lower the dollar value of ethanol parity.

Low Sugar Production in EU Countries, but restart sugar export from 2017

In 2004, the World Trade Organization (WTO) ruled that EU's sugar subsidies violated the General Agreement on Tariffs and Trade (GATT) and thus cut its support for EU's sugar production. Therefore, EU's revised sugar Quota system and it limit sugar production and export. However from October 2017, this system was de-regulated and the export was jumped up to 3.5 million tons in 2017/2018 crop from previous 1.4 million tons. On the other hand regarding 2018/2019 crop, the sugar production be expected to reduce due to dry weather across most of the key growing areas.

Asian Economic Growth

The continuous economic growth of Asian countries, especially China, India and ASEAN countries, led to higher sugar consumption and production of the region. At present, Asia's sugar production is around 70-80 million tons per year while the consumption outpaces the production. Hence the need for sugar imports at more than 20.0 million tons each year.

Sugar Tax

In Thailand sugar tax was installed in October 2017, and Philippines also introduced sugar tax in January 2018. Since 2016, WTO recommends to install sugar tax system in order to reduce soft drinks consumption, which leading to obesity. After that USA and Mexico started to install in part of the countries. And so far, India and UK have installed the sugar tax as well. In addition to this, especially in ASEAN, some other countries are considering about this kind of sugar tax system. Which movement might damper the expanding sugar consumption.

Higher Investment in Commodity Markets by Funds and Speculators

During the past 10 years, funds and speculators have increased their investment in commodity markets, especially agricultural commodities and sugar commodities. This has intensified the sugar price volatility and influence from non-fundamental factors, such as macro market, technical indicators, currencies, and ethanol parity.

Sugar Demand and Supply

In 2017/2018, the global sugar output was forecast at approximately 194.2 million tons, which is record high number mainly due to big crop in India and Thailand. On the other hand the global sugar consumption was expected at around 182.0 million tons as historical high too, but the number is still lower than sugar output. Then the global sugar supply/demand balance turned to big surplus. Although CS Brazil was expected production drop by maximizing ethanol production, it was not enough to compensate for the big surplus. As a result, the global sugar price headed to downside and touched 10 years low in August 2018.

In 2018/2019 the global supply/demand balance is expected to be surplus for consecutive 2 years. India is expected to expand its production above 33 million tons, and go to the top sugar producer, overtaking Brazil. However Brazil, EU and Thailand are forecast to drop sugar output. Then the volume of surplus will be shrinking to 2.0 – 5.0 million tons.

Source: LMC, Monthly Sugar Supply/Demand Update, A supplement to the Sugar Quarterly July 2018

On January 15, 2018, Thai government announced the abolition of domestic sugar quota and domestic ex-factory selling price which were parts of cane and sugar industry restructuring plan that the government has approved to restructure such plan during 2016-2021. In order to restructure the plan successfully, many related rules and regulations should be revised and comply with international obligations. In addition, it should create fairness for consumers, sugarcane farmers and sugar producers which will be beneficial to the economy of both agriculture and industrial sectors of the country. The above abolition of domestic sugar quota was published and effective in Royal Thai Government Gazette on January 15, 2018.

In the year 2017/2018, Thai sugar production was 14.71 million tons while domestic consumption was estimated at 2.60 million tons which showed supply was much more than domestic demand and excess sugar about 12.11 million tons would be exported. The retail domestic price will be controlled by the Ministry of Commerce according to the notification of the Central Committee on Prices of Goods and Services No. 21, 2018 Re: Pricing and Conditions of Sugar Distribution.

In the production year 2017/2018, Thailand have 54 sugar mill and recorded the total sugar output of 14.72 million tons as shown below:

Producer	Number of Sugar Factory of Each	Sugar Output (Ton)	Market Share (%)
Mitr Phol Sugar Group	6	2,725,988.0027	19.71
Thai Roong Ruang Sugar Group	9	2,500,638.6131	15.74
KTIS Group	3	1,185,177.2200	9.35
Khon Kaen Sugar Group	5	1,200,519.0700	7.23
Cristalla Sugar Group	3	674,088.5580	5.42
Korat Industry Sugar Group	2	913,949.1250	4.88
Banpong Sugar Group	2	524,635.9740	4.40
Wangkanai Sugar Group	4	786,880.1970	3.85
Kumphawapi Sugar Group	2	413,307.5182	2.79
Thai Kanchanaburi Sugar Group	2	350,489.0570	2.71
Khonburi Sugar Group	1	437,325.8350	2.67
Mitr Kaset Sugar Group	2	320,014.5339	2.25
Others	13	2,678,822.2830	19.00
Total	54	14,711,435.9869	100.00

Source: 2017/2018 Cane and Sugar Production Report as of the End of Cane-Crushing Period (Updated), Office of Cane and Sugar Board.

Sugar : Competitive Strategy

(1) Security of Raw Material Supply

The Company has put importance to investments and developments in terms of academic sectors, service excellence, farmers' knowledge and cultivation system which contribute to better quality of sugar products and plantations. With a reliable source of quality raw material supplies, our sugar business and other downstream businesses are able to proceed for continuous and sustainable growth.

(2) Production Efficiency and Cost Reduction

The Company has steadily invested in our human resources and machineries in order to improve our production efficiency, and also planed to increase the sugar production capacity to capture the advantage of economies of scale, which will result in lower average costs. The Company employs a team of engineers who are capable of investing and developing our own machinery at the lower cost than purchases of imported machineries. In addition, this team of engineers can maintain and repair the majority of our machineries without third-party assistance.

(3) Mitigation of Impact of Natural Disasters

Recognizing the threats from natural disasters, such as drought and pest infection, to our raw material supply, the Company has developed several corrective and preventive measures by introducing innovations and techniques derived from the Company's researches and studies for better agricultural productivity. For examples the drip irrigation system which can solve the issue of water supply shortage during the dry season and the biological pest control technique which makes use of natural enemies such as Trichogramma spp., Cotesia sp. and Earwigs.

(4) Development of Value-Added Products

The Company strives to convert byproducts and waste into value-added products in order to increase the value for our shareholders and minimize waste from the sugar production processes. Under the visionary leadership of our management team, we aim to create an eco-friendly supply chain through the application of clean and eco-friendly technologies.

The Company has collaborated with Sumitomo Corporation Co., Ltd., our strategic partner and investor, and other world-class organization in continuously adding value to core products and byproducts.

Sugar : Distribution Channel

Industrial Customers

Industrial customers purchase sugar products with the intent of using them as raw materials in their production process and typically procure sugar products in a large volume under annual purchase agreement. The Company has successfully attracted and retained industrial customers who comprise a large proportion of the Company's sales revenue as a result of the Company's reliability in terms of stable supply, fine quality, and punctual delivery. The industrial customers are as follows,

Type of Industrial Customer						
	2016		2017		Sep 30, 2018	
	(Sales Record)		(Sales Record)		(Sales Record)	
	Quantity ¹ (Ton)	%	Quantity ¹ (Ton)	%	Quantity ¹ (Ton)	%
Beverage Industry	85,775.61	41.98	80,532.95	51.42	53,162.52	51.84
Food Industry	41,643.82	20.38	23,123.70	14.76	11,453.80	11.16
Dairy Products Industry	76,384.19	37.38	52,929.30	33.80	37,764.22	36.82
Candy	527.00	0.26	30.00	0.02	180.00	0.18
Total	204,330.62	100.0	156,615.95	100.00	102,560.54	100.00

Source: KTIS

¹ Consolidated sales of the following 3 sugar factories:

- 1) Sugar factory operated by Kaset Thai International Sugar Corporation Pcl. (KTIS)
- 2) Sugar factory operated by Thai Identity Sugar Co., Ltd. (TIS)
- 3) Sugar factory which KTIS has leased from Ruampol Enterprise Co., Ltd. (RPE) under a long-term lease agreement

Distributors

The Company sells sugar by way of the "ex-factory" method to distributors which comprise a smaller proportion of the Company's sales revenue, compared to industrial customers. This is partially because the Company has to sell sugar to distributors at a discount from monthly average surveyed selling price in the country. The discount rates depend on the prevailing market conditions and demand.

Overseas Customers

Sugar exports to Japan accounts for approximately 60.0% of the Company's total export sales. Most of overseas customers are sugar traders, including well-known companies such as Cargill International S.A., Bunge Agribusiness Singapore Pte. Ltd., Sumitomo Corporation, Marubeni Europe Plc. and Mitsubishi Corporation etc. The Company has particularly focused on Japanese traders as target customers for our J-Spec raw sugar.

Bleached Bagasse Pulp and Pulp Mold : Production and Distribution Business

The Company operates bleached bagasse pulp production and distribution business through EPPC which has the production capacity of approximately 100,000 tons per year. The factory is currently the only mill that can produce bleached bagasse pulp which is a byproduct from the Company's sugar production process. EPPCO has 3 types of pulp products: dry pulp, wet pulp and packaging products from bagasse pulp (Pulp Mold)

(1) Dry Pulp

Dry pulp is made from bagasse with a moisture content of about 10 - 12%. It weighs about 250 kilogram per bale and has a brightness of no less than 80% ISO with TAPPI dirt count of less than 10 ppm. Dry pulp is a core product of bleached bagasse pulp business.

(2) Wet Pulp

Wet pulp is made from bagasse with moisture content of about 50. - 52.0%. It weighs about 225 kilograms per bale but has the same brightness and TAPPI dirt count as dry pulp. It can be used more easily than dry pulp in a paper manufacturing process because of its higher moisture content, which saves time in the re-boiling process. However, wet pulp has a shorter storage period than dry pulp and incurs higher transportation costs. Thus, EPPCO distributes wet pulp only to domestic customers.

(3) Packaging products from bagasse pulp (Pulp Mold)

Pulp Mold used bagasse pulp 100% as raw material to produce different types of packaging products at EPPCO factory. The products will be bio-degradation which are Eco friendly products consistent with the demand trend for products that save the environment in both domestic market and worldwide. The products will add value to EPPCO bagasse pulp.

Bleached Bagasse Pulp : Market Conditions and Competition

1. Global Market

AS the world economic started to recover gradually in 2018 and China Government issued the policy to prohibit importing of low grade paper scraps , the paper pulp price rose drastically especially short fiber pulp from Bleached Eucalyptus Wood Pulp. It is estimated that from Q2/2018 the short fiber pulp price will be around USD 770-790 per ton, increases from 2017 about USD 100-120 per ton and will be at this level until the end of 2018. For 2019 it is forecasted that the price of paper pulp will be trimmed down a little bit to meet the requirement of buyers and increase buying volume.

1.1) Selling Price of Pulp in August 2018

In Chinese market, the selling price of long fiber pulp increased from USD 650-660 per ton in August 2017 to USD 870-900 per ton in August 2018. The price of short fiber pulp increased from USD 630-650 per ton in August 2017 to USD 770-780 per ton in August 2018. For other East Asian markets, the price of long fiber pulp increased from USD 610-650 per ton in August 2017 to USD 885-925 per ton in August 2018, while the short fiber pulp increased from USD 600-640 per ton in August 2017 to USD 770-805 per ton in August 2018.

Source: PPI ASIA's report as of September 3, 2018

1.2) 2019 Global Market Outlook

In 2019, the pulp and paper industry situation trends to grow from the world economic recovery, especially the Eco-friendly packaging products from pulp and paper. While the oversupply situation of pulp & paper is stable, so the price will be at high level for the whole year but will not rise drastically because it has increased since 2018. It is forecasted that environmental policies of China that did not allow import of low quality paper scraps as these materials caused many wastes and hard to eliminate, so this will increase the consumption for pulp paper particularly Bleached Eucalyptus Wood Pulp and support the price.

In 2019, there is not any investment to expand short pulp production from Eucalyptus in South America while the demand for paper pulp will increase gradually in this region and causes price of paper pulp in the world market remains at high level.

(2) The Country Situation.

On Q1/2018 the pulp paper and publication export index showed an increase in paper pulp, paper and its products, book and printing paper from previous quarter especially the increase in demand of paper packaging products in Asian markets and domestic market rose stably and grew continuously.

2.1) Production Situation

In Q1/2018, the production index showed an increase in paper pulp and printing paper at 14.92% and 4.35% respectively compared QOQ and YOY. The index increased mainly from paper pulp, cardboard and Kraft paper 6.57% and 5.78% respectively from increasing demand in domestic and Asian markets which showed the continuous growth in paper packaging products.

2.2) Export Situation of pulp and printing paper

In Q1/2018, the export value amounted to USD 554.53 million reduced 0.42% QOQ but increased 23.95% YOY due to the export increased more than 70% of soluble chemical wood pulp to China and the export of papers and their products to Vietnam, Malaysia and Indonesia also increased. The export of paper and publication products to Philippines i.e. stamped paper, bank notes, cheque books etc. increased.

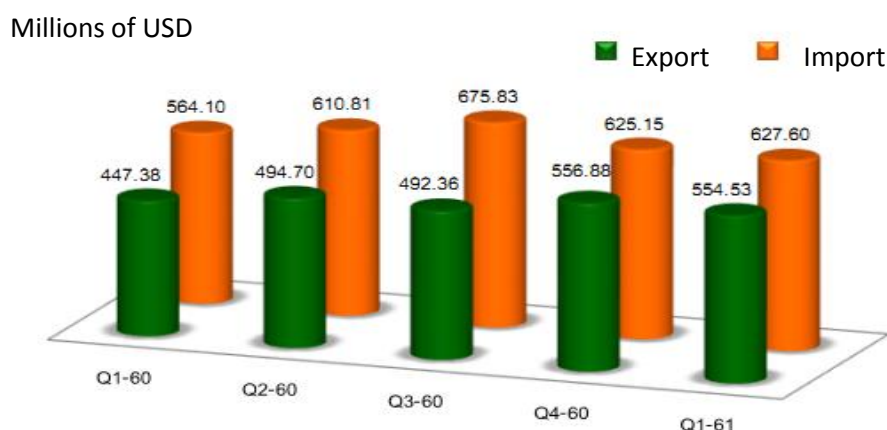
2.3) Import Situation of pulp and printing paper

In Q1/2018, the import value amounted to USD 627.60 million increased 0.39% QOQ and increased 11.26% YOY due to the increase of import of pulp and paper products which grade could not be produced in the country. The import of books and publication reduced 19.11 % QOQ as the printing media are substituted by digital media.

Related Government Policies

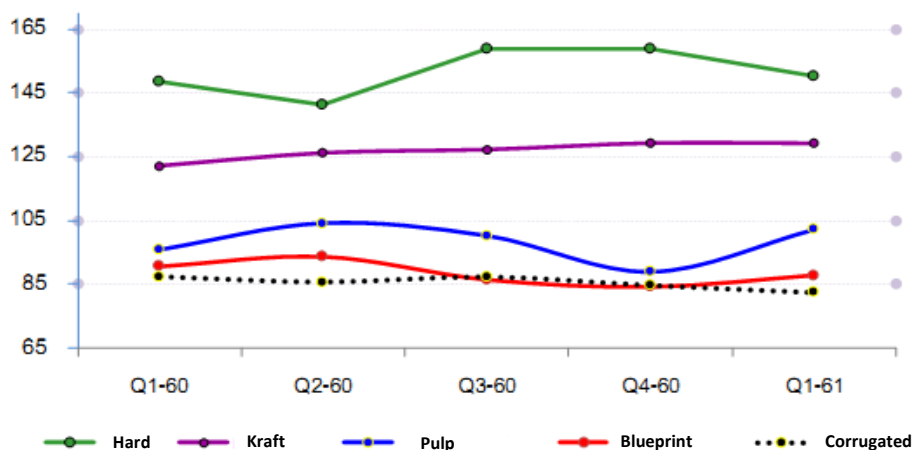
As the Wage Committee announced the increase of minimum wage rate by province which effected April 1, 2018, all industries had to adjust their production process to reduce costs or improved machinery equipment to increase productivity and product quality in packaging products for their customers. It is expected that Asian markets will be main importers and trend to grow continuously.

Export - Import Paper Pulp and Printing Paper



Source : Information and Communication Technology Center, Ministry of Commerce

Index of pulp and paper production



Source : Office of Industrial Economic

Production of Industry Sector Situation

Indicators		2016								2017								2018							
%YoY	Year	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Jan	Feb	Mar	Apr	May	Jun	Year(f)									
MPI*	1.4	1.0	4.0	5.6	5.3	1.0	6.3	5.8	2.5	4.7	4.6	3.2	3.1	2.9	4.7	3.0									

** MPI has updated its Industry Index for 2018. It has classified ISIC Rev.4 industrial products into 21 categories, 57 industrial sectors, 235 industrial products and indexes using the Laspeyres, base year 2011, Weighted Average with Value Added and Product Value According to the 2012 Business and Industrial Census: Manufacturing Industry of the National Statistical Office. The weighted values have been updated with added value that reflects today's industrial structure.

Industrial Economic Status in June 2018 continued to grow positively for the 14th month since May 2017. The Manufacturing Production Index (MPI) expanded by 4.7 % from the same period last year as a result of continued recovery in global economy while Industrial exports in June 2018 expanded by 3%.

Considering the three-month MPI (% YoY) MPI data, it is evident that the industrial production trends to grow continuously as an increase 3.2% in March, 3.1% in April and 2.9% In May. So MPI grew by an average of 3.9% which is a significant improvement compared to the first half of 2017 which MPI rose by just 0.5%, reflecting the expansion of the industry stronger and more stable.

It is predicted that the Manufacturing Production Index (MPI) in 2018 will expand moderately by 3.0 percent from export transactions which is in line with the growth of the trading countries economy. In addition, the government spending remains a major driver together with the progress of huge infrastructure investment projects in large public sector and the development of special economic zones, including joint investment between public and private sectors. So it is expected that this will contribute to the confidence of the business sector and promote the private investment climate in the country. Private consumption is expected to continue to grow. It was also supported by non-farm payrolls that showed signs of improvement as a result of increased employment in export-related businesses. Meanwhile, farm income gradually improved as production expanded.

Source: Office of Industrial Economics, Ministry of Industry

Bagasse pulp market situation 2018, and trends in 2019 .

Demand for bagasse pulp both domestically and internationally continues. Since environmental policies are starting to take effect seriously. The policy of fast food chain in the United States including global branches which prohibits the use of plastic and foam packaging causes the increasing demand for environmentally-friendly products. So the demand for bagasse pulp is increasing. The bagasse pulp producers in China, Iran, India and Thailand will benefit from such demand but there will be more price competition. This is due to the increase in bagasse pulp production in China and Iran in order to accommodate the above mentioned expansion and reduce prices to grab more market share especially the pulp market in China. By the way, some manufacturers in China try to reduce their costs and turn to increase the proportion of bagasse pulp which price is lower as the ingredients to produce products.

The Trade war between the United States and China Impacts of food packaging products made from bagasse pulp. By raising the tax rate to 25%, the trade in such products has slowed down as both trading partners need time to adjust themselves for these measurements. However this will result to higher price for consumers in the US market.

For the company's own customers, there is still continuous demand for bagasse pulp. This group of customers produce environmentally-friendly packaging products and require bagasse pulp as raw material in order to create environmental image of the product in the printing paper and sanitary paper.

In 2018, the Company has adjusted its sales price of bagasse pulp according to the price of world pulp by increasing an average FOB price of USD 710 per ton in August 2018 from USD 620 per ton in August 2017. There were continuous orders from domestic market and overseas markets.

In 2019, the world economy and the domestic economy will recover. The demand for bagasse pulp will continue to grow, especially overseas exports that results from environmental policies in China and EU countries which focus on the environmental friendly products and from the expansion of the production of the environmental packaging industry in country and abroad.

The company's bagasse pulp production is expected to be at the same quantity in 2018 and costs of production will be controlled more or less. The sale price is expected to be high level as 2018 and will be adjusted according to the world market.

The largest paper pulp manufacturers in 2018 were as follows,

Manufacturer.	Capacity of production (' 000 tons).	The type of the raw materials.
Double A	560	Eucalyptus wood.
Phoenix Pulp & Paper	240	Eucalyptus wood.
Panjapol Pulp Industry	110	Eucalyptus wood.
SCG Paper	107	Eucalyptus CTMP
EPPCO	100	Bagasse
Siam Cellulose	86	Eucalyptus wood.
Fiber Pattana	20	UHT box
Thai Gorilla Pulp	9	Palm leaves.
Total	1,232	

Source : 2016-2018 Directory of the Thai Pulp and Paper Industries Association (TPPIA).

Market situation of packaging products from bagasse pulp (pulp mold) 2018/2019

The growth of demand for Eco friendly packaging products, especially from bagasse pulp increases continuously. The large producers in China still have the production expansion plan to supply for the world's growing demand.

Thailand presently has two manufacturers of the packaging products from bagasse while such product requirements are growing continuously. The support and campaigns from the Government and private sectors have helped the growth of Eco friendly packaging products over 2018 and trends to grow continuously in 2019.

Bleached Bagasse Pulp : Competitive Strategy

(1) Reliable Raw Material Source

EPPCO has a strong raw material security as its bagasse supply is primarily provided by the Company and factories in KTIS group which altogether record the cane-crushing capacity of more than 10,000,000 tons of cane per year. This enables EPPCO to effectively plan its bagasse-based production in advance.

With the raw material security, EPPCO can provide its clients with reasonable assurance of EPPCO's ability to satisfy their demand.

(2) Low Cost of Raw Materials

EPPCO has lower production costs, compared to other pulp manufacturers, largely thanks to the short distance between EPPCO factory and the Company's factories being EPPCO's suppliers. The delivery of supply through conveyor belt system instead of trucks will lead to substantial save transportation costs.

(3) Environmental Friendliness

Bleached bagasse pulp of EPPCO is virgin pulp which is made from bagasse and thus is environmentally friendly. The increasing environmental awareness has led to the rise in demand for EPPCO's eco-friendly products. EPPCO's bleached bagasse pulp factory is the first pulping factory that is awarded the ISO 22000 food safety accreditation and the GMP&HACCP certification from SGS (Thailand) Co., Ltd. which guarantee that its products are safe for consumption and can be used as raw material for food packaging production.

Bleached Bagasse Pulp : Distribution Channel

(1) Domestic Distribution

EPPCO distributes bleached bagasse pulp directly to industrial customers on a monthly basis or as agreed with customers. Strategic customers of EPPCO include major leading paper product manufacturers in Thailand using eco-friendly pulp in their operations such as SCG Paper Pcl., Kimberly-Clark (Thailand) Co., Ltd., Berli Jucker Co. Ltd., Cellox Co. Ltd. and Biodegradable Packaging for Environment Co. Ltd. To promote customer satisfaction, EPPCO has technical sales personnel who are highly knowledgeable and can provide customers with useful information for correct and efficient use of bleached bagasse pulp.

(2) Overseas Customers

Generally, distribution of bleached bagasse pulp to international markets is made through brokers .Our sales through spot contracts comprise approximately 90.0% of our total export sales while the remaining 10.0% is under long-term contracts. To mitigate associated risks, our selection of brokers is based on their ability to penetrate markets which have strong pulp demands and their credibility. EPPCO's management team has implemented proactive marketing activities such as participation in trade expos to attract new customers. Sales through brokers enable EPPCO to determine the price and quantity of the product it intends to sell at its discretion, without having to negotiate with the end customers. EPPCO's revenue is primarily from international sales which accounted for approximately 70-78% of its total revenue during the year. EPPCO's brokers include leading international companies such as Zhejiang Welbon Pulp and Paper Group, Ecoplus Paper and Packaging (HK) Co., Ltd., OG Corporation etc.

Pulp Mold products : Distribution channel

The sales proportion target is **about 90-95% for the foreign market and 5-10% for domestic market at the beginning**. The demand of domestic and foreign countries for eco-friendly products are still high, so the company continues to develop the type and variety of products to cope with the needs of consumers both domestically and abroad in the future.

(1) Export Sales

As the markets for Eco friendly packaging products are in Europe and America, so the company has to sell through the experienced sale agents and distributors for large volume distribution in order to reach the dealers and consumers which are better way than Original Equipment Manufacturer (OEM) or selling directly under its own brand aboard. In 2018 the Company sold pulp mold products about USD 2,250 per ton and in 2019 the price is expected to be not less than 2018 .

(2) Domestic Sales.

Domestic customers are environmental oriented group which the company has many distribution channels as follows,

- Large retail and modern trade stores (Big C, Lotus, Makro, The Mall, TOP, Central, Department Store, Seven Eleven) under own brand and/or OEM for large retail stores.
- Provincial wholesalers of packaging products, and sale agents across the country.
- Direct sales to organizations, government agencies, hospital, schools, universities and other institutions.
- Online Marketing (under development).

Ethanol : Production and Distribution Business

The Company operates ethanol production and distribution business through KTIS Bioethanol Co.,Ltd (KTBE) and uses molasses derived from the group's sugar factories as a primary raw material with the maximum production capacity of 230,000 liters per day or 75,900,000 liters per year. Presently, it produces and distributes only industrial alcohol and fuel alcohol.

Ethanol : Market Conditions and Competition

Global Market Situation

Ethanol Price The ethanol price in USA was about Baht 13.90 per liter, decreased 2.8% YOY as high supply in USA. While the ethanol price in Brazil rose up due to decrease in production. The price of anhydrous ethanol and hydrous ethanol in Brazil were Baht 18.9 per liter and Baht 18.00 per liter respectively. The price of industrial grade was Baht 18.3 per liter decreased from last year caused by abundant molasses as raw materials. The ethanol price in the world market trends to decline as to high supply. It is forecasted that in 2018/2019 the ethanol production in Brazil which started from April 2018 will increase and the stock and export volume of USA will be at high level.

Production The production of USA in Q1/2018 was 165.7 million liters per day. The production of Brazil at ending period was 9.6 million liters per day, however, the proportion of ethanol production from sugarcane increased so that its production was 15% higher than last year.

Cost of Production The cost of production in USA was about Baht 12.3 per liter higher than last year due to corn price rose up.

Consumption The consumption in USA was about 155.6 million liters per day increased 12% YOY as the domestic gasohol consumption increased. The consumption in Brazil was about 74.3 million liters per day increased 18.6% YOY due to the gasoline price increased and led to higher gasohol consumption.

Export In Q1/2018, USA export was 1,176.8 million liters, increased 18.4% YOY which its major markets were Brazil, China and Canada. At the end of crushing season, Brazil export was 359.2 million liters increased 12.5% YOY due to higher demand and higher proportion of ethanol production from sugarcane compared to last year.

Source : the ethanol price situation reports, Thailand's Q1/2018 Bank of Thailand .

Ethanol : Domestic Market Conditions

Ethanol Price In Q3/2018 Thai ethanol reference price was Baht 23.40 per liter, decreased from last year due to molasses price as raw material declined.

Production Thai production was about 4.1 million liters per day which was 65% of its total production capacity as the production was in the sugarcane crushing season.

Cost of Production In Q3/2018 Thai cost of ethanol production from molasses was Baht 20.54 per liter (calculated from molasses price at Baht 3.5 per kg.) as supply of sugarcane and molasses were higher in crushing season 2017/2018. The cost was reduced 25% from last quarter. The cost of ethanol production from cassava increased due to supply of cassava reduced. The cost of ethanol production from cassava chips was Baht 21.52 per liter(calculated from cassava chips price at Baht 2.2 per kg.) and the cost of ethanol production from cassava pellets was Baht 24.89 per liter(calculated from cassava pellets price at Baht 6.7 per kg.) increased 34.2% and 27.4% respectively YOY.

Consumption Thai consumption was about 4.3 million liters per day, increased 13.8% YOY as gasoline price rose up, so gasohol consumption increased. Total gasohol sale was 2,996.5 million liters increased 18.2% YOY as higher sale of gasohol E10, E20 and E85 which increased 11%, 11% and 15.9% respectively.

In 2018, Thailand had 26 ethanol factories which total production capacity was 6.250 million liters per day while the total consumption was 4.1 million liters per day. The major ethanol producers are:

	Company	Capacity (Liter/day)	Production Material
1	Mitr Phol BioFuel Co., Ltd.(Chaiyaphum)	500,000	Molasses
2	E85 Co., Ltd.	500,000	Cassava /Starch

3	Ubon Bio Ethanol Co.,Ltd	400,000	Cassava /Cassava Chips
4	T. P. K. Ethanol Co.,LTD Phase 1	340,000	Cassava Chips
5	Mitr Phol BioFuel Co., Ltd.(Kuchinarai ,Kalasin)	320,000	Molasses
6	Thai Roong Ruang Energy Co.,LTD.	300,000	Molasses
7	KSL Green Innovation Pcl. (Bo Ploi)	300,000	Molasses
8	K I Ethanol Co.,Ltd	250,000	Molasses
9	KTIS Bioethanol Co.,Ltd	230,000	Molasses
10	Maesod Clean Energy Co., Ltd.	230,000	Cane juice
	Other	2,880,000	
	Total	6,250,000	

Source : Department of Alternative Energy Development and Efficiency

Industry Trend The domestic ethanol business will be highly competitive as the new plants increase production about 1.22 million liters per day. This results the utilization of total production capacity will be only 68-70% (compared to 2016) and the raw materials competition especially cassava will become serious as higher demand while the uncertainty of cassava volume per year is not so stable and may be shortage causes by periodic draught and insects problem.

The important issues are

1. The government policy about the cancellation of gasohol 91 sale in 2018 which will increase the consumption for ethanol.
2. The technology development of competitors to gasoline engine i.e. Hybrid vehicles, Electric vehicles etc. which will pay higher role in the vehicle business. Currently there is not any impact to ethanol consumption, but if the government focuses seriously on this policy by motivating to buy these vehicles, the ethanol consumption will reduce.

Source: Economic Research, Bank of Ayudhya Public Company Limited.

Ethanol : Competitive Strategy

(1) Product Variety

KTBE offers a wide range of products for different needs of customers in each industry. KTBE's ethanol plant is licensed to produce 3 different grades of ethanol products: potable alcohol, industrial alcohol and fuel alcohol. The product variety has contributed to competitive advantage in international markets over many other ethanol plants in Thailand which mostly are licensed to produce only fuel alcohol production for domestic distribution.

(2) Reliable Product Delivery

KTBE's punctual and reliable product delivery to customers is one of its key strengths. With steady molasses supply from factories in KTIS group for its ethanol production process, KTBE is safe from the raw material shortage issue and can punctually deliver products which are confident by its customers.

(3) Product Quality

Committed to achieving excellent quality standards, KTBE has continuously attempted to develop the quality of its products. All ethanol products of KTBE are therefore meet regulatory quality standards. In addition, KTBE's distillation columns have been developed to accommodate the production of Korean B grade ethanol which is high quality product commonly sold in the international market.

(4) Marketing Strategy

Recognizing the intensifying competition in the energy industry, KTBE has proactively formulated and implemented marketing strategy to grow its customer base, especially in offshore markets. This includes KTBE's regular participation in meetings and training courses arranged for domestic and international ethanol producers to reap benefits from opportunities to meet with customers and intermediaries as well as to continuously expand its customer base.

Ethanol : Distribution Channel

(1) Domestic Customers

KTBE produces ethanol with 99.5% purity for domestic oil dealers to use for blending as biofuels to support the government's policy to promote the consumption of alternative energy and the reduction of imported fuels and crude

oil. KTBE's major customers, defined as "traders" under Section 7², are PTT Plc., Thai Oil Plc. and Shell Company Of Thailand etc. As of 31 December 2017, revenue from domestic sales of fuel alcohol accounted for 100% of the total sale revenue.

(2) Overseas Customers

KTBE's ethanol products are sold to overseas customers through distributors. Previously, KTBE exported industrial alcohol with 95.5% purity and fuel alcohol with 99.5% purity to overseas markets.

Following the implementation of the Ministry of Energy's policy to discontinue 91-octane gasoline sale on 1 January 2013, the rate of domestic ethanol consumption has risen and KTBE has not exported fuel alcohol and industrial alcohol to overseas markets.

Electricity : Generation and Distribution Business

The Company's sugar factories and bleached bagasse pulp factories are equipped with electricity and steam generating modules which use bagasse, a byproduct from sugar production, as primary feedstock. The electricity and steam generated are used in the production processes of our 3 sugar factories and other factories. The surplus electricity is sold to the Electricity Generating Authority of Thailand (EGAT) and the Provincial Electricity Authorities (PEA) under the power purchase agreements (PPAs) which the present selling contracts will be under Feed in Tariff term instead of adder term and get better return. Kaset Thai Bio Power Co., Ltd. (KTBP) has been established to operate the 60MW biomass power plant which is currently in commercial operation. The Group has another two new power plants: TEP and RBPB with the capacity of 50 MW which both factories have completely operated.

Electricity : Market and Competition

(1) Domestic Market and Industry

According to the Thailand Power Development Plan (PDP), the Ministry of Energy has prepared a draft amendment to the new PDP due to the fact that domestic electricity consumption has changed from forecasted demand for electricity in PDP 2015 and the data should be updated to reflect current situation.

Large-scale projects (power plants, transmission lines), electricity distributions are not as planned, and the consumption behavior of electricity has changed. The demand for electricity was higher during the day and night (Peak at 34,101 MW, up 1.9%, Peak in system at 30,303 MW, down 2.2%). The electricity consumption rose up from previous year and highly used all types of fuel except natural gas.

Key Principles for Preparing a New PDP

1) Security

- The country's electricity security covers all power generation, transmission and distribution systems for supporting the National Economic and Social Development Plan.
- Fuel Diversification is used to generate electricity in order to reduce the risk of reliance on only one kind of fuel.
- There is a reliable security level of power plant in supporting during energy crisis.
- Development of Smart Grid Networks to support the development of small electricity distribution system (Decentralized Generation: DG)

2) Economy

- Taking into account the cost of electricity generation and encouraging low-cost electricity generation in order to reduce the burden on consumers. It will not hinder the long-term economic and social development of the country.
- Improve management efficiency for the cost of production of the country's electricity and is in line with the Merit Order.

3) Ecology

- The goal of reducing carbon dioxide emissions is to comply with the covenant.
- Promote Merit Order in remote areas, Industrial Estate or Special Economic Zone to utilize resources in the area to maximize the benefits and reduce the investment burden.
- Supporting the efficiency in electricity generation and electricity consumption and also encouraging the Demand Response.

(2) Domestic Electricity Consumption Situation

In 2018, the Net Peak Generation Requirement (GRP) was on April 24, 2018 at 1.31 p.m. which was 29,968 mw., which was less than the peak power in 2017 that occurred on May 4, 2017 at 30,30 mw.

² Under Section 7, Chapter 1 Fuel Trade and Transportation of the Fuel Trade Act B.E. 2543, fuel traders whose total fuel trade volume, either in a particular fuel type or all types combined, equals 100,000 metric tons per year or higher, or fuel traders of only liquefied petroleum gas whose total trade volume equals 50,000 metric tons per year or higher must hold license granted by the Minister.

(3) Domestic Electricity Generation Capacity

At the end of August 2018, the electricity generation capacity totaled 42,715.15 mw, not including very small electricity producer. Details are as shown below:

EGAT	15,763.83 MW	36.90%
Independent Power Producer (IPP)	14,948.50 MW	35.00%
Small Power Producer (SPP)	8,125.22 MW	19.02%
Electricity Import	3,877.60 MW	9.08%
Total	42,715.15 MW	

The proportion of electricity generation from different types of fuel.

Natural gas	17,305 GWH	56%
Imported coal and lignite	5,911 GWH	19%
Import	3,598 GWH	12%
Renewable energies	2,970 GWH	9%
Hydropower	1,263 GWH	4%
Fuel oils	38 GWH	0.1%

The Proportion of Renewable Energy for Electricity Generation

Renewable energy	Unit	Target 2036	2014	2015	2016	2017	2018 target
Wind	MW	3,002.00	224.47	233.90	507.04	627.82	327.85
Solar	MW	6,000.00	1,298.51	1,419.58	2,446.12	2,697.26	2,223.0385
Waste	MW	550.00	65.72	131.68	145.28	191.47	410.00
Bio gas	MW	1,280.00	311.50	372.51	434.86	475.42	494.79
Small hydro power	MW	376.00	142.01	172.12	182.12	182.28	205.72
Bio mass	MW	5,570.00	2,451.82	2,726.60	2814.70	3,157.28	3,372.83
Large hydro power	MW	2,906.00	-	2,906.40	2,906.40	2906.40	2,906.40
Total	MW	19,684.00	4,494.03	7,962.79	9,436.52	10,237.93	9,940.62

Electricity : Competitive Strategy

In addition to the production efficiency which the Group has consistently enhanced through the continuous improvement of the electricity generation process, feedstock is also another key success factor for the electricity business as bagasse from sugar production is the main feedstock source. So we have to improve the energy saving in sugar production and acquire more bagasse. Additionally, we encourage more sugar cane plantings for our factories thus have more bagasse left for electricity production. Meanwhile, the Company has also researched on a variety of energy crops to identify additional feedstock sources. These will be beneficial to farmers and our group to increase revenues and reduce costs in electricity business.

Electricity : Distribution Channel

Steam and electricity generated by the Group's power plants are used in our sugar factories and while the surplus electricity are sold to EGAT or PEA according to each power plant's contract.

Bio Soil Conditioner : production and distribution business

The Company has its own bio soil conditioner manufacturing plant in Nakhonsawan which processes filter cake and vinasse into bio soil conditioner products; powder product and pellet product. KTIS Bio Fertiliser Company Limited (KTBF) was established at Taklee District, Tambon Nongpho, Nakhonsawan as arm of the Company's integrated sugar business. The plant produces and supplies bio soil conditioner products to the group's sugarcane farmers at 150,000 tons of powder product, 10,000 tons of pellet product.

Bio Soil Conditioner:Market and Competition

Due to good weather condition, the production of major economic crops such as sugarcane, rice etc. increased a lot, especially sugarcane production rose significantly. However, the global sugar price declined and caused the price of sugarcane decreased. So the sugarcane farmers had to control their costs of production which led to careful usage of chemical fertilizers and soil conditioners. Most of them still believed to use chemical fertilizer for their crops in prior to bio fertilizers and bio soil conditioners as it works faster. However, the company has developed strategies to promote the use of bio soil conditioners together with chemical fertilizers which will reduce costs by using less chemical fertilizer, increase productivity and maintain soil quality for sustainable sugarcane plantation.

Bio Soil Conditioner :Competitive Strategy

KTBF has targets and policies to encourage our contracted sugar cane farmers to use standard quality and cheap bio soil conditioners for reducing their costs of production and also increasing their production yield per hectare that result to more revenues. The main policies are as follows,

- (1) The Company and farmers jointly analyze the bio soil conditioner to identify which KTBF's products are suitable for their plantation.
- (2) As raw materials used in the bio soil conditioner production are sourced among the group, the products are sold at cheap price. Farmers can thus reduce their costs and increase productivity.
- (3) The Company treats the packaging as a priority, uses colored sacks and double seals for better durability.
- (4) The Company offers delivery services for its bio soil conditioner products.
- (5) Periodic plant touring programs for the targeted farmers to see the production process and provide knowledge for proper products usage.
- (6) Run the demonstration farms so that the farmers are able to see the productivity resulted from the usage of bio soil conditioner products.
- (7) The Company advertises its products and activities through advertising media and local radio stations,
- (8) The Company conducts the products requirement surveys from contracted farmers in order to make production plan.
- (9) The Company has many research projects coordinated with the Institute of science and technology of Thailand for developing the production standards to create the customer confidence.

Bio Soil Conditioner:Distribution Channel

- (1) Sale to contracted cane farmers of the group.
- (2) Sale to general customers.
- (3) Sale to merchants, agricultural cooperatives, Agricultural Marketing Cooperative Limited (AMC)

3. Risk Factors

Risks associated with the Company's operations

1. The risk of fluctuation in foreign exchange

In the past year, Thai Baht currency was volatile compared to the US currency. The dramatic currency fluctuation has directly affected the group's business because more than 60% of its revenue is from exports of sugar products and the downstream businesses' eco-friendly products, and machinery imports which are mostly in USD currency and some in JPY and EUR currency.



Source : www.xe.com

XE Currency Converter : USD to THB

The Company is aware of the foreign exchange risk and has established the Financial Risk Management Committee which is responsible for the governance of financial risk management framework and controls the financial plans to prevent the impact of the foreign exchange risk through various financial instruments such as Forward contract, Option contracts, and natural hedge. The Company keeps abreast of economic movements and analyzes factors that may affect the exchange rates in order to dynamically manage its foreign exchange risk amid the changes.

The sugarcane price in Thailand will be calculated from the sugar domestic price and sugar export price. In 2018, the government abolished quota A which determined the sugar volume and sugar price sold domestically, so the domestic and foreign sugar sale system has changed into two parts,

1. One part of certain sugar volume from sugar producers has to be priced and sold aboard by Thai Cane and Sugar Corp., Ltd.(TCSC).

2. The other part of sugar volume will be sold either domestic or aboard by sugar producers.

In terms of domestic sales, there is a change from such determined sugar price to be the price that is derived from the white sugar price in London No. 5 plus Thai premium. While in export sales, TCSC will do pricing and used as reference price.

Total revenue after expenses from the sale of sugar in two parts is net income that will be shared between sugar producers and sugarcane farmers in the proportion of 70:30 which is calculated to be sugarcane price.

From such structure, the pricing and exchange rates which are executed by TCSC will be very important reference price that sugar producers have to do pricing and getting exchange rate not less than TCSC. If any sugar producer could not catch up TCSC level, it had to pay higher sugarcane price.

The risk protection from such exchange rate can have either positive or negative figure which will be recorded in the annual financial statements as the gain and loss on exchange rate. This is because of the different between fixed forward rate and the spot rates on the goods delivery dates under the Accounting Standard Basis. The Company is aware of the risk protection policy without speculation.

2.Risks of World Sugar Price Volatility

Sugar is a product with high price volatility, the price of sugar on the world market depends on many factors;

- Fundamental factors such as weather conditions, production, consumption, supply-demand by which the fluctuation of world sugar prices depends on supply and demand of the producing countries and the consumer countries.
- Technical factors, fund speculation in futures commodity markets, economic factors, and fuel prices which correlate with the prices of ethanol produced from sugar cane juice and molasses also influence the price fluctuation in the global sugar market.

The price volatility in the global market may adversely affect the Company's sales, particularly export sales, while the domestic sales are not directly impacted. As the cane prices rely on the sugar prices, so the low cane prices will demotivate cane farmers and cause them to reduce cane planting or cane caring, hence lower cane supply available for sugar production.

To reduce the risks associated with the high volatility of sugar prices in the global market, the Company has the Pricing Policy to control the pricing volume at plus or minus 10% of Quota B pricing volume. The sugar price will determine the sugar cane price which is the main cost of sugar production. The Company has additionally action plans to prevent negative effects not more than certain amounts for next year.

The Company also has a working team consisting of experts and officers from the international leading trading company, to monitor and manage the prices of exported sugar. The working team's analysts keep abreast of the sugar prices in global markets, i.e. the New York No 11 sugar futures market and the London refined sugar futures market, the world economy, fuel prices, production and consumption figures, demands, supplies and stocks on a daily basis.

3. International Trade Barriers Risk

At present, sugar export sales account for more than 60% of the Company's total sales and the major market is Japan. Therefore, changes in trade barriers introduced by importing countries such as tariffs and tax policies, sugar import quota, national rules, or trade membership agreements may adversely affect the Company's competitiveness, production and export sales. As risk mitigation measures, the Company keeps abreast of the news from various sources, concludes the future contracts in order to manage production planning, inventory and logistics management to ship products on time, and cooperate with Sumitomo Corporation which is our major strategic partner on analyzing and determining the best approaches to deal with or alleviate unfavorable impact in the way that will best benefit the Company.

Normally, raw sugar import of Japan was J-Spec grade for many years, and KTIS group is one of the major exporters for J-Spec raw sugar. After Japan has trade agreements with Australia, Japan has therefore reduced the import of J-Spec raw sugar and started to import more Hi-pol raw sugar in 2017/2018, the Company has improved the machine so that it can produce more Hi-pol raw sugar and reduce J-Spec raw sugar to serve the market demand and additionally selling more super refined sugar than normal refined sugar in order to get a higher price.

4. Risks of changes in government policies (Sugar production and distribution business)

The changes in the Sugarcane and Sugar Act, BE 2527 (1984), has passed public hearing process and has been considered by many committees, but has not been proposed for Cabinet approval. It is not sure to be done under existing government or new government.

Although the burnt cane reduction campaign by a penalty of burnt cane Baht 30 per kilogram and award to fresh cane Baht 120 per kilogram, in 2017/2018 the quantity of burnt cane still increased. At the same time, Thailand had historical largest sugar cane volume about 135 million tons but the world sugar price declined significantly and caused lower sugarcane price. So the sugarcane farmers' association asked for previous measurement that the burnt cane would have a penalty of Baht 20 per kilogram and award to fresh cane Baht 70 per kilogram. As 2017/2018 the sugar cane volume was very high, the sugar producers had to operate their plants for a very long period, resulting in lower sugarcane quality and lower production efficiency. There was a request from the sugar producers to the Office of Cane and Sugar Board for abolishing the production efficiency standards in 2017/2018 production season (the standard sugar cane 1 ton at 10 ccs. must produce sugar not less than 90 kg at 96 NT). The matter is still under consideration by the Office of the Cane and Sugar Board and proposed to the Cane and Sugar Board for further consideration.

Under such risk management, in order to achieve the best performance, the Company has set the policy of suitable sugarcane crushing in terms of volume and production period. Additionally, this year the company has improved production machinery more efficiently, lower production costs, and higher product quality as well as best practices in delivery and storage for the satisfaction of both domestic and foreign customers. In raw materials (sugarcane) aspect, will focus on cane quality by surveying and analyzing suitable cane before harvesting in order to ensure that the cane quality, sweetness and purity are appropriate for sugar production. In addition, there will be campaigns for sugarcane farmers to send fresh cane to the factory. At the same time, the Company will also educate the sugarcane farmers about the negative effects of burnt cane on its price, community, and country. This year our group has purchased 23 cane harvesting machines in order to solve the problems of labor shortage and increase fresh cane.

5. Risk from sugar competition

The government has abolished the domestic sugar quota system since January 15, 2018. The free sale of domestic sugar has caused serious competition, especially in terms of price, although there is a survey price as reference. At the same time, London sugar price also declined a lot. However, the company has adjusted sales strategies and policy by focusing on product quality and service, reducing production costs, improving and developing products to meet our customers requirements. For the foreign customers, the Company continues to focus on developing better quality products suitable for the market by reducing the production of J-Spec raw sugar and producing more Hi-Pol raw sugar, reducing the production of white sugar and increase the production of super refined sugar and refined sugar and also providing faster sending products/service to our customers.

6. Risk from the uncertainty of government policies (ethanol business) and changes in energy policy.

Ethanol is a biofuel that has been clearly promoted and has target to be used as a combination of gasohol in the Alternative Energy Development Plan (AEDP). Currently, the domestic ethanol consumption is about 4.1 million liters a day and will increase to 11.3 million liters per day as AEDP plan in 2036.

Over time, the growth of ethanol consumption was not consistent with the production and causes excess supply. As new ethanol plants occurred in 2018, the total production capacity of the country increased to 6.25 million liters per day with average production of 5.0 million liters per day. As the cane volume was 135 million tons in 2017/2018, the molasses volume also increased and molasses price declined caused the cost of ethanol production from molasses reduced. As a result, price competition in ethanol sales rose up.

Negotiations with the Government sector are necessary. Thai Ethanol Manufacturing Association will contact with the government agencies responsible for energy policy such as Office of Energy Policy and Planning (EPP), The Department of Alternative Energy Development and Efficiency (DEDE) and Biofuels Development Office etc. in order to accelerate the increase of ethanol consumption in consistent with production through the fuel retail prices mechanism and funds paid into the oil fund for higher mixture of ethanol in gasoline i.e. E20 and E85 etc. and cancellation of gasohol 91.

However, if the domestic ethanol market became worse, the Company could produce high-quality alcohol for the international market as its good foreign customer relationship and Logistics plus high experience in export procedures.

Internal Risks

1. The Procurement Risk of Raw Material(Sugarcane) both quantity and quality.

In 2017/2018, sugarcane volumes of all three sugar mills in the KTIS Group reached their target. Due to the rain during the harvest season, especially at the end of the Songkran Festival that the factories had to operate for relieving troubles of contracted sugarcane farmer, so the mud that come with sugarcane affected the sugar production. At the same time, the abundant of burnt cane caused slow crushing and resulted in cane purity drop. While the Government agencies measurement for loading of cane trucks and no cane transportation for crushing during festival days affected the cane quality even though there were many action plans for reducing risks.

In the year 2018/2019, the sugarcane volume of the three sugar mills will be in target due to sugarcane planting areas, contracted quantity, rainfall and cane surveying reports which are consistent with the information of planting and maintenance of sugarcane farmers. Additionally, the usage of bio soil conditioning products from affiliated factories, the usage of by-products from sugar factories and the usage of high fertilizers, ensure that sugarcane volume will be on plans. In terms of sugarcane quality, we have analyzed the causes that occurred in the last season that had problems in cane quality and make additional action plans to solve such problems this year i.e. controlling the cane quality in the fields and inspecting the cane quality at the factory, stop cutting and moving when it rains in sugarcane areas and moving to other less rainfall areas, preventing large fire burning areas by separating into small areas, reducing times from harvesting to crushing in the factory for maintaining the purity of sugar cane. Increasing cane harvesting machines bot cane farmers and factory for fresh cane harvest, setting the training courses for drivers of cane harvesting machine by virtual simulator to reduce impurities from cane harvesting machines. These additional action plans are employed together with appropriate crushing periods will ensure that sugarcane quality risks can be reduced.

2. The risk of bad debts from advance payment for sugar cane procurement.

It is expected that the price of sugarcane in 2018/2019 will not be good because sugar prices in the world market decline, together with the changes in Quota selling system in domestic market. When sugar prices are not good, sugarcane farmers' incomes will be affected. However, there was not much rain in 2018 compared to May 2017 and the cautious selection of planting areas, the sugar cane output will not be affected by flooding. Also, the drought did not happen as in 2015/2016, there are action plans to survey and take care of sugarcane pests including continuous usage of natural enemies in cane enemies, will ensure no sugar cane output damage and causes bad debts. In addition, the increase of sugarcane farmers' incomes by raising CCS from selecting suitable harvesting areas

according to IT programs, encouraging fresh cane harvesting to earn more money instead of paying penalty from burnt cane harvesting, collecting the sugarcane trashes that can be used as a biomass fuel and generates incomes for both farmers and trashes collectors as the wording "Sugar cane trashes are valuable in KTIS contracts." These additional action plans are employed to reduce the risk of money investment in sugarcane farmers' contracts according to in the Sugarcane Promotion Handbook. At the same time, estimating sugarcane yield of each farmer before crushing season in order to manage debts from doubtful farmers, the collateral of contracted farmers will be assessed every year to insure in case some farmers could not provide cane as contracted. These action plans will reduce the risk of bad debts caused by the sugarcane advanced payments process.

3. Risk of raw material shortages in pulp production.

The Company expects to have higher bagasse volume from increasing sugarcane production and from energy saving in sugar factory. In addition, the Company has improved machinery to increase production efficiency continuously and will gain higher yield output. AT the same time, continuous study and research for other substitute raw materials for continuous production.

Nowadays, the world community is more environmentally conscious. The Company pays attention on the product development. The bagasse pulp could be used to produce a variety of environmental packaging products which are under feasibility study. This is another way to generate revenue from value added or to increase the value of existing products with the opportunities for future growth.

4. Risk of raw material shortages in producing electricity.

The Company still maintains its policy and focus on the electricity generation and distribution business, especially during the high volatility of sugar price. The electricity distribution of the company was sold to the Electricity Generating Authority of Thailand and the Provincial Electricity Authority. The good points for our group is that we have electrify sold in large contracts. However, the risk for electricity from biomass production is its raw materials. So KTIS group has focused on expanding the sugar cane volume both vertically and horizontally in order to increase the amount of cane for sugar production and get more bagasse. In addition, the Company has invested in the improvement of machinery and production process to save more energy, both in sugar factories and electricity power plants in order to obtain more bagasse. Meanwhile, we have our subsidiary, KTIS Research and Development Co.,Ltd ("KTIS R&D"), to continuous study and research for alternative energy corps in order to prevent such risks and create the stability of electricity production and distribution business for future sustainable growth

4. Assets for Business Operations
4.1 Core Operating Assets of the company and its subsidiaries

As of September 30, 2018, the company and its subsidiaries have core operating assets, as follows:

Items	Net Book Value (THB Million)	Ownership	Encumbrance
1. Land and land improvement 9,215 rai 3 Ngan 38.57 square wah.	374.97	owner	partly as Collateral Loan
2. Building and buildings improvements		owner	partly as Collateral Loan
3. Machinery and tooling	1,796.32	owner	Partly as Collateral Loan
4. Motor Vehicles	6,314.78	owner	Partly as Collateral Loan
5. Furniture, fixtures and office equipment	120.94	owner	-
6. Motor vehicles	36.72	owner	-
7. Assets under installation	534.16	owner	-
Total	763.72		

Note Items 1-4 are partly as collateral with the financial institutions for short and long term loans.

Intangible assets

Asset	Objective
Computer software	Computer program for work, which includes accounting software program, farmland record and sugar production, etc.

Trademarks

Trademark	Objective	Registration Date
	For refined sugar, sugar and raw sugar.	27 February 2013

Promotion privileges

By virtue of provisions of the Industrial Investment Promotion act of B.E. 2520, the subsidiaries were granted privileges by the Board of Investment which included exemption from payment of income tax for certain operations. The details of each privilege are as follows:

1. Certificate No.	1095(1)/2555	2590(5)/2556	1557(1)/2558	59-1195-0-00-1-0	59-0348-0-13-2-0	59-0268-0-00-2-0	61-0899-0-00-2-0
2. Promotional privileges for	Electricity generating from biomass	Production of biological fertilisers or organic fertilisers	Electricity generating and stream production from biomass	Packaging for foods (Biodegradable)	Electricity generating and stream production from biomass	Biogas	Biogas
3. The significant privileges are							
3.1 Exemption of corporate income tax for net income from promotional privileges and exemption of income tax on dividends paid from the profit of the operations throughout the period in which the corporate income tax is exempted	8 years	8 years	8 years	8 years	8 years	8 years	8 years

3.2	A fifty percent reduction of the normal rate of corporate income tax on net income derived from the promoted operations for a period of five years after the expiration of the above corporate income tax exemption period.	Received	Not received	Received	Not received	Received	Not received	Not received
4.	Date of first earning operation income	7-Oct-13	Not yet Commence	7-Jul-16	31-Oct-16	26-May-17	Not yet Commence	Not yet Commence

4.2 Policy on Investment in Subsidiaries and Associate Companies

It is the Company's policy to invest only in businesses that are related to its core business and are beneficial to or support for the business operations of the Company in order to capture new sources of revenue and leverage its profitability. The Company will nominate an appropriate proportion of its representative directors to the boards of its subsidiaries or associate companies to oversee and steer their businesses towards the right direction and the best benefits of the Company.

5. Legal Dispute

As of September 30, 2018, the Company and its subsidiary had dispute which Lawsuit regarding the request for the repayment from the Sugarcane and Sugar Committee and the Sugarcane and Sugar Fund. According to the Sugarcane and Sugar Act B.E. 2527 (the "**Act**"), the sugar factory is required to contribute an equal amount of the differences between the net income and the final cane price combined with the final cost of the sugar's production and distribution to the Sugarcane and Sugar Fund (the "**Fund**") as prescribed by the Sugarcane and Sugar Committee (the "**Committee**") (which is called the Fund for Stability Maintenance of Sugarcane and Sugar Industry). The Company, therefore, has submitted the Fund for Stability Maintenance of Sugarcane and Sugar Industry from the production season 2007/2008 to 2013/2014 inclusive. Also, the Thai Identity Sugar Factory Co., Ltd. (the "**Subsidiary**") has submitted the Fund for Stability Maintenance of Sugarcane and Sugar Industry from the production season 1996/1997 to 2013/2014 inclusive.

Later, the Company has considered the situation in legal aspect and found that the money demanded by the Committee at the fixed rate was not in conformity with the Act, thus, the Fund has no right to receive such contribution. Therefore, on 11 September 2017, the Company and the Subsidiary filed a complaint against the Committee and the Fund at the Supreme Administrative Court for preservation of the Company and the Subsidiary's right as the black case no. 1463/2560 and 1464/2560 respectively by requesting the amount which is not considered as the Fund for Stability Maintenance of Sugarcane and Sugar according to Section 27 (3) of the Act to be returned in the total of THB 544,527,508.65 and THB 379,579,218.84 respectively in total THB 924,106,727.49.

6. General Information and Other Information
6.1 Company Information

Company Information	: Kaset Thai International Sugar Corporation Public Company Limited (the"Company")
Type of Business	: Production and distribution of sugar and connected secondary businesses such as the production and distribution of bleached white paper pulp, ethanol and electricity
BKK office	: 24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok
Head office and Factory	: 1/1 Moo 14 Nong Pho Sub-District, Taklee District, Nakhonsawan Province, Thailand
Factory (Branch 3)	: 1 Moo 7 Banmakhua Sub-District, Muang District, Nakhonsawan Province, Thailand
Registration number	: 0107556000116
Telephone	: (66) 2692-0869 to 73
Facsimile	: (66) 2246-9125 , (66) 2692-0876 , (66) 2246-9140
Homepage	: www.ktisgroup.com
Company Secretary	: Mr.Suchart Pipatanachaiyapong Tel. (66) 2692-0869 to 73 ext. 176
Investor Relations and Corporate Communications	: Ms.Monathy Ploisook Tel. (66) 2692-0869 to 73 ext. 193 ext. 26
E-mail	: ir@ktisgroup.com
Registered capital	: 3,888,000,010 Baht
Paid up Registered Capital	: 3,860,000,010 Baht

6.2 Subsidiary Information

Sugar Business:	Thai Identity Sugar Factory Co., Ltd.
Business Type:	Production and distribution of sugar
Registered Share Capital	1,215,000,000 Baht
Paid-up Share Capital	1,215,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
Factory:	42/1 Moo 8 Ban Hardsuatan, Kungtapao Sub-District, Muang District, Uttaradit Province Telephone (66) 5544-9010 to 1, (66) 5540-7241 to 5

Sugar Business:	Lopburi International Sugar Co.,Ltd
Business Type:	Production and distribution of sugar
Registered Share Capital	2,000,000 Baht
Paid-up Share Capital	2,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Energy Business:	Kaset Thai Bio Power Co., Ltd.
Business Type:	Production and distribution of electricity
Registered Share Capital	1,260,000,000 Baht
Paid-up Share Capital	1,260,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
Factory:	555 Moo 14 Nong Pho Sub-District, Taklee District, Nakhonsawan Province Telephone (66) 56-338-123 to 5

Energy Business:	Ruamphol Bio Power Co.,Ltd
Business Type:	Production and distribution of electricity
Registered Share Capital	395,000,000 Baht
Paid-up Share Capital	395,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
Factory:	128 Moo 7 Banmakhua Sub-District, Muang District, Nakhonsawan Province Telephone (66) 56-338-123 to 5

Energy Business:	Thaiekaluck Power Co.,Ltd
Business Type:	Production and distribution of electricity
Registered Share Capital	350,000,000 Baht
Paid-up Share Capital	350,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
Factory:	42/2 Moo 8 Ban Hardsuatan, Kungtapao Sub-District, Muang District, Uttaradit Province Telephone (66) 2692-0869 to 73

Energy Business:	Lopburi Biopower Co.,Ltd
Business Type:	Production and distribution of electricity
Registered Share Capital	2,000,000 Baht
Paid-up Share Capital	2,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Energy Business:	KTIS Biogas Power Co.,Ltd
Business Type:	Production and distribution of electricity
Registered Share Capital	1,000,000 Baht
Paid-up Share Capital	1,000,000 Baht
Head office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Paper Pulp Business:	Environment Pulp and Paper Co., Ltd.
Business Type:	Production and distribution of bleached paper pulp
Registered Share Capital	2,400,000,000 Baht
Paid-up Share Capital	2,400,000,000 Baht
BKK office:	(1) 24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
	(2) 133 Vibhavadi Rangsit Rd., Samsennai, Phayathai, Bangkok Telephone (66) 2692-0869 to 73
Factory:	9/9 Moo 1 Attavipach Rd., Nong Pho Sub-District, Taklee District, Nakhonsawan Province Telephone (66) 2247-0920

Fertilizer Business:	KTIS Bio Fertiliser Co.,Ltd
Business Type:	Production and distribution of fertilizers and soil
Registered Share Capital	35,000,000 Baht
Paid-up Share Capital	35,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
Factory:	888 moo 14 Nong Pho Sub-District, Taklee District, Nakhonsawan Province Telephone (66) 56-338-123 to 5

Energy Business:	KTIS Bioethanol Co., Ltd.
Business Type:	Production and distribution of ethanol
Registered Share Capital	256,000,000 Baht
Paid-up Share Capital	256,000,000 Baht
BKK office:	(1) 24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73
	(2) 133 Vibhavadi Rangsit Rd., Samsennai, Phayathai, Bangkok Telephone (66) 2692-0869 to 73
Factory:	9 Moo 14 Nong Pho Sub-District, Taklee District, Nakhonsawan Province Telephone (66) 56-338-333 , (66) 2644-8388 , (66) 2644-8130 to 2

Energy Business:	KTIS Bio Energy Co.,Ltd
Business Type:	Production and distribution of ethanol
Registered Share Capital	20,000,000 Baht
Paid-up Share Capital	20,000,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Energy Business:	Lopburi Bioethanol Co.,Ltd
Business Type:	Production and distribution of ethanol
Registered Share Capital	50,000,000 Baht
Paid-up Share Capital	12,500,000 Baht
BKK office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Holding Business:	Permsinpattana Co., Ltd.
Business Type:	Shareholders engagement, which currently holds 26.0 per cent in EPPCO
Registered Share Capital	317,000,000 Baht
Paid-up Share Capital	317,000,000 Baht
Head office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Property Business:	Sapsirikaset Co.,Ltd
Business Type:	Real estate investment
Registered Share Capital	311,000,000 Baht
Paid-up Share Capital	311,000,000 Baht
Head office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Asset management Business:	Kaset Thai Wiwat Co., Ltd.
Business Type:	Support company's asset management
Registered Share Capital	61,000,000 Baht
Paid-up Share Capital	61,000,000 Baht
Head office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

Support and Development Business:	KTIS Research and Development Co., Ltd.
Business Type:	Support company's businesses and its growth aspiration.
Registered Share Capital	20,000,000 Baht
Paid-up Share Capital	20,000,000 Baht
Head office:	24 Aekphol Bldg., Vibhavadi Rangsit Rd., Ratchadaphisek, Din Daeng, Bangkok Telephone (66) 2692-0869 to 73

6.3 Other References

SEC	Securities and Exchange Commission, Thailand 333/3 Vibhavadi Rangsit Road, Chomphon, Chatuchak, Bangkok 10900, Thailand Telephone: (66) 2695-9999 Facimile : (66) 2695-9660 Email: info@sec.or.th website : www.sec.or.th
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SET	The Stock Exchange of Thailand 93 Ratchadapisek Road., Dindaeng, Bangkok 10400, Thailand. Telephone: (66) 2009-9000 Facimile: (66) 2009-9991 SET Contact Center : (66) 2009-9999 Email: SETCallCenter@set.or.th webset : www.set.or.th
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Registrar	Thailand Securities Depository Co., Ltd. 93 Ratchadapisek Road., Dindaeng, Bangkok 10400, Thailand. Telephone: (66) 2009-9000 Facimile: (66) 2009-9991 SET Contact Center : (66) 2009-9999 Email: SETContactCenter@set.or.th webset : www.set.or.th/tsd
Auditor	EY Office Limited 137-136/193Lake Ratchada Office Complex, 33 th Floor New Ratchadapisek Road, Klongtoei, Bangkok, 10110, Thailand Telephone: (66) 2264-0777, (66)2661-9190 Facimile: (66) 2264-0789 to 90 Email: ernstyoung.thailand@th.ey.com webset : www.ey.com
Legal Advisor	Kudan and Partners Co.,Ltd 127 Gaysorn Tower,23 th Floor, Unit Ratchdamri Road, Lumpini,Pathumwan,Bangkok, 10330,Thailand Telephone: (66) 2838-1750 Facimile: (66) 2838-1795