



OUTLOOK 2021

VOLUME 03

EXPECTED FAVORABLE WEATHER

Rice Industry
Sugar Industry
Rubber Industry
Fertilizer Industry
Power Industry

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LIST OF ABBREVIATIONS AND TERMS

CAGR	Compounded Annual Growth Rate
Cropping season of the crops mentioned in the report:	
Paddy rice	<p>In Vietnam, paddy rice is grown in almost all regions of the country and can be cultivated in various crops. The growing period of paddy rice lasts about 100 - 120 days (depending on rice varieties).</p> <p>In the North: 2 main crops (Winter - Spring: Feb to Jun; Seasonal crop: Jul to Nov); In the Central & South: 03 main crops (Winter - Spring: Oct to April next year; Summer - Autumn crop: Apr to Aug; Seasonal crop: Jun to Nov).</p>
Sugarcane	The sugarcane crop year 2020/21 starts from July 2020 to June 2021. In Vietnam, sugar mills often enter the sugarcane crushing season and produce sugar from December to April/May of the following year. Raw sugarcane has a growth period of 12 - 18 months and is planted from the previous crop, affected by weather changes during that time.
Rubber	Rubber tree's growth is divided into 02 main phases: The basic construction phase (growing period: the first 5 - 6 years), the rubber extraction phase (tapping period: 20 - 25 years). Yields of rubber latex depend on varieties, planting locations, weather and extraction mode. After the tapping period, rubber trees are liquidated for timber.
ENSO	The El Niño-Southern Oscillation (ENSO) is a recurring climate pattern involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean.
El Nino/ La Nina/ Neutral	<p>El Nino and La Nina are the extreme phases of the ENSO cycle; between these two phases is a third phase called Neutral.</p> <p>El Nino causes drought the Eastern hemisphere (including Vietnam) and rain in the Western half of the hemisphere. The difference in sea surface temperature is higher than +0.5°C is El Nino state; greater than +1.5°C is the extreme El Nino.</p> <p>La Nina: The opposite of El Nino. The difference in sea surface temperature lower than -0.5°C is La Nina state; below -1.5°C is extreme La Nina.</p> <p>Neutral: The difference in sea surface temperature ranges from -0.5°C to +0.5°C.</p>
EVN	Vietnam Electricity
FAO	Food and Agriculture Organization of the United Nations
FiT	Feed in Tariff (FiT) is a policy mechanism designed to accelerate investment in renewable energy, with a 20-year fixed electricity tariff in USD to increase the competitiveness of these energy sources with traditional energy sources.
Fitch Solutions	International company providing global market insights
GDI	MARD's General Department of Irrigation
GSO	General Statistics Office of Vietnam
IFRC	International Federation of Red Cross and Red Crescent
MARD	Vietnam's Ministry of Agriculture and Rural Development
MOIT	Vietnam's Ministry of Industry and Trade
Thailand's MOC	Thailand's Ministry of Commerce
USDA	United States Department of Agriculture

A. OVERVIEW OF WEATHER CONDITIONS IN VIETNAM

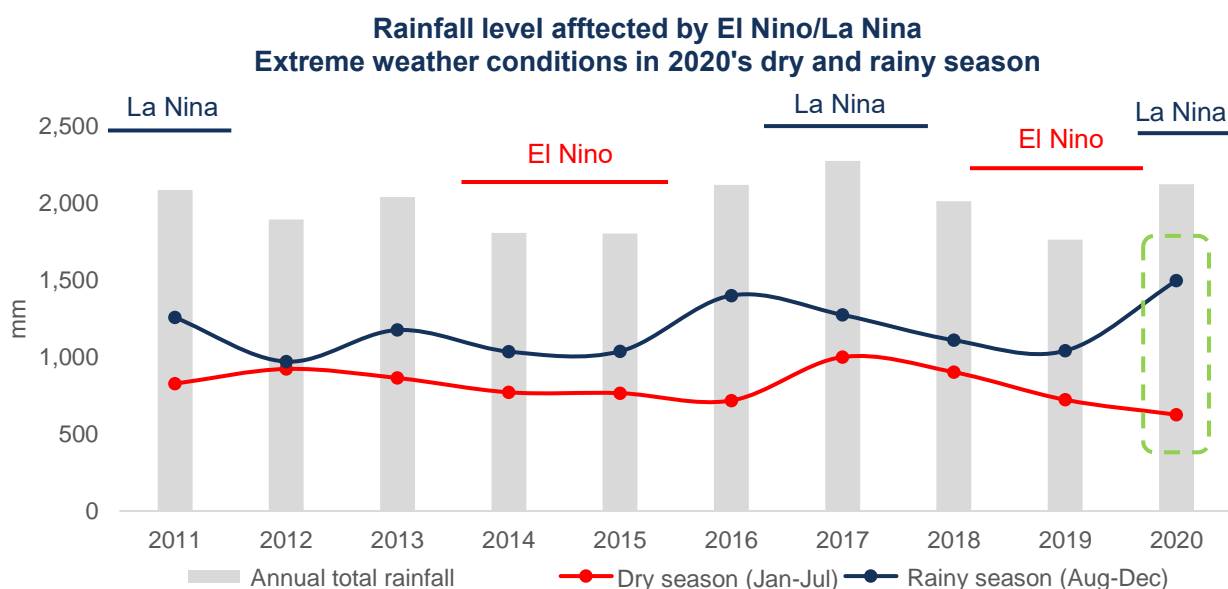
In 2020, the safety of people and socio-economic activities around the world is not only threatened by the COVID-19 pandemic but also by climatic disasters, with the highest number of natural disasters recorded in the history¹.

The number of natural disasters is increasing significantly (+35% compared to the 1990s) with many record-breaking heatwaves and the denser frequency of major storms. According to IFRC statistics, Vietnam is always in the top 10 countries that most affected by weather-related disasters in the past 10 years. In 2020 alone, Vietnam has suffered heavy losses due to climate changes, with an estimated economic loss of more than 37 trillion VND (5 times higher than the amount of 6.8 trillion VND in 2019). Besides the damage to people and property, agricultural and industrial activities were negatively affected by the weather events in the past year.

Through this report, we would like to give investors a complete picture of the weather conditions and climate change, as well as prospect impacts in 2021 for a number of economic sectors, including **Rice**, **Sugar**, **Rubber**, **Fertilizer**, and **Power** industries that are directly affected by weather factors on production and business activities.

I. REVIEW 2020 – Extreme weather conditions

Vietnam's weather is negatively affected by the two phenomena of El Nino and La Nina in 2020. El Nino and La Nina are the unusual warm/cold phase of the sea surface layer in the Equatorial Pacific, often occurred every 3-4 years, affecting the weather and climate conditions of many regions in the world, including Vietnam. The effects of these two phenomena are most clearly demonstrated through the amount of rainfall. In the years of El Nino, rainfall descends sharply in most areas and causes drought, together with high temperatures. In contrast, La Nina increases rainfall and higher frequency of tropical storms resulting in floods in some regions.



Average rainfall data of 15 monitoring stations across the country;
Source: GSO, GDI, FPTs Research

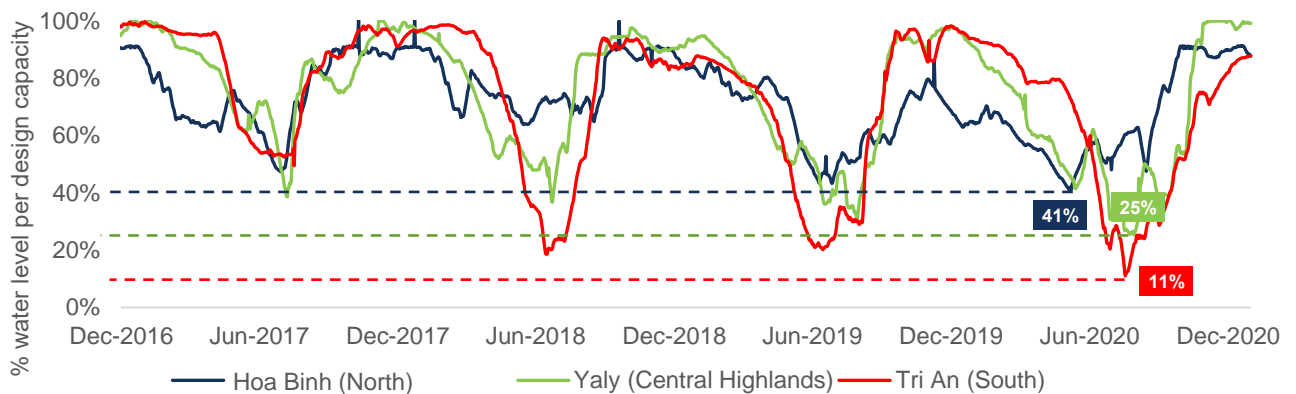
In 2020, El Nino occurs in the dry season in the first half of the year and La Nina occurs in the rainy season in the second half of the year, creating extreme weather conditions between two seasons: severe drought in the dry season; heavy rain and floods during rainy season. The unusual weather events have caused negative impacts on the socio-economic situation of Vietnam in 2020.

¹ According to IFRC, World Disasters Report, December 2020

1. Severe drought in the first half of 2020

The first half of the year corresponds to the dry season in many areas, especially in the South. Being affected by the El Niño phase lasting from 2019, the dry season 2020 weather is extremely hot and dry with the lowest rainfall in recent years. The water level in rivers and lakes across the country is inherently low since the end of 2019, along with the sharp drop in water flow to rivers and lakes in the first half of 2020, making droughts and water shortages more serious. The peak of drought occurs in June – July 2020, when the remaining water capacity of most irrigation and hydropower reservoirs is only 30% - 60% of the design capacity. Especially in the South, the storage capacity at Tri An Lake in July 2020 only reaches 11% of the design capacity.

The water level of most irrigation and hydropower reservoirs were at the lowest compared to recent years



Source: GDI, FPTs Research

The Southern region (including Central Highlands, South Central Coast, South) is the place that most affected by the drought. In the Mekong Delta, drought is accompanied by saline intrusion due to low river water levels causing seawater to flow into river systems. Saline intrusion in 2020 is considered the most severe in the history, affecting 10/13 provinces and 42.5% of natural land in the Mekong Delta.

2. Heavy storms and floods in the second half of 2020

After the drought in the first half of the year, the La Niña phase starts in August 2020 and completely changes the weather conditions. La Niña causes large-scale heavy rains, increasing rainfall across the country. The total rainfall at the end of the year in most areas increases from 30% to 60% compared to the average level of many years in the same period. In many areas in the North Central Coast, the rainfall even doubled compared to the same period in 2019.

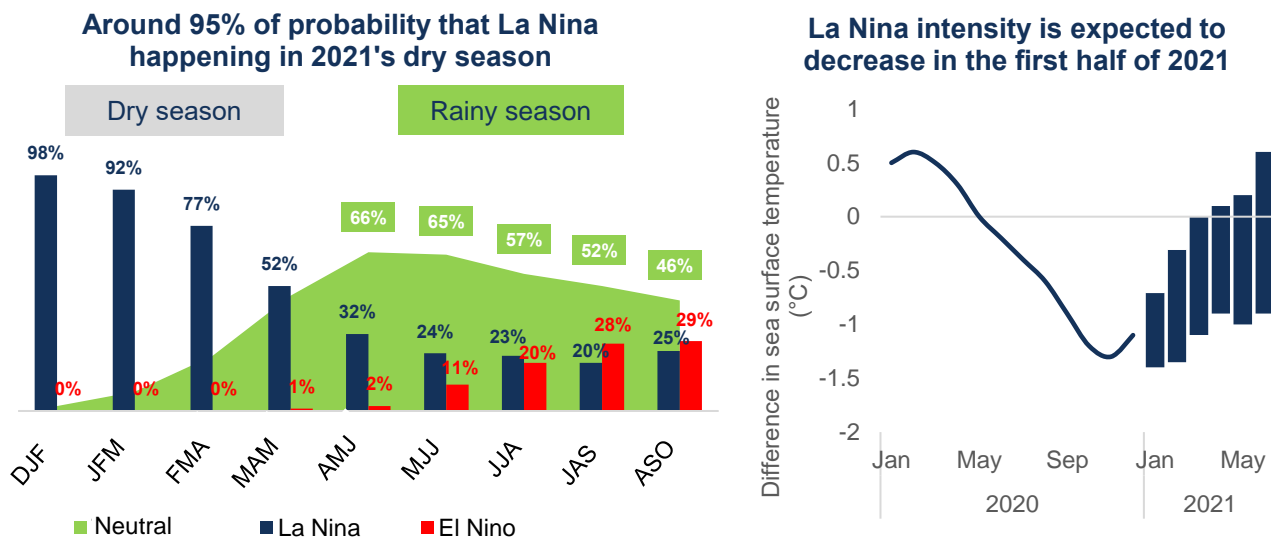
Besides the positive factors of rainfall recovery, La Niña also has a negative impact with more frequent storms and floods. In 2020, Vietnam suffers 14 storms (more than the average of 11 storms), 265 thunderstorms, and 120 floods and flash floods causing landslides. The most severe is the historic heavy rain from October 6 to 22, 2020 in the Central region, especially from Ha Tinh to Thua Thien Hue provinces.

Review 2020: Extreme weather conditions and unusual natural disasters (droughts, storms, floods...) have caused serious damage to people and property in 2020. Regarding agriculture, there were 144 thousand hectares of rice and 54 thousand hectares of crops damaged, accounting for ~1.32% of the total cultivated area in 2020. Regarding irrigation, 787 km of embankments and canals, 273 km of coast and riverbanks were eroded and sabotaged. The estimated economic loss of Vietnam as of December 21, 2020, is over 37.4 trillion VND (floods in the Central caused a loss of 32.9 trillion VND).

II. OUTLOOK 2021 – Expected favorable weather

1. La Nina is forecast to continue during the dry season and gradually decrease in Summer 2021

The ENSO cycle in the Pacific region is currently in the phase of La Nina. The La Nina starts from mid-2020 and gradually strengthens towards the end of the year. The difference in sea surface temperature in December 2020 is at -1.1°C (an increase of 0.2°C compared to the average of November 2020). According to the World Meteorological Organization (WMO), La Nina is expected to continue until March 2021. The difference in sea surface temperature is expected to remain between -1.0°C and $+0.5^{\circ}\text{C}$ in the first half of 2021, suggesting that La Nina tends to weaken in the summer of 2021. Following that case, the Neutral phase is predicted with a probability of 65% - 66% and possibly extend to Aug-Sep-Oct 2021.



Source: International Research Institute for Climate & Society (IRI/CPC), World Meteorological Organization (WMO), FPTs Research

Thus, La Nina maintaining in the dry season of 2021 is expected to increase rainfall, reduce the impact of drought in the Central, Central Highlands, and saline intrusion in the Southern region compared to 2020. Together with a Neutral phase ahead, the weather is expected to be more favorable to most agricultural areas in the country. The cultivated area of major crops is about to increase compared to the same period in 2020 when El Nino causes severe drought and saline intrusion in the 2019/20 crop.

2. Temperature and storm tendency are expected to be equal to or less than the multi-year average

According to the National Center for Hydrometeorological Forecasting, in the first months of 2021, the average temperature tends to be equal to or lower than the average of many years. Severe cold waves occur from the second half of December 2020 to February 2021, that is likely to last from 7 to 10 days and longer in the northern mountainous provinces. The summer's heatwaves in the North and Central regions tend to appear later than usual and is not as intense as in 2020.

Storms and tropical depressions are expected to appear early in the East Sea with similar or less ability to affect the mainland than the annual average. According to forecasts, there will be about 10-12 tropical storms and depressions in the East Sea in 2021 (less than in 2020), the storms might affect the mainland mainly in the last months of 2021.

With the above forecast weather conditions, Vietnam's agricultural activities in 2021 are expected to be less affected by extreme weather factors (heat, storms, floods,...) compared to the year 2020. Only the North and Northern Central Coast are likely to be impacted by major cold waves in Jan-Feb 2021.

3. Total projected rainfall is significantly higher than the multi-year average in the first half of 2021

Average monthly rainfall in the first half of 2021 is forecasted to be higher than the average of many years in most regions across the country and there is a possibility of heavy rain in some areas:

- The Northern region: Less rainfall is common, the total rainfall is approximately compared to the multi-year average.
- The Central region: The total rainfall is higher than the multi-year average in the provinces from Quang Tri - Binh Thuan (Jan 2021: +15-30% compared to the multi-year average), Da Nang - Binh Thuan (March – May: +10-30% compared to multi-year average), the South Central region (June: +10-20% compared to the multi-year average).
- The Central Highlands and the South: There is a possibility of unseasonal rain with a total monthly rainfall of 20 - 50mm in January - March 2021. In April - May 2021, the total rainfall is forecast to be 20-35% higher than the average of many years in the same period.

The total projected rainfall is significantly higher than the multi-year average, which is likely to help maintaining high level of water flow to rivers and hydroelectric reservoirs. Weather conditions are expected to have a positive impact on business activities of hydropower firms and irrigation for agriculture in 2021.

In 2021, the impact of weather events will be less extreme than in 2020 with the trend La Nina in the first half of the year (dry season) and Neutra in the second half of the year. Note, in the phase of ENSO transition, the weather and climate conditions often fluctuate robustly. It is forecasted that in 1H2021, unusual weather events such as extreme and damaging cold waves will likely appear in the North; storms are likely to appear early in the summer months.

We expect that the weather conditions in 2021 will have a **POSITIVE impact on the production and business activities of the rice, sugar, rubber, fertilizer, and power industries.**



RICE INDUSTRY

PROSPECTS FROM PRODUCTION RECOVERY & EXPORT GROWTH

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Review 2020

- Rice output reached 42.8 million tons, decreased by 1.6% yoy due to the negative impact of the weather. More than 144 thousand hectares of paddy rice in the Mekong Delta, the largest paddy rice area in the country, has been damaged by the saline intrusion.
- High export price due to global food storage demand. Rice exports decreased in volume (-1.9% yoy) but increased in value (+ 11.2% yoy). In 2020, Vietnam's rice prices reach the highest level in 9 years.
- Rice industry's profit margins improved due to positive movements in world rice prices.

Outlook 2021

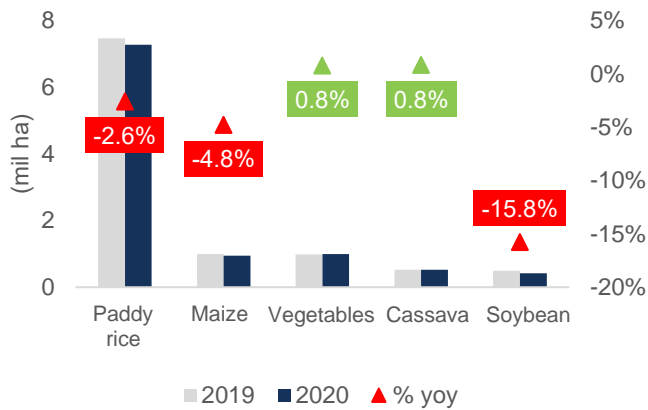
- Production is expected to recover by +1.1% yoy thanks to expected favorable weather conditions. Rice export growth is estimated at +1.6% yoy with the key driver of global food consumption and reserves.
- World rice price is projected to remain at a high level of ~490 - 500 USD/ton (+22.7% compared to the low price level in 2015 - 2019).
- Industry revenue continues to grow, export prospects from trade agreements.

I. RICE INDUSTRY IN 2020 – Lower production due to drought, hiked export value

1. Slight decrease in production as a result of extreme weather conditions

1.1. Severe saline intrusion and heavy floods reduced rice cultivated areas in the country

Cultivated area of various crops were negatively affected by the weather factors in 2020



Source: GSO

Under the impact of the El Niño, droughts occurred nationwide, saline intrusion in the dry season 2019/20 (Dec 2019 to May 2020) in Mekong Delta (accounting for ~54% of rice area in the country) is considered to be the most severe in history. After that, heavy rains and consecutive floods occurred, especially in the period from September to October 2020 in the North and Central region has also negatively impacted rice cultivation and production.

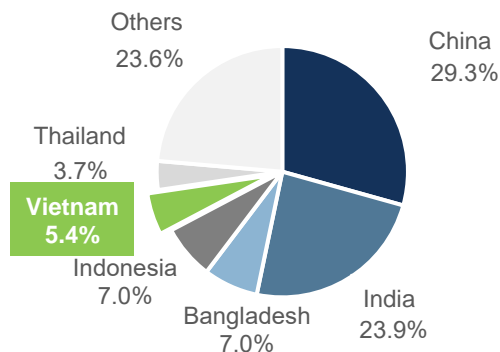
According to the General Department of Natural Disaster Prevention and Control under the MARD, accumulated to December 21, 2020, various types of natural disasters caused damage to more than 144 thousand hectares of rice and 54 thousand hectares of crops (~1,32% of the agricultural area in Vietnam).

In addition, the paddy rice area in Vietnam is also affected by the trend of restructuring crops (growing vegetables, fruits) and changing land purposes due to urbanization (~1% of the area paddy).

1.2. Output decreased, productivity continued to improve in 2020

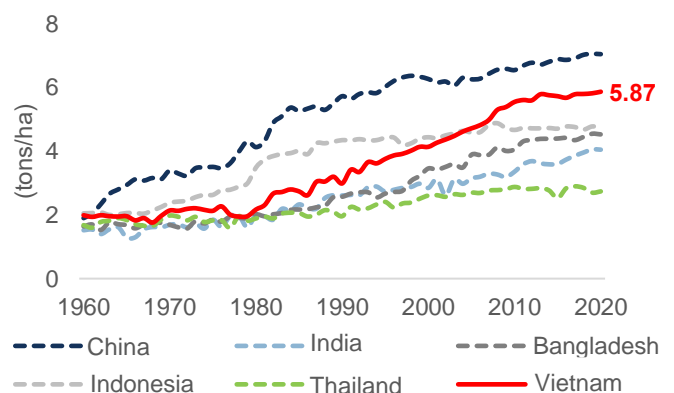
Due to the decrease in the cultivated area (-2.54% yoy), the country's paddy output is estimated to reach 42.8 million tons (-1.6% yoy) in 2020, equivalent to more than 27.1 million tons of milled rice. Vietnam continues to rank the 5th among global top rice producing countries. Meanwhile, average yield improved at 5.87 tons of rice/ha (+ 0.9% yoy) as a result of proactive and appropriate measures to cope with the effects of drought, saline intrusion, natural disasters. Currently, Vietnam's average rice yield is at the 2nd highest level in the world thanks to the favorable soil conditions and the development of high-yield varieties.

Vietnam is in the top 5 largest rice producers in the world with 5.4% market share in 2020



Source: USDA

High rice yield thanks to favorable soil conditions



Source: USDA

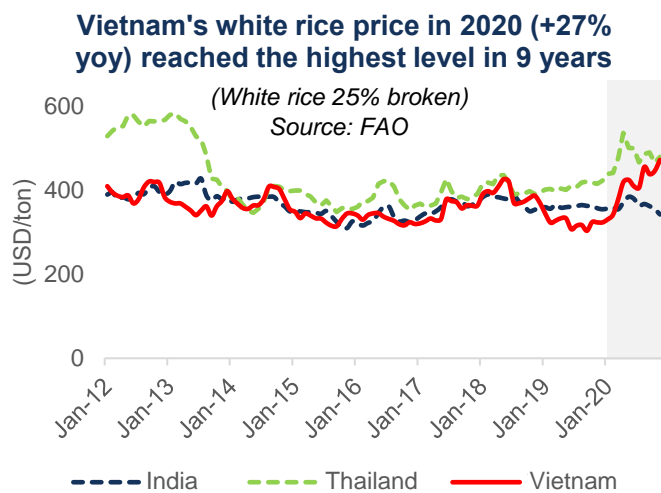
2. High rice price driven by increased global food demand

2.1. Vietnam's rice exports decrease in volume but increase in value in 2020

Rice production in Vietnam is now sufficient to meet domestic consumption and export demand. In the period from 2000 to 2020, Vietnam's rice export output averaged over 6 million tons, equivalent to about 20% of production, making Vietnam the 3rd largest rice exporter (with ~14% global market share in 2020). Vietnam's rice export growth is expected to grow in line with the global demand for rice.

In 2020, the breakout of the COVID-19 pandemic as well as natural disasters in many regions has disrupted global food supply and supply chains. The need to ensure food security in each country is more urgent than ever. Various countries and regions have increased food reserves in the country, boosting demand for rice imports. Global rice consumption volume in 2020 is estimated at over 494 million tons (+2.0% yoy).

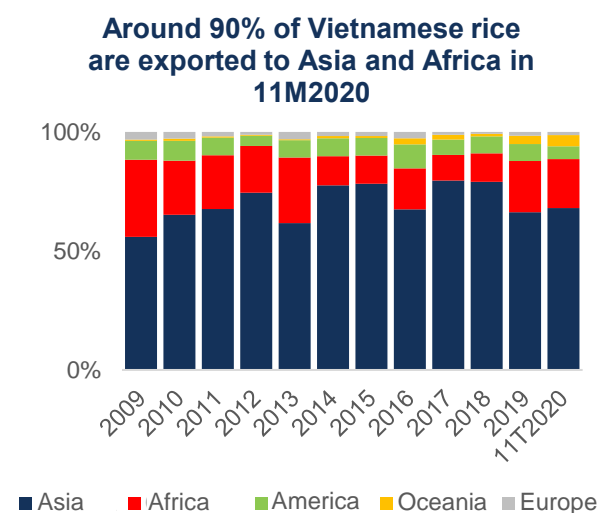
According to the General Department of Vietnam Customs, Vietnam's rice export volume in 2020 reached 6.25 million tons, a slight decrease of 1.9% compared to 2019. Previously, in April 2020, the Government decided to suspend rice exports at the end of March 2020 and apply an export quota of 500,000 tons to ensure food security in Vietnam in the context of saline intrusion and COVID-19. By May 2020, Vietnam's rice export activities have been resumed.



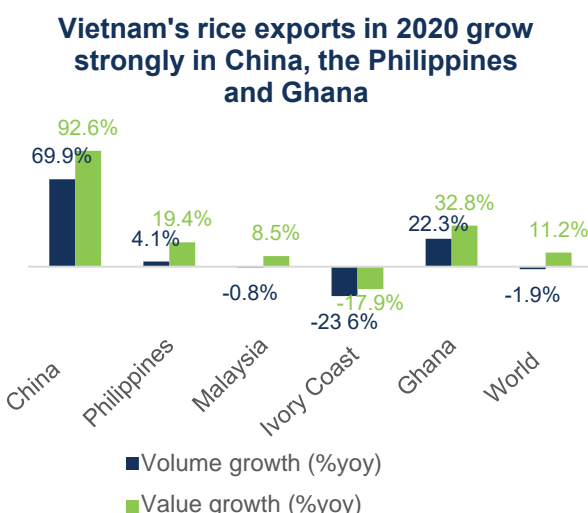
Despite a small decrease in export volume, Vietnam's rice export value in 2020 reached a positive growth rate of 11.2% yoy. Rice export turnover of the country in the past year was 3.12 billion USD, equivalent to 21.8% of agricultural products' export turnover and 1.1% of the total export turnover of Vietnam. In 2020, Vietnam's 25% broken white rice price reached an average of \$412/ton, up 27.3% yoy, the highest level in the past 9 years.

In the global rice market, Vietnamese rice is often priced lower than Thai and Indian rice of the same grade, because Vietnamese rice is considered to have no brand name, unable to trace the origin, overuse of pesticides and fertilizers in cultivation. In 2019, Vietnam's 25% broken white rice is priced 10-20% lower than Thai rice in the global market.

2.2. Asia and Africa are the key export markets, while white rice accounts for the largest proportion



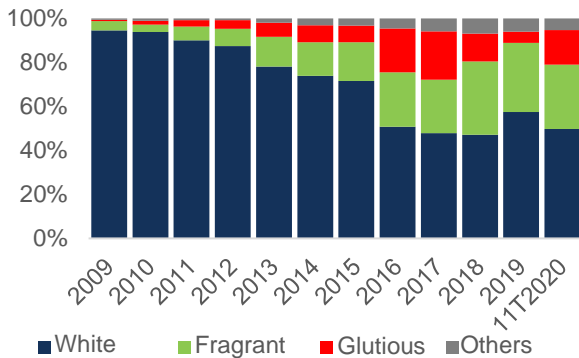
Source: USDA, FPTs Research



Source: Vietnam Customs, FPTs Research

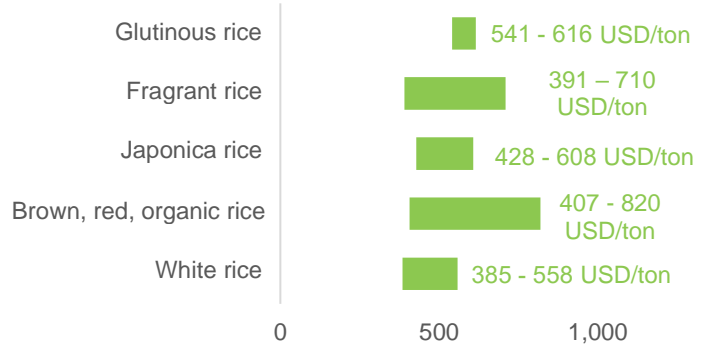
The main rice export markets of Vietnam are countries in Asia and Africa (nearly 90% of export in 11M2020), including the Philippines (~34%), Malaysia (9.8%), China (12.1%), Ghana (9.2%), Ivory Coast (7.6%)... In 2020, Vietnam's rice exports to China, the Philippines, Ghana has grown significantly, especially in the context of these countries increasing food reserves after the pandemic and impacts of unfavorable weather conditions on agricultural cultivation.

White rice accounts for more than 50% of Vietnam's rice export volume in 11M2020



Source: USDA, FPTs Research

Average rice export prices of Vietnam by type in 2020



Source: Vietnam Customs, FPTs Research

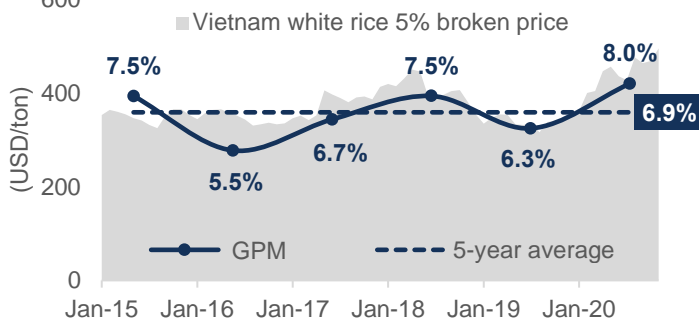
It is estimated that in 11M2020, white rice (-48% yoy) accounted for the majority of Vietnam's rice exports with 50.2% of export output. Vietnam's white rice markets are Asian countries. Next is fragrant rice (-18.1% yoy), contributing ~29.6% to the rice export structure in 11M2020, with Africa as the dominant market.

Glutinous rice (~15.9% proportion) is mainly exported to China. Since 2018, Vietnam's export of glutinous rice has encountered difficulties due to changes in China's import tariffs². In 2020, thanks to the short-term increasing food reserves of China, Vietnam's glutinous rice exports increased by +170.8% yoy in 11M2020.

The export output of other types of rice including Japonica rice, brown rice, organic rice, red rice... also increased significantly. In 11M2020, Vietnam's exports of these products grew +10.4% yoy in volume and +7.5% yoy in value. The Korean market is currently the main market with a 54.1% proportion of the export volume of other rice varieties of Vietnam. In some markets, the export price of brown rice, organic rice... of Vietnam is tremendous compared to the average export price, such as France (1,655 USD/ton), the US (1,503 USD/ton); UK (1,446 USD/ton); South Africa (1,469 USD/ton); Hong Kong (1,350 USD/ton)... (according to Vietnam Customs). However, the export amount of these types only accounts for a small proportion in the rice export structure of Vietnam, estimated at ~5% in 11M2020.

3. Improved rice industry profit margins

Gross profit margin (GPM) of rice production and trading segment improved in 9M2020



Thanks to the increase in rice prices in 2020, the gross profit margin in 09M2020 of rice production and trading enterprises improved significantly compared to 2019 and the average of 5 years. However, the gross profit margin of 6.9% in the period 2015 - 2020 of rice businesses is still quite low and not attractive compared to other industries in agricultural sectors such as production and sales of seed varieties (average GPM of ~30%), production and sales of pesticides (average GPM of ~25%).

Source: FPTs Research from major rice listed companies' financial statement (LTG, NSC, TAR, BLT, AGM, KGM)

² From July 2018, China increased the import tariff on glutinous rice from 5% to 50%, exported Vietnamese rice to the Chinese market (in which glutinous making up a large proportion) plummeted in the period of 2018 - 2019.

II. OUTLOOK 2021 – Enhanced production and export growth promoted by favorable weather

1. Recovery in production and growing demand for imported rice globally

1.1. Favorable weather expectations boost rice production

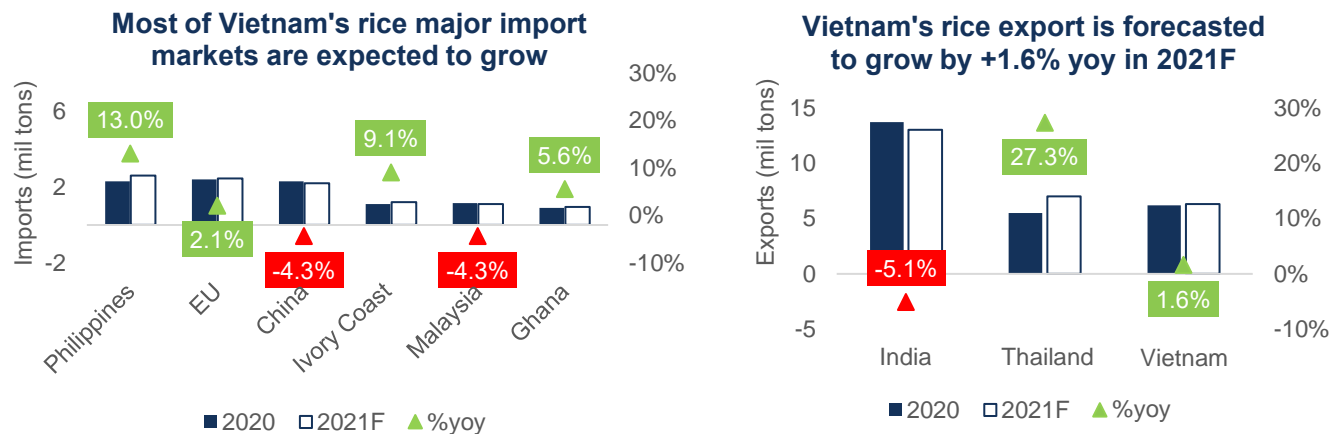
According to the National Center for Hydrometeorological Forecasting, the La Nina phase is expected to continue until March 2021, then tends to decrease gradually and changing to a Neutral phase in the summer of 2021. Thus, saline intrusion in the Mekong Delta region in the dry season of 2021 is forecast to be less severe than in 2019/20, creating favorable conditions for rice production in the region. For the Northern region, the damaging cold waves are expected to last until February 2021, which may affect agricultural production activities.

According to Fitch Solutions' forecast, rice production in 2021F will reach more than 27.4 million tons, equivalent to a growth rate of +1.1% yoy.

1.2. Vietnam's rice exports are expected to increase slightly by +1.6% yoy in 2021F

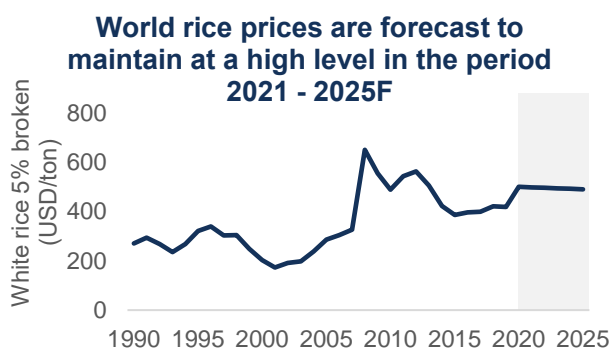
According to the USDA forecast, with the complicated development of the COVID-19 pandemic globally, the demand for food consumption and storage is expected to remain high. It is forecasted that in 2021, global rice import volume is estimated at 44.79 million tons (+1.0% yoy). In which, the countries that are expected to increase rice imports are the Philippines (+13%), Ivory Coast (+9.1%), Ghana (+5.6%), and EU (+2.1%), which are the key export markets for Vietnamese rice. Particularly in China and Malaysia, due to the recovery of domestically produced rice, imports are forecast to drop more than 4% in 2021F.

Meanwhile, Vietnam is expected to maintain its position as the 3rd rice exporter in the world, with a slight growth in export volume at +1.6% yoy owing to (i) Recovery of production; (ii) Challenges from major competitors (such as Thailand with forecasted rice production and export growth to reach +5.35% yoy and +27.3% yoy respectively thanks to favorable weather conditions).



Source: USDA Forecast (December 2020)

2. Global rice price to remain at a high level



Source: World Bank Forecast (October 2020)

According to World Bank, the world rice price is forecast to be stable and hardly increase in the period of 2021 - 2024F due to the growth of rice output in major rice-producing countries in Asia with more favorable weather conditions in 2021.

The price of rice is expected to remain at a high price, about 490-500 USD/ton for 5% broken rice, which is 22.7% higher than the average of 2015 - 2019.

3. Growth in industry revenue, prospects for exports from trade agreements

In 2021, we believe that Vietnam's rice industry will continue to be **STABLE**, the industry revenue is expected to grow at +1.6% yoy with following factors:

- **Recovery in production** due to favorable weather conditions;
- **High world rice prices**, export growth in both traditional markets and new markets, especially the opportunity to export premium rice with high added value from trade agreements. In addition to traditional export markets in Asia and Africa, Vietnam's rice industry is gradually expanding exports to markets that demand a premium and special kinds of rice (fragrant rice, glutinous rice, brown rice, organic rice...) with higher 20 - 50% selling price than that of white rice, expected to add value to businesses and rice farmers.

Trade agreements with the potential to increase the export value of Vietnamese rice

FTAs	Detail
CPTPP	<p>The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) comes into force from January 14, 2019 in Vietnam, creating opportunities to export rice to countries in the bloc. Vietnam's rice industry has opportunities in the Australia and Singapore market:</p> <ul style="list-style-type: none"> • Australia: Eliminate tariffs and quotas on rice imports from Vietnam. In 11M2020, Vietnam's rice output exported to Australia grew +57.01% yoy, equivalent to ~10% share of imported rice in this country. In which, fragrant rice accounts for ~40% of the total rice export volume, with a growth of over 51% yoy. Other types with high export growth are high-value rice products such as Japonica rice (+32.5% yoy), brown rice (+190% yoy), and glutinous rice (+814.1% yoy)... • Singapore: Eliminate tariffs and quotas on rice imports from Vietnam. In 11M2020, Vietnam's rice output exported to Singapore reached more than 0.1 million tons, up +13.01% yoy; fragrant rice accounts for the majority with a 57.7% proportion.
EVFTA	<p>The free trade agreement between Vietnam and the European Union (EVFTA) took effect from August 1, 2020. Accordingly, the EU will:</p> <ul style="list-style-type: none"> • Exempt tariffs for 80,000 tons of rice from Vietnam (~3.3% of annual EU import volume), including 30,000 tons of milled rice, 20,000 tons of paddy rice, 30,000 tons of fragrant rice; • Exempt tariffs and quotas for broken rice. <p>Exemption of tariffs is expected to create advantages for Vietnamese rice in the EU market compared to other exporting countries such as Cambodia and Myanmar (accounting for more than 30% of EU rice imports in 2019) which are applied tariffs of 125 EUR/ton to the end of 2021.</p> <p>Accumulated in 10M2020, Vietnam's rice exports turnover to the EU reached about 30.8 million USD, up 27.5% over the same period. Fragrant rice is the most exported item to the EU market (+48.8% yoy) and accounts for 58.7% of the export amount. Following that is brown rice with 25.4% of rice export volume from Vietnam.</p>
WTO	<p>In the framework of the WTO agreement and the bilateral agreement between Korea and Vietnam, Korea has allocated a quota of 55,112 tons to Vietnam from January 1, 2020, and an import tariff of 5% (the quota allocated to Vietnam is higher than 28,494 tons quota of Thailand, one of the main competitors of Vietnamese rice export). Since 2015, rice imported into Korea is subject to a tax rate of 513%.</p> <p>As a result, in 10M2020, Vietnam's rice export output to South Korea reached more than 47 thousand tons, about 62 times higher than the same period in 2019, including premium rice such as brown rice, organic rice...</p>

However, the above markets have high requirements on the quality of agricultural products, technical barriers, traceability. Hence, Vietnamese rice producers and exporters must continuously improve competitiveness in the global rice market.

Source: Vietnam Customs, International Trade Center (ITC), USDA, FPTs Research

III. UPDATES ON LISTED RICE COMPANIES

Ticker	Market Cap. Jan 18, 2020	Revenue 9M2020	NPAT 9M2020	NPAT growth	NI Margin	ROE (LTM)	P/E
LTG	2,289 bil	3,971.8 bil	202 bil	-29.9%	5.1%	9.3%	9.4x

Loc Troi Group JSC., (UPCoM: LTG) is the leading domestic company of chemical plant protection products (pesticides) in Vietnam (~20% of market share) and the leading company in domestic branded rice, with the production capacity of ~1 million tons of rice/ year.

The pesticides segment accounts for the largest proportion of the revenue and profit structure of LTG with 61.1% of revenue and 87.2% of gross profit in 9M2020. In 2020, due to the negative impact of weather on domestic agricultural production, LTG's business result declined. However, thanks to the increase in agricultural prices, LTG's gross profit margin improved. Specifically, the gross margin of the pesticides segment increased from 21.7% to 34.1% and the rice segment increased from 2.9% to 4.1% in 9M2020.

Prospect: Opportunity to export branded rice with high value to the EU market after EVFTA, business results are expected to recover owing to more favorable weather conditions.

[\(Full report on LTG\)](#)

TAR	1,058 bil	2,099.4 bil	84.8 bil	+238.3%	4.0%	20.5%	9.7x
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Trung An Hi-tech Farming JSC., (HNX: TAR) operating in the field of processing, trading, and exporting branded rice, capable of producing more than 360 thousand tons of rice/year.

In 2020, the increase in export rice prices help the company achieving revenue growth of +64.7% yoy, the net profit margin improved from 2.0% to 4.0% in 9M2020.

Prospect: Rice export growth and high-end rice export opportunities to new markets.

NSC	1,459 bil	968.6 bil	123 bil	-4.5%	12.7%	17.3%	7.5x
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Vietnam National Seed Group JSC., (HSX: NSC) is the leading domestic company in Vietnam's seed business sector (accounting ~20% market share), a leader in research and development (R&D), capable of producing more than 140,000 tons of seeds and 100 thousand tons of rice year.

NSC's seed segment contributes more than 93% to the revenue and profit structure of the business, in which rice varieties account for the majority (~80%). In 2020, Center for Agricultural and Seed Processing Industry in Dong Thap province has put into operation, increasing more than 40% of the production capacity of the enterprise. Due to the strength of R&D activities, NSC has the advantage of reducing production costs, enjoying tax incentives, and the profit margin is high compared to the industry average.

Prospect: Seed sector benefiting from more favorable weather conditions; export opportunities for premium rice products.

Currency: VND

Source: EzSearch



SUGAR INDUSTRY YET-TO-RECOVER PRODUCTION SUGAR PRICE DRIVEN BY TRADE REMEDIES

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Review 2020

- The output of cane sugar produced in 2020 was nearly 0.8 million tons, declined by 34% yoy due to drought. Low price imported sugar from Thailand increased by more than 39% yoy after the ATIGA took effect. Sugar export to China is positive in the short term.
- Domestic sugar prices recovered 9.02% yoy, reaching an average of VND 12,557/kg thanks to high sugar export prices from Thailand and the demand for imported sugar from China.
- Sugar industry margins improved. The gross profit margin of the whole industry reached 14.7% in 9M2020, higher than the 5-year average.

Outlook 2021

- Production will not yet recover in the crop year 2020/21, expected to rebound in 2021/22.
- The sugar price movement depends on the government's trade remedies to support the domestic sugar industry with anti-dumping and anti-subsidy tax on sugar products imported from Thailand.
- The sugar industry's profit margin is expected to remain at a high level.

I. SUGAR INDUSTRY IN 2020 – Lower production, pressure from imported sugar

1. Declined output, surged imported sugar after integration, positive export in short-term

1.1. Lower production, pressure from imported sugar

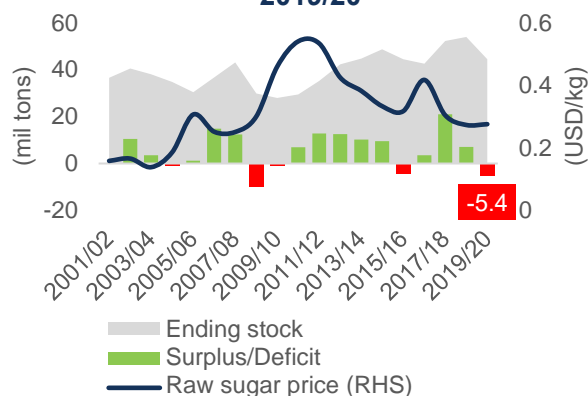
- Unfavorable weather conditions negatively affected global sugar production

Global sugar production decreased by 7.5% yoy

(mil tons)	Sugar production 2019/20	Weight	% yoy
Brazil	29.9	18.0%	+1.4%
India	28.9	17.4%	-15.7%
EU27+UK	17.3	10.4%	-4.1%
China	10.2	6.1%	-5.2%
Thailand	8.3	5.0%	-43.4%
Vietnam	0.8	0.5%	-34%
WORLD	166.2	100%	-7.5%

Source: USDA, FPTs Research

Global sugar deficit of ~3.2% in 2019/20



Source: USDA, FPTs Research

By the end of the 2019/20 crop, global sugar production reached 166.2 million tons (-7.5% yoy). The El Nino causing drought in 2019 has negatively affected sugarcane output in key sugar producing countries such as Thailand (-43.4% yoy), India (-7.9%) and China (-5.2%).

The global sugar industry suffered a deficit of about 5.4 million tons, equivalent to ~3.2% of demand in 2019/20 helping to reduce the pressure of high global sugar stock after the period of record-high production from 2017 to 2019.

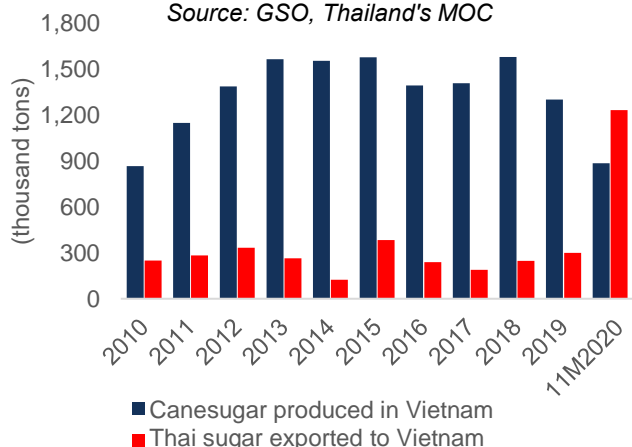
Meanwhile, dry weather caused sugarcane production in Vietnam to be at a 19-year low. Large-scale drought for the Central - Central Highlands and saline intrusion in the Mekong Delta (~50% of the whole country plant area) caused sugarcane yield and output to decrease by 37.6% and 39.5% yoy respectively.

- Sugar imported from Thailand surged after ATIGA, Vietnam's sugar industry diverged

After the effectiveness of ATIGA³ (Jan 01, 2020), the amount of sugar imported into Vietnam increased more than 4 times over the same period. Of which, about 90% is sugar originating from Thailand. In 11M2020, Thailand exported to Vietnam more than 1.2 million tons sugar of all kinds, which is 39.2% higher than the domestically produced sugar. Refined sugar accounts for ~66.4% of sugar exported to Vietnam.

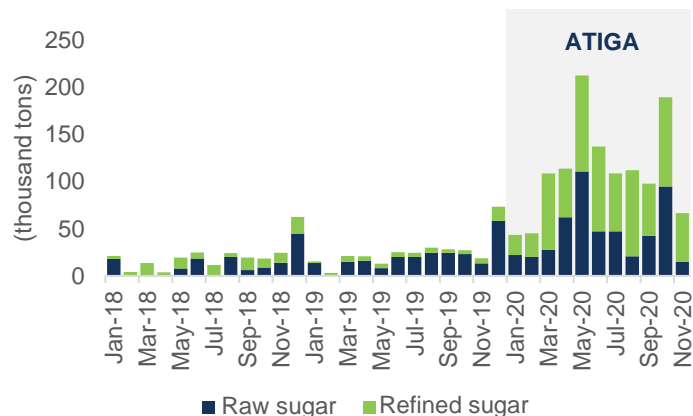
Thai sugar exported to Vietnam is +39.2% higher than domestic production after ATIGA

Source: GSO, Thailand's MOC



Import of refined sugar from Thailand accounts for majority since integration

Source: GSO, Thailand's MOC



³ ATIGA: ASEAN Trade in Goods Agreement, effective for Vietnam's sugar industry from 2020.

According to the Vietnam Sugarcane and Sugar Association (VSSA), imported refined sugar serves the consumer segment (households, small businesses) and the industrial production of small and medium food and beverage manufacturers. Meanwhile, imported raw sugar is mainly consumed by domestic sugar mills, used for processing refined sugar and consumed in the domestic market.

Due to competitive pressure from Thai imported sugar, Vietnam's sugar industry has strongly diverged and faced difficulties in consumption. There are 16 sugar mills (~40% of the total mills in Vietnam) have to close in 2019/20 and the first half of 2020/21 due to their inability to compete with low price Thai sugar (the mills that have to close are mainly low-capacity mills, having difficulty in developing raw material areas for sugarcane and sugar consumption). Currently, Vietnam has only 25 mills operating in the crop year 2020/21.

1.2. Sugar exports to China increased in the short term

Vietnam's sugar export turnover to China increased ~40 times in 2020

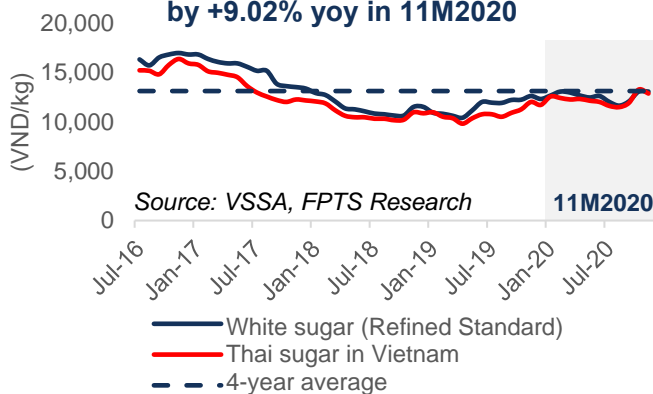


Under the impact of the COVID-19 pandemic and floods, China has increased imports of sugar as reserves for essential food (+64.4% yoy in 2020), including sugar from Vietnam. According to China Customs, the value of China's sugar import from Vietnam in the whole year 2020 reached more than 106.3 million USD, equivalent to ~425,000 tons (around 55% of domestic sugar production), which is 40 times higher than 2019.

Sugar exports to China helped reducing consumption pressure for Vietnamese sugar companies in the context of high sugar supplies from Thailand. However, we think that this is only a short-term opportunity (in 2020) for Vietnamese sugar enterprises as China would continue their policy of tightening sugar imports to protect the country's domestic sugar enterprises in China.

2. Rebound in sugar price

Domestic white sugar price increased by +9.02% yoy in 11M2020

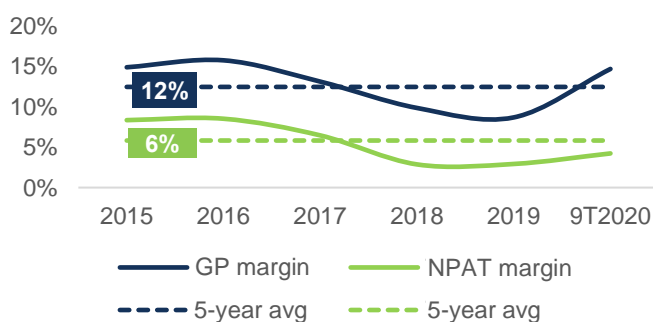


In 11M2020, even the domestic sugar price was still lower than the 4-year average, the domestic white sugar price reached an average of 12,557 VND/kg, improving +9.02% yoy, thanks to:

- (i) A 14.1% increase in Thai sugar exported price to Vietnam due to the falling of sugar output in Thailand (-43% yoy) under the impact of weather;
- (ii) China's demand for sugar imports helped reducing consumption pressure in the sugar industry. It is estimated that the country's sugar inventory decreased by ~5% yoy in 2020.

3. Better profit margins

Sugar industry's margins improved in 9M2020



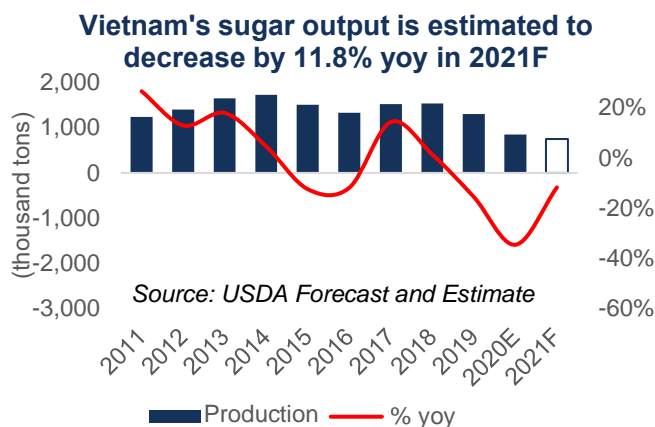
As a result of domestic sugar price increase, the sugar industry's profit margins in 2020 improved compared to 2019 (a period of low sugar prices due to competition with cheap smuggled sugar from Thailand). Specifically, the gross profit margin and net profit margin of the whole industry reached 14.7% and 4.2% in 9M2020, respectively.

Source: FPTS Research from financial statements of listed companies that accounting for ~80% sugar market share in Vietnam: SBT, LSS, SLS, KTS.

QNS is excluded since ~70% proportion of company's revenue and profit are contributed by soymilk segment.

II. OUTLOOK 2021 – Sugar price movement driven by trade remedies

1. Production is yet to recover in 2020/21, positive expectation for 2021/22



With extreme weather conditions during growth period of sugarcane in 2020, sugarcane production in Vietnam will continue to face difficulties in crop year 2020/21. It is expected that sugarcane production in Vietnam will recover in the 2021/22 crop thanks to more favorable weather in 2021.

According to the USDA, the sugar output in Vietnam (including sugar produced from sugarcane and raw sugar) in 2021F is estimated at ~850 thousand tons, declined by more than 11.8% yoy. Meanwhile, consumption is stable at ~1 million tons.

According to our assessment, the domestic sugar industry will not experience a sugar shortage in 2021 as sugar inventories remain high and imported sugar continues to penetrate the market.

2. Domestic sugar price movement driven by trade remedies

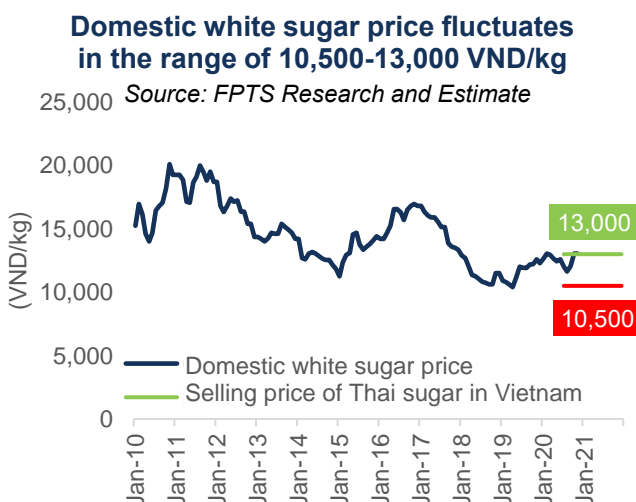
To support sugar producers and sugarcane farmers in Vietnam in the difficult context after integration, the Ministry of Industry and Trade issued a decision to investigate and impose anti-dumping and anti-subsidy tax on imported sugar originating from Thailand with the proposed tax rate of 37.9% (September 21, 2020). The time for antidumping investigation is 12 months (not more than 18 months in the case of extension). As such, the investigation is expected to have an official result in 2021.

In October 2020, domestic white sugar price reached an average of 13,050 VND/kg (+6.7% yoy and +12.3% compared to the lowest level in 2020). These trade remedies are expected to support sugar prices and improve the competitiveness of Vietnam's sugar industry.

However, the volume of sugar imported from other countries in the ASEAN region (Malaysia, Cambodia, Indonesia...) into Vietnam in October - November 2020 remains high. Notably, these countries are in a sugar deficit and have to import sugar for domestic consumption, or only refine raw sugar (mainly imported from Thailand) due to the lack of sugarcane materials.

According to our estimates, the sugar import volume will be at a low level in the period December 2020 - April 2021; Domestic white sugar price in 2021F will fluctuate in the range of 10,500-13,000 VND/kg, since:

- (i) Sugar mills in Vietnam are crushing cane for crop year 2020/21 (December 2020 - May 2021), domestic sugar supply increases;
- (ii) Sugar production in Thailand in crop year 2020/21 is forecast to decrease by 5.4% yoy (reaching 7.8 million tons - the lowest level in 10 years) due to the impact of unfavorable weather;
- (iii) Expected anti-dumping and anti-subsidy tax rate, proposed at 37.9%, to be applied in 2021, Thai white sugar price in Vietnam is projected to be about 13,000 - 14,000 VND/kg.



Forecast price of Thai white sugar imported officially into Vietnam		VND/kg
Production cost for Thai sugar		8,400
Shipping cost		1,500 – 2,000
Local and distribution advantages		400 – 1,000
Tariff (5%)		400
Selling price of Thai sugar (exclude antidumping and anti-subsidy tax)		10,500
Proposed anti-dumping and anti-subsidy tax (37.9%)		3,000
Selling price of Thai sugar (include antidumping and anti-subsidy tax)		13,000 – 14,000

Source: FPTS Research and Estimate

3. Sugar industry profit margins to remain at a high level

In 2021, we believe that the profit margins of domestic sugar companies will continue to be high, the prospect of sugar industry in Vietnam will be **POSITIVE** as:

- **Improved sugar price** thanks to the government's supportive policy with anti-dumping and anti-subsidy tax for imported sugar products;
- **Favorable weather in 2021** helps improve sugarcane production for the 2021/22 crop.

Investment risks in the sugar industry include (1) Risk of low price smuggled sugar; (2) Risk of sugar price volatility; (3) Weather risk affects sugarcane areas.

III. UPDATES ON LISTED SUGAR COMPANIES

Ticker	Market Cap. Jan 18, 2020	Revenue 9M2020	NPAT 9M2020	NPAT growth	NI Margin	ROE (LTM)	P/E
SBT	14,688 bil	10,426.2 bil	405.2 bil	+34.2%	3.9%	5.5%	34.6x

Thanh Thanh Cong – Bien Hoa JSC., (HSX: SBT) is the leading enterprise in Vietnam's sugar industry. With the advantages of scale, ability to refine raw sugar, brand, and distribution system, SBT maintains the leading position in Vietnam's sugar industry in 2020 with nearly 50% of domestic sugar market share. In the context of fierce competition after ATIGA, SBT has low competition pressure in the industrial channel with large customers thanks to high quality sugar products.

Prospect: Opportunity to export high-end products, especially organic sugar with high added value, to the EU (after EVFTA comes into effect).

[\(Full report on SBT\)](#)

QNS	14,294 bil	5,115.7 bil	670.4 bil	-16.9%	13.1%	18.2%	12.5x
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Quang Ngai Sugar JSC., (UPCoM: QNS) is the second largest sugar producer in Vietnam with competitive advantages from diversifying business products.

The soymilk segment (contributing ~55% to the revenue and ~77% in the gross profit structure of the business in 9M2020) faced difficulty in consumption due to the impact of the COVID-19 pandemic. Meanwhile, the sugarcane material area is affected by extreme weather conditions, causing the sugar - biomass power output to decline.

Prospect: Soymilk segment is expected to recover in 2021 with forecast growth at +9%/year in the period of 2021 - 2024F. In 2020, the price of raw soybeans increased sharply and is forecast to continue at a high level, negatively impact the profitability of the soymilk segment. Refined extra (RE) sugar refining line has been completed but has not yet efficient.

[\(Full report on QNS\)](#)

LSS	700 bil	1,096.5 bil	13.4 bil	-26.5%	1.2%	1.5%	29.9x
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Lam Son Sugar JSC., (HSX: LSS) is the enterprise with the largest scale of RE refined sugar production in the North.

More than 80% of the company's products are consumed by industrial customers, hence, less competition with other businesses and low price imported sugar. In the consumer segment, LSS does not have advantages in branding and distribution channels, so it is difficult to keep market share. In 2020, LSS invested in processing agricultural products and beverage (producing sugarcane cell water, rice milk..).

Prospect: The sugar cane area of LSS is relatively stable and not significantly affected by the weather in 2020, helping to maintain the sugar production capacity of the business.

SLS	841 bil	678.9 bil	98.5 bil	+143.3%	14.5%	22.4%	7.0x
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Son La Sugar JSC., (HNX: SLS) has a small production scale with competitive advantage of the ability to control costs.

The sugar production cost of SLS is 26% lower than the industry average thanks to (i) low price of raw sugarcane, (ii) favorable soil conditions for high yield and sugar content, (iii) Higher production efficiency after upgrading production lines.

Prospect: SLS has the ability to compete with imported sugar and take advantage of the opportunity to export to China due to high quality sugar, low production cost, and convenient location for export to China.

KTS	67 bil	138.7 bil	4.2 bil	+264%	3.0%	3.0%	14.3x
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Kon Tum Sugar JSC., (HNX: KTS) is a small-scale enterprise with unstable raw material areas, having difficult to gain economy of scale.

In the period 2016 - 2019, KTS focuses on sugar trading activities with suppliers and customers that related to major shareholders. The proportion of receivables/revenue is high for several years, causing the firm to suffer risk of capital appropriation, negatively affecting the cash flow of the business.

Prospect: The sugarcane area of KTS in the Central Highlands region which is negatively affected by weather factors. Sugarcane and sugar output of the business is estimated to decrease in 2021.

[More detail at Sugar Industry Updated Report Sep 2020](#)

Currency: VND

Source: EzSearch



RUBBER INDUSTRY

NEGATIVE OUTLOOK FOR NATURAL RUBBER SEGMENT

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Review 2020

- Vietnam's natural rubber yield reached 1,5 tons/ha (-3% yoy) due to negative weather impacts.
- In 2020, Vietnam natural rubber production was 1,17 million tons, equivalent to the same period thanks to new tapping area.
- Rubber price remained low, reaching an average of 30 million VND/ton (-10% yoy).

Outlook 2021

In 2021, Vietnam natural rubber industry is expected to be negative with the following trends:

- Natural rubber yield is expected to reach 1,55 tons/ha (+3% yoy).
- Natural rubber production is expected to reach 1,22 million tons (+4% yoy) because of increased yield and 10 thousand hectares of new tapping area (increasing the total tapping area to 700 thousand hectares (+1% yoy).
- Rubber price is expected to remain at a low level of 32,5 million VND/ton (+0.03% yoy) because of continued surplus situation.

I. RUBBER INDUSTRY IN 2020 – Gloomy natural rubber market

1. Decreased natural rubber yield, stable production, positive exports

1.1. Unfavorable weather conditions negatively impacted natural rubber yield

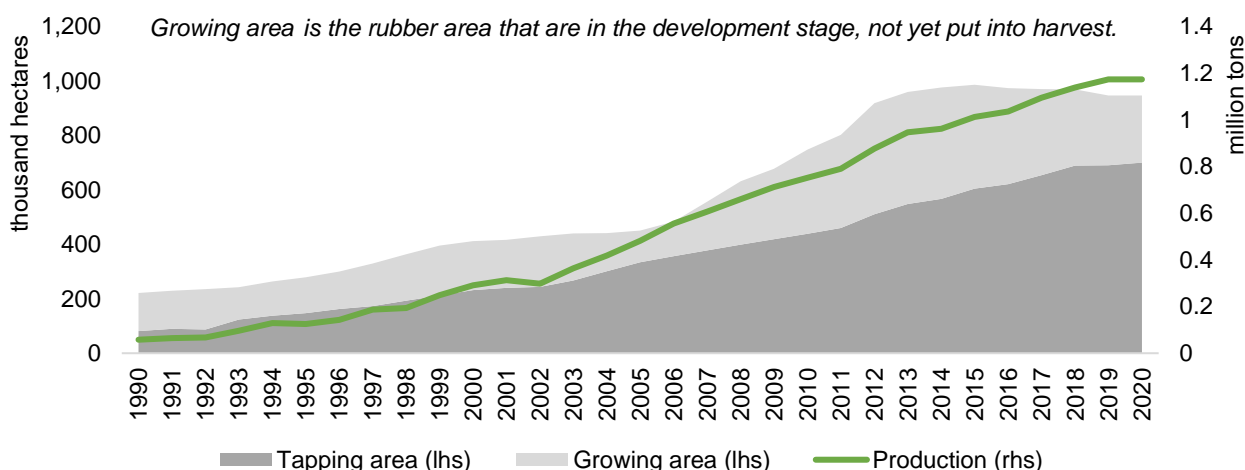
In the first half of 2020, hot and dry weather caused negative impact to natural rubber yield. In Vietnam, especially in Central Highlands, natural rubber yield was severely affected by the dry weather. In the second half of the year, rainfall increased sharply, making the soil had enough moisture for rubber trees to grow. Hence, natural rubber yield picked up, though still remained low comparing to last year, reaching 1,5 tons/ha (-3% yoy).

- **New tapping area helped stabilizing natural rubber production**

Despite having low yield due to the negative effects of weather, Vietnam natural rubber production was estimated at 1,17 million tons thanks to new tapping area. The new tapping area, which was planted in the period from 2013 to 2014, was put into production to help Vietnam natural rubber maintaining the same output as 2019.

Vietnam natural rubber plantation area and production in 2020

Source: GSO, GVR, FPTs

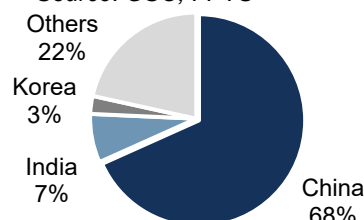


1.2. Natural rubber export volume remained at high level, domestic consumption grew positively

About 80% Vietnam natural rubber is exported, mainly to China, India and Korea. As of November 2020, exports of Vietnam natural rubber was 1,52 million tons (+1,4% yoy) (including natural rubber from Laos and Cambodia which was planted by Vietnam’s companies). Natural rubber export volume remained at high level thanks to the increase in demand in China in the second half of 2020 when China partially controlled the COVID-19 pandemic and industrial production resumed.

China accounts for 68% Vietnam natural rubber export volumes

Source: GSO, FPTs

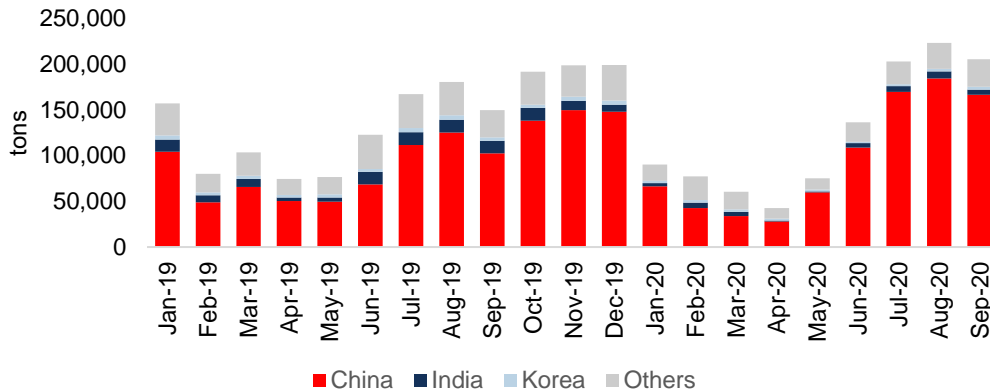


- **Natural rubber export to China grew positively in the second half of 2020**

In the first 6 months of 2020, when COVID-19 pandemic broke out globally, Vietnam natural rubber export volume was only 856 thousands tons, which represented a 20% drop over the same period. In which, export to important markets such as China, India and Korea decreased by 12%, 59% and 33% yoy, respectively. The reason came from the social distancing order from Governments to mitigate the impact of the pandemic, causing tire factories to halt production, natural rubber demand declined.

Vietnam natural rubber export volumes from January 2019 to September 2020

Source: GSO, FPTs

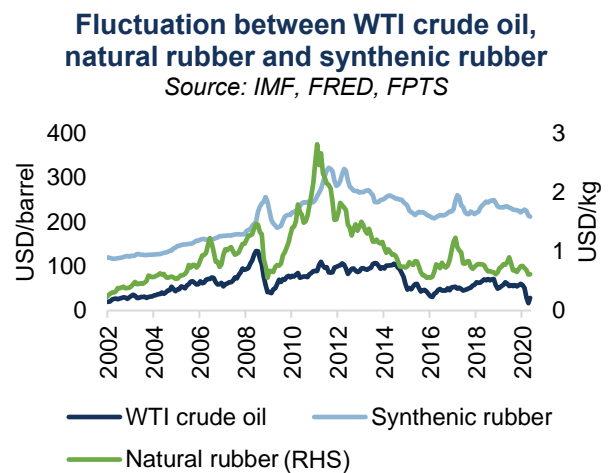
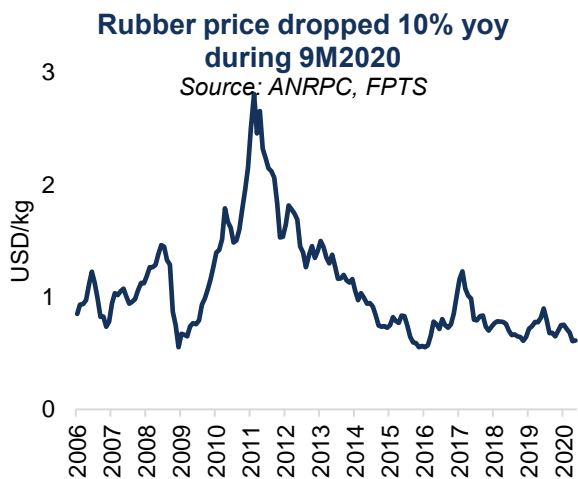


However, at the beginning of the third quarter, China had basically controlled the pandemic and the social distancing order was lifted. Factories began to resume production with the same capacity before the pandemic, Vietnam natural rubber export volumes showed signs of recovery. Specifically, in Q3/2020 alone, China imported 520 thousand tons of Vietnam natural rubber, up 53% over the same period.

- **Domestic consumption grew positively**

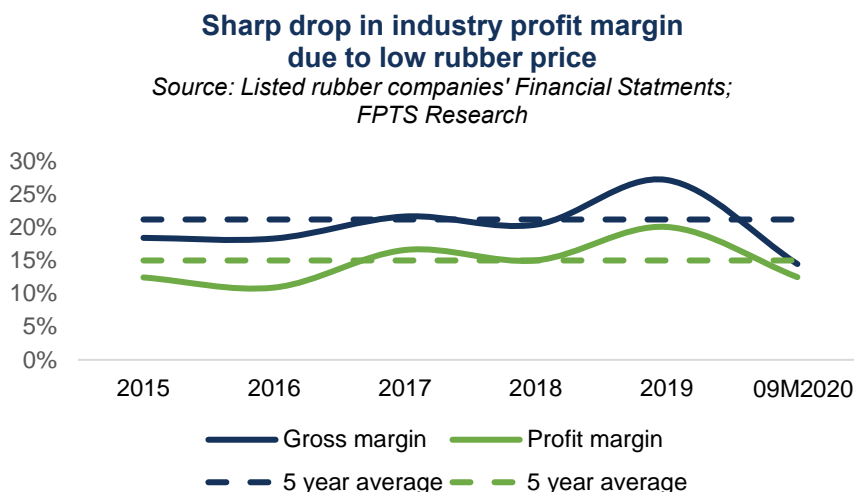
In 2020, the volume of natural rubber used in industrial production in Vietnam was 272 thousand tons (+10% yoy). This helped natural rubber companies to increase the volume of natural rubber sold domestically in order to be more proactive in selling prices and reduce their dependence on the fluctuation of global rubber prices.

2. Low level of rubber price



In 2020, rubber price remained at a low level due to (1) The oversupply situation continued, inventory was 226 thousand tons, equivalent to ~2% of demand, (2) World natural rubber consumption decreased to 11.66 million tons because of the COVID-19 pandemic, represented a 7,9% drop over the same period, and (3) The price of synthetic rubber, which considers a substitute for natural rubber, fell sharply due to the fall of crude oil, with which synthetic rubber was made of.

3. Falling natural rubber industry profit margins



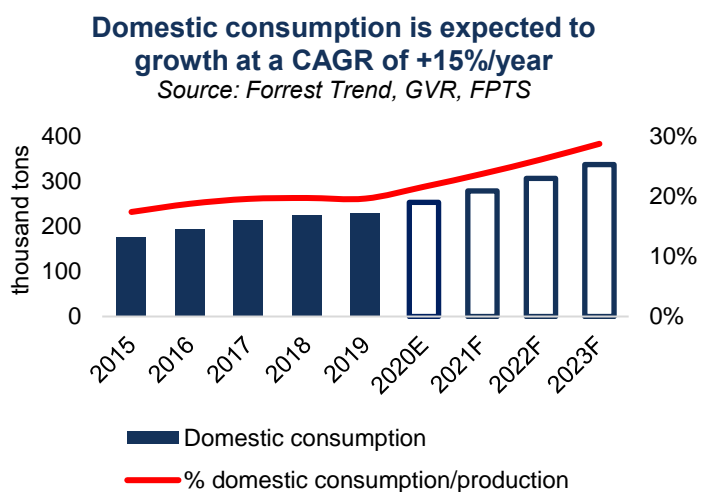
As of September of 2020, the rubber price was, on average, around 30 million VND/tons, which dropped 10% yoy, making the industry profit margin to fall dramatically compared to 2019. Specifically, the industry's gross margin ratio and net margin ratio reached 15% and 12% respectively.

II. OUTLOOK 2021 – Rubber price to remain at low level, negative prospect for natural rubber

1. High yield supported by favorable weather conditions

With favorable weather condition expected in 2021 and new tapping areas being put into production, Vietnam natural rubber production is forecasted to grow positively. Specifically, according to World Meteorological Organization, La Nina will continue in the 2021 dry season, causing more rain. Thus, the impact of hot weather will be mitigated, making natural rubber yield higher and more stable. Vietnam natural rubber yield is expected to reach an average of 1.55 tons/ha, corresponding to an increase of 3% compared to 2020. In addition, about 10 thousand hectares of new tapping area, which was plant around 2015 – 2016, will be tapped in 2021, bringing the total tapping area in 2021 to about 700 thousand hectares (+1% yoy). Vietnam natural rubber production is forecasted to reach 1.22 million tons (+4% yoy) in 2021.

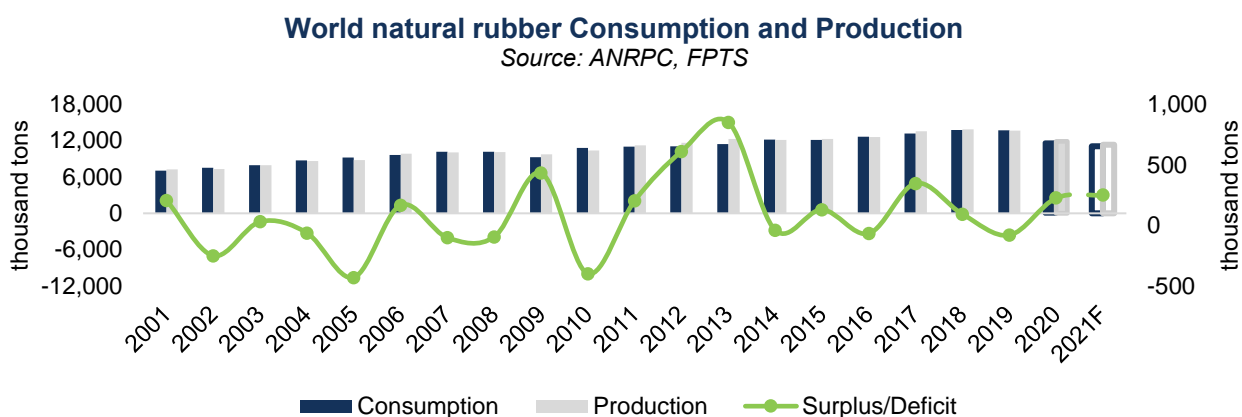
- **Domestic consumption grew positively**



In the period of 2015 – 2019, the domestic demand for natural rubber achieved a high growth rate with CAGR = +10%/year. In 2021, domestic demand for natural rubber is expected to even higher with CAGR = +15%/year due to (1) Prioritizing the development of natural rubber value chain, and (2) Tire companies boost production in Vietnam.

In term of export market, demand for natural rubber in China has somewhat recovered since the country has successfully controlled the spread of the pandemic. Export to other major markets such as India and Korea will gradually recover when the pandemic situation improves.

2. Unpromising prospect for natural rubber segment due to low rubber price



With the oversupply situation exacerbates, natural rubber prices will not expect a strong recovery. In the next three years, global rubber production is forecasted to increase by an average of 3 – 6% annually, growing according to the total rubber area planted. New tapping area, which was planted in 2014, will be put into production in 2021, increases the natural rubber production.

Synthetic rubber price has risen sharply as the crude oil price have fully recovered to the pre-pandemic level of about 50 USD/barrel. With that, the demand for natural rubber is forecasted to reach 11.007 million tons, which represents a 5% drop compared to 2020. The reason is that the world economy has not really recovered from the pandemic. According to Association of Natural Rubber Producing Countries (ANRPC), world natural rubber is forecasted to continue the oversupply situation. Natural rubber surplus is expected to reach 250 thousand tons, equivalent to ~2.5% of demand.

Hence, rubber price is forecasted to remain low in 2021 for an average of 32 – 33 million VND/tons, much the same with 2020's price. This will continue to have a negative impact on natural rubber segment.

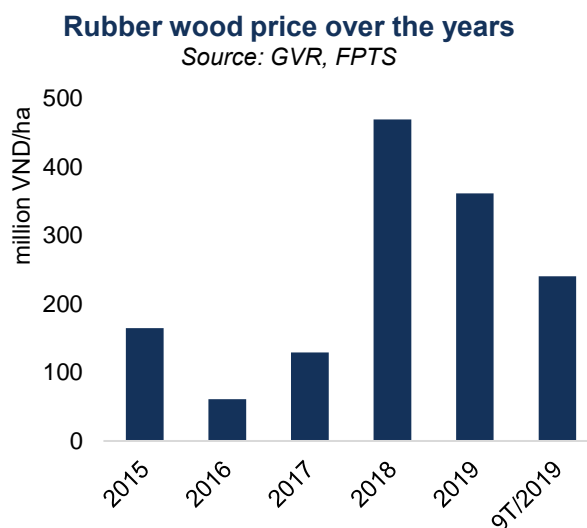
3. Divergence among rubber companies, tendency to liquidate rubber area for timber and convert plant to industrial real estate

In light of the gloomy situation of the natural rubber segment due to depressed rubber price, natural rubber companies seek other opportunities to boost earnings. Ways to do that are to liquidate rubber area for timber or change land use purpose that has higher economic value.

- **High rubber wood price**

In recent years, rubber wood has had high value, providing an additional source of profits for natural rubber companies to compensate for the natural rubber segment.

The US – China trade war tension which is expected to continue in the coming years serves as an advantage for Vietnam' woods and wood products industry. In addition, Vietnam signed a Voluntary Partnership Agreement with the EU (VPA – FLEGT) to ensure the legality of wood export to the EU. Accordingly, the EU only accepts to import FLEGT-licensed wood, which has a clear origin, coming from the rubber plant of natural rubber companies. Thus, the demand for wood export will have a positive impact on the price of rubber wood, we expect the rubber wood will remain as high as 250 million VND/ha (+4% yoy).



- **Convert rubber plant into industrial real estate**

Another attractive opportunity for rubber companies is to convert rubber plant into industrial zone, which has higher economic value in the period of depressed rubber price. In 2019, the US – China trade war tension has caused businesses to relocate their supply chain, which currently heavily depends on China. Major companies has began to shift production to other countries and the outbreak of the COVID-19 pandemic has accelerated this progress. Vietnam has become a bright spot to attract foreign investment, leading to the need to rent land for production.

Rubber companies have the advantage of having a large land bank in favorable location. With the accelerated trend of moving production to Vietnam, many rubber companies seek to ask for approval for changing land use purpose into industrial zone. In fact, many has done so such as DPR, PHR,.. and proved to be effective with high occupancy rate.

In 2021, Vietnam natural rubber companies will continue to face various challenges in their main business, which is the natural rubber segment. Rubber companies performance will diverge and recover in a K-shaped model. Accordingly, companies that quickly get approval for land use purposes and launch industrial zone would benefit from the current trend.

III. UPDATES ON LISTED RUBBER COMPANIES

Ticker	Market Cap. Jan 22, 2021	Revenue 9M2020	NPAT 9M2020	NPAT growth	NI Margin	ROE (LTM)	P/E
DPR	2,078 bil	632 bil	117 bil	+8%	19%	4.9%	10.8x

Dong Phu Rubber JSC., (HSX: DPR) is the second largest listed rubber company in terms of scale, owning more than 8,000 hectares of rubber plant in Binh Phuoc. Natural rubber segment accounts for a large proportion in DPR's revenue, about 80%. So DPR depends on the fluctuations in rubber price. During the period of depressed rubber price, wood liquidation is expected to compensate for the natural rubber segment.

Prospect: DPR will have about 500 hectares of rubber area to be liquidated in 2021, which is expected to bring in high revenue while the rubber wood price is expected to remain high.

PHR	9,526 bil	886 bil	701 bil	+15%	79%	17.3%	16.8x
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Phuoc Hoa Rubber JSC., (HSX: PHR) has favorable geographical location with huge rubber plant in Binh Duong province. Therefore, it is one of the rubber companies that benefits the most from the trend of shifting production to Vietnam. PHR is seeking approval for the many industrial park such as: Hoi Nghia (1,000 hectares), Binh My (745 hectares) and Tan Binh Phase 2 (1,055 hectares). These projects are waiting for approval from the Prime Minister and will be the main growth drivers for PHR in near future.

Prospect: PHR will receive compensation money from industrial park developers such as VSIP, NTC. The value of PHR's land bank is expected to increase sharply as the wave of factory relocation continues to accelerate.

Currency: VND

Source: EzSearch



FERTILIZER INDUSTRY

POSITIVE OUTLOOK FROM

AGRICULTURAL PRODUCTION RECOVERY

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Review 2020

- Vietnam's fertilizer consumption in 2020 was estimated at ~9.73 million tons, down 5.9% yoy due to negative weather. Total fertilizer supply increased significantly: domestic production in 11M2020 increased by 5.1% yoy, imports increased by 7.2% yoy, causing oversupply.
- Fertilizer prices in 2020 plummeted due to oversupply pressure in the domestic market: Urea fertilizer (-12.8% yoy), DAP fertilizer (-8% yoy) and Potassium fertilizer (-8.3% yoy).
- Industry profit margin improved significantly, especially Urea and NPK segments thanks to sharp drop in raw material prices due to impacts of global energy prices.

Outlook 2021

- Positive factors in the agricultural sector are expected to boost Vietnam's fertilizer consumption growth in 2021. Total fertilizer demand in 2021 is expected to reach ~10.3 million tons, +5.5% yoy.
- Fertilizer prices are expected to increase slightly in 2021, industry's profit margin is expected to decrease due to impact from Urea segment, NPK and DAP segment is expected to be more stable.
- VAT policy on fertilizers is likely be resubmitted to the National Assembly in 2021 next meetings.

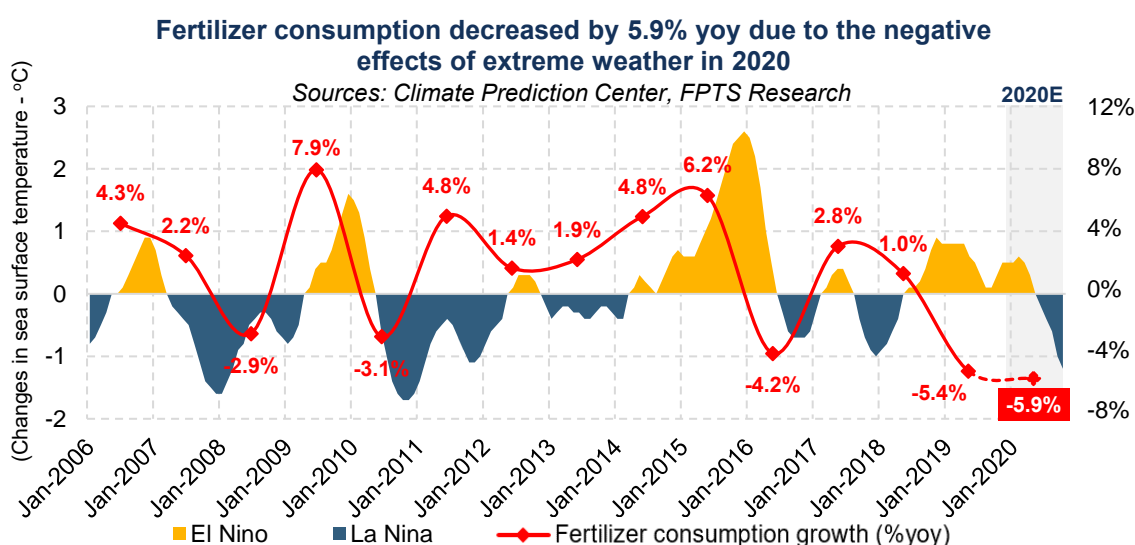
I. FERTILIZER INDUSTRY IN 2020 – Decline in demand, lower prices pressured by oversupply

1. Decreased consumption, enlarged oversupply

1.1. Weather in 2020 has a negative impact on fertilizer consumption

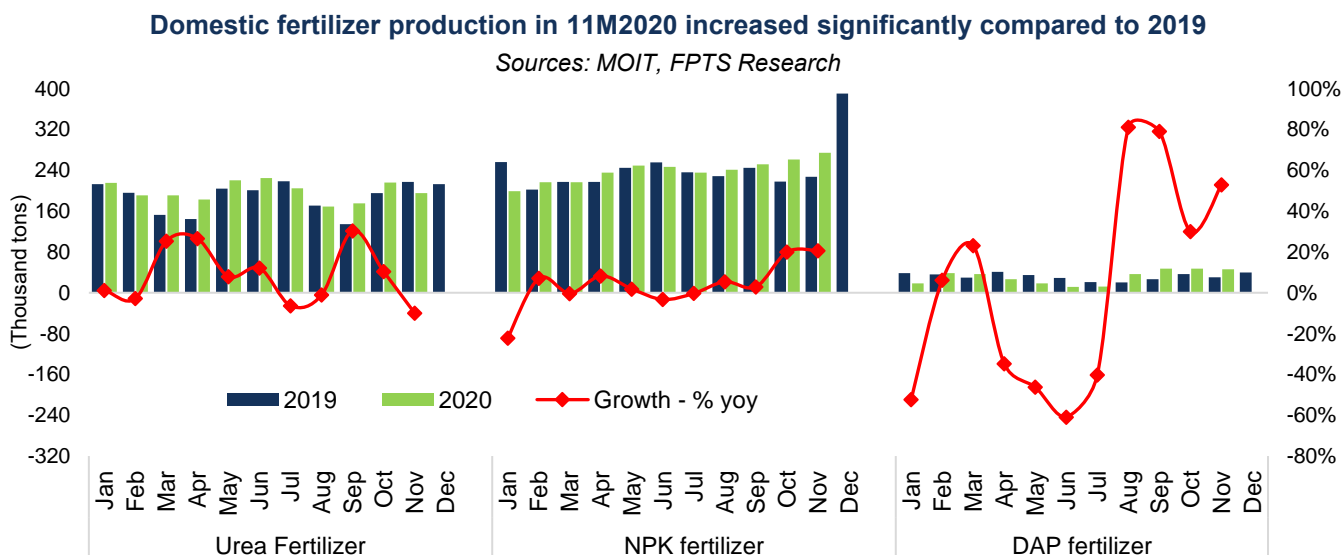
Extreme weather conditions in 2020 have a direct impact on agricultural cultivation in Vietnam. El Nino phenomenon in the first half of year causes dry weather in most of main farming areas, especially drought in the Central Coast, Central Highlands and severe saline intrusion in Mekong Delta. Along with that, to cope with salty drought in 2020, Mekong Delta provinces changed Winter - Spring crop schedule to one month earlier, fertilizer demand for this crop is mainly consumed at the end of 2019, causing fertilizer demand in the first half of 2020 to plummet.

In the second half of 2020, La Nina phenomenon strengthened at the end of year, causing prolonged flooding in the Central and Southeastern regions, causing damage to agricultural cultivation. Meanwhile, Mekong Delta is less affected by floods, along with the increase in prices of agricultural products to help farmers have conditions to invest in fertilizer, fertilizer consumption is recovered in 2020/21 Winter - Spring crop.



Facing the negative impact of the weather on Vietnam’s agriculture, Vietnam’s fertilizer consumption in 2020 was estimated at 9.73 million tons, down ~5.9% compared to 2019. In which, consumption of NPK, Urea and DAP fertilizers all fell sharply, decreasing by 200.000 tons (-6% yoy), 180.000 tons (-8% yoy) and 100.000 tons (-10% yoy) respectively and demand decreased mainly in the Central and South East.

1.2. Domestic fertilizer production increased significantly, domestic supply was plentiful



In 2020, Vietnam faced two widespread outbreaks of COVID-19. With effective anti-epidemic measures from the Government, no domestic fertilizer factories have to shut down. **In 11M2020, Vietnam's fertilizer production increased significantly compared to the same period in 2019:**

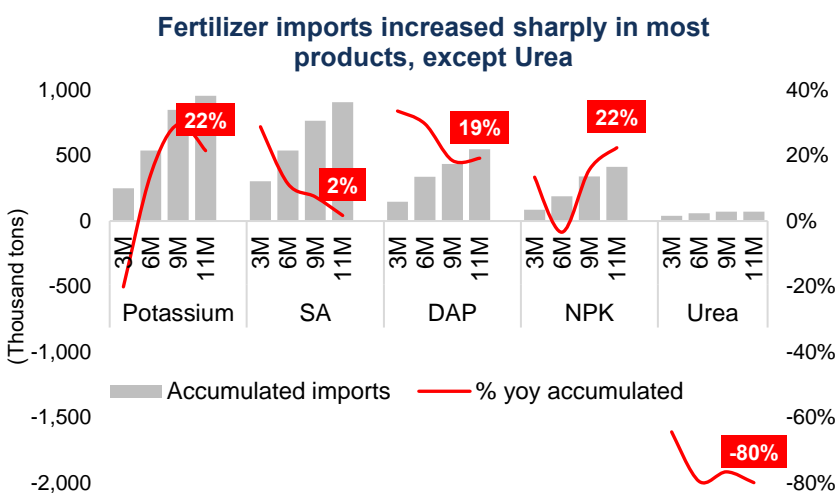
(i) Domestic Urea production in 11M2020 is estimated at ~2.19 million tons (+7.3% yoy). This year, domestic Urea factories didn't perform long-term maintenance. Short-term maintenance activities at factories such as Ha Bac Fertilizer, Ninh Binh Fertilizer, and Ca Mau Fertilizer took place rapidly in July and August, causing output to decrease slightly in these two months.

(ii) NPK fertilizer production in 11M2020 is estimated at ~2.64 million tons (+3.5% yoy). Increase in output mainly came from small and medium NPK factories, while NPK production of Vietnam National Chemical Group (Vinachem) decreased sharply (-12.2% yoy). In October and November 2020, NPK output increased sharply because factories boosted production to prepare for 2020/21 Winter - Spring crop.

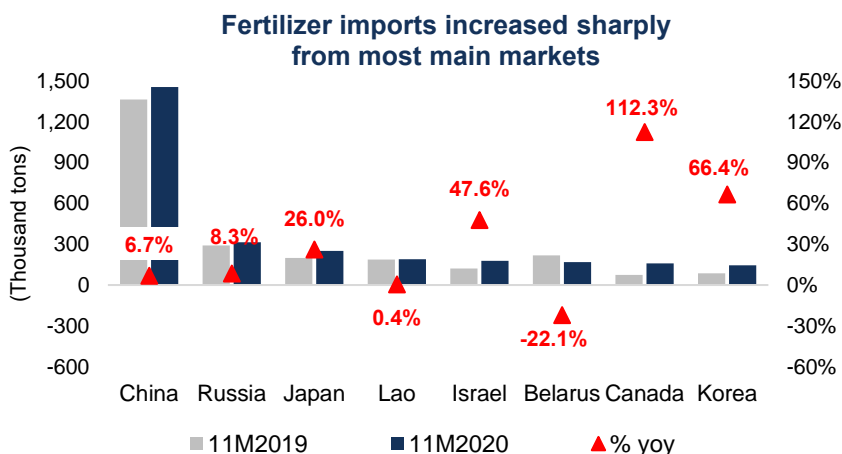
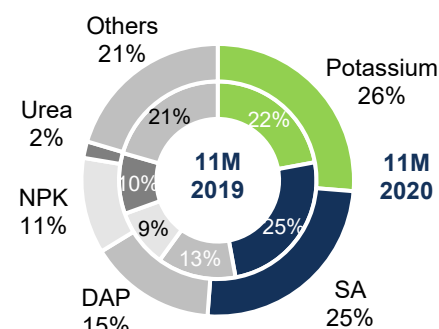
(iii) DAP production in 11M2020 is estimated at 339,400 tons (+3.3% yoy). In the first half of 2020, plentiful import supply and low demand, domestic DAP factories have reduced production and maintenance in June - July, reducing pressure on supply of the whole market. In the following months, DAP demand for the Summer - Autumn crop and Winter - Spring crop increased again, domestic DAP production increased again.

1.3. Fertilizer exports and imports increased despite global supply chain disruptions

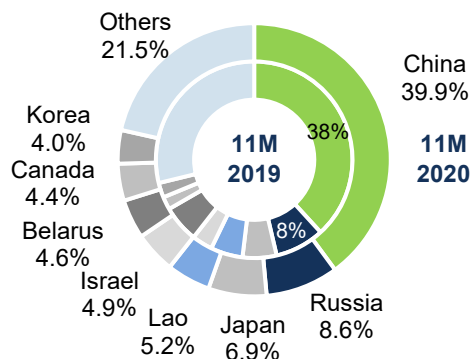
Fertilizer imports of Vietnam in 11M2020 reached 3.64 million tons, +7.2% yoy, causing oversupply in the domestic market. Import volume of most fertilizers that cannot be produced domestically increased sharply: Potassium fertilizer (+21.5% yoy), SA fertilizer (+1.7% yoy), DAP fertilizer (+19.2% yoy) and NPK fertilizer (+22.4% yoy). Only Urea fertilizer imports fell sharply over the same period in 2019 (-79.9% yoy) due to abundant domestic urea supply and a sharp drop in domestic Urea price following FO oil price, increasing competitiveness compared with imported Urea products.



Potassium and SA account for the largest proportion in structure of imported products



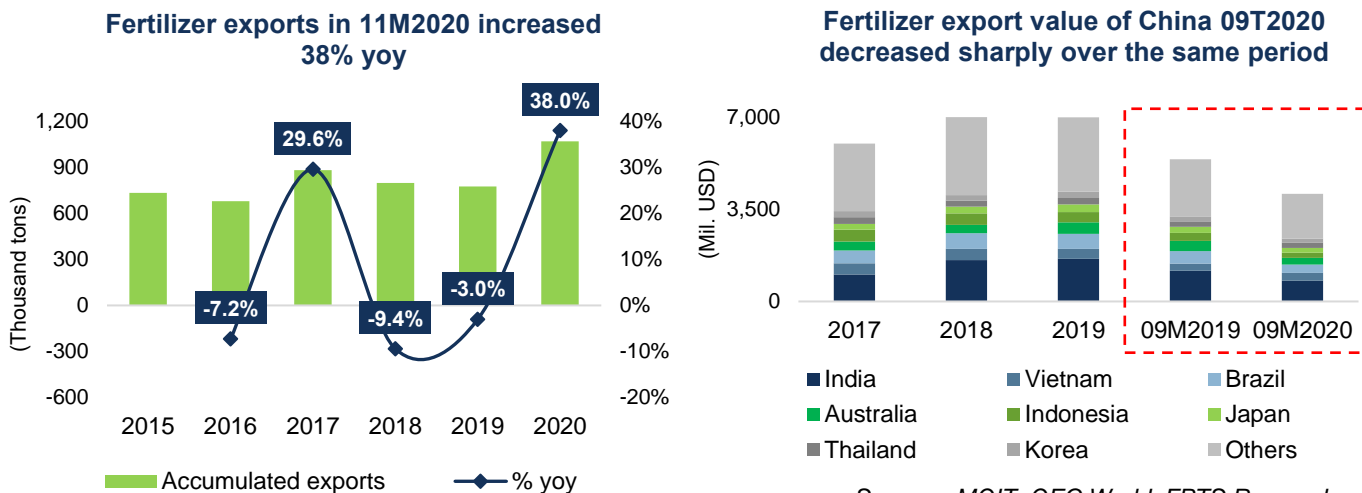
China accounts for the largest share in import market structure



Sources: General Department of Vietnam Customs, FPTs Research

In terms of market, Vietnam's fertilizer import increased strongly in most major markets such as China, Russia, Japan, Israel, Canada, Korea,... In which, China is still the largest fertilizer supplier to Vietnam in 11M2020. Total amount of fertilizer imported from China in 11M2020 reached 1.45 million tons, +6.7% yoy, accounting for ~40% of market share of Vietnam's imported fertilizers. Fertilizers imported from China increased: Potassium fertilizer (+1,043% yoy), foliar fertilizer (+194.5% yoy) and DAP (+23.5% yoy),...

Vietnam's fertilizer exports surged thanks to political instability between China and India. In 11M2020, Vietnam exported ~1.07 million tons of all kinds of fertilizers, +38% yoy. The main export fertilizers such as NPK, DAP, and Urea all increased, especially granular Urea.

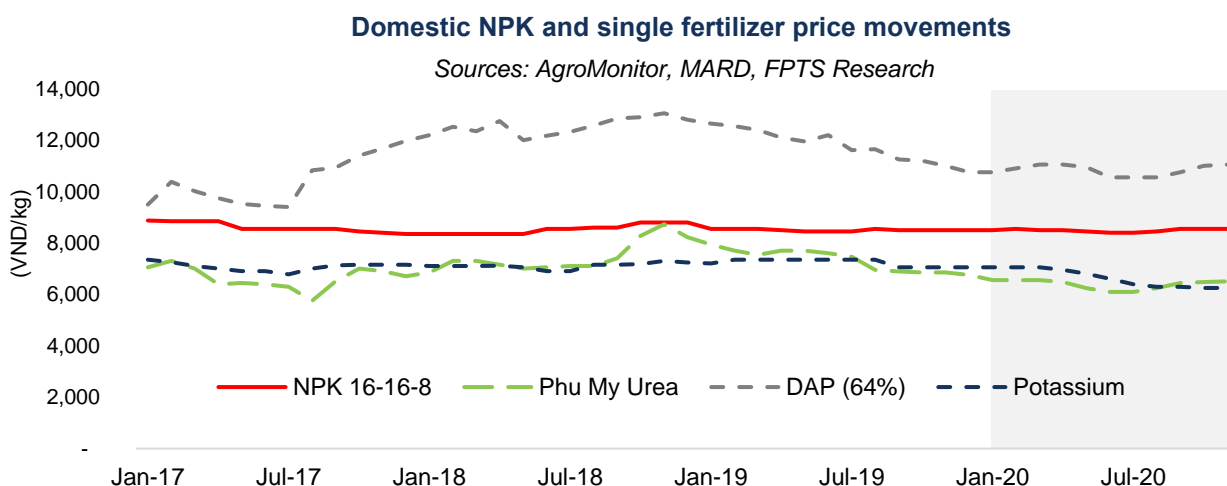


In 2020, a number of events in the Chinese market have a positive impact on Vietnam's fertilizer exports: (i) In the first half of 2020, China's fertilizer production and consumption was severely affected by COVID-19 pandemic; (ii) The double impact from severe flooding in June - August 2020 in the Southern provinces of China reduces coal mining output - the main raw material for urea production in this country; (iii) In particular, the political conflict between China and India is still complicated, making import and export activities between the two countries interrupted and be subject to punitive measures against imported goods.

Therefore, China's fertilizer export in 09M2020 plummeted over the same period last year (-24.3% yoy in value), especially exports to Indian (-31.9% yoy) and Southeast Asia – regions that account for nearly 80% of Vietnam's total fertilizer export value.

2. Plummeted domestic fertilizer prices

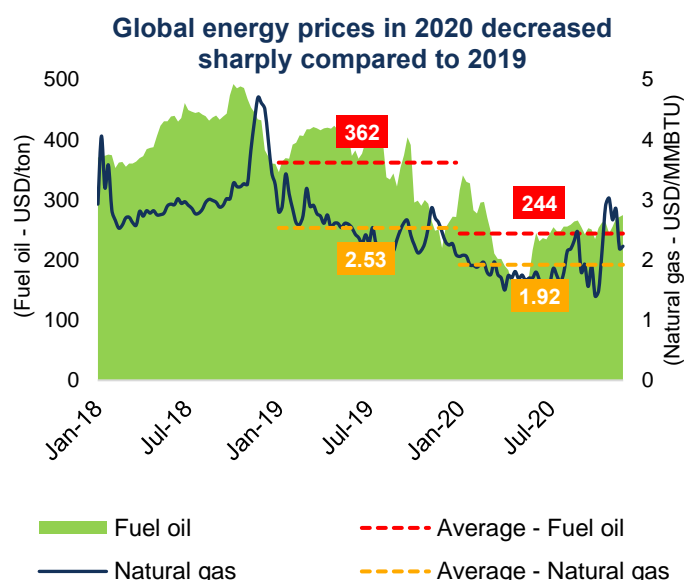
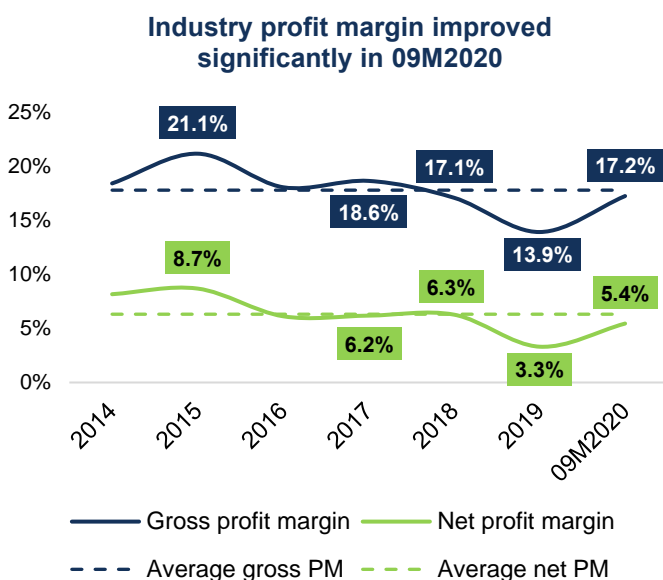
While the total fertilizer supply is plentiful, domestic fertilizer demand has decreased due to the negative impact from extreme weather, fertilizer prices in 2020 are under great pressure from oversupply in the domestic market.



In 2020, Vietnam's fertilizer prices fluctuated sharply. Single fertilizer prices (Urea, DAP) fell to the bottom in middle of the year and rose again in last months of the year when demand gradually recovered. Particularly, potash prices still fell sharply in line with world prices due to oversupply pressure and low demand in many regions. On average in 2020, single fertilizer prices decreased significantly compared to 2019: Urea fertilizer (-12.8% yoy), DAP fertilizer (-8% yoy) and Potassium fertilizer (-8.3% yoy).

Domestic NPK fertilizer price is quite stable under the fluctuations of domestic single fertilizer market. NPK 16-16-8 fertilizer in Ho Chi Minh city market has prices only fluctuate between 8,400 - 8,550 VND/kg throughout the year. Meanwhile, single-input fertilizer prices (Urea, DAP, and Potassium) decrease sharply in 2020. Facing such price movements, NPK fertilizer producers from single fertilizers benefit greatly from this price difference.

3. Higher industry profit margins owing to falling raw material prices



Listed companies: DPM, DCM, BFC, LAS, SFG, VAF, NFC, DDV, QBS
 Sources: Financial statements of companies, FPTs Research

Sources: Bloomberg, FPTs Research

The profit margins of listed fertilizer companies in 09M2020 improved significantly compared to 2019 due to the benefits from changes in raw material prices, specifically:

- Group of fertilizer enterprises using natural gas input (DPM, DCM) greatly benefit from the drop in global fuel oil prices in 2020. Due to impact of COVID-19 pandemic, the world fuel demand decreased strongly, causing crude oil prices to plunge in April - June and slightly recovered in the second half of the year. DPM and DCM's input gas prices are anchored to global fuel oil prices (down 32.6% yoy), causing gross profit margin of this group of enterprises to increase sharply in 09M2020.
- Group of enterprises producing NPK from single fertilizers will benefit indirectly through reduction of single fertilizer prices in 2020. As analyzed above, single fertilizer prices in 2020 plummet due to oversupply pressure, while domestic NPK fertilizer price was stable during the year. Gross profit margin of this group of enterprises has been significantly improved, resulting in outstanding business profit growth. However, the decline in demand and fierce competition in NPK segment due to entry of big competitors such as DPM and DCM, making business performance of some companies in this group less favorable, along with fixed costs that cannot be reduced, eroding profits in 09M2020.

Since 2015, the transfer of fertilizers to subjects non-VAT has caused industry profit margin to decrease because the input VAT is charged to production cost. The unchanged VAT policy on fertilizers in 2020 also reduces competitive advantages of domestic producers compared to imported products in past few years.

II. OUTLOOK 2021 – Positive outlook from agricultural production recovery

1. Expected higher fertilizer consumption thanks to improvement in agricultural production

1.1. The weather is forecast to be more favorable for agricultural cultivation

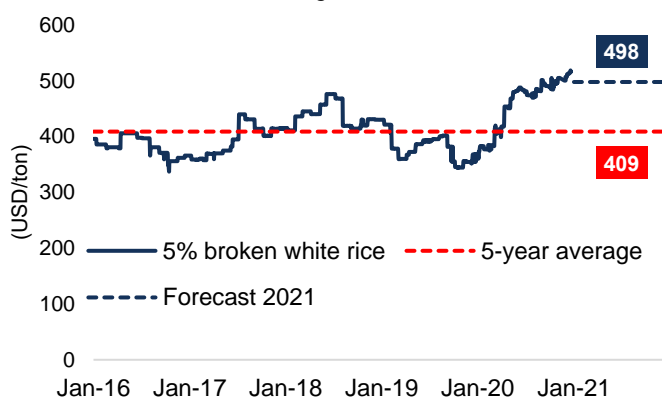
According to forecasts, La Nina phenomenon this year can last until March 2021. La Nina lasts during the dry season, causing more rain, expected to reduce the impact of drought in the Central, Central Highlands and saline intrusion in the South. From April - May 2021, the neutral state is forecast to be maintained again, expected to bring favorable weather to most agricultural areas across the country, boosting demand for fertilization and improving fertilizer consumption in crop year 2020/21.

1.2. Agricultural product prices are at high levels, creating conditions to cultivation and fertilization

In 2020, agricultural product prices in the world increase sharply, indicating the need for food storage in the global COVID-19 pandemic. In November 2020, global rice price increased by 16% over the same period in 2019. Besides, corn and soybean prices also increased sharply in 2020, +14.5% yoy and +33.1% yoy respectively. The trend of increasing food storage in COVID-19 pandemic took place in many countries such as China, Algeria, Turkey, Morocco,... Meanwhile, some major food exporting countries have stopped exporting some agricultural products: India (rice), Kazakhstan (wheat), Cambodia (rice),... Accordingly, Vietnam's agricultural exports also benefit, especially rice.

Export price of Vietnam's 5% broken white rice in 2021 is forecast to remain high

Sources: Bloomberg, World Bank, FPTS Research

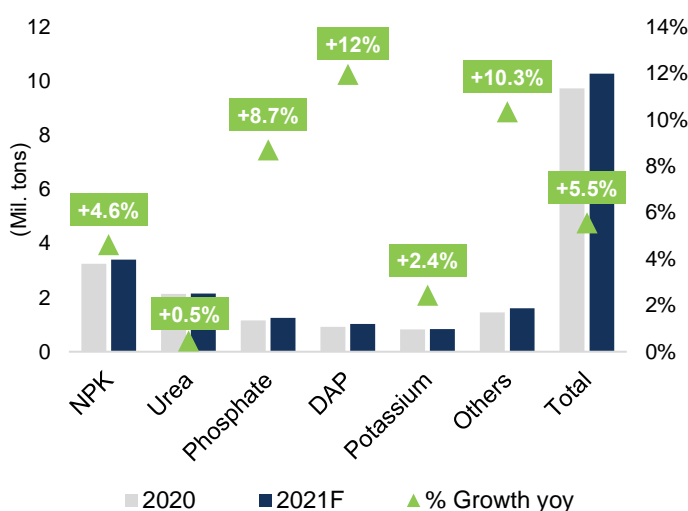


At the end of December 2020, Vietnam's export price of 5% broken white rice increased sharply to 516.25 USD/ton, +45.4% yoy, and 26.2% higher than average of the last 5 years. According to World Bank forecasts, global rice price in 2021 is expected to maintain an average of 498 USD/ton, 21.8% higher than the 5-year average from 2016 to 2020. Rice is a crop with the greatest impact on fertilizer demand in Vietnam. Rice prices are at high levels and the weather in 2021 is forecast to be more favorable, creating good conditions for farmers to increase their cultivated area, strengthen fertilization for crops, thereby boosting fertilizer demand.

1.3. Fertilizer demand is expected to grow positively in 2021

Total fertilizer demand in 2021 is forecast to reach ~10.3 million tons, +5.5% yoy

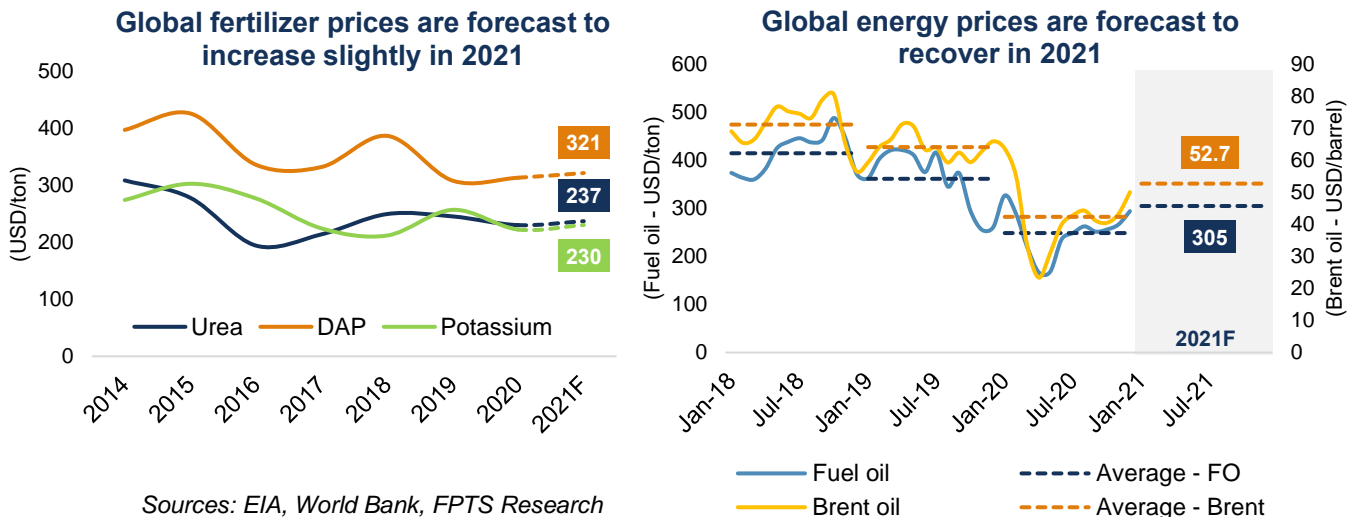
Sources: AgroMonitor, FPTS Research



With the above favorable factors, along with reducing impact of COVID-19 pandemic, total fertilizer demand is expected to recover in 2021. According to AgroMonitor, total fertilizer demand in 2021 is about to reach ~10.3 million tons, up 5.5% compared to 2020. Consumption of most fertilizers will increase, especially DAP (+12% yoy), phosphate fertilizer (+8.7% yoy) and NPK fertilizer (+4.6% yoy). Urea consumption is forecast to be stable (+0.5% yoy), Potassium fertilizer (+2.4% yoy) and other fertilizers (+10.3% yoy).

In 2021, it is expected that fertilizer demand in the Mekong Delta (the largest fertilizer consuming region in the country) will recover ~4 - 6% yoy, mainly increasing consumption of DAP, NPK and other types such as phosphate fertilizer, organic fertilizer,...

2. Increasing fertilizer prices, declining Urea segment's profit margins



According to the World Bank, global fertilizer price is forecast to increase slightly in 2021: Urea (+3.0% yoy), DAP (+2.6% yoy) and Potassium (+3.6% yoy). Accordingly, domestic fertilizer prices are expected to increase slightly in line with global prices.

Industry profit margin in 2021 is expected to decline due to the influence from Urea segment. Because global energy price is forecast to recover faster than the output urea price, Urea segment's profit margin will decrease in 2021. Brent and fuel oil prices in 2021 are expected to increase to 52.7 USD/barrel (+24.6% yoy) and 305 USD/ton (+22.6% yoy). Input natural gas price is forecasted to increase correspondingly due to being anchored to global fuel oil price. Meanwhile, domestic Urea price recovers more slowly, Urea segment's profit margin in 2021 is expected to decrease.

NPK segment's profit margin is expected to drop more slightly due to indirect impact from single fertilizer prices. Single fertilizer prices are forecast to increase slightly in 2021, while domestic NPK fertilizer price is quite stable. DAP segment is expected to have a slight increase in profit margins because DAP fertilizer price in 2021 is forecast to increase by 2.6% yoy and domestic Apatite material is self-controlled and has a relatively stable price in recent years.

3. VAT policy on fertilizers to be followed in 2021

Since 2015, VAT on fertilizers has been changed from 5% to non-VAT under Law 71/2014/QH13, creating difficulties for domestic fertilizer producers.

On October 28, 2020, the Prime Minister signed to promulgate Resolution No.159/NQ-CP approving the VAT on fertilizers project's dossier to submit to the National Assembly. Accordingly, fertilizers can be changed from non-VAT to 5%. However, in November 2020 session, the National Assembly hasn't passed the Resolution because it is argued that change of VAT on fertilizers to 5% will cause more difficulties for farmers when COVID-19 pandemic hasn't been extinguished. Domestic fertilizer enterprises continue to have to charge input VAT on their production costs. We believe that the Resolution on VAT on fertilizers is likely to continue to be submitted to the National Assembly in 2021 next sessions.

With favorable weather forecast, high agricultural product prices and expectation of agricultural production recovery, Vietnam's Fertilizer industry expects to be **POSITIVE** in 2021 with following factors:

- Total fertilizer demand is expected to grow positively: stable growth in single fertilizers and rapid growth in NPK fertilizers due to its sensitivity to weather and climate changes;
- Domestic fertilizer prices in 2021 are expected to increase slightly in line with global prices;
- VAT policy on fertilizers is likely to continue to be submitted to National Assembly in 2021 next sessions.

Risk factor when investing in Vietnam's Fertilizer industry in 2021: Urea segment's profit margin may decline as input natural gas price is forecast to increase according to global fuel oil price.

III. UPDATES ON LISTED FERTILIZER COMPANIES

Ticker	Market Cap. Jan 18, 2020	Revenue 9M2020	NPAT 9M2020	NPAT growth	NI Margin	ROE (LTM)	P/E
DPM	7,690 bil	5,831.8 bil	597.1 bil	+292.3%	10.2%	7.4%	9.3x

PetroVietnam Fertilizer and Chemicals Corporation (HSX: DPM) has large advantage in brand name and distribution system, DPM is at the top of the market share of Urea consumption in Vietnam.

In 09M2020, DPM's net revenue grew by +8.0% yoy, mainly due to a sharp increase in fertilizer consumption (+29% yoy). Average domestic Urea price in 2020 decreased by 13.4% yoy according to input gas price, increasing competitive advantage compared to imported Urea products. DPM's gross profit and after tax profit margin increased sharply in 09M2020 due to benefit from fuel oil price movements.

Prospect: In 2021, DPM's profit margin is expected to decline as raw material prices are forecast to increase in line with fuel oil prices. Fertilizer demand increases and competitive advantages compared to imported products are expected to help DPM maintain Urea market share and increase consumption of chemical NPK products in 2021.

DCM	7,544 bil	5,294.9 bil	462.2 bil	+49.9%	8.7%	9.3%	12.9x
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PetroVietnam Ca Mau Fertilizer JSC., (HSX: DCM) ranks second in Urea market share (accounting for 27.4%), is the largest Urea exporter, with advantages from granular Urea product (slow solubility, rigid).

In 09M2020, DCM's revenue continued to grow by +7.3% yoy due to: (1) Export strategy towards potential markets such as Cambodia, India, Sri Lanka,... (2) Diversification of fertilizers from imported distribution channel. This strategy is quite suitable in period of saturation and fierce competition in the domestic market. Along with that, input natural gas price pegged to global fuel oil price dropped sharply in 09M2020, DCM's gross profit margin improved significantly.

Prospect: DCM is expected to continue boosting Urea exports to Cambodia and other Asian markets. The NPK project will be officially put into commercial operation from Q1.2021 and is expected to be the driving force for DCM's revenue and profit growth from 2021.

BFC	1,003 bil	3,944.3 bil	120.5 bil	+117.1%	3.1%	12.8%	8.4x
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Binh Dien Fertilizer JSC., (HSX: BFC) leads the market share of NPK fertilizer (accounting for 13.5% of the whole country) with advantages of large production capacity and good product quality.

In 09M2020, domestic NPK fertilizer price was stable while single fertilizer prices such as DAP, Urea, and Kali all fell sharply, BFC produced NPK fertilizers from three types of single fertilizers, so it benefited greatly. BFC's gross profit margin in 09M2020 improved markedly, up from 11.1% to 14.6%.

Prospect: Being the leading company in the NPK segment, but BFC cannot control input sources so its ability to compete with strong competitors like DPM and DCM will be more difficult. However, in 2021, NPK demand is expected to improve due to the support from positive factors in agricultural sector, BFC's business performance is expected to improve over 2020.

LAS	925 bil	1,565.6 bil	-4.65 bil	-133.6%	-0.3%	-0.9%	N.A
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Business results of **Lam Thao Supe Phosphate and Chemical JSC** (HNX: LAS) tend to drop sharply from 2014 to 2020. Domestic fertilizer market is saturated, big competitors join the NPK segment, LAS products don't have competitive advantage in quality, making LAS's business performance more and more difficult. In 09M2020, LAS recorded a negative after-tax profit (-4.7 bil VND).

Prospect: LAS has poor competitive advantage in NPK segment due to low quality products and saturation of the North market, business expectations in 2021 will be not positive.

(More detail at [Fertilizer Updated Report – December 2020](#))

Currency: VND

Source: EzSearch



POWER INDUSTRY

PROSPECTS FROM HYDROELECTRICITY & RENEWABLE ENERGY

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Review 2020

- The output of hydropower plants is strongly influenced by extreme weather events and indirectly changes the output of other types of power generation.
- Electricity demand growth slowed down due to the effects of the COVID-19 pandemic. Total commercial electricity output in 2020 only increases by 2.9% compared to 2019.
- Solar power is the bright spot in 2020 with explosive growth in capacity, contributing to reducing pressure on power supply shortage.

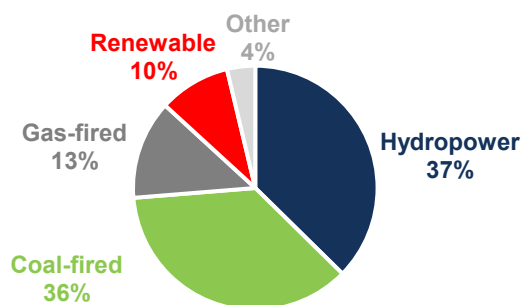
Outlook 2021

- Electricity demand is expected to recover soon with growth around 8% - 10%.
- Hydropower plants have the greatest prospects in 2021 thanks to the favorable hydrological situation. Renewable energy is also expected to keep robust growth in capacity, with wind power being the focus of development.

I. POWER INDUSTRY IN 2020 – Fluctuated hydropower output, booming solar power capacity

1. Strong impact of weather on hydropower, decelerated consumption growth

Hydropower accounts for the largest proportion in the power source capacity structure

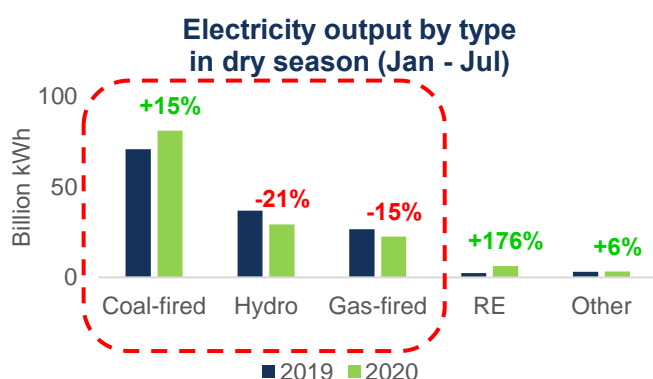


*Capacity at the beginning of 2020
Source: EVN

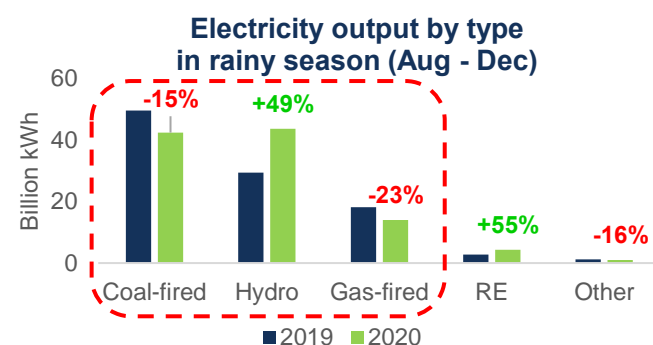
Electricity supply in Vietnam is still heavily dependent on traditional sources of electricity, including hydroelectricity and thermal power. At the beginning of 2020, these power sources account for 90% of the power capacity structure.

Hydropower is the type of power generation with the largest capacity, accounting for 37% of the country's total capacity. Hydropower has the cheapest generation cost and is always the first priority to mobilize. Therefore, the hydrological situation not only affects hydropower plants, but also the mobilization plan of the whole power system.

1.1. Opposite electricity production structure between dry and rainy season



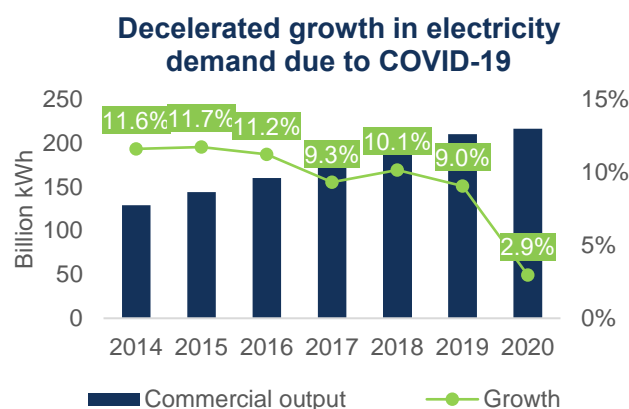
In the first 7 months of 2020, total power generation output from hydropower plants decreased by 21% yoy due to dry weather. Gas-fired thermal power plants also faced difficulties due to the decline in gas input, so output from these plants in 07M2020 decreased by 15% yoy. Coal-fired thermal power plants benefit from the above situation and are mobilized with high output by EVN (+15% yoy).



In the last 5 months of the year, the phase transition from El Nino to La Nina created a completely opposite weather situation. Increased rainfall helped hydropower output to grow strongly in these months (+49% yoy). In contrast, thermal power plants are mobilized less. As a result, coal and gas thermal power output in the last 5 months decreased by 15% and 23% yoy, respectively.

Source: EVN, Genco3, FPTs Research

1.2. Demand for electricity growth slowed down due to the effects of COVID-19 pandemic

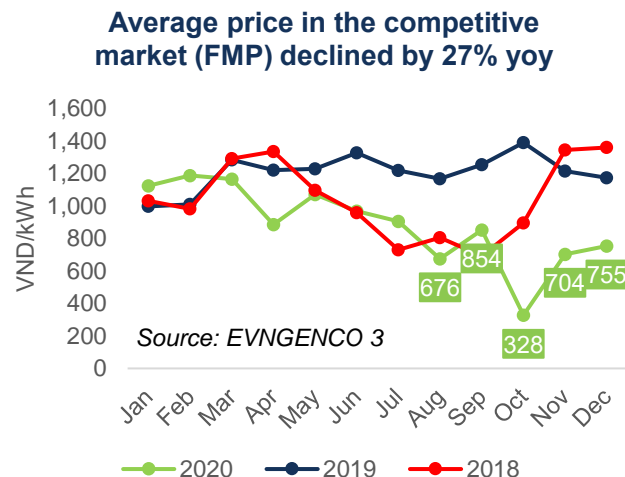


Source: EVN, MOIT

Electricity consumption demand in Vietnam in recent years has achieved high and stable growth thanks to the growth of the economy, especially the industrial manufacturing sector. Annual growth rate of electricity consumption is around 10%.

In 2020, the COVID-19 pandemic has a huge impact on many economic sectors, causing the growth rate of electricity consumption to decline. Total commercial electricity output in 2020 only increased by 2.9%, much lower than in recent period and lower than the expected rate at the beginning of the year by the Ministry of Industry and Trade (8.86%).

1.3. Electricity price in the competitive generation market declined



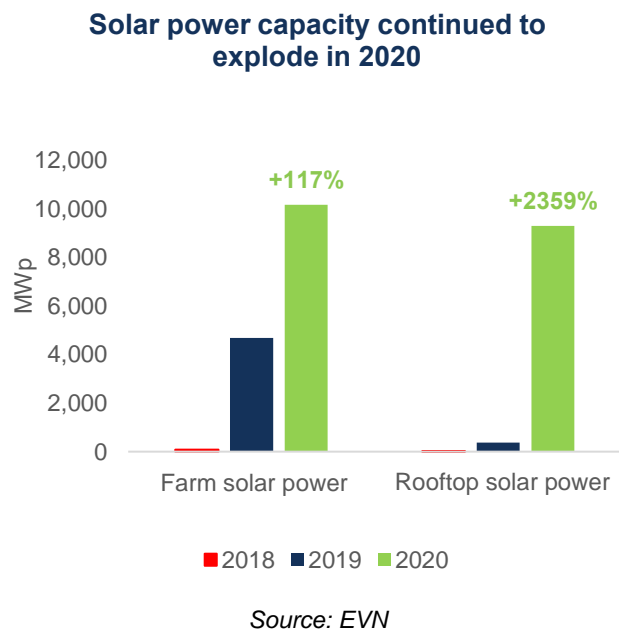
The strong increase in hydropower output is the main reason for the decline in electricity prices in the competitive market because this is the source of electricity with the lowest production cost. In addition, lower than expected growth in electricity demand is another reason for the drop in the competitive market price.

Thermal power plants were the most affected by low market price. With high generation cost (about 1,000 - 1,800 VND/kWh), thermal power plants were nearly unable to sell electricity in the competitive market and only generated electricity according to the output assigned in the contract (Qc).

In contrast, small hydropower plants (with capacity <30 MW) do not have to participate in the competitive generation market, so the selling price of these plants were not affected. These are the plants that have benefited the most in late 2020 period due to strong growth in output and no reduction in selling prices.

2. Robust growth of solar power reducing power shortage pressure

2.1. Solar power capacity continued to increase, especially rooftop solar power in 2020



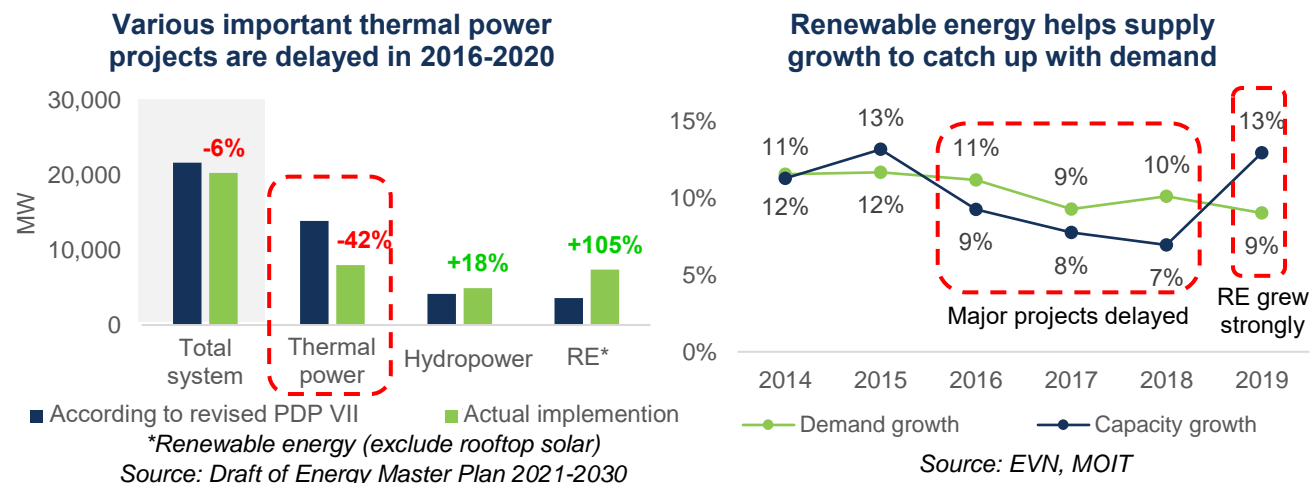
2020 is the booming year of rooftop solar power (capacity <1 MW) because this type of solar power enjoys the highest FiT price according to Decision 13/2020/QD-Ttg on the mechanism for encouraging the development of solar power in Vietnam. Specifically, rooftop solar power projects enjoy the selling price of 8.38 cents/kWh, 9% higher than floating solar power and 18% higher than ground-mounted solar power.

Especially in the last days of the year, the number of projects put into operation increased dramatically in order to take advantage of the FiT incentives ending on December 31, 2020. According to data from EVN, as of December 31, 2020, more than 100,000 rooftop solar projects have been installed, with a total capacity of 9,296 MWp⁴ (increased 25 times compared to the end of 2019).

In addition, solar farm (capacity > 1MW) capacity continued to grow strongly in 2020, reaching about 10,000 MWp (+117% yoy). Thus, by the end of 2020, the total solar power capacity has reached 19,400 MWp (equivalent to 16,500 MW) and accounts for 25% of the total generation capacity of the whole system. Electricity output from solar power plants also grew strongly in 2020, reaching 10.6 billion kWh (+115% yoy).

⁴ Megawatt-peak: used to describe the rated power output of solar power systems, which would be achieved under ideal conditions. These conditions assume a photovoltaic cell temperature of 25°C, a solar irradiance of 1,000 watts per square metre, and the incidence angle of sunlight for a latitude of 35° north during summer.

2.2. Renewable energy helps to compensate for the supply shortage



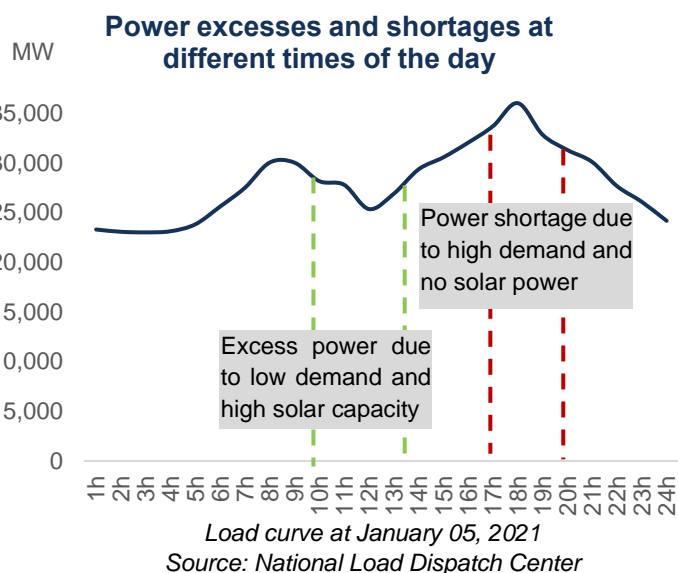
To meet the average growth of electricity consumption of 10%, the power supply system must also add a similar figure, equivalent to about 5,000 MW of capacity per year. In 2016 – 2020 period, according to the revised Revised PDP VII: Revised Power Development Master Plan for the period 2011 – 2020, Vision 2030 (PDP VII), the power sector must put into operation 21,650 MW of power capacity, of which more than half come from thermal power projects. These power sources are base load power plants, which have large capacity and stability and therefore have an important role in the power system. However, most of the above projects are behind schedule and only 60% of them have been put into operation as planned. According to calculations by MOIT in Report 58/BC-BCT published on June 6, 2019, the delay of the above projects may create power shortages in the period of 2021 - 2025, in which the peak is in 2023 with about 12 billion kWh of electricity shortages.

With the aforementioned slow progress and power shortage risk, the Government has had to issue preferential policies (FiT pricing mechanism) to develop renewable energy. The strong growth of renewable power sources, especially solar power in 2019 and 2020, partly offset the capacity shortage mentioned above. Solar power sources added 10.6 billion kWh in 2020, accounting for about 4.3% of the entire power system's output. This figure will be higher next years due to a sharp increase in solar capacity in the late 2020 period (and is expected to continue to increase in 2021).

2.3. The high proportion of solar power creates difficulties for the operation of the power system

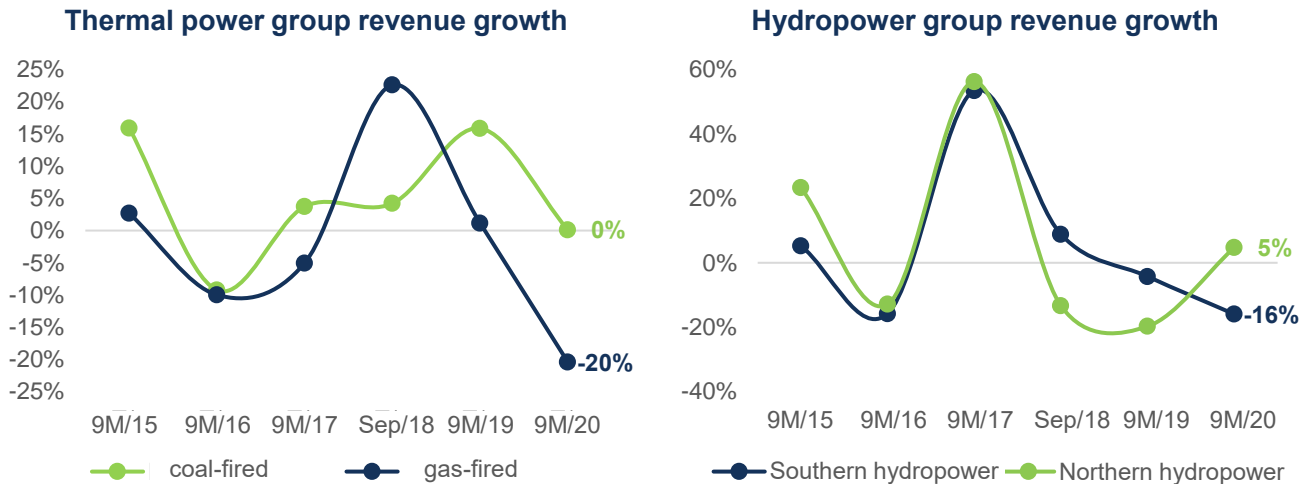
Solar power grows too fast and starts to account for a large proportion in electromechanical electricity, creating many difficulties:

- Solar power capacity depends entirely on the sunny time of the day due to the lack of a storage system. The instability of solar PV has caused power shortages and excess electricity at different times of the day.
- Solar power develops too quickly and concentrates in places with low electricity demand, causing grid congestion and overload. Therefore, EVN often has to cut the capacity of solar power plants. EVN has cut about 0.35 billion kWh of solar power in 2020 and is expected to cut 1.3 billion kWh in 2021.



EVN has implemented a number of measures to limit the above problems, such as reallocating generation capacity structure, focusing on grid development to release capacity. In the future, EVN will have to implement types of energy storage such as pumped-storage hydropower or storage battery system to ensure stable and efficient operation of the power system.

3. Diverged performance among sectors in 9M2020



Based on data from: HND, PPC, QTP, NBP, NCP (coal-fired), NT2, BTP (gas-fired), AVC, BHA, BSA, CHP, DNH, DRL, GEG, GHC, GSM, HJS, NED, S4A, SBA, SBH, SEB, SHP, SJD, SP2, TBC, TMP, VPD, VSH

Coal-fired: Most coal-fired power plants recorded production growth in 9M2020 due to high mobilization in the first 2Q of the year. As a result, most companies grew 3% - 5% in revenue, except for QTP, whose revenue declined 9% yoy due to a decrease in the contract price.

Gas-fired: Due to declining domestic gas production, gas thermal power plants lack input gas for generation. Accordingly, the plants cannot take advantage of the time when hydropower plants have difficulty to improve their performance. This causes the electricity production and revenue of the plants to both decline relatively sharply compared to the same period in 2019.

Hydropower: Performance in 09M2020 of hydropower companies have a relatively strong differentiation. Hydropower companies in the North and Central region due to earlier rainy season and strong rainfall increase, achieving high growth in electricity output in Q3/2020. The strong growth in electricity sales in Q3/2020 helped the 9-month performance of these companies recover after the difficult first 2Q of the year due to the dry weather.

In the South (Central Highlands, South Central coast, Southeast), because the rainy season came later (falls in Q4), plants still cannot take advantage of the opportunity from La Nina. Performance in 9M2020 southern hydropower companies are still relatively poor, most companies had a decrease in revenue by 15% - 30% compared to the same period in 2019. However, performance of this group is expected to become more positive in Q4/2020 thanks to favorable hydrological situation.

II. OUTLOOK 2021 – Renewable energy as the bright spot

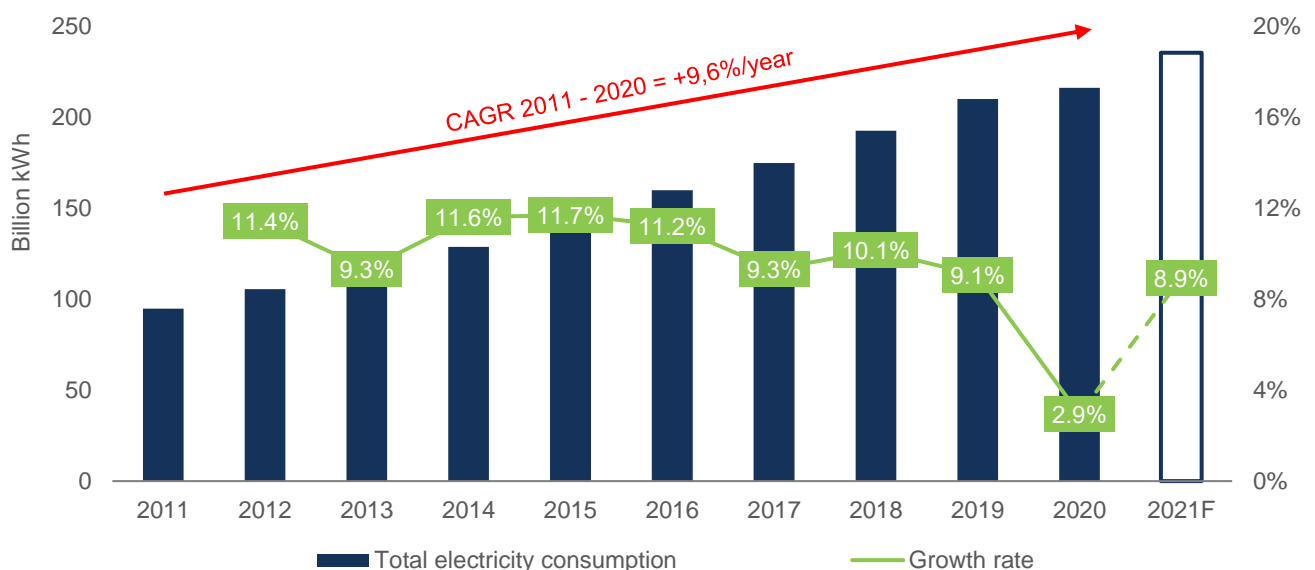
1. Expected recovery and steady growth in electricity demand from 2021 onward

After the pandemic period, the recovery of the construction industry group is expected to help power load to have a high and stable growth from 2021. To prepare for this, EVN has built two power supply plans (depending on the speed of the economic recovery), including:

- Base case: electricity demand in 2021 will be 235,2 billion kWh (+8,9% yoy);
- High case scenario: electricity demand in 2021 will be 236,97 billion kWh (+9,7% yoy).

In addition, EVN has also prepared a cautious scenario with low electricity output growth of 226.27 billion kWh (+4.75% yoy) in Decision No. 3598/QĐ-BCT - issued on December 31, 2020 by Ministry of Industry and Trade.

EVN forecasts that demand for electricity in Vietnam will soon recover with a growth rate of 8.9% in 2021



Source: MOIT, EVN, FPTs Research

2. Promising outlook of renewable energy, hydropower and gas turbine thermal

2.1. The weather forecast for early 2021 shows positive signs for hydropower

Since Q3/2020, the strong return of La Nina has caused continuous rain and flood all over the country. Therefore, the electricity output produced by hydropower plants also achieved a high growth rate in the last two quarters of 2020. As expected, La Nina will continue to extend to Q1/2021 with a probability of about 95% (then maintain the neutral phase), which will help keep water in hydropower reservoirs at a high level. According to EVN's estimates, the weather support factor is expected to help the electricity output mobilized from this group have strong growth in 2021, reaching 76.6 billion kWh (+14.5% yoy).

2.2. Renewable energy: Keep growing with the new focus on wind power

Unlike the previous period, the development progress of small hydroelectricity capacity (renewable energy sources with capacity of ≤ 30 MW) is currently under strict control by the MOIT. Despite being an energy source with a lot of potential for exploitation, the lack of control in planning management and construction investment has caused a number of small hydropower projects to have a negative impact on the environment. Facing the damage caused by the recent floods, the MOIT issued Document No. 9844/BCT-DL – on December 22, 2020 – to strengthen screening for projects that lack of economic efficiency and yet to be implemented, including: (i) 299 projects under research (equivalent to 3,296.6 MW); and (ii) 67 projects have not been researched (equivalent to 412.2 MW).

Solar power capacity is likely to slow down from 2021 as FiT is no longer in effect. Due to the encouragement of the Government with the FiT mechanism, the solar power capacity has grown rapidly in a short period of time. By the end of 2020, the total solar power capacity has reached 19,400 MWp (equivalent to 16,500 MW), accounting for 25% of the total power supply of the whole system. However, EVN has now stopped signing and connecting for new solar power projects because the FiT mechanism was no longer in effect on December 31, 2020. Most likely, the application of a competitive bidding mechanism instead of a FiT mechanism will slow down the capacity growth of this resource from 2021. Therefore, projects with high economic efficiency (low investment rate, favorable location, limited pressure on the transmission grid) will have more opportunities for implementation.

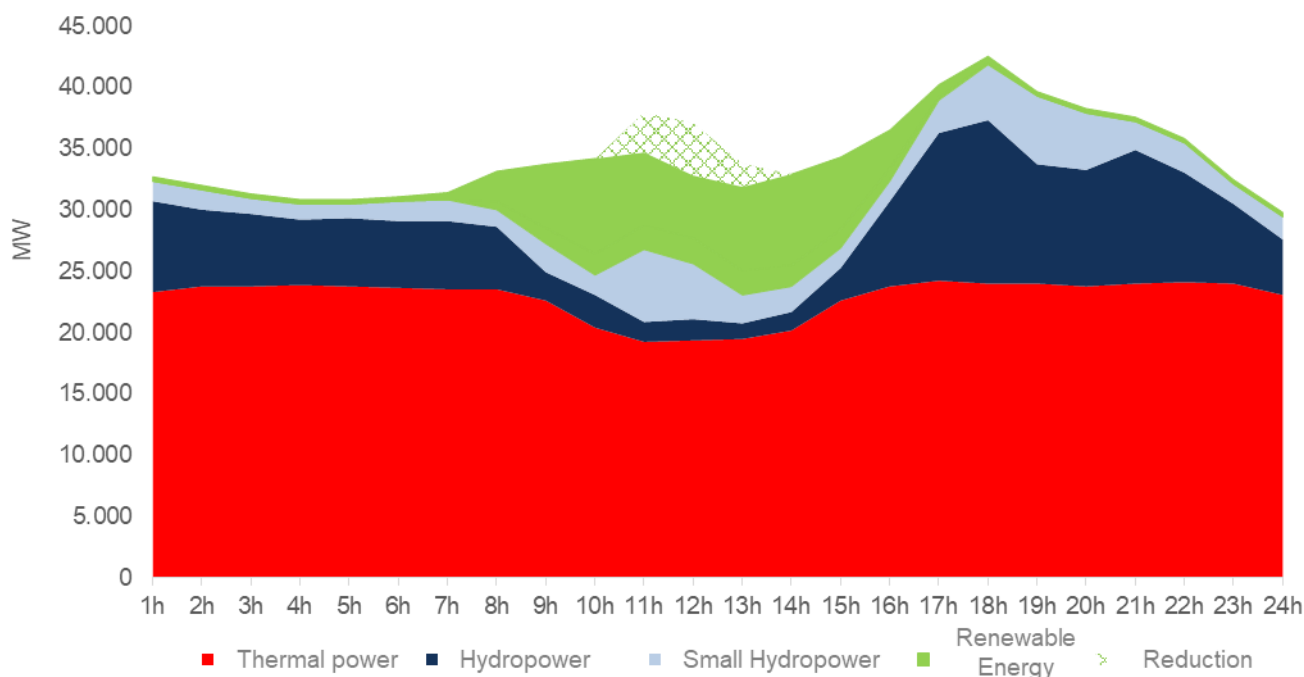
Wind power is expected to grow strongly due to the recommendation to prolong the FiT mechanism and have plenty of room for development. By the end of June 2020, the total wind power capacity approved by the Prime Minister on “Revised Power Development Planning VII” increased to 11,630 MW. Since only 642.6 MW has been put into operation in the total capacity supply, the growth room for this source is still very large. However, while project implementation typically takes 2 to 3 years, the FiT mechanism ends November 1, 2021. Therefore, the Ministry of Industry and Trade is currently proposing to the Prime Minister to extend the time to apply the FiT mechanism until the end of 2023, but this new price could be reduced from 12% to 17% compared to previous price.

In addition, the introduction of the Direct Power Purchase Agreement (DPPA) mechanism from 2021 is considered a positive factor to help develop the renewable energy market in Vietnam.

2.3. Thermal power plants are facing challenges

With the advantage of stable operation, gas and coal thermal power plants are always regulated to run in base load⁵ and are the main power sources of the system. However, favorable weather conditions, combined with the massive development of renewable energy (mainly solar power) in recent times can negatively impact the business activities of this group in 2021.

Power source capacity will be reallocated to optimize renewable energy



Source: National Load Dispatch Center

⁵ Based on the results of calculation of the average load factor (or expected performance), Electricity Regulatory Authority of Vietnam (ERAV) will classify generating sets into three groups: (i) group of base load running units; (ii) group of intermediate running units; and (iii) group of peak load running units. In fact, gas and coal power plants are often classified in base load running units due to the average annual load factor $\geq 60\%$ and monthly average of 70%.

- **For coal-fired power plants:** in recent years, the operation at maximum capacity (more than 7,000 hours per year on average) has made coal-fired thermal power overloaded. To relieve this pressure, EVN has planned to diversify other types in 2021. More specifically, high-priced power generation sources such as gas and coal will be cut down to focus on solar power at noon. In contrast, the peak load at night will focus on hydropower exploitation. With the participation in operation of massive solar power capacity, the regulatory balance between these sources could lead to a decline (or sideways) in electricity produced from coal-fired power plants in 2021.
- **For gas-fired power plants:** With the new gas supply from Sao Vang - Dai Nguyet project, business activities of gas turbine power plants in the Southeast are expected to get better in 2021. In fact, since gas thermal still accounts for a large proportion of the total capacity supply in the South (more than 28%), the system is likely to have the regulation to exploit this power source, because: (i) capacity dispatch near the load center helps reduce grid investment costs, reducing transmission losses; (ii) ability to operate stably with average load factor⁶ higher than 60% per year (compared with the average load factor of renewable energy sources is about 10% - 25% per year); and (iii) ability to change capacity quickly and flexibly in line with EVN's power balance plan. However, the weather is forecasted to be favorable for hydropower, which can cause low growth in electricity production from this group in 2021.

From the above analysis, we evaluate that the electricity industry in 2021 will be **POSITIVE** with the following trends:

- EVN is forecasting that electricity demand will recover and grow at a rate of 8-10% in 2021;
- The weather is forecasted to benefit hydropower plants' business activities;
- From 2021, renewable energy will be focused on sustainable and calculated development to optimize long-term economic benefits;
- Thermal power's business activities in 2021 will depend heavily on weather conditions and the balance between power sources (as the load growth of ~22.67 billion kWh has been partly ensured by large capacity from solar power). At the same time, gas turbine power will be properly exploited to relieve base load running pressure on coal-fired power, helping to improve the performance of this source in 2021.

TYPE OF POWER SOURCE	OUTLOOK
HYDROPOWER	POSITIVE
RENEWABLE ENERGY	POSITIVE
COAL-FIRED POWER PLANT	NEGATIVE
GAS-FIRED POWER PLANT	POSITIVE

With the characteristics of Vietnam's electricity industry, investors are recommended to monitor additional factors related to mechanisms and policies, such as: (i) dispatchable source of electricity is directly regulated by EVN to ensure grid safety and minimize costs for the system; (ii) the exploitation potential of renewable energy (tariff, planned capacity) will vary depending on the Government's power development plan.

⁶ Load factor is the ratio between planned power output (Q_{KH}) and theoretical output (Q_{max}) of generating sets.

III. UPDATES ON LISTED POWER COMPANIES

Ticker	Market Cap. Jan 21, 2021	Revenue 12M2020	NPAT 12M2020	NPAT growth	NI Margin	ROE (LTM)	P/E
NT2	6,909 bil	6,082 bil	625 bil	-17%	10.3%	6%	10.9x

PetroVietnam Power Nhon Trach 2 JSC., (HSX: NT2) is a electricity generation enterprise with a great position in the South because of its total capacity of large units (750 MW), low fuel consumption and stable operation ability. Since its commercial operation (2011) up to now, NT2 has always ensured an annual supply of more than 4.5 billion kWh of electricity to the national power system.

Prospect: (1) Improve operational efficiency in 2021 with new gas supply from Sao Vang - Dai Nguyet project; and (2) The contracted electricity output allocated to NT2 is expected to be higher than in 2020 due to the shortage of electricity supply will enter a serious period in the South.

GHC	991 bil	296 bil	98 bil	3%	33%	5.3%	7x
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Gia Lai Hydropower JSC., (UPCoM: GHC) currently operates two small hydropower plants and one solar power system. GHC's power plants are located in favorable geographic locations, have low unit cost and high electricity selling price. Therefore, the company achieved good business results with financial indicators such as profit margin and ROE in the industry's leading position.

Prospect: (1) Expanding investment in renewable energy (contributing capital to rooftop solar and wind power projects); (2) Improve financial performance and reduce interest expenses; (3) La Nina helps hydropower plants increase their electricity output generation.

GEG	5,410 bil	960 bil	206 bil	-5%	21.5%	10.6%	22.0x
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Gia Lai Electrical JSC., (HSX: GEG) is a pioneer in the field of solar power, which is the enterprise that brings two solar power plants into operation in Vietnam. With extensive experience in the field and support from partners (such as AAM, IFC and Sharp), GEG has become one of the largest solar power enterprise in the country. GEG's solar power plants have low unit cost and high electricity selling price.

Prospect: Currently, GEG is planning to quadruple its current investment in renewable energy capacity by 2025. In fact, GEG is implementing 03 wind power projects with a total capacity of 130 MW, expected to be completed in 2021 to receive preferential prices of ~2.000 VND/kWh.

Currency: VND

Source: EzSearch

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