



# STEP BACK

From series "Outlook 2022"



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**ABBREVIATION AND TERMS**

EIA	Energy Information Administration
CAGR	Compounded Annual Growth Rate
Crack spread	Spread between refined product and crude oil price
ANRPC	The Association of Natural Rubber Producing Countries
CAAM	China Association of Automobile Manufacturers
GACC	General Administration of Customs China
GSO	General Statistics Office of Vietnam
Argus Media	An independent media organisation produces price assessments and analysis of international energy and other commodity markets, and offers bespoke consulting services and industry-leading conferences.
MOIT	Vietnam's Ministry of Industry and Trade
VAMA	Vietnam Automobile Manufacturers' Association
FHWA	Federal Highway Administration
CPC/IRI	Climate Prediction Center/International Research Institute for Climate and Society
EVN	Vietnam Electricity
FiT	Feed in Tariff (FiT) is a policy mechanism introduced to encourage the development of renewable energy sources, with a fixed price of electricity in USD for 20 years in order to increase its competitiveness with conventional energy sources
NLDC	National Load Dispatch Centre
NOAA	National Oceanic and Atmospheric Administration
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>
Brent	North Sea sweet light Crude
WTI	West Intermediate Texas Crude

## PREFACE

In the third publication titled "**STEP BACK**", we mention the business industries which investors need to closely observe and assess the prospects in 2022. As shown in this publication, **Electricity, Fertilizer, Tire, and Oil & Gas** are those industries that we decide to analyze under 2 primary factors: **(1) oil price movements** and **(2) weather patterns**. Finally, we propose the 2022 outlook based on the above factors as well as the industry-specific factors.

## A. GENERAL OBSERVATIONS ABOUT THE WEATHER PATTERNS AND OIL PRICES

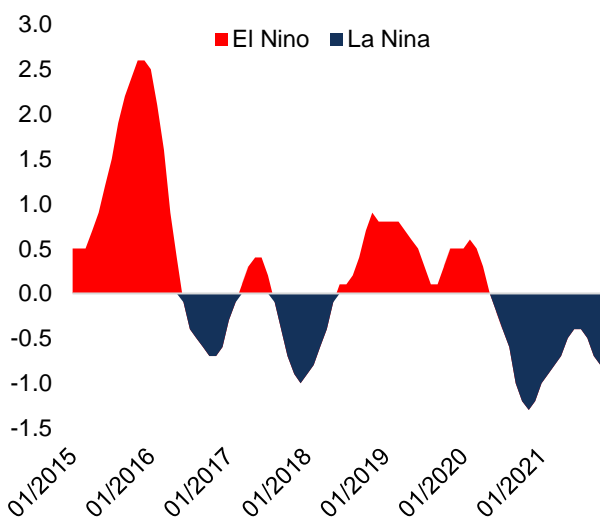
### I. 2021 REVIEW – Favorable weather condition and oil price recovery

#### 1. Favorable weather conditions thanks to La Nina phenomenon

In 2021, the weather patterns were more favorable, resulting in fewer extreme weather events than that in 2020. Vietnam is highly exposed to El Nino/La Nina phenomenon. Specifically, El Nino causes a rainfall deficit, drought as well as saltwater intrusion, meanwhile, heavy rain, frequent storms, and floods are typically accompanied by La Nina's emergence. The climate status in 2021 was weak La Nina, which brought mild weather to Vietnam, thereby facilitating many economic sectors.

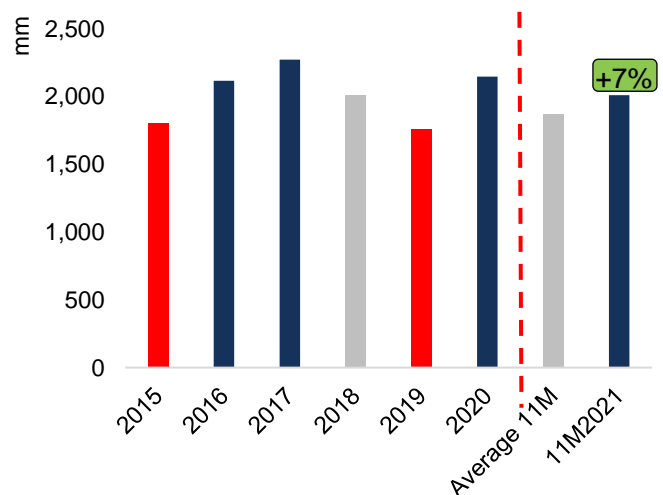
**Rainfall in the first 11 months of 2021 was 7% higher than the 5-year average during the 2015-2020 period, due to the impact of La Nina.** Two La Nina events took place during the 2020 – 2021 period. The first La Nina wave with strong intensity appeared at the end of 2020, then gradually weakened and ended in June 2021. Afterward, the second weaker La Nina appeared in September 2021. La Nina has caused intensified rainfall across all regions in Vietnam.

**El Nino/La Nina index in 2015 – 2021 period**



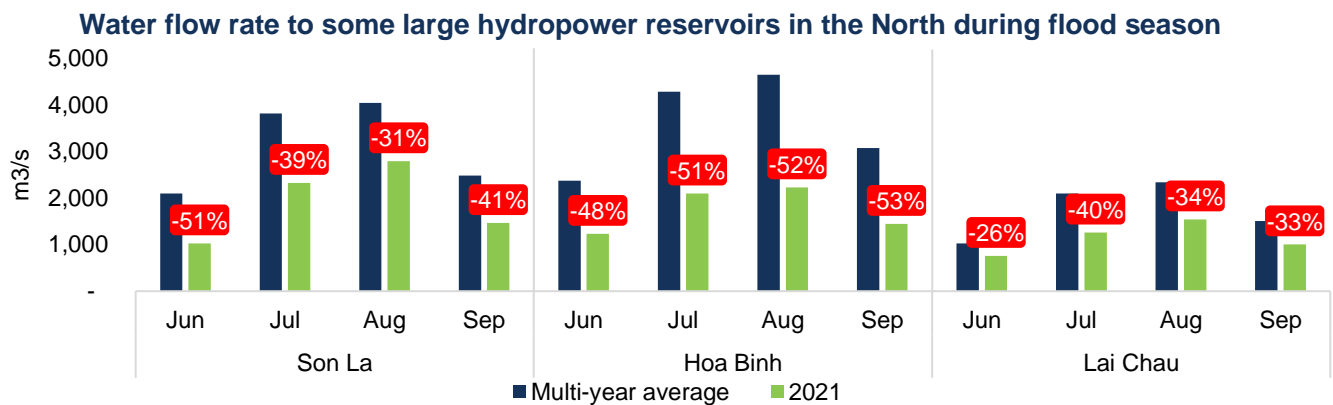
Sources: NOAA

**National average rainfall**



Sources: GSO, Directorate of Water Resources

**The hydrological conditions diverged among regions in the second half of 2021.** In the first half of 2021, the hydrological conditions in most areas of the country were good due to heavy rainfall and abundant water resources, which have been stored since the end of 2020. However, in the second half of the year, the hydrological conditions began to strongly diverge. In particular, the Central and Southern regions continued to obtain favorable hydrological conditions while the North faced water shortages. The water flow rate to large hydropower reservoirs in the North during the flood season (June - September) was insufficient compared to the average level of many years, the usual shortage is in the range from 30% to 50%. The low water flow rate engendered water shortages in reservoirs, affecting electricity production, water supply to downstream, as well as making it difficult to store water to prepare for the dry season in 2022.



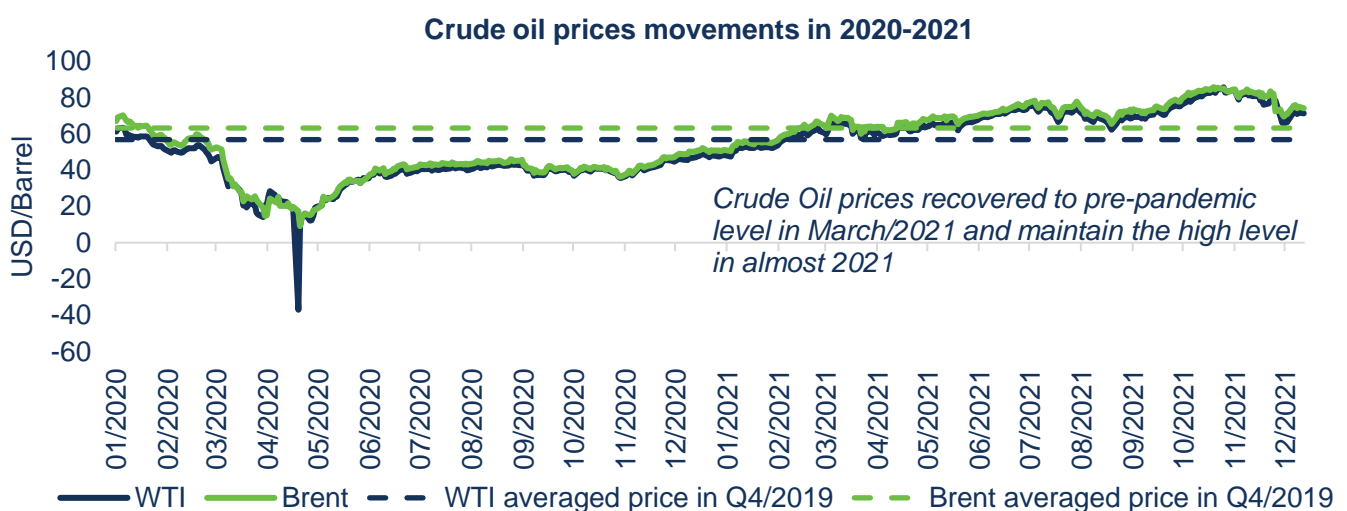
Sources: ERAV

**The weather conditions in 2021 were relatively mild and there were not as many extreme weather events as in 2020.** During the first half of the year (dry season), La Nina made the weather cooler and mitigated the impact of drought in the Central Highlands and South Central regions as well as saltwater intrusion in the Mekong Delta. Meanwhile, the weakening of La Nina in the rainy season reduced the frequency of storms in the second half of 2021. In 2021, there were 9 storms and 3 tropical depressions that occurred in the East Sea. This figure was roughly the same as the average statistics of many years, however, 3 less than as in 2020. Out of 9 storms, only 6 storms made landfall in Vietnam and 5/6 storms weakened into a tropical depression before making landfall.

The mild weather facilitated many industries and economic fields, of which the **Fertilizer** and **Hydropower industries** are typical exemplars. Favorable weather fostered agricultural cultivation and crop yields, thereby boosting the fertilizer demand. The hydropower industry also benefited from the favorable weather since La Nina brought heavy rains, enabling hydropower plants to reach high generation output in 2021.

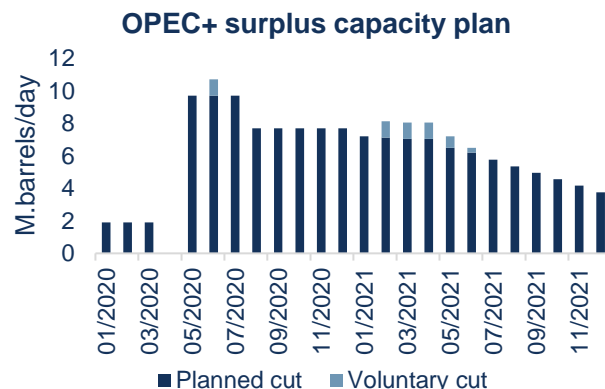
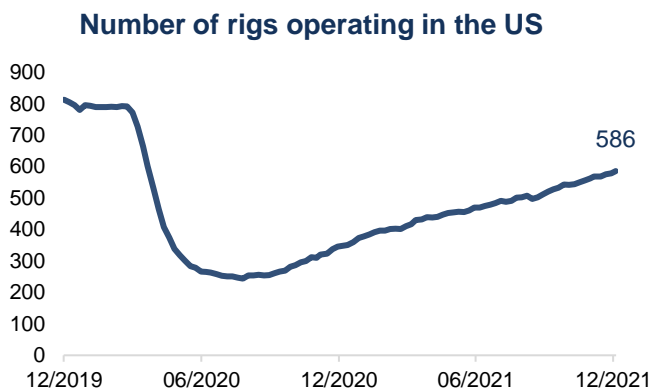
On the contrary, the **Tire industry** was negatively affected by the weather. The strong La Nina at the end of 2020 caused floodings in Thailand, which produces up to 30% of global natural rubber production. Therefore, the supply of natural rubber was affected, which led to a sharp increase in the price of natural rubber, pushing up the input costs of tire manufacturers.

## 2. Crude oil prices rise amid the recovery in demand and supply cuts



Sources: Bloomberg

Crude oil prices in 2021 averaged USD 67.8/barrel for WTI crude oil and USD 70.6/barrel for Brent crude oil, respectively, up 73.3% and 68.4% compared to 2020. The significant increase in crude oil prices is attributed to 2 main reasons: demand recovery to pre-pandemic level and oil production cut in 2021.



Sources: Baker Hughes, OPEC, FPTS research

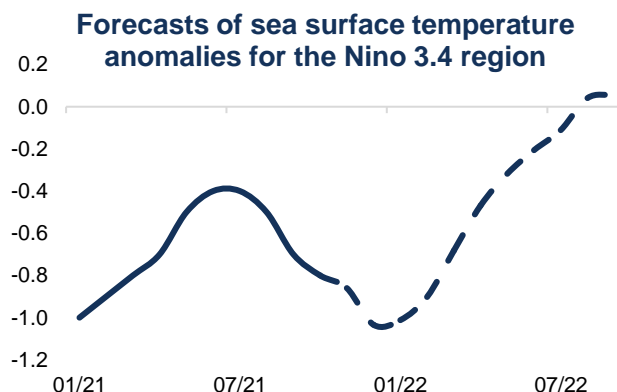
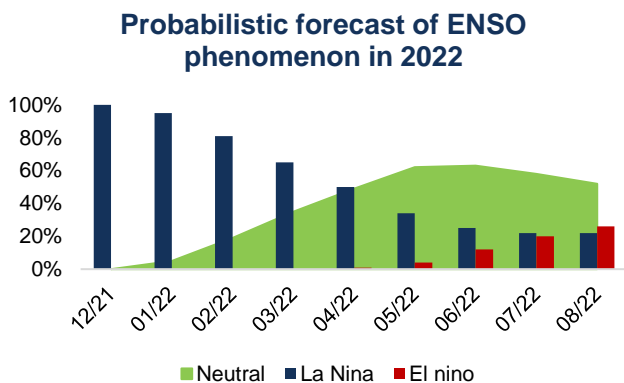
According to EIA’s statistics, the global crude oil demand has rebounded to 100.6 million b/d in December 2021 (the same as the pre-epidemic period), thanks to the signs of recovery and reopening of the economy after the pandemic. Meanwhile, crude oil supply has not recovered, since (1) the US has expanded its drilling rigs inconsiderably, only reaching at 60% pre-pandemic level, and (2) OPEC+ has been cautious concerning production increase by extending its production plan for the first 4 months of the year and easing 400,000 b/d in each month to April 2022. This supply shortage has enabled crude oil in 2021 to maintain higher prices than the average price of crude oil before the pandemic.

The rising crude oil price has facilitated the **Oil & Gas industry** to rebound in 2021, especially **Refining and Consuming petroleum enterprises**, which has been directly benefited from the upward of crude oil prices. On the other hand, Oil prices increase have indirectly hamper the **Tire industry** by means of increasing the cost of synthetic rubber (input for tires), which is a petrochemical product.

## II. 2022 OUTLOOK – Continued favorable weather patterns and high level of oil prices

### 1. Favorable weather forecasts

According to the forecast of the International Research Institute for Climate and Society (IRI), the La Nina phenomenon is forecast to last until March 2022, before transitioning to a neutral state until September 2022. The sea surface temperature anomaly in the central Pacific region (Nino 3.4 region) is forecast to reach -1.0°C in January 2022, and subsequently decrease to be in the range -0.5°C – 0.1°C in the period between April and September 2022. We believe that the El Nino cycle is not likely to happen in 2022.



Sources: IRI, FPTS Research

**Rainfall in 6M2022 is forecast to be approximately or higher than the multi-year average rainfall (MAR)** in most of all regions in Vietnam primarily from April 2022 onwards. Moreover, the rainy season will likely come early in the North, Central Highlands and South regions when storms and tropical depressions are anticipated to emerge from the end of May 2022 in the northern regions of the East Sea. The rainfall summary in the main areas of Vietnam in 6M2022 is demonstrated as follows:

**The Northern region:** Total rainfall approximately will be equal to the multi-year average rainfall, resulting from the period of April-March 2022 (+10% to 20% compared to MAR). However, the total rainfall in March 2022 will be 5-15% lower than the MAR.

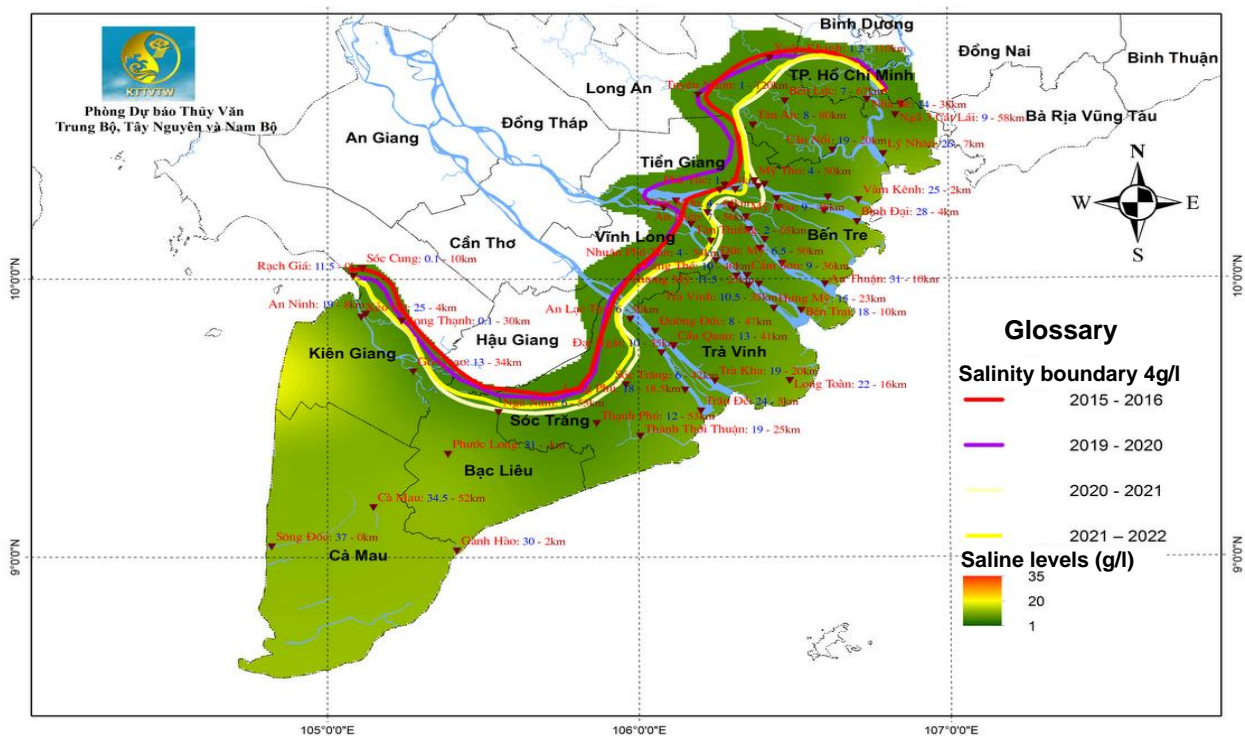
**The Central region:** Total rainfall will be expected to be higher than MAR, mostly attributed to the period between March-June 2022. Specifically, the total rainfall will be 10-30% higher than MAR in March 2022, and 5-20% higher than MAR during the April - June period.

**The Central Highlands and the South regions:** Total rainfall will be approximately equal to MAR. During January-February 2022, the Central Highlands and Southeast regions are projected to receive little rain, while the Southwest region is expected to have localized showers. In the period March-June 2022, the total rainfall will be 10-25% higher than MAR in the April-May 2022 period, in contrast with March 2022 (-10-30% compared to MAR) and June 2022 (-10-20% compared to MAR).

**The hydrological situation is expected to continue to differentiate in 6M2022.** The hydrological situation in the Northern region will remain less favorable than that of the Central region and the Southern region due to the risk of water shortage lasting until June 2022, especially water sources to large reservoirs in the upper Red River basin. Water sources in the northern river basins are expected to be in a deficit of 20-30%, with historical low water levels are likely to continue to occur in the lower Lo and Red River basins, especially during the dry season months of 2022. Therefore, we reckon that the **Hydropower industry** will have a divergent outlook in 2022, pessimistic in the Northern region and optimistic in the Central and Southern regions.

**According to the Directorate of Water Resources, saltwater intrusion in the 2021/2022 dry season is forecast to be equivalent to the 2020/2021 dry season, but not as severe as the 2019/2020 dry season.** In the months of the 2021/2022 dry season, the total flow from the upstream to the lower Mekong River and the Mekong Delta is projected to be 10-15% short of the multi-year average. Saltwater intrusion in 2021/2022 is forecast to negatively affect ~210 thousand hectares of agricultural area, including 60 thousand hectares of rice cultivation, 43.3 thousand hectares of fruit trees, and 107.4 thousand hectares of rice-shrimp farming areas in the Mekong Delta. Hence, we are optimistic about the fertilizer demand in 2022, owing to a high level of rainfall and saltwater intrusion similar to 2021.

**Saltwater intrusion map in the Mekong Delta during the dry season 2021/2022**

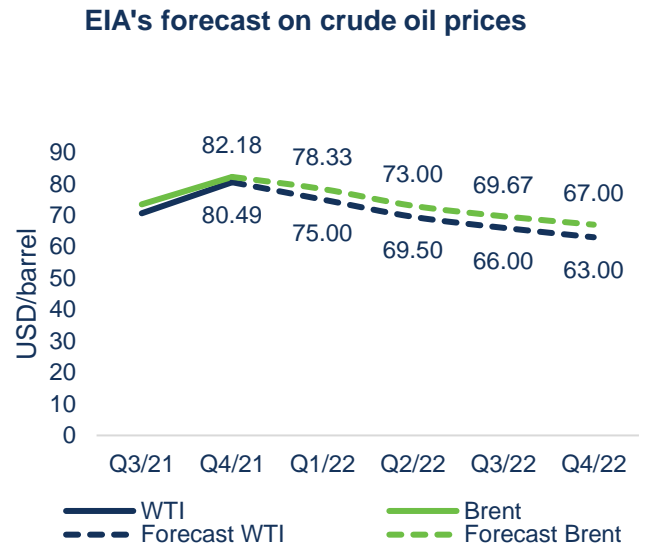
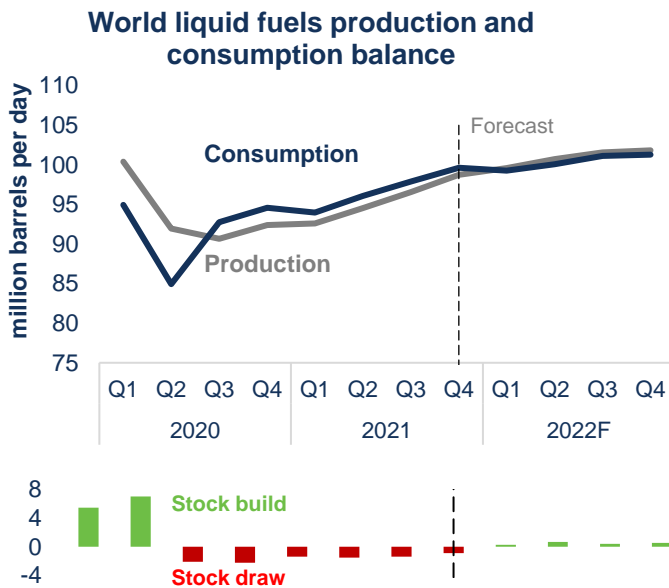


\* The level of saltwater intrusion is greater when the 4g/l saline line goes further inland  
Sources: National Centre for Hydro-Meteorological Forecasting, FPTS Research



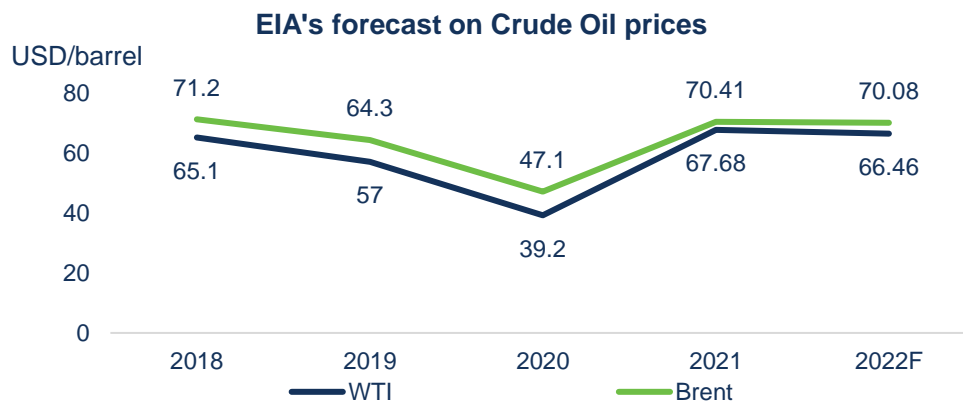
## 2. Crude oil price is forecast to cool down, however, remain at a high level in the past five year

Recovered demand and tight supply contributed a considerable increase in crude oil prices in 2021. In 2022, EIA forecasts the supply will catch up with demand for crude oil, under the OPEC+'s planned increase in oil output until April and lower demand after the winter season.



Sources: EIA

Under the above forecast, the crude oil price movements in 2022 are expected to be more stable. Specifically, the oil price is predicted to cool down gradually from Q4 2021 onwards, to USD 67/Barrel for Brent and USD 63/Barrel for WTI in Q4 2022. Despite the minimal decrease, the crude oil price in 2022 is forecast to remain at a high level during the last 5 years, reaching USD 70.08/barrel (- 0.4% YoY) on average.



Sources: EIA, FPTs Research

Therefore, we believe that the **Oil & Gas industry** will benefit from the prospect of exploration and production activities in Southeast Asia, and price of petroleum fuel and gas will continue to remain high. On the contrary, this could adversely impact the **Fertilizer industry** through an increase in input gas prices, which are anchored to Brent and FO oil prices.

To sum up, we expect a **POSITIVE** outlook for Oil & Gas, Power, and Tires industries and a **NEGATIVE** outlook for the Fertilizer industry, based on the above forecasts on the weather patterns and the oil price movements.



# ELECTRICITY INDUSTRY

## EXPECTED POST-PANDEMIC CONSUMPTION RECOVERY

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### 2021 Review

- Electricity demand continued to grow at a low rate in 2021 due to the impact of the COVID-19 epidemic. Meanwhile, the power supply grew strongly due to the explosive development of renewable power sources, leading to an oversupply in the electricity industry.
- The Hydropower subsector has the most positive business results in 2021 thanks to favorable hydrological conditions. Cumulative hydropower generation in 11 months increased by 8.2% over the same period in 2020.
- Thermal power generation declined due to oversupply. Many thermal power enterprises have poor financial performance because of the decrease in contract quantity and contract price in 2021.
- Solar power plants faced difficulties in 2021 due to capacity curtailment.

### 2022 Outlook

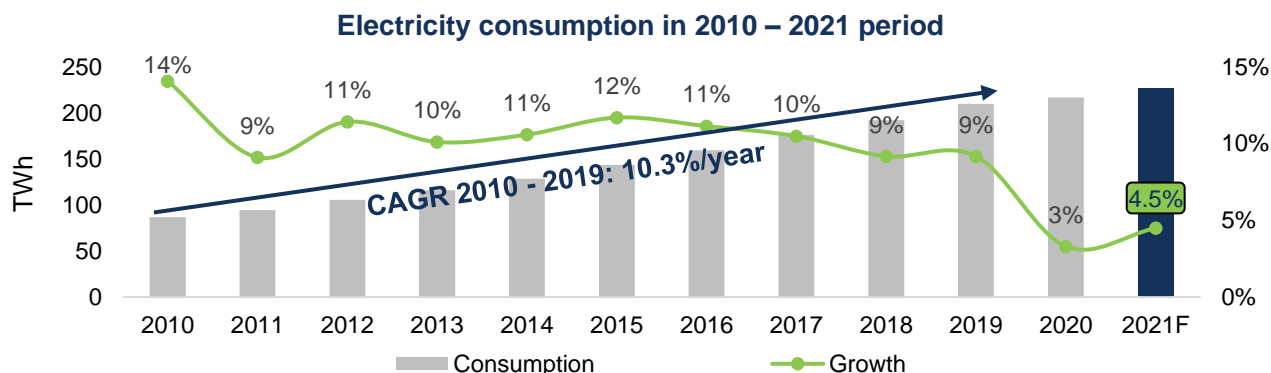
- We believe that the power industry will be **positive** in 2022 thanks to the recovery in electricity consumption and decelerating supply growth, which will balance the supply and demand of the electricity industry in 2022.
- Business prospects of electricity enterprises will be differentiated in 2022. We expect that some groups of enterprises will have positive prospects including hydropower enterprises in the Central and South; wind power enterprises; and coal-fired power enterprises in the North.

## I. 2021 REVIEW – Poor performance due to oversupply

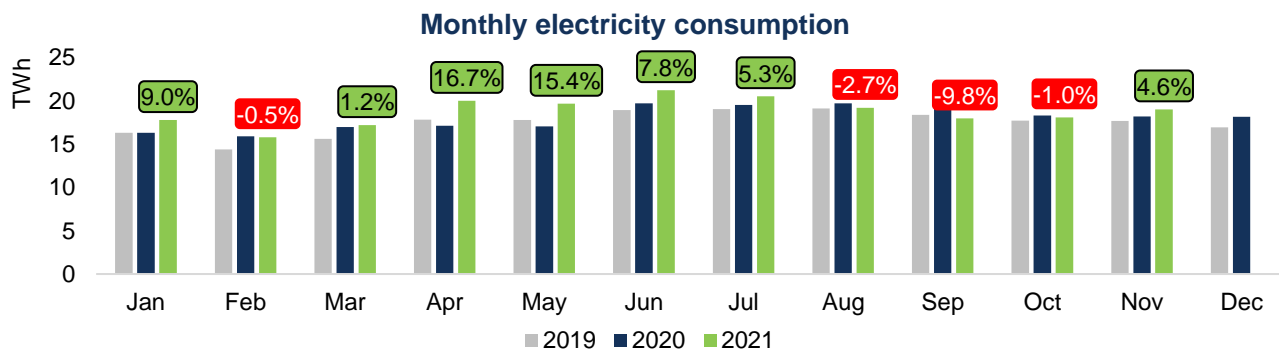
### 1. Oversupply due to low consumption demand and strong growth in generation capacity

#### 1.1. Electricity consumption demand continued to grow at a low rate due to the impact of COVID

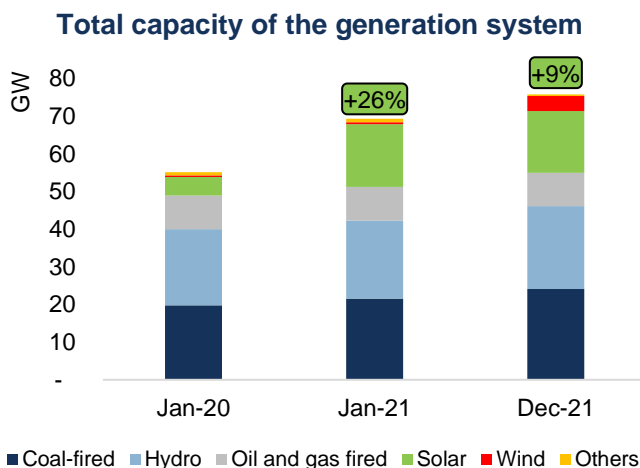
Accumulated electricity consumption in the first 11 months of 2021 grew by 3.92%YoY, much lower than the sustainable growth of about 10% per year in the period before the pandemic. We estimate that annual electricity consumption in 2021 will grow by about 4.5%, a minor improvement compared to 2020 (+3.42% YoY).



Specifically, the complicated pandemic situation and the application of social distancing measures have caused electricity demand to decrease in Q3 2021. Electricity consumption decreased by 3%, 10%, 1% in August, September and October respectively. After the pandemic outbreaks, the economy began to recover, helping electricity demand to start growing again from November 2021.



#### 1.2. Strong growth in generation capacity leads to oversupply



Electricity supply has grown strongly in the past 2 years due to the development of renewable energy. Total capacity of the generation system grew by 26% in 2020 and is estimated to grow by 9% in 2021. Electricity demand in these two years only grew by 3% - 4%, hence an oversupply situation has occurred for the electricity industry in 2021.

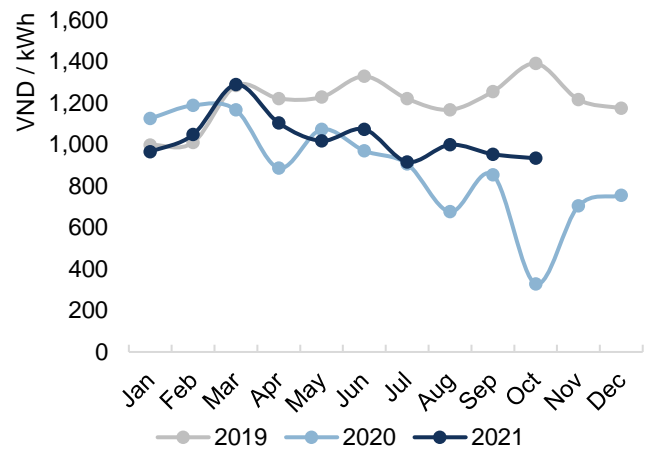
In addition, the favorable hydrological condition helped hydropower plants increase generation and made the oversupply situation even worse in 2021.

### 1.3. Electricity prices in the competitive market remain low, affecting thermal power plants

Due to the oversupply situation occurring in 2021, electricity prices in the competitive electricity market remained on hold at a low level. The monthly average competitive electricity price in 2021 fluctuated around VND 900 - 1,000 /kWh.

Low competitive electricity prices on the market affected thermal power plants most seriously. The price level approximated the fuel cost of coal-fired power plants and was lower than the fuel cost of gas-fired power plants. Thermal power plants could only generate electricity based on the quantity assigned under the contract and rarely sold excess output in the competitive market that led to the reduction in generation output.

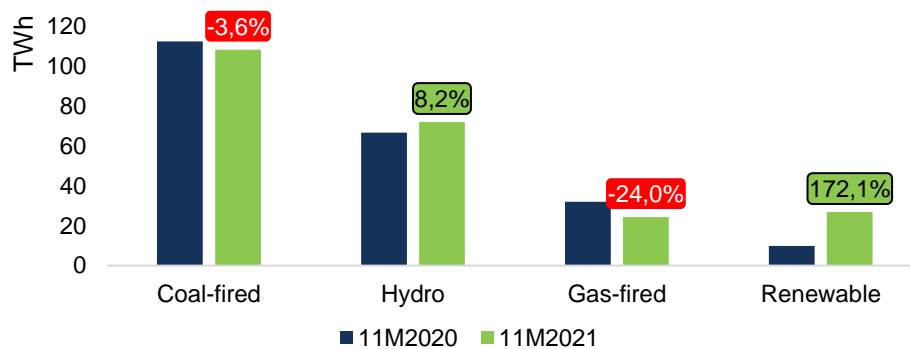
**Monthly competitive market electricity price**



Sources: EVN Genco3

## 2. Diverged performance among subsectors

**Accumulated 11 months generation by source**

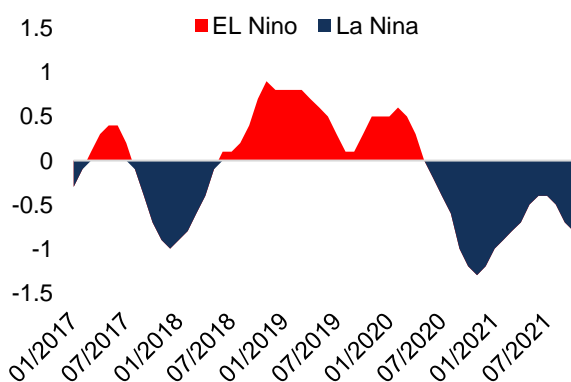


Sources: EVN

### 2.1. Hydropower has the most positive performance in 2021

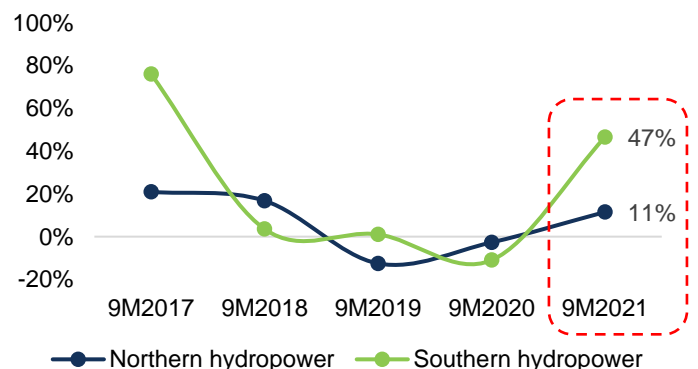
**Accumulated hydropower generation in the first 11 months still achieved a growth rate of 8.2% over the same period in 2020.** A strong La Nina event that appeared at the end of 2020 and lasted until mid-2021 has created favorable weather conditions for hydropower plants. In the first 6 months, performance of most hydropower plants across the country was positive and total hydropower generation of the whole system achieved a very high growth rate (+41% YoY).

**EI Nino/La Nina Index 2017 - 2021**



Sources: NOAA

**9-month revenue growth of hydropower enterprises**



Sources: FPTs Research  
Data from financial report of 27 listed companies

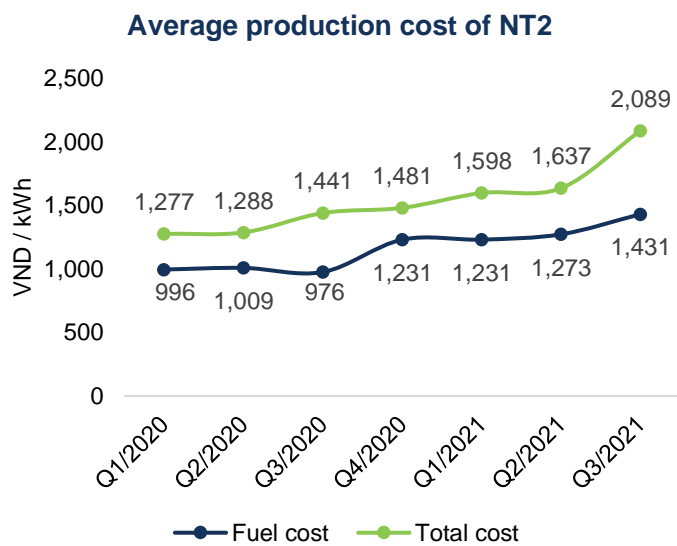
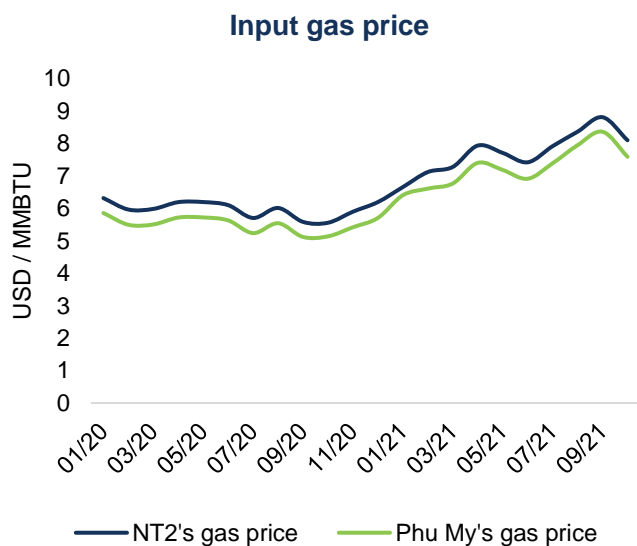
Performance of hydroelectric power plants began to differentiate in Q3 2021. Favorable hydrological condition continued to benefit Southern hydropower plants in Q3 2021. Southern hydropower enterprises achieved a high growth rate in 9M2021 revenues with an average growth rate of 47%.

In the meantime, hydrological condition in the North became worse, making the generation output and revenue of hydropower plants in this area less positive in Q3 2021. Most of the hydropower enterprises in the North had negative revenue growth in Q3 2021. Average revenue growth of hydropower enterprises in the North in 9M2021 is only 11%, much lower than the Southern region and lower than the growth rate in the first 6 months of 29%.

## 2.2. Thermal power plants faced difficulties in 2021

**Generation output of most thermal power plants declined in 2021.** In the first 11 months of 2021, national coal-fired thermal power generation decreased by 3.6% over the same period, while gas-fired thermal power generation decreased by 24% over the same period. Low demand and excess supply are the main reasons for the decrease in output of thermal power plants.

**Rising fuel expenditure affected gas-fired power plants.** In addition to the influence of the oversupply situation, gas-fired thermal power plants also struggled with high production costs due to a sharp increase in input gas prices in 2021. Input gas prices peaked in September 2021, rising to nearly \$9/MMBTU, 50% higher than the average gas price in 2020. High gas prices led to higher production costs and lower generation output. A typical example is at Nhon Trach 2 Power Plant (NT2). NT2's fuel cost in Q3 2021 increased to VND 1,431/kWh, 43% higher than the 2020 average. The generation output in Q3 2021 also causes the fixed cost components per unit of output to increase, resulting in the average total production cost of NT2 increasing to VND 2,089/kWh, 52% higher than the average in 2020.



High production costs hindered gas-fired power plants from competing with other plants, especially when an oversupply situation occurs. In Q3 2021, the generation output of many gas-fired power plants is very low, some plants only generate 50% of the monthly contract quantity.

**Coal-fired generation output is better than gas-fired because domestic coal price remains stable.** Although international coal price increased sharply in 2021, domestic coal price in Vietnam has almost no adjustment. Except for a few coal-fired power plants located in the South using imported coal as the major fuel, coal-fired power plants in Vietnam still mainly use domestic coal sources and are not affected by fuel prices. In addition, low gas-fired generation also reduces competitive pressure on coal-fired power plants. In general, the output of coal-fired power plants is not too negative in 2021.

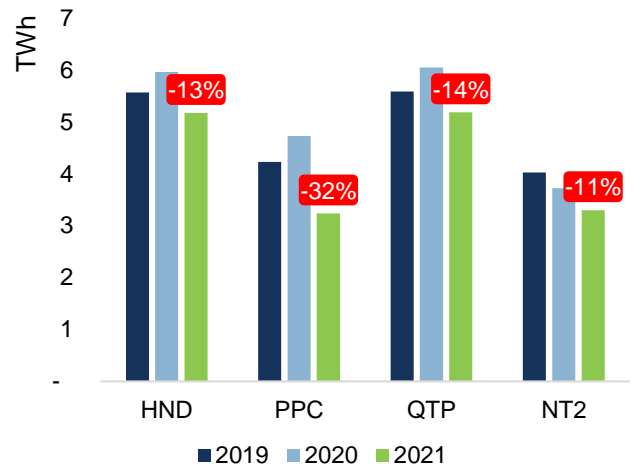
## Contract quantity of listed companies

### Contract quantity and contract price of many thermal power plants declined in 2021.

In 2021, the contract quantity (Qc) of most thermal power plants decreased sharply and affected the financial performance of thermal power enterprises. Profits of thermal power plants in Vietnam mainly come from the contracted quantity. Qc usually accounts for more than 80% of the total generation output of the plants, and the contract price is adjusted according to the input fuel price to ensure profit for plants.

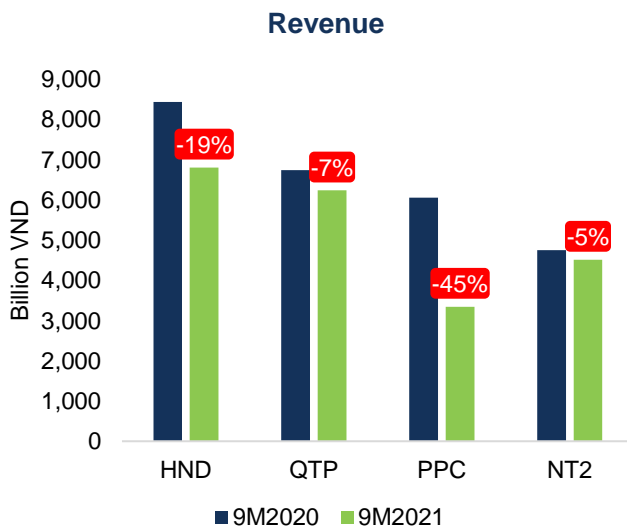
In addition, the contract price of some thermal power enterprises was adjusted down in 2021. Enterprises whose plants were built in the period 2010 - 2011 such as HND, QTP, NT2 must reduce the fixed price component of the electricity selling price under the contract because their high contract price profiles have expired.

Specifically, the fixed price of HND decreased by 33% (from VND 600/kWh to VND 400/kWh), the fixed price of QTP decreased by 17% (from VND 432/kWh to VND 357/kWh) and the fixed price of NT2 decreased by VND 37 /kWh.

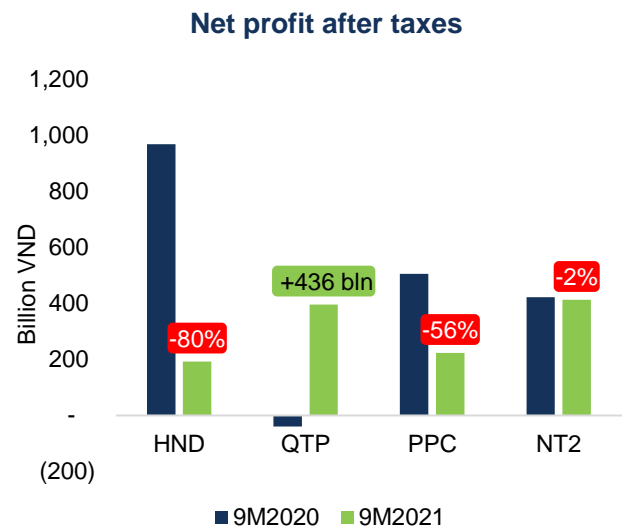


Sources: FPTs Research

### Financial result of thermal power enterprises declined in 9M2021



Sources: Companies Financial Report



Sources: Companies Financial Report

Within the scope of this report, we will mention 4 typical thermal power enterprises: HND, QTP, PPC and NT2. Revenue and NPAT of these enterprises in 9M2021 both decreased compared to the same period in 2020. QTP is the only enterprise that has NPAT growth in 9M2021, shifting from a loss of VND 40 billion in 9M2020 to a gain of VND 396 billion in 9M2021. However, the main reason for this growth is that QTP adjusted depreciation period from 10 to 15 years, helping QTP's depreciation expense in 9M2021 decrease by VND 688 billion compared to the same period in 2020. Without the depreciation adjustment, QTP's NPAT would also decline like other thermal power enterprises.

NT2 is a special case in 2021. Although the NT2's generation output in 9M2021 decreased by 26% compared to the same period in 2020, NPAT in 9M2021 still reached VND 412 billion, decreased by only 2% over the same period. In Q3 2021, NT2 only generated half of the contract quantity and NT2 is compensated for the revenue of the rest quantity, which was not dispatched by EVN. The compensation is the main contribution to the impressive growth in NT2's NPAT in Q3 2021 (+349% YoY).

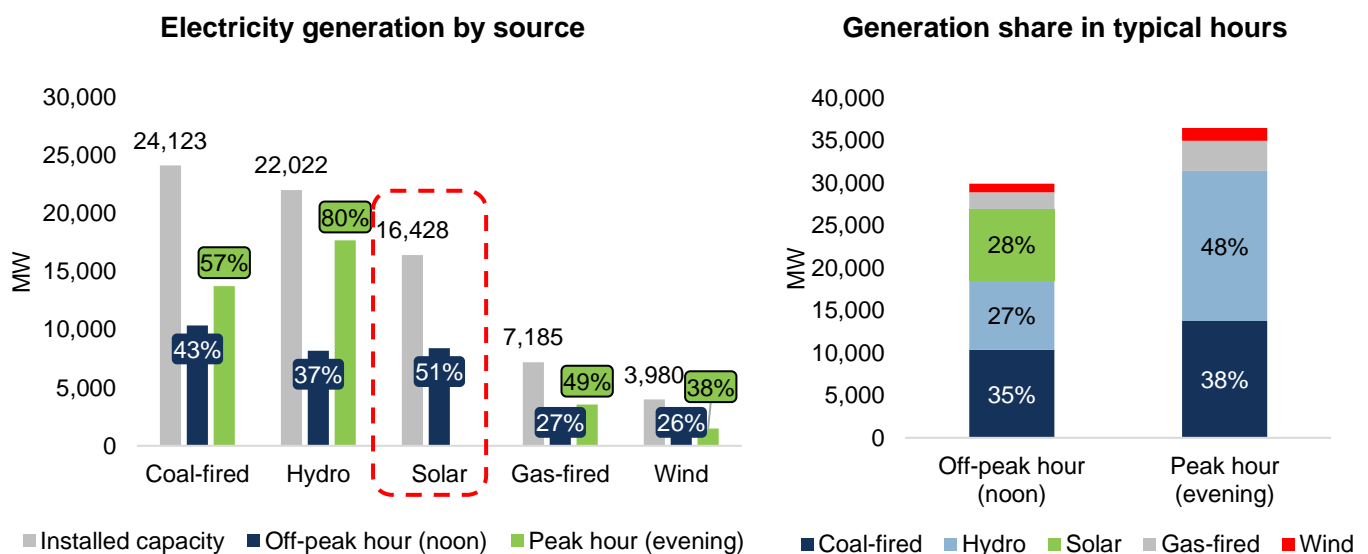
### 2.3. Renewable energy power plants faced difficulties due to curtailment

**Generation output from renewable energy (RE) sources grew strongly in 2021.** Accumulated 11M2021 RE generation of the whole system reached 26.88 billion kWh (+172% YoY), including 24.46 billion kWh from solar photovoltaic (PV) power plants. The main reason comes from the explosive development of solar PV projects in late 2020. Total installed capacity of solar PV sources grew from about 5,000 MW at the beginning of 2020 to 16,500 MW at the beginning of 2021 (+234% YoY).

**Solar PV power plants were seriously curtailed in 2021.** We estimate that solar PV power plants have been curtailed on average 10% - 12% potential output. Curtailment has affected the profit margin and debt repayment cash flow of solar PV enterprises.

There are two main reasons for solar PV curtailment. Firstly, the low demand for electricity makes the power system unable to absorb all the solar power capacity, especially during noon hours. According to data from the National Load Dispatch Center (NLDC), despite cutting other power sources, EVN can still only dispatch nearly 50% of solar installed capacity during off-peak hours. The second reason is the overload of the transmission grid system. Because solar PV power plants are usually concentrated in only a few locations, the transmission grid in those locations cannot be upgraded fast enough to catch up with the rapid growth of solar PV installation.

#### Electricity generation by source in typical hours



Sources: NLDC

Sources: NLDC

## II. 2022 OUTLOOK – Expected demand recovery and supply – demand balance

### 1. Supply and demand of the electricity industry is expected to be balanced in 2022

#### 1.1. Electricity demand is expected to recover in 2022

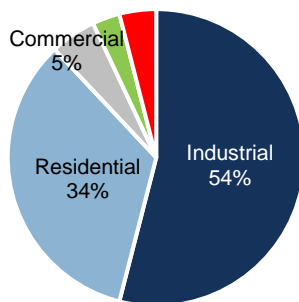
**Electricity demand is forecast to recover in 2022 and achieve pre-pandemic growth thanks to the recovery of the economy.** In a report at the forum "Energy for economic recovery after the COVID-19 pandemic", Electricity of Vietnam (EVN) proposed two scenarios for growth of power output for 2022, of which the scenario is: base is 8.2% and high growth scenario is 12.4%.

Unlike 2021, in 2022 the recovery of the economy is more assured thanks to the vaccination program. As of the beginning of December 2021, the proportion of the population over 18 years old in Vietnam receiving the first injection is 96% and the second injection is 73%. The Government has also set a goal of 100% completion of the second dose of vaccination for people aged 18 years and older by 2021 and has begun to develop a vaccination plan for people under 18 years of age.

The universalization of vaccines will help reduce the impact of the pandemic and avoid widespread social distancing, thereby creating a basis for the recovery of economic activities and helping electricity demand to recover.

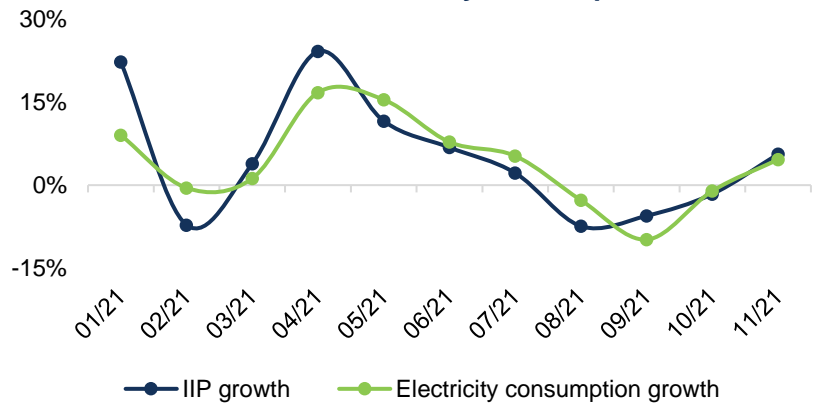
**The recovery of the industrial sector is the main growth driver.** Industrial consumption is the largest electricity consumer, accounting for 54% of the annual electricity consumption in Vietnam. The growth of electricity consumption in this sector has been the main growth driver of the electricity industry in recent years. The growth rate of electricity consumption often fluctuates in the same direction as the growth rate of the index of industrial production (IIP) with a relatively high correlation.

**Share of electricity consumption**



Sources: EVN

**Correlation between electricity consumption and IIP**



Sources: MOIT

After a period of negative growth in Q3 2021 due to social distancing, production activities began to return to normal, helping the IIP index to recover in October 2021 and grow 5.6% in November 2021, leading to the growth of electricity consumption. With positive signs of recovery in Q4 2021, we expect industrial production to recover in 2022, thereby becoming the main driving force for growth in electricity consumption.

### 1.2. Power supply growth will decelerate, helping to alleviate oversupply pressure

**We forecast that the power capacity of the generation system in 2022 will be added by 4,500 - 5,000 MW, an increase of 6-7% compared to the end of 2021.** According to the power supply plan 2022 of Electricity Regulatory Authority of Vietnam (ERAV), approximately 2,000 MW of coal-fired power and 1,200 MW of hydroelectricity will be added to the system in 2022. In addition, we estimate that an additional 1,000 - 1,500 MW of wind power will be put into operation in 2022. This amount of wind power capacity mainly comes from plants that have not been completed before the deadline of the FiT mechanism on October 31, 2021. We believe that wind power will still be strongly developed in the period of 2022 - 2025 and the Government will provide a mechanism for unfinished wind power plants to be put into operation in 2022.

The remaining electricity sources such as gas thermal power and solar PV do not have much potential for capacity growth in 2022. Among the current gas-fired thermal power projects under construction, none is likely to be completed in 2022. Solar PV will also not have much room for growth in the period of 2022 - 2025 due to the limitation of instability.

**The decelerating capacity growth will help the power system supply and demand become more balanced and reduce the oversupply situation like in 2021.** In general, the current capacity can ensure a stable electricity supply in 2022. Northern power plants will have better prospects because this area had the best growth in consumption demand in the last 2 years, while power capacity growth is the lowest due to no advantage to developing solar and wind power. The North is also facing the risk of power shortage in some peak hours of the dry season in 2022.

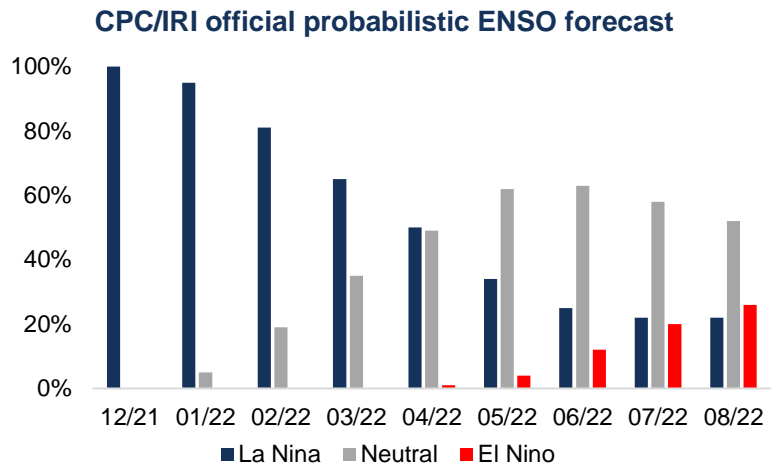


## 2. Groups of enterprises that have positive prospects in 2022

### 2.1. Hydropower enterprises will maintain good performance thanks to favorable hydrological condition

**The hydrological situation is forecast to continue to be favorable for hydropower plants in 2022.** According to data from Columbia University's International Research Institute for Climate and Society (CPC/IRI), La Nina is forecast to last until April 2022, then return to neutral conditions. Favorable weather will help hydropower plants maintain firm generation output and business results in 2022.

However, we believe that the generation output of hydropower plants will not have a sudden growth because the base level of 2021 is relatively high.



Sources: CPC/IRI

**Hydropower plants in the central and southern regions will have better prospects.** We believe that hydropower plants in the Central and the South will have better prospects in 2022 because hydrological condition in these regions is still going well. Meanwhile, hydroelectric power plants in the North have a less positive outlook because the water flow to hydropower reservoirs in the North in the last months of 2021 is quite low, making the North facing the risk of severe water shortage in the dry season of 2022.

### 2.2. Renewable power group will have a more positive outlook in 2022

**Solar power plants will experience less capacity curtailment in 2022.** Low electricity demand is one of the main reasons for capacity curtailment in 2021. Entering 2022, the recovery of electricity consumption demand will help reduce the curtailment.

**Enterprises that complete wind power projects before the FiT deadline will have a positive outlook in 2022.** 106 wind power plants submitted applications to be recognized for commercial operation (COD) with a total capacity of 5,655.5 MW. However, the complicated pandemic situation in the southern region has caused many difficulties in plants construction. By the end of October 31, 2021, only 69 out of 106 plants with a total capacity of 3,298.95 MW (58%) were completed in time and received COD recognition.

Wind power plants completed ahead of schedule will receive a fixed preferential FiT for 20 years of 9.8 cents/kWh for offshore wind and 8.5 cents/kWh for onshore wind. In addition, wind power will also experience less capacity curtailment than solar power because this power source can be generated in the evening (peak consumption hours without solar power). In general, enterprises that complete wind power plants ahead of schedule will have good prospects for growth in business results in 2022.

### 2.3. Coal-fired power enterprises in the North have the most favorable prospects in the thermal power subsector

We believe that the general outlook of the thermal power subsector in 2022 is not too optimistic because the competitive pressure from hydropower and renewable electricity is still quite large. However, some coal enterprises in the North will still have good prospects in 2022 thanks to the following factors:

- **Advantage of cheap input fuel.** The majority of coal-fired power plants in the North use domestic coal, and the domestic coal price has had almost no adjustment since 2019. Meanwhile, gas prices and imported coal prices have increased strongly in 2021 and are expected to remain high in 2022. Therefore, coal-fired power plants using domestic coal will have the best competitiveness in the group of thermal power plants.
- **Power capacity in the North grows slowly.** The North does not have the advantage to develop renewable power sources, while many coal-fired power projects in this region are behind schedule. Power capacity in the

North in the 2016-2021 period only grows about 5.8%/year. In addition, the outage of some thermal power plants in the North (Vung Ang 1, Pha Lai 2) will create conditions for the remaining plants in the North to have the opportunity to increase output.

- **The hydrological condition in the North is getting worse.** The hydrological situation in the North began to deteriorate from Q3 2021 and the water flow to hydropower reservoirs in the North in the last months of the year was very low, affecting the ability to store water for the dry season in 2022. Hydroelectric power plants in the North are facing the risk of water shortage in the dry season of 2022. The output prospect of hydroelectric power plants in the North will be less favorable in 2022, thereby reducing competitive pressure on coal-fired power plants in this region.

From the above analysis, we assess that the electricity industry in 2022 will perform **POSITIVE** thanks to the recovery of electricity consumption demand and the supply and demand of the electricity industry becoming more balanced. We believe that in 2022, there will be a divergence between groups of businesses in the industry, in which there are a number of groups of businesses that have **POSITIVE** prospects, specifically as follows:

- Hydropower enterprises in the Central and Southern regions will maintain positive business results thanks to favorable hydrological conditions;
- Wind power enterprises have good growth prospects due to attractive selling prices and low risk of capacity curtailment.
- Coal-fired power enterprises in the North have good prospects to improve their business results thanks to the advantage of cheap fuel sources and benefit from the supply shortage in the North.

### III. UPDATES ON LISTED COMPANIES

Ticker	Market cap. at Jan 7, 2022 (bil VND)	Revenue 9M2021 (bil VND)	NPAT 9M2021 (bill VND)	NPAT growth	NPAT margin	ROE (TTM)	P/E
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	6,804	976	195	637%	19.9%	9.97%	19.1x
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**VSH** owns and operates 3 hydropower plants, Vinh Son, Song Chinh and Thuong Kon Tum with a total capacity of 356 MW. VSH's hydropower plants are located in the Central Highlands - South Central region, where the geographical and climatic conditions are favorable for the development of small and medium hydroelectric plants.

**VSH**

**Prospect:** VSH has just completed the Thuong Kon Tum hydropower plant with a capacity of 220 MW in April 2021, increasing 2.6 times total generation capacity. Besides, the positive hydrological condition in the Central Highlands - South Central region will also help VSH maintain good financial performance in 2022.

	7,775	938	211	+3%	22.5%	8.8%	29.4x
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**GEG** is a leading enterprise in the field of solar power, the one that put the first two solar power plants into operation in Vietnam. GEG has become one of the enterprises with the largest solar power capacity in the country. Currently, the company owns and operates nearly 300 MWp of solar power. Along with that, GEG also owns 14 hydropower plants with a total capacity of 84 MW and has just completed 3 wind power plants with a total capacity of 125 MW in 2021.

**GEG**

**Prospect:** GEG has completed 3 wind power plants with a total capacity of 125.2 MW that are recognized for commercial operation and enjoy preferential rates. The operation of wind power plants will help GEG achieve high revenue and profit growth in 2022.

	9,800	6,809	183	-80%	2.7%	11.3%	13.7x
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**HND**

**HND** owns and operates 2 coal-fired power plants with a total capacity of 1,200 MW in Hai Phong. Hai Phong Thermal Power Plant is located in the economic triangle of Hanoi - Hai Phong - Quang Ninh,

an area with high economic growth and high demand for electricity. HND's power plant operates stably, achieves high efficiency with few incidents.

**Prospect:** The recovery of electricity demand will help HND's business results improve in 2022. HND's power plant is located in the North, so it will have a good recovery prospect because this area has the best growth in consumption demand in the past 2 years. In the meantime, power capacity in the North has the lowest growth because the lack of climatic conditions to develop solar and wind power.



# FERTILIZER INDUSTRY

## NEGATIVE OUTLOOK DUE TO LOWER UREA PRICE

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### 2021 Review

- Fertilizer consumption in 2021 is estimated to increase by 5.5% YoY, thanks to favorable weather. The growth in demand for NPK and DAP fertilizers is primarily attributable to the domestic supply. Meanwhile, the growth in demand for nitrogen fertilizers, including Urea and SA, mainly results from the import market.
- The price of fertilizers has escalated dramatically since the beginning of 2021. Commonly used fertilizers such as Urea, DAP, Potash, and NPK fertilizers all have had a significant increase in the range from 70 to 170% compared to early 2021.
- The trend in gross profit margin has exhibited the division between the Urea and NPK segments. While the Urea segment benefited from the high price of Urea fertilizer, the NPK segment was negatively affected as the prices of input fertilizers (Urea, DAP, Potash) increased at a faster pace than the NPK price.

### 2022 Outlook

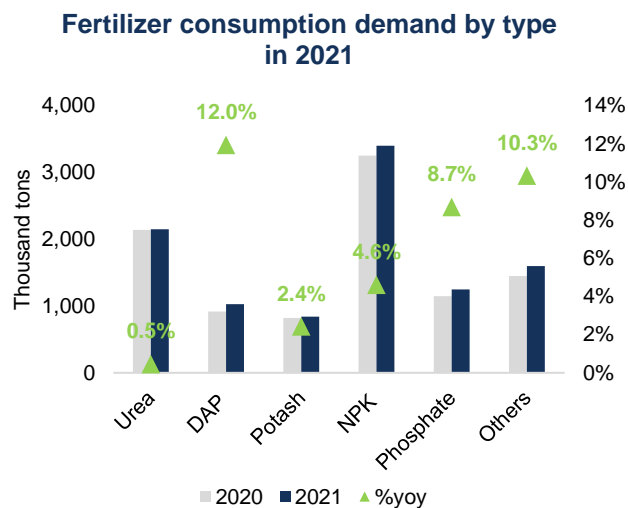
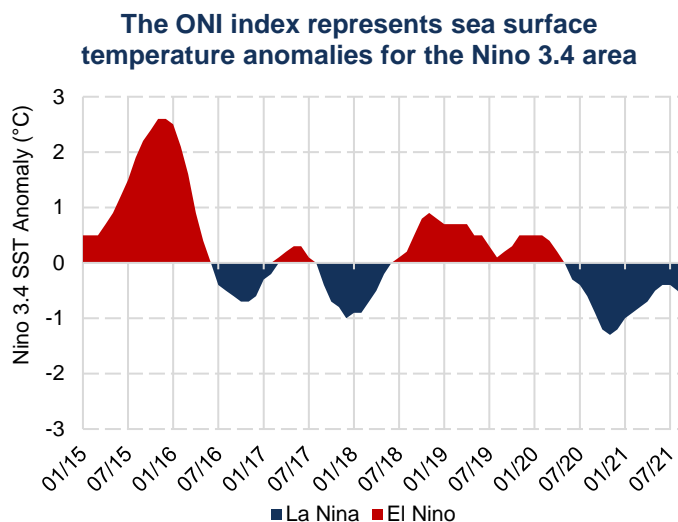
- We believe that the outlook for the fertilizer industry in 2022 will be pessimistic because the gross profit margin of the fertilizer industry is expected to decrease, especially in the Urea segment as the price of urea is forecast to cool down by 5.5% YoY in 2022.
- Nevertheless, fertilizer demand in 2022 will remain strong and we expect that growth to continue at lower rates.

## I. 2021 REVIEW – Shortage of supply pushes prices up

### 1. Strong fertilizer consumption due to positive weather conditions

#### 1.1. High fertilizer demand thanks to favorable weather conditions

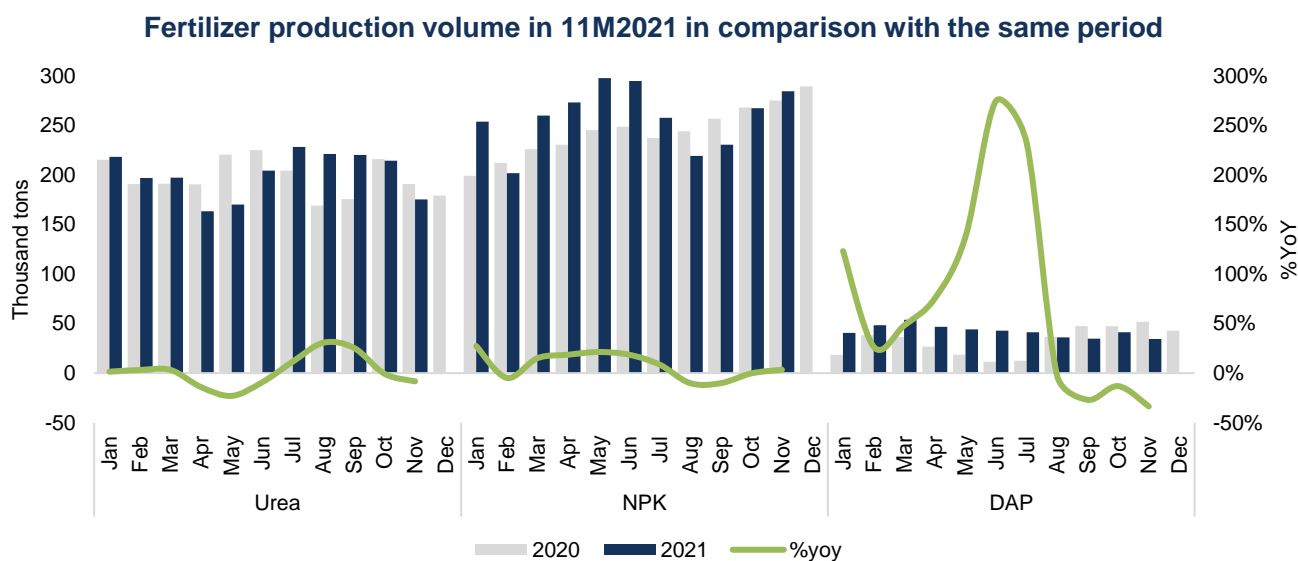
Fertilizer demand in 2021 is estimated at ~10.3 million tons, up 5.5% over the same period. This is due to the improvement in weather conditions in 2021 in comparison with negative effects such as drought in the Central and Central Highlands regions, saltwater intrusion in the Southern region caused by El Nino phenomenon in the previous crop year. Accordingly, the La Nina phenomenon, which has lasted from August 2020 to the end of 2021, has caused heavy rainfall in most agricultural areas, thereby improving crop productivity and boosting the fertilizer demand.



Sources: CPC, Agromonitor, FPTS Research

#### 1.2. High production growth, mainly in NPK and DAP segments, in 11M2021

In general, the fertilizer industry in 11M2021 witnessed production growth in all major fertilizer segments, including Urea, NPK and DAP.



Sources: Ministry of Industry and Trade, FPTS Research

NPK fertilizer production in 11M2021 is estimated at 2,840 thousand tons (+7.5% YoY). The increase is attributed to the scarcity of single-nutrient fertilizers and high fertilizer demand for rice in most areas and industrial crops in the Southeast and Central Highlands regions. The high-quality NPK segment is the primary

contributor to the overall growth rate of the NPK segment. For example, production volumes of high quality NPK of Vinachem's enterprises in 11M2021 reached 1,342 thousand tons, +25.1% YoY.

Domestic production of urea fertilizer in 11M2021 reached roughly 2,209 thousand tons, +0.9% YoY, since coal-based urea plants (DHB and Dam Ninh Binh) have increased their operating capacity in the context of high urea prices. However, urea production in Q2 2021 decreased slightly compared to the same period last year, due to the maintenance schedule of DPM and DHB plants during the April-March period and technical issues of Dam Ninh Binh during the April-June period.

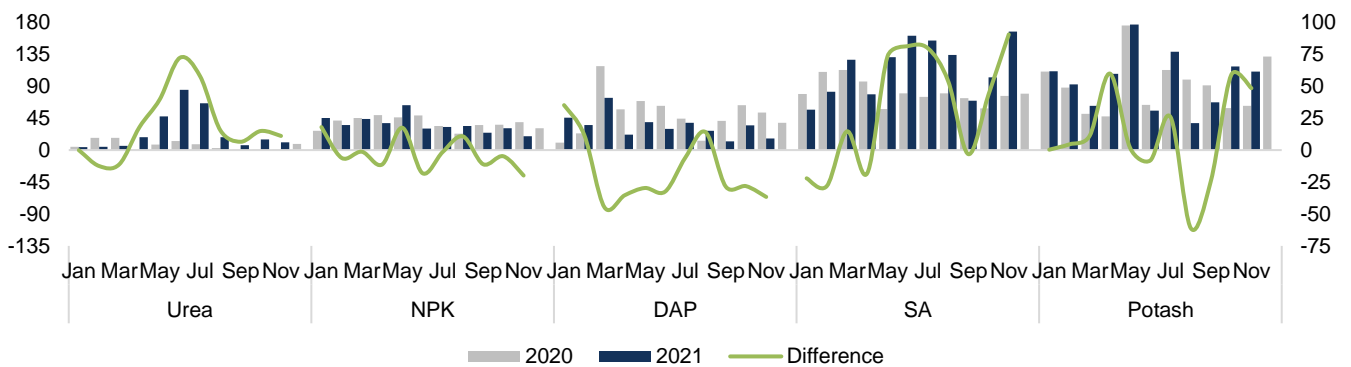
DAP fertilizer production in 11M2021 reached 464 thousand tons, +34.3% YoY, thanks to DGC's new DAP factory, which came online in October 2020. However, DAP fertilizer production started to decline from August 2021 due to the scarcity of apatite ore, giving rise to production cuts or even shut down in DAP factories.

### 1.3. Import volume increased sharply in 11M2021, mainly in the nitrogen fertilizer segment

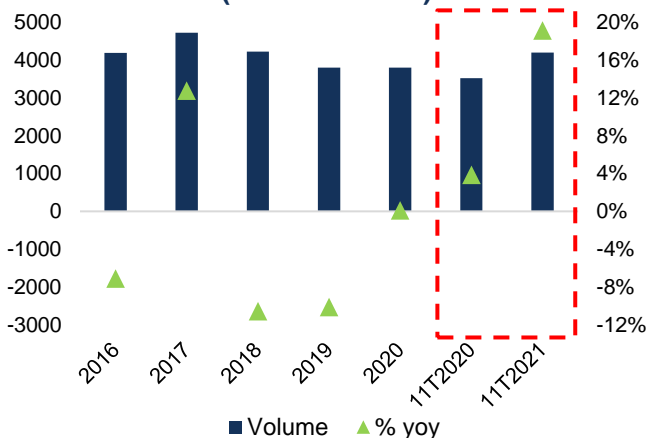
Fertilizer import volume in 11M2021 of Vietnam reached ~4,200.1 thousand tons, +19.1% YoY, mainly attributable to the nitrogen fertilizer segment (Urea and SA fertilizers). Urea import volume in 11M2021 reached ~283.2 thousand tons (+297.5% YoY), with a peak increase in the period of May-July 2021, in the context of thin supply (urea production plants entered the maintenance phase) and increased demand for the summer-autumn rice crop. This amount of urea was originated from Indonesia, which increased its market share of imported fertilizers of Vietnam to 4.7% (+3.6 ppt YoY).

Likewise, imported SA fertilizer in 11M2021 reached ~1,264.5, +40.7% YoY, mainly in the May-August period to (1) compensate for the shortage of domestic urea supply and (2) meet the domestic demand for NPK production. The import volume is mostly due to China (accounting for more than 70% of SA fertilizer imported volumes of Vietnam), which increase its market share of imported fertilizers of Vietnam to 44.2% (+3.0 ppt YoY).

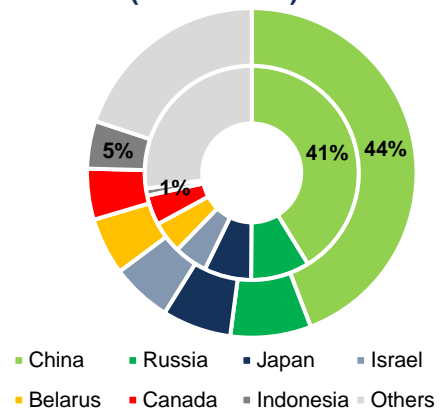
**Import volume of main fertilizers of Vietnam (thousand tons)**



**Fertilizer import volume of Vietnam (thousand tons)**



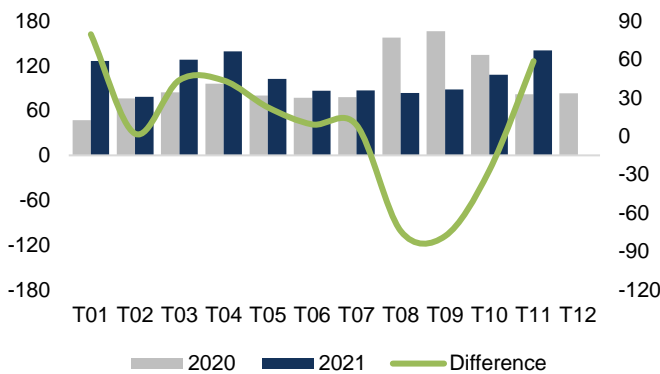
**Fertilizer imports by country in Vietnam 11M2021 (outer circle) vs 11M2020 (inner circle)**



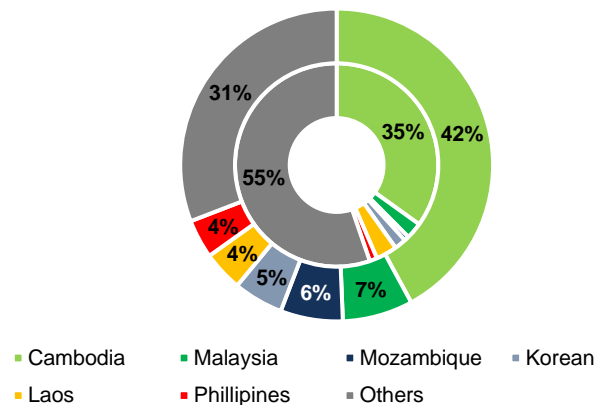
Sources: General Department of Vietnam Customs, FPTs Research

In addition, Vietnam's fertilizer export volume in 11M2021 reached 1,169 thousand tons (+8.2% YoY), increased sharply in 7M2021 in most major fertilizers such as Urea (+86.0%), DAP (+755.1% YoY), and NPK (+28.2% YoY). Nonetheless, the export situation became worse in the period August-October 2021 when Directive 16 entered into force in 19 southern provinces and cities due to the COVID-19 outbreak in Q3 2021, which negatively impacted the transportation and export of fertilizers. Regarding exports, Southeast Asia is still Vietnam's main export market, mainly in countries such as Cambodia, Malaysia, Laos, etc.

**Fertilizer export volume of Vietnam in 11M2021 (thousand tons)**



**Fertilizer exports by country in 11M2021 (outer circle) vs 11M2020 (inner circle)**

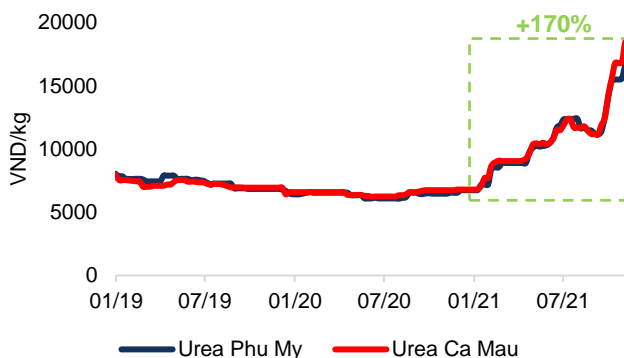


Sources: General Department of Vietnam Customs, FPTs Research

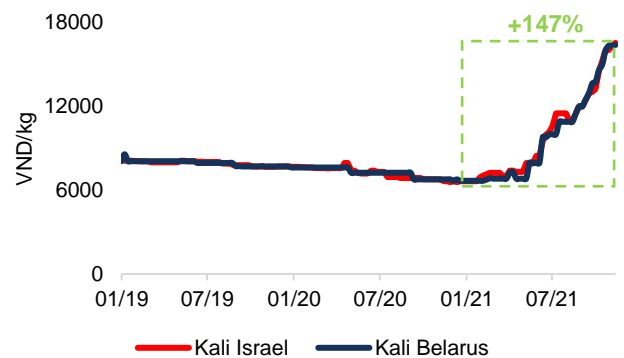
## 2. Fertilizer prices soared due to high demand and tight supply

The domestic fertilizer price in 2021 witnessed an unprecedented increase in history as the domestic price was aligned with the world price. Specifically, commonly used fertilizers such as Urea, DAP, Potash and NPK all have an increase of 70-170% compared to the beginning of 2021.

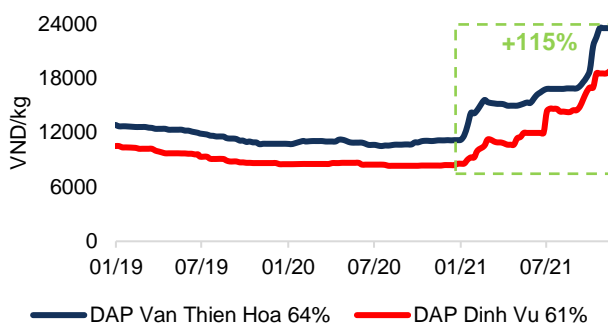
**Urea prices at HCM city (2019-2021)**



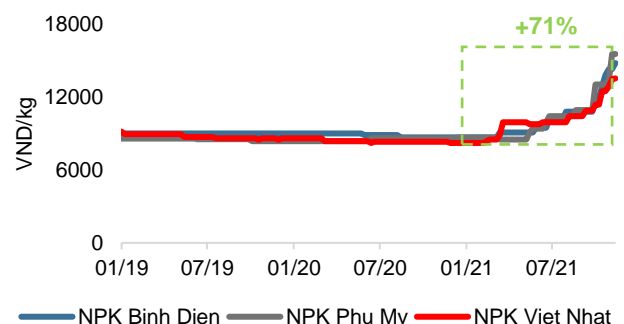
**Potash prices at HCM city (2019-2021)**



**DAP prices at HCM city (2019-2021)**



**NPK prices at HCM city (2019-2021)**

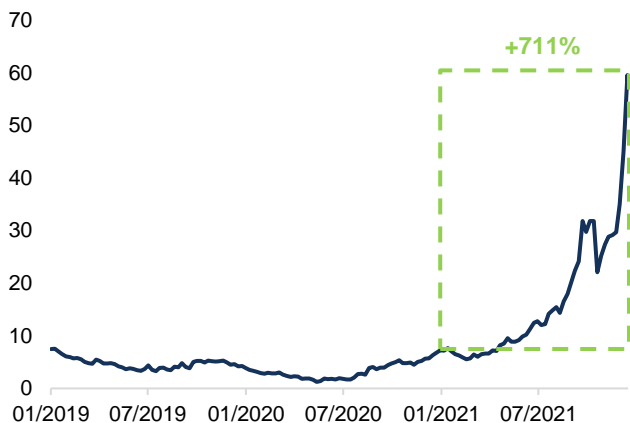


Sources: Agromonitor, FPTs Research

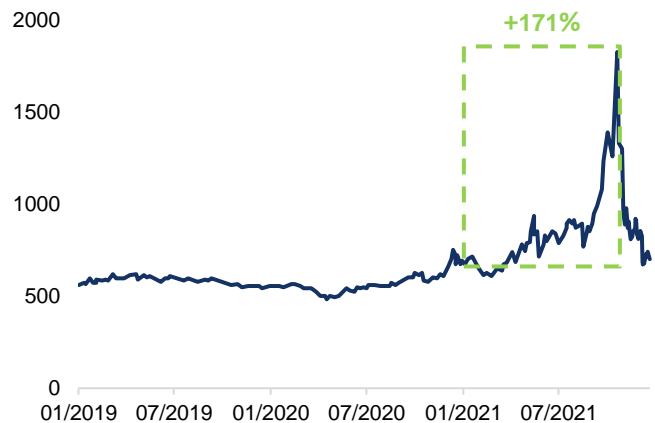
For **Urea fertilizer**, the main reason is due to the tight supply in Europe and China (accounting for a total of ~20.5% of the world's urea exports in 2020) in light of increased demand as major regions such as Europe, Brazil, and India approached the crop season in early Q4 2021.

Regarding the supply, in Europe, many urea plants were forced to cut or even halt production in light of elevated gas prices. This resulted from low storage levels and uncertainties surrounding Russia cutting its natural gas export to Europe. Similarly, the supply of urea in China diminished dramatically, on account of a shortage of coal supply (~75% of urea produced in China is made with coal) hiking coal price up. This is attributable to 3 main reasons: (1) a dual control policy, (2) floods in Shanxi province (accounted for ~1/3 of China's coal production) and (3) an unofficial ban of Australian coal in Q4 2020.

**Dutch TTF natural gas price (USD/mmBTU)**



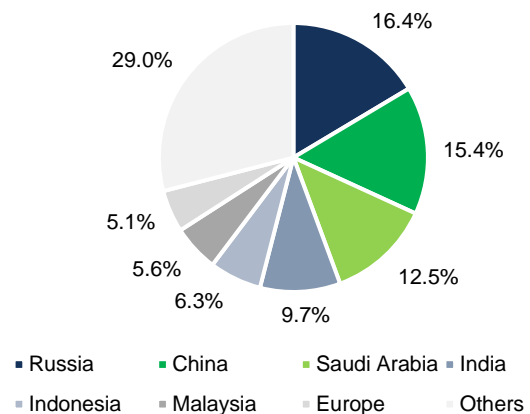
**China thermal coal price (RMB/ton)**



Sources: Bloomberg, Zhengzhou Commodity Exchange, FPTs Research

Moreover, the export-cutting policies of China, Russia and Egypt - three of the world's four largest urea exporters - have been detrimental to the global supply of urea. China has implemented an export ban of urea since October 15, 2021, which is expected to last until June 2022 to ensure domestic demand. Meanwhile, Russia has set an export quota of urea fertilizer of about 5.9 million tons, equivalent to ~81% of the country's urea exports during the period between December 1<sup>st</sup>, 2021 and May 31<sup>st</sup>, 2022. In Egypt, export supply from urea producers has also been tightened since December 2021 as the government asked domestic Urea producers to supply 65% of their production to the domestic market (an increase of 10% compared to the previous request).

**Top urea exporting countries by trade value (2020)**



Sources: UN Comtrade, FPTs Research

Regarding **DAP fertilizer**, prices have been buoyed by strong input costs (sulfur, apatite, and ammonia), coupled with strong demand for maize and soybeans (phosphate-intensive crops) in Brazil, the United States, and China. Particularly, the demand for soybean for animal feed in China has recently increased as China rolls out rebuilding its hogs herd after being killed by African swine fever. Furthermore, the US's countervailing tax imposed on DAP fertilizers imported from Morocco and Russia in April 2021 and China's export ban of phosphate fertilizer in October 2021 has also contributed to the increase in DAP price.

In the domestic market, the DAP has been in tight supply since August 2021 due to the scarcity of apatite ore, leading Vietnam to depend more on imports. However, the current imposition of safeguard duty on imported



DAP fertilizers has caused the opposite effect, establishing a higher level of the domestic price compared to the world price.

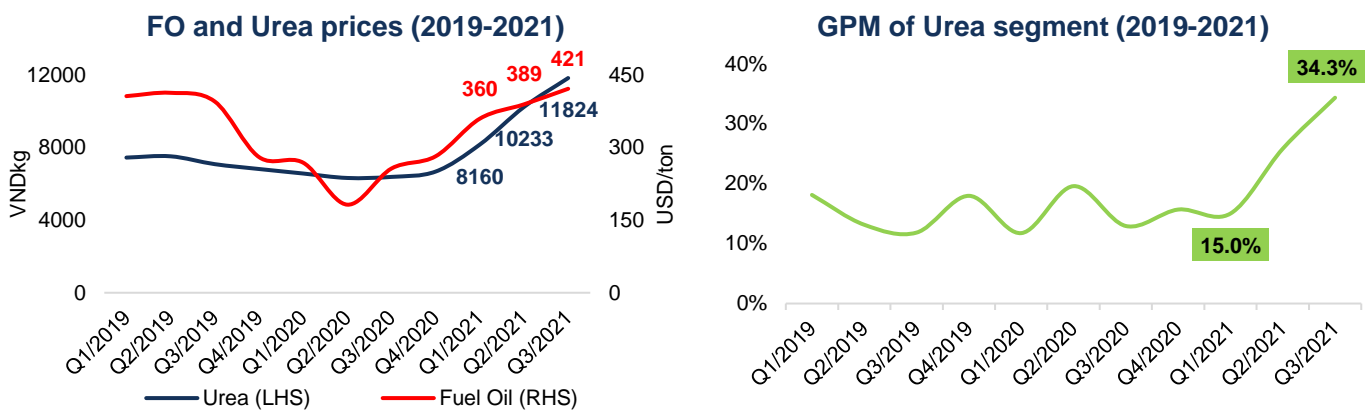
As for **potash fertilizer**, price escalation is a consequence of the EU's sanctions in June 2021, and the UK, US, and Canada's sanctions in August 2021 for potash fertilizers imported from Belarus - the second largest country in terms of exports, accounting for ~22.8% of total world exports.

In terms of **NPK fertilizer**, the increasing price of input fertilizers causes NPK prices to act in a similar trend, but at a slower pace than input fertilizers. The explanation for that is NPK producers usually procure input fertilizers 1-3 months in advance.

### 3. Contrasting gross profit margin (GPM) trajectories: upward trend of the urea segment and downward trend of the NPK segment.

#### 3.1. Urea segment – GPM improved thanks to higher selling price

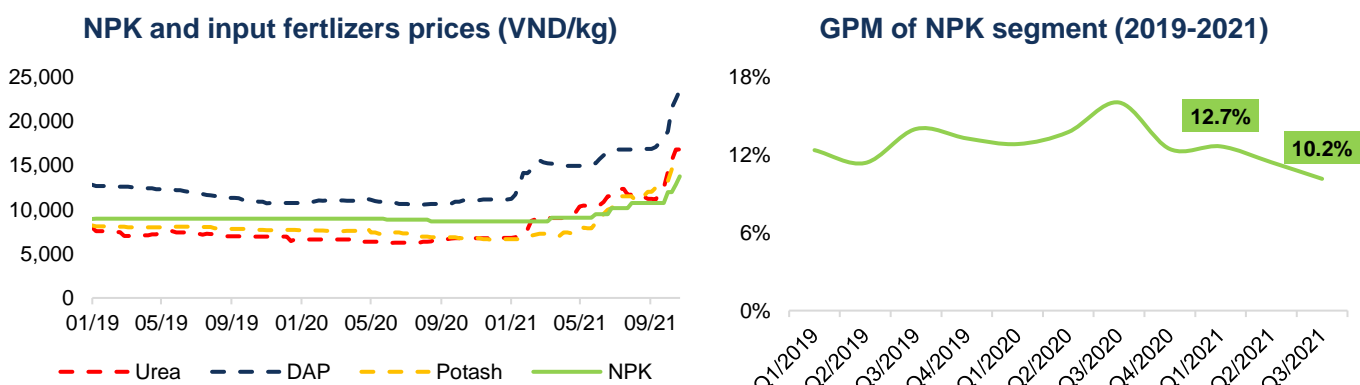
GPM increased gradually in 9M2021, from 15% in Q1 2021 to 34.3% in Q3 2021 due to higher urea price outweighed higher natural gas price (anchored to FO oil price and Brent oil price), which is beneficial to nitrogen-based urea producers such as DCM and DPM. The average price of Urea was ~ VND 11,800/ton in Q3 2021, up 44.9% compared to the average level in Q1 2021, higher than the 17.2% increase of FO oil.



Sources: Agromonitor, Bloomberg, FPT S Research

#### 3.2. NPK segment – GPM declined as NPK fertilizer price lagged behind input fertilizers

In contrast to the Urea segment, the GPM of the NPK segment decreased gradually in 9M2021, from 12.7% in Q1 2021 to 10.2% in Q3 2021. This is because the price of NPK tends to lag behind the prices of inputs such as Urea/SA, DAP, and Potash, each account for ~20-25% in NPK production cost structure. Therefore, the price of NPK fertilizers has only grown ~70.4% YTD, lower than the increases in all input fertilizers, which has more than doubled since the beginning of the year.

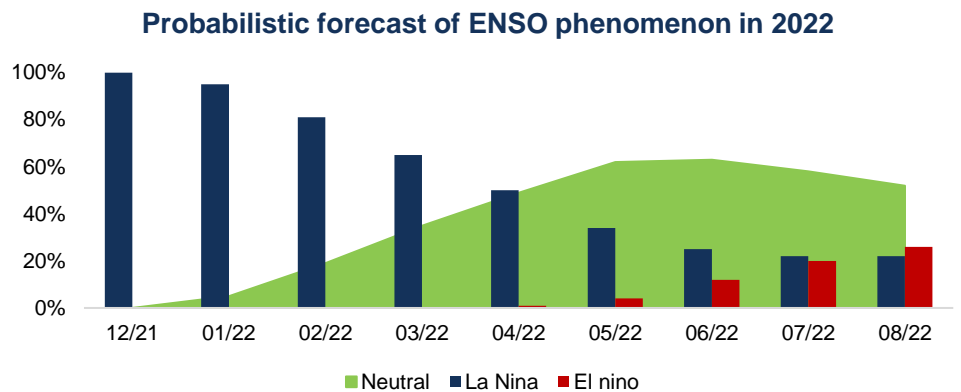


Sources: Agromonitor, FPT S Research

## II. 2022 OUTLOOK – Urea fertilizer price cools down, GPM of fertilizer industry shrinks

### 1. Fertilizer demand remains strong thanks to continued favorable weather conditions

Fertilizer demand is likely to be strong in 2022 as La Nina is predicted to recur in early 2022 before transitioning to a neutral state until June 2022. Specifically, we forecast that the fertilizer demand in 2022 will increase by ~ 2% YoY.



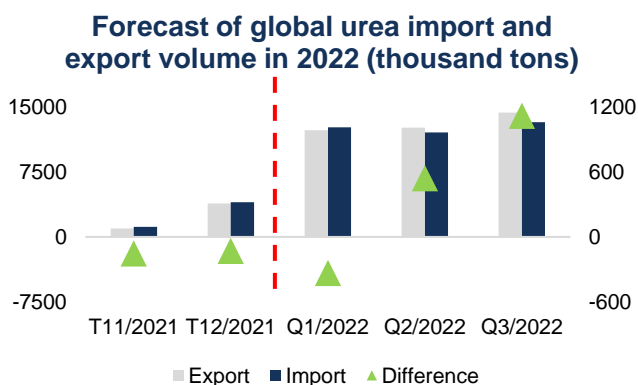
Sources: IRI, FPTs Research

### 2. Urea price cools down, GPM of fertilizer industry shrinks

We believe the fertilizer industry's GPM in 2022 is expected to be lower because of the negative impact of the Urea segment. The GPM of the Urea segment will decline in 2022 as the price of urea is forecast to decrease (~5.5% YoY) by a higher extent than the decrease in gas prices.

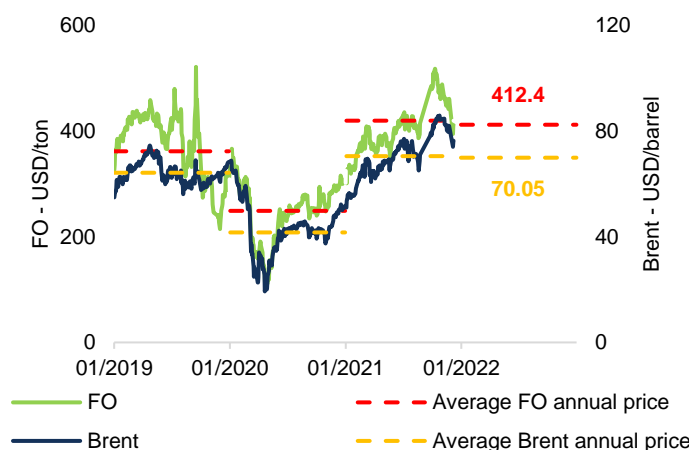
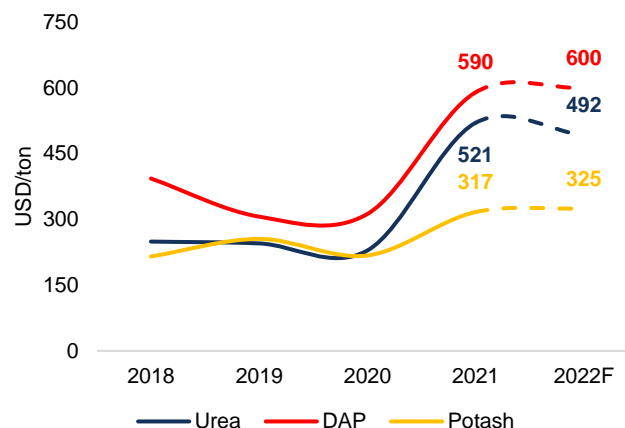
In terms of price movements, Urea fertilizers are expected to decrease slightly in Q1 2021 as the supply of Urea in China will remain low even though the Chinese government has regulated domestic coal prices since mid-October 2021, enabling some coal-based urea manufacturers to increase operating capacity. The main reason is that many gas-based Urea plants in China (accounting for ~25% of China's urea production) will close in the period between November 2021 and February 2022 when gas is diverted for domestic heating. Therefore, we believe that China is unlikely to reopen to exports at least until the end of Q1 2022.

Subsequently, Urea price will adjust downward dramatically in Q2 2022, from USD 725/ton in Q1 2021 to USD 420/ton in Q2 2022, corresponding to the supply shortage being overcome. This is attributed to (1) the global urea capacity is expected to increase by ~5.5 million tons/year in 1H2022 as new urea plants will come into operation (mostly in Russia and India) and (2) low demand for urea import in India and Brazil during the off-season. Urea prices are forecast to remain low in Q3 2022, reaching around USD 360-375/ton when export restrictions in Russia and China are lifted.



Sources: Argus Media, FPTs Research

Meanwhile, we reckon that the gas prices of gas-based urea plants anchored to the FO and Brent oil prices are forecast to stay at a high level, putting pressure on the GPM of the urea segment. Accordingly, the price of FO oil and Brent oil in 2022 is expected to reach USD 412.4/ton (-1.9% YoY) and USD 70.05/barrel (-0.8% YoY). The GPM of the urea segment is expected to be lower than that in 2021, under the assumption that the gas prices are predicted to fall less than urea prices.

**Forecast of FO and Brent crude oil prices (2019-2022F)**

**Forecast of fertilizers prices in 2022**


Sources: EIA, WorldBank, Argus Media, Bloomberg, FPTs Research

For the NPK segment, we believe that GPM will be higher in 2022 as we consider the NPK selling prices are relatively stable and the urea prices are forecast to decrease by 5.5% YoY. We believe that the decrease in urea prices would more than compensate for the increase in the prices of DAP and Potash - increasing at 1.7% YoY and 2.6% YoY respectively, hence, reducing the production cost of NPK.

Although fertilizer demand is predicted to remain strong in 2022, we expect the fertilizer industry will have a **NEGATIVE** outlook compared to the high level in 2021. This is due to the expected decline of the fertilizer industry's GPM, primarily from the urea segment as urea prices are forecast to decrease by 5.5% YoY.

### III. UPDATES ON LISTED COMPANIES

Ticker	Market cap. at Jan 7, 2022 (bil VND)	Revenue 9M2021 (bil VND)	NPAT 9M2021 (bill VND)	NPAT growth	NPAT margin	ROE (TTM)	P/E
DCM	18,582	6,048.0	804.2	+74.6%	13.3%	15.8%	18.19x

**Ca Mau Petroleum Fertilizer Joint Stock Company (HSX: DCM)** is a leading Urea exporter in Vietnam with granular urea as its main product.

In 9M2021, DCM's revenue grew by 14.2% YoY, thanks to the upward trend of the world urea price. Meanwhile, DCM's 9M2021 sales volume decreased by 20.6%, due to the recurring COVID-19 outbreak in Q3 2021 in the Southwest region, affecting consumption in that market and export market - two main distribution areas of DCM. DCM's 9M2021 profit increased by ~74.6% YoY thanks to a high increase in urea price, more than offset an increase in natural gas prices anchored to FO oil and Brent oil prices.

**Prospect:** Under the forecast of urea price to remain high in Q1 2022, we expect that DCM's financial results will be optimistic until the end of Q1 2022. Nevertheless, DCM's financial results will deteriorate from Q2 2022. In addition, DCM's NPK fertilizer production line, which came into operation in April 2021, is a potential segment for DCM to increase its profit in the future.

DPM	18,334	7,699.8	1,502.7	+151.6%	19.5%	18.6%	11.74x
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**PetroVietnam Fertilizer and Chemicals Corporation (HSX: DPM)** possesses a large distribution network ranging from the North to the South, dominating the urea market share in the North, Central & Central Highlands and Southeast regions.

In 9M2021, DPM's revenue and profit increased by 32.1% YoY and 151.6% YoY respectively, thanks to higher prices of urea, NPK, and chemical products. Urea fertilizers consumption in 9M2021 of DPM decreased by 16% YoY and was less affected than DCM by the COVID-19 outbreak in Q3 2021. In contrast, NPK consumption jumped by 69% YoY in 9M2021 since DPM increased the operating capacity of its NPK plant (currently not at full capacity).

**Prospect:** Under the forecast of urea price to remain high in Q1 2022, we expect that DPM's financial results will be optimistic until the end of Q1/2022. Nevertheless, DPM's financial results will deteriorate from Q2 2022.

<b>BFC</b>	<b>1,835</b>	<b>5,893.5</b>	<b>184.2</b>	<b>+52.9%</b>	<b>3.1%</b>	<b>14.6%</b>	<b>10.23x</b>
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**Binh Dien Fertilizer Joint Stock Company (HSX: BFC)**, which is a leader in the NPK segment with 15.6% market share, produces high-quality NPK fertilizers.

In 9M2021, BFC's revenue increased by 49.4% YoY thanks to (1) the increase in NPK fertilizer price in line with the input fertilizer price and (2) the increase in output in 9M2021 of 42.7% YoY because of faster growth in high-quality NPK segment compared to the overall growth rate of the NPK segment.

**Prospect:** We expect that the GPM of the NPK segment in 2022 will improve compared to 2021 thanks to the expected Urea price to cool down, reducing the production cost of NPK.



# TIRE INDUSTRY

## POTENTIAL PROSPECTS DUE TO THE FALL OF NATURAL RUBBER PRICE

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### **2021 Review**

- The Tire industry was negatively affected by a sharp increase in rubber price, which is a consequence of:
  - (1) Unfavorable weather lead to a shortage of natural rubber supply
  - (2) An increase in oil price pushing up the price of synthetic rubber
- Nevertheless, the tire consumption in 2021 was higher than that in 2020, thanks to the recovery of the logistics & transportation industry.

### **2022 Outlook**

The outlook for the tire industry in 2022 will be more optimistic than 2021 under the following expectations:

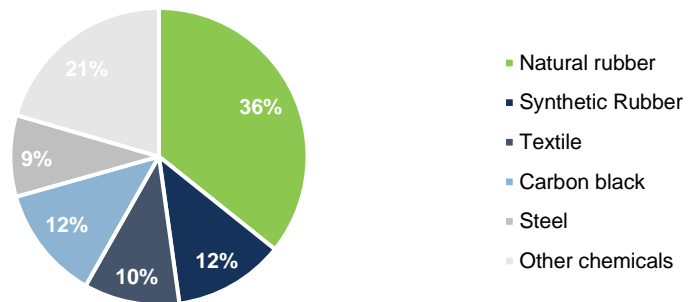
- Rubber price is expected to cool down compared to 2021, thereby improving the gross profit margin of the tire industry.
- Tire consumption is expected to grow because of (1) the recovery of the logistics & transportation industry and (2) rising demand for automobiles.

## I. 2021 REVIEW – Negatively affected by rising material prices

### 1. Material prices increased in 2021

Raw materials account for about 70% of production cost in the tire industry, in which natural rubber and synthetic rubber are two main components, contributing to 36% and 12% respectively. In 2021, rubber prices have increased sharply, hampering the gross profit margin of the tire industry.

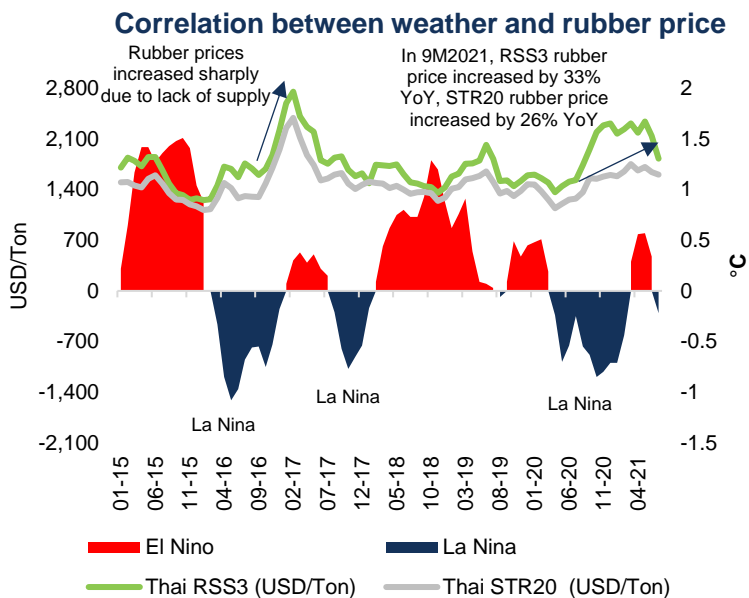
**Material cost structure**



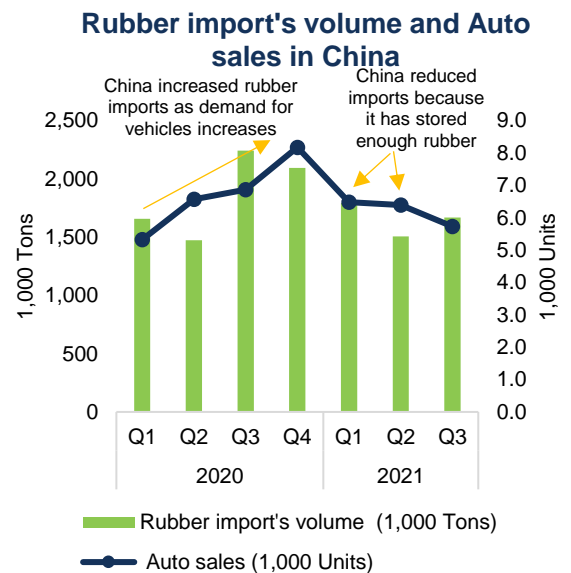
Sources: DRC, CSM

#### 1.1. Natural rubber price increased due to unfavorable weather conditions and an increase in demand

During the period between July 2020 and October 2021, natural rubber's prices have increased dramatically as the supply couldn't meet China's rubber demand for the auto industry<sup>1</sup>. Specifically, La Nina phenomenon engendered floods in Thailand<sup>2</sup> in July 2020 and September 2021, diminishing the supply of natural rubber, while China initiated to import natural rubber in order to meet the auto industry's demand. Consequently, both kinds of natural rubbers commonly used to make tires, RSS3 and TSR20, hit a high of average USD 2,103/Ton (+33% YoY) and USD 1,664/Ton (+26% YoY) respectively in 9M2021.



Sources: CPC, ANRPC, CAAM, GACC



<sup>1</sup> China accounts for more than 40% of global natural rubber imports, other countries have minimum shares. Therefore, China's demand for rubber imports will have an impact on world rubber prices.

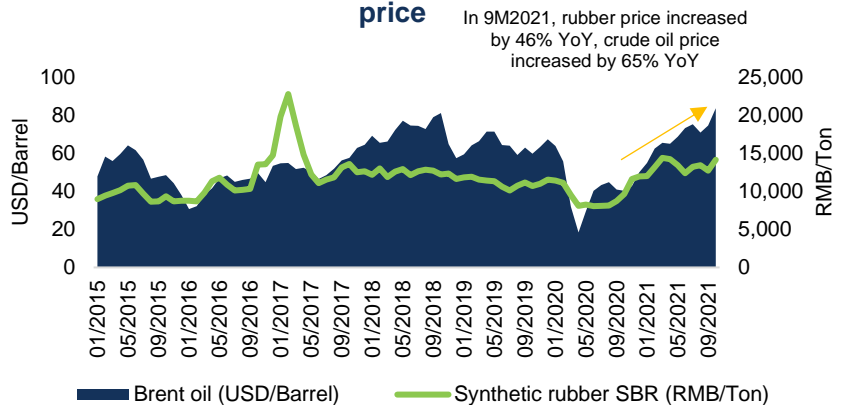
<sup>2</sup> Thailand accounts for more than 30% of global natural rubber production, followed by Indonesia and Vietnam with 26% and 8% respectively. Therefore, adverse weather events in Thailand negatively affect the total output of natural rubber.

## 1.2. Synthetic rubber prices increase due to rising crude oil prices.

The price of synthetic rubber is correlated with the price of crude oil, since synthetic rubber is a petrochemical product. In 2021, synthetic rubber prices rose noticeably corresponding to the crude oil price movements in light of global economic recovery.

Consequently, in 9M2021, crude oil price was at USD 67/barrel, up 65% YoY, giving rise to an increase in the price of synthetic rubber, reaching a high of 13,200 RMB/Ton (46% YoY).

### Correlation between crude oil and synthetic rubber price



Sources: EIA, CEIC

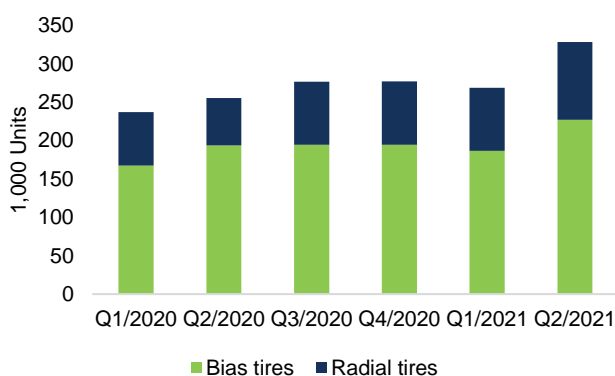
## 2. Tire consumption recovered in 2021

Within the scope of the analysis, we focus only on car & truck tires and analyze the industry based on the data from 2 listed joint stock companies: CSM and DRC.

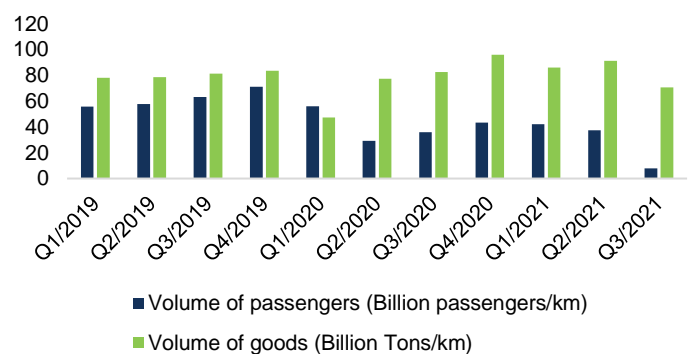
### 2.1. The first half of the year – domestic consumption recovered, exports were less positive

**Regarding domestic consumption**, domestic tire sales increased in Q1 2021 and Q2 2021, reaching 269 thousand units (+13% YoY) and 329 thousand units (+29% YoY). This strong result is attributed to increased demand for tire replacement as logistics & transportation were improved in Vietnam. Particularly, freight transport has been recovered when Vietnam gradually loosened social distancing, the freight volume reached an average of 89 billion tons/km (+142% YoY) in 6M2021.

#### Domestic tire sales volume

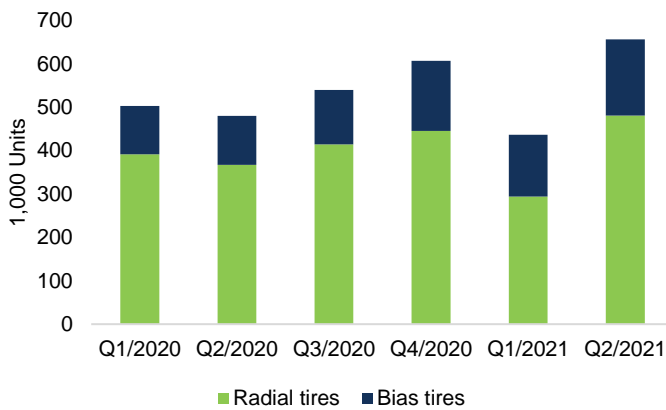
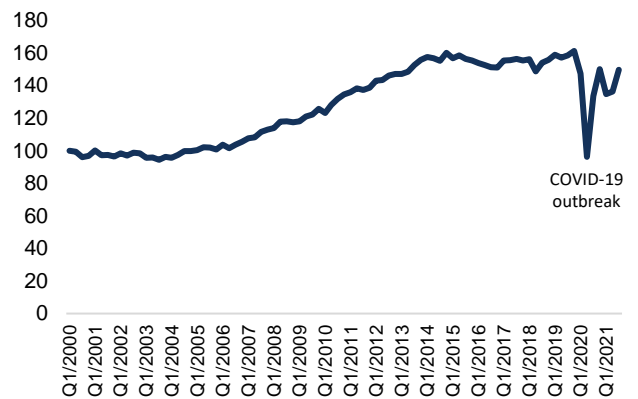


#### Volume of goods and passengers in Vietnam



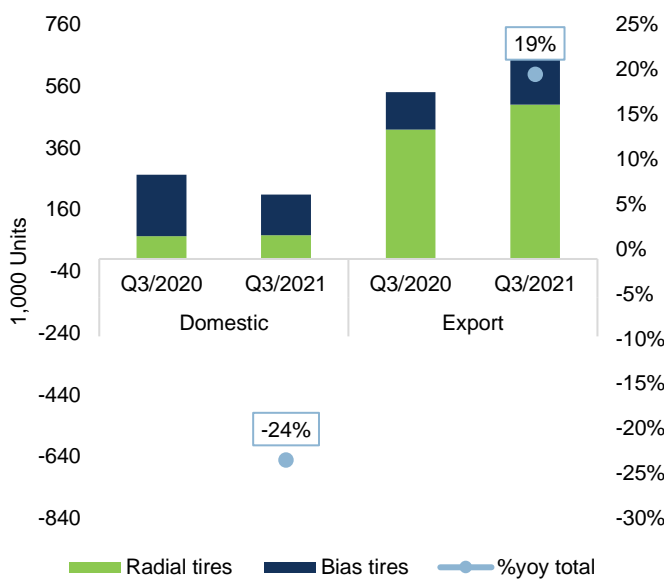
Sources: DRC, CSM, GSO

**Regarding exports**, the US is Vietnam's main tire export market, which accounts for more than 50% of the total export value. In Q1 2021, export volume was only 437 thousand units (-13% YoY), due to low demand for tire replacement. The explanation for this is transportation industry in the US was hurt by the recurrent outbreak of COVID-19, with the number of new infections peaking in January 2021. However, in Q2 2021, export volume recovered strongly and reached 656 thousand units (+36% YoY), which was attributed to the quick recovery of the transport industry in the US as consumer demand rebounded after the previous COVID-19 outbreak.

**Tire export volume**

**U.S. cass freight index**


Sources: DRC, CSM, FHWA

## 2.2. The second half of the year – Domestic consumption was pessimistic due to the recurrent COVID-19 outbreak, while exports remained positive

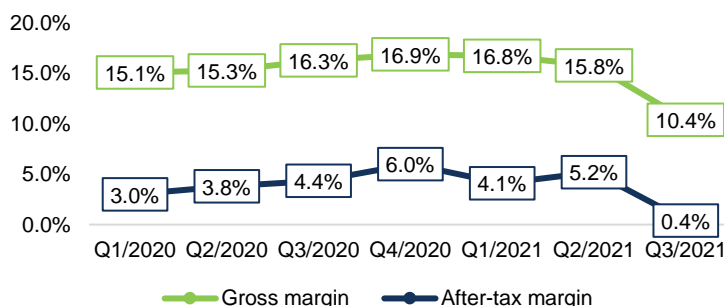
**Domestic/export tire sales in Q3 2021**


Sources: DRC, CSM

**Regarding domestic consumption**, in Q3 2021, domestic tire consumption was negatively impacted due to the government's implementation of social distancing when the COVID-19 pandemic continued to break out in July, 2021. As a result, domestic tire sales reached only 209,000 units (-24% YoY) in Q3 2021. **In terms of exports**, tire consumption, however, demonstrated a good result, reaching 645 thousand units (+19% YoY) in Q3 2021, since the US has maintained the open-door policy for economic recovery.

**In conclusion**, the total consumption volume in 2021 has been improved in comparison with 2020, thanks to the rapid recovery of the domestic and export markets despite the impact of the re-emergence of the COVID-19 pandemic. The total sales volume of car tires in both markets reached 2.5 million tires in 9M2021 (+11% YoY).

## 3. Profit margins are negatively impacted by increased material prices and increased logistics cost

**Gross margin and after-tax margin of the tire industry**


Sources: DRC, CSM

In 2021, the tire companies were negatively affected by the high price of input materials and high shipping costs. During the period between Q1 2021 and Q2 2021, gross profit margin decreased slightly because tire companies increased selling prices, improving gross profit margin in the short term.

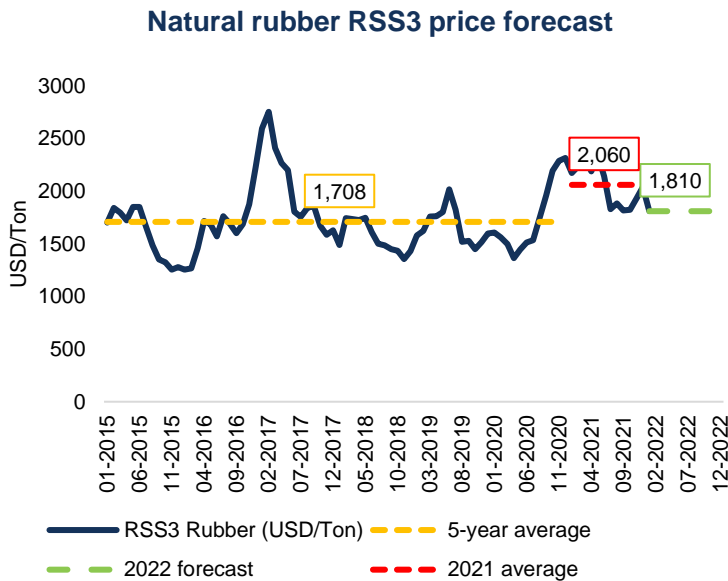
In Q3 2021, the after-tax profit margin was only 0.4% (compared to Q3 2020, the after-tax profit margin reached 4.4%), obviously reflecting the double impact of increases in input prices and logistics costs.



## II. 2022 OUTLOOK – Positive expectations due to cooling material prices and tire demand recovering to pre – pandemic levels

### 1. Material prices will gradually decrease but remain high in 2022

The price of natural rubber will cool down, but still at a high level

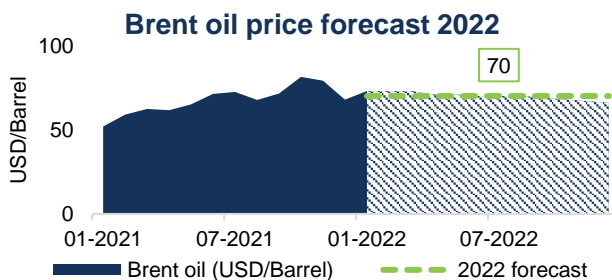


Sources: ANRPC, WorldBank

According to the Association of Natural Rubber Producing Countries – ANRPC, the price of natural rubber will gradually decrease, however, it's still higher than the 5-year average in the period 2015 – 2020. The reason is that there will be a shortage of supply due to the prolonged La Nina phenomenon in combination with the demand for automobiles in China will surge.

According to WorldBank's forecast, the price of natural rubber RSS3 in 2022 will reach an average of USD 1,810/Ton, down -12% YoY, but still ~6% higher than the 5-year average in the period 2015 – 2020. **Therefore, we believe that the gross profit margin of the tire industry will improve in 2022.**

### Synthetic rubber will cool down due to the oil price forecast to decrease

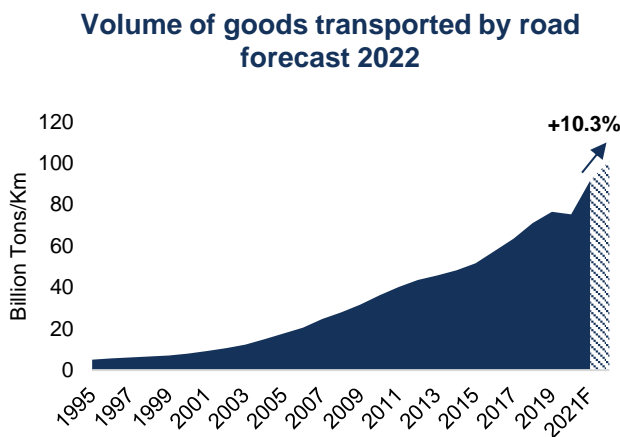


Sources: EIA

Synthetic rubber prices will gradually cool down, however, will remain at a high level in 2022 as its price is anchored to oil prices. According to EIA, oil prices are forecast to decrease to the average price of USD 70/Barrel in 2022, under the assumption of increased crude oil production by OPEC+ and the U.S.

## 2. Tire sales outlook and policies to watch out for in 2022

### 2.1. Logistics & transportation recovers, automobiles demand increases, tire consumption will increase

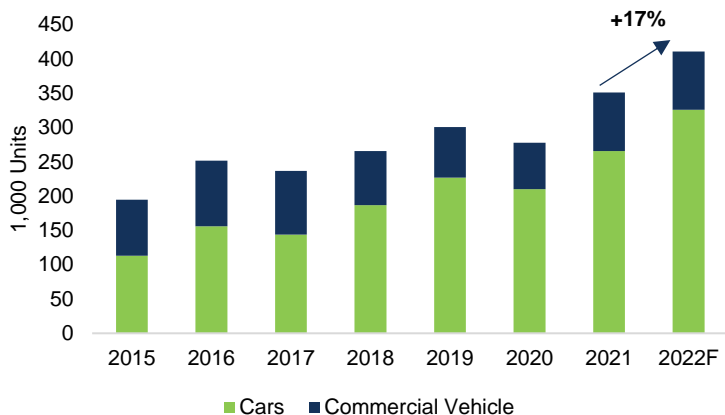


Sources: GSO, BMI

We suggest the positive prospect of tire consumption in 2022, which is attributable to 2 main reasons: (1) transportation is forecast to recover strongly, and (2) demand for automobiles increased thanks to the government policy of reducing registration fees.

According to BMI, the volume of goods transported by road will hit an average of 101 billion tons/km (+10.3% YoY) due to (1) recovery of import and export activities when Vietnam starts to recover after the COVID-19 pandemic, and (2) increased consumption demand. Based on the above forecast, we believe that tire replacement will be optimistic in 2022.

### Automobiles sales in Vietnam forecast 2022



Sources: VAMA, BMI

In addition, we expect auto demand to recover in 2022 because of the effect of the Decree 103/2021/ND-CP, which stipulates to reduce automobile registration tax by 50% for domestically manufactured and assembled vehicles. This decree is applicable until May 31, 2022.

According to BMI, total car sales in 2022 are forecast to reach 411 thousand units (+17% YoY), of which the main driving force comes from passenger cars of 326 thousand units (+22% YoY). In our view, the original equipment manufacturer (OEMs) segment will benefit from this decree.

## 2.2. Policies to watch closely in 2022

### ► Anti-dumping tax policy on Chinese tires in Brazil – Positive

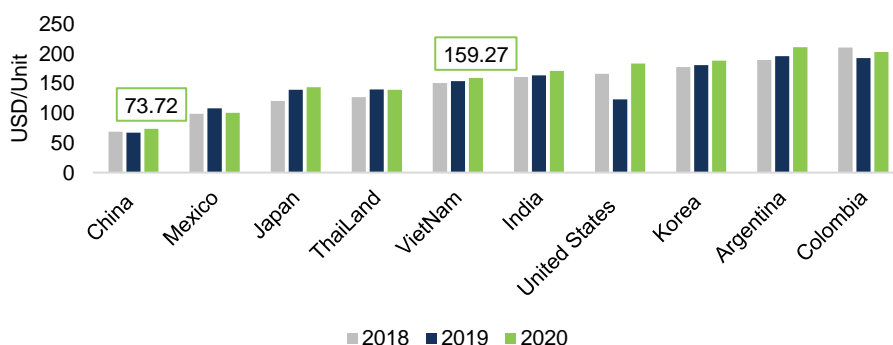
Type of tires	Country	Tax rate (March of 2021)
Tires for heavy trucks, buses	China	USD 1.05 – 2.59/kg
	Japan	USD 0.32 – 1.59/kg
	Korea	
	Russia	
	Thailand	

Sources: GECEX

During the period between 2015 and September 2019, Brazil applied anti-dumping tax on Chinese tires with a tax rate of USD 0.3–4/kg for heavy trucks, buses and construction vehicles tires. In May 2021, Brazil continued to impose anti-dumping tax on Chinese tires at the rate of USD 1.05–2.59/kg within 5 years, promoting the competitiveness of Vietnamese tires.

In 2020, the price of Chinese tires imported into Brazil is 2 times lower than that of Vietnamese tires. According to our estimates<sup>3</sup>, the price of Chinese tires after imposition of the tax will be in the range of USD 136 – 228/Unit, approximately 16% higher than Vietnamese tires (an average price of USD 157/Unit).

### Truck & bus tires price by country in the three-year period (2018 - 2020)



Sources: UNComtrade, FPTs estimated

<sup>3</sup> Tires have many different specifications, hence, will have different weights. We use a common truck tire of 22.5 inches with an average weight of 60 kg (according to Oponeo.co.uk) for our estimate.

► **Anti-dumping tax policy in the US – Negative**

On May 24<sup>th</sup>, 2021, U.S Department of Commerce (DOC) concluded that a few FDI tire enterprises in Vietnam did not dump tires for passenger cars tires (PCR) and light trucks tires (LTR). However, domestic tire enterprises are still subject to anti-dumping tax of 22.27% and anti-subsidy tax of 6.46%, which adversely influences the competitiveness of domestic enterprises in the US market.

Type of tires	Enterprises	Anti-dumping tax rate	Anti-subsidy tax rate
Passenger car tires (PCR) and Light truck tires (LTR)	Sailun Group	0%	6.23%
	Kenda Rubber	0%	6.46%
	Bridgestone Corporation	0%	6.46%
	Kumho Tire	0%	7.89%
	The Yokohama Tyre	0%	6.46%
	Other Vietnamese enterprises	22.27%	6.46%

In our view, Vietnam's tire industry will be **OPTIMISTIC** compared to 2021, owing to two main factors:

- The price of natural rubber will cool down compared to 2021, although the price is still about ~6% higher than the average of 5 years 2015 – 2020. We expect the gross profit margin will be improved.
- Tire sales will be better in the domestic market thanks to the recovery of the logistics & transportation industry, as well as an increase in automobile consumption.

However, investors still need to be careful because the industry have not shown any obvious growth factors when rubber prices are forecast to remain high and the COVID-19 pandemic is still a major risk.

### III. UPDATES ON LISTED COMPANIES

Ticker	Market cap. at Jan 7, 2022 (bil VND)	Revenue 9M2021 (bil VND)	NPAT 9M2021 (bill VND)	NPAT growth	NPAT margin	ROE (TTM)	P/E
DRC	3,943	3,046	203.6	+38.5%	6.7%	18.1%	12.6x

DRC is a domestic tire company specializing in manufacturing all-steel Radial tires for heavy trucks and long – distance buses (TBR) with a capacity of 600,000 Units/year.

In 2021, DRC has been negatively affected by (1) Increased in raw material costs; (2) Increased logistics costs. Therefore, DRC's net profit margin in Q3 2021 recorded the lowest level after 2 years at 3.6%.

In 9M2021, despite being negatively affected, DRC still grows well compared to 2020. DRC's revenue and after-tax profit recored growth of ~20%, +38.5% respectively, this result thanks to (1) better tires sales; (2) increase tire's selling price in 2021.

**Prospect:** DRC has a positive prospect as DRC's tire consumption will benefit from (1) Brazil's imposition of anti-dumping duty on Chinese tires; (2) Positive demand for automobiles thanks to the government policy of 50% reduction in registration tax for domestically manufactured and assembled vehicles; (3) Road transport demand is expected to recover in 2022. However, DRC still has risks from (1) Rubber prices may increase in the short term due to supply shortage and remain high in in 2022; (2) Shipping costs are forecast to continue to increase.

CSM	1,937	3,484	7.5	-87.5%	0.2%	2.6%	57.5x
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CSM is a domestic tire company specializing in manufacturing Radial tires for cars (PCR) and light trucks (LTR) with a capacity of 1,200,000 Units/year. In addition, CSM is also a tire assembler for TireCo Inc. in North America, this helps to ensure output for CSM.

In 2021, CSM suffered more severe damage than its peers (1) CSM is still subject to anti-dumping and anti-subsidy tax in the US with a tax rate of nearly 29%; (2) Increased in raw material costs; (3) Increased logistics costs; (4) Vietnam's continued social distancing in Q3 2021 has a negative impact on domestic consumption.

In 9M2021, CSM's revenue still grows +0.5% YoY thanks to the stable consumption source of TireCo Inc. However, after – tax profit dropped sharply -87.5% YoY due to those above impacts, especially in Q3 2021, CSM's net profit after tax recorded a loss of VND -28.4 billion for the first time.

**Prospect:** CSM has a rather negative outlook as (1) continues to be affected by anti-dumping and anti-subsidy duties in the US; (2) raw material prices will continue to remain high in 2022; (3) Shipping costs are forecast to continue to increase.

An oil rig is silhouetted against a vibrant sunset sky with orange and pink clouds. The rig's complex structure of pipes, ladders, and cranes is visible against the bright background.

# OIL & GAS INDUSTRY

## POSITIVE PROSPECT AS DEMAND RECOVERS WITH A HIGH LEVEL OF OIL PRICES

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### 2021 Review

In 2021, crude oil prices increased sharply by 70% YoY, leading to the recovery of enterprises in the Oil & Gas industry. However, the social distancing period in Q3 2021 somewhat inhibited that recovery, specifically:

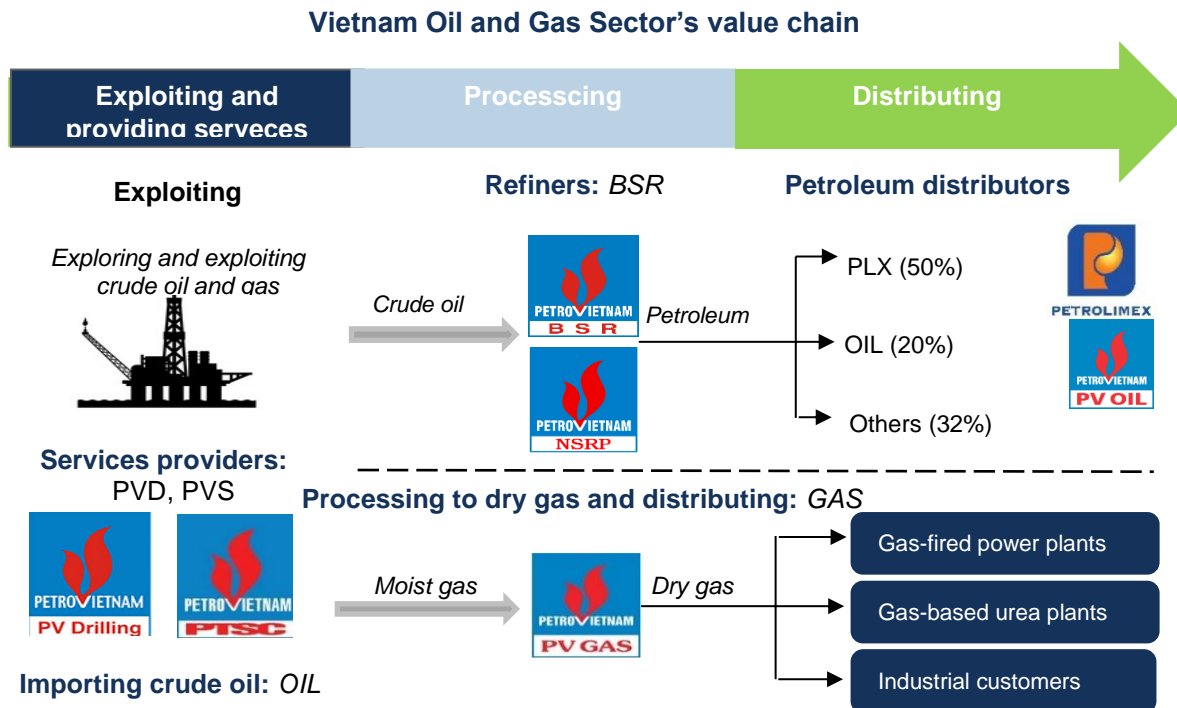
- **Providing exploited services enterprises:** Financial results recovered more slowly than crude oil prices because of the delay in exploitation contracts.
- **Refining and Petroleum Consuming enterprises:** Financial results recovered in line with the upward trend of crude oil prices, despite declined consumption caused by social distancing.
- **Gas distribution enterprises:** Financial results exhibited a slight growth since the increase in gas prices corresponding to oil prices movements outweighed the decrease in output by the COVID-19 pandemic.

### 2022 Outlook

We suggest that the outlook for the oil and gas industry in 2022 would be positive thanks to the high level of oil prices and the recovery of consumption demand after the pandemic, specifically:

- **Providing exploited services enterprises:** A positive outlook with respect to boosting exploration and production activities, thanks to stable high oil prices
- **Refining and Petroleum Consuming enterprises:** Recovery in demand facilitates profit growth
- **Gas distribution enterprises:** an optimistic prospect thanks to the recovery of demand in the context of expected high gas prices

## I. CHARACTERISTICS OF VIETNAM OIL AND GAS SECTOR – Business model differs among enterprise groups



Vietnam's oil and gas industry is relatively peculiar and less-competitive because each enterprise goes deep into operations in different segments, constructing a complete value chain. Under the characteristics of each business segment, we divided the oil and gas industry into 3 groups, delineated as follows:

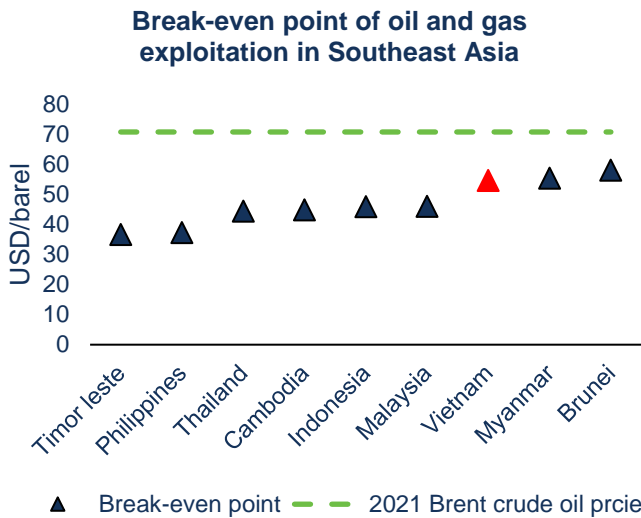
**Providing exploited services enterprises:** participate in oil and gas exploration and extraction activities from oil fields. Within the scope of the article, we focus on analyzing services providers and temporarily ignore exploration businesses because these businesses have not been listed on the stock exchange. For service providers (rig supply, technical design, and maintenance), the two most important factors are operational efficiency and service unit price. The high volatility of crude oil prices will spur new investment and exploiting activities that bring workloads and high unit prices for services and vice versa. However, the business results of this group lag behind short-term fluctuations in crude oil prices because businesses operate under signed contracts (6-12 months). Crude oil price movements will only be reflected in future contracts.

**Refining and Petroleum Consuming enterprises:** participate in the process of refining crude oil into usable products such as gasoline, diesel, etc. in refineries and subsequently distribute these products to customer. The demand for petroleum is the decisive factor for this group. According to the Government's regulations, oil refineries can only be sold through petrol and oil dealers, therefore, this group is comprised of two main business activities:

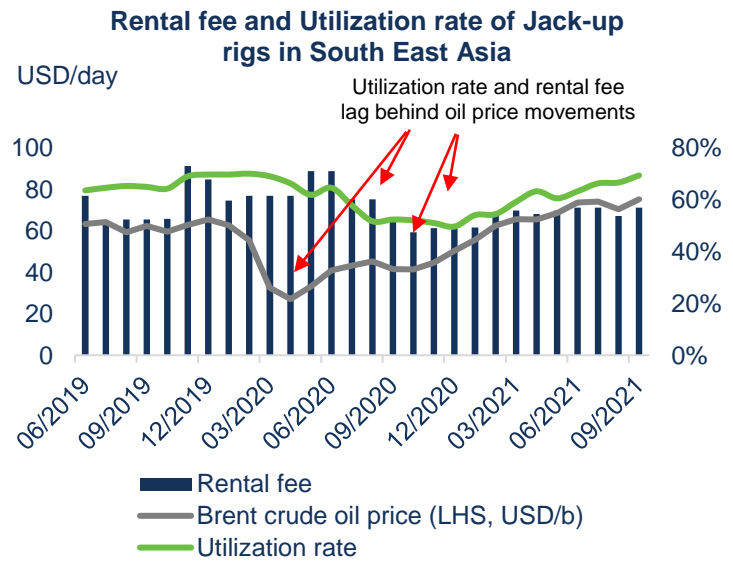
- **Refiners:** Refine crude oil input to finished petroleum products output. The group's profit will result from the gap between crude oil and petroleum products (Crack spread).
- **Petroleum distributors:** Import finished petroleum products at refineries and distributing them to consumers. The profit growth of this group comes from increasing production and reducing operating costs, with the selling price calculated at the base price prescribed by the Government.
- **Gas distribution enterprises:** participate in transporting wet natural gas from gas fields by pipeline, processing into dry gas, and supplying to consumption sources. There are two major sources of income of gas distribution enterprises: (1) Gas transportation fee and (2) the difference between the dry gas price and the wellhead price.

## II. 2021 REVIEW – Vietnam's oil and gas industry recovered on the rise of oil prices however, still restrained by social distancing.

### 1. Providing exploited services enterprises: Financial results recovered more slowly than crude oil price because of the delay in exploitation contracts.



Sources: PVN, FPTs Research



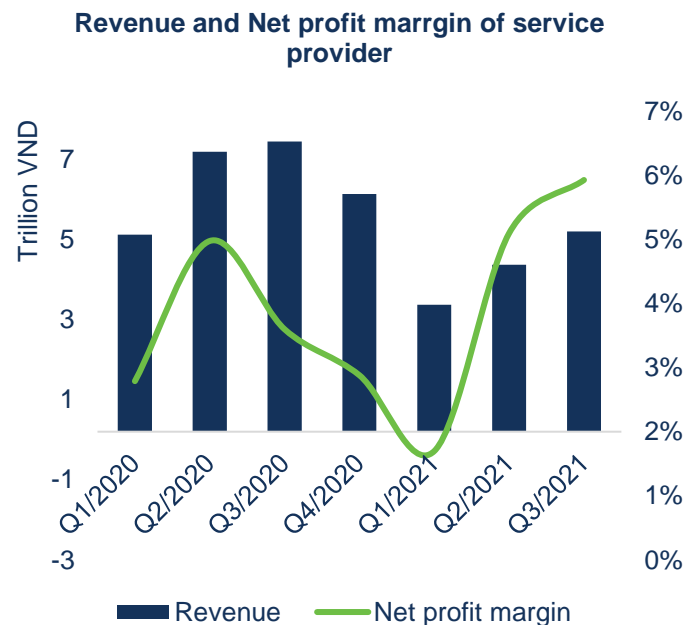
Sources: IHS Markit, FPTs Research

The average price of Brent oil in 2021 reached 70.64 USD/barrel, higher than the exploitation break-even point in Southeast Asia (about USD 48/barrel), thereby stimulating oil and gas exploitation activities. Nonetheless, because of the lag between rental contracts and crude oil price, both rents and average utilization in 11M2021 remained lower than the same period last year.

In terms of month-to-month data, the average rig rental price in November 2021 reached USD 71/day, up 15% from the low level in January 2021. The utilization was aligned with this trend, reaching 64.9% in 11/2021 compared to the low level of 49.7% at the beginning of the year, indicating the improvement in the service providers' performance.

In 9M2021, the results of providing exploited services enterprises recorded a decline regardless of the high level of oil prices. Revenue and NPAT reached 12,332 billion dong (-35.6% YoY) and 562 billion dong (-24.5 % YoY) respectively. The decline resulted from the lag in contracts, demonstrated by the high capacity utilization in 9M2020 under the old workload and unit price as oil prices were high at the end of 2019, in contrast with the low capacity utilization in Q1 2021 due to lack of contracts.

In 2021, the utilization rate has seen an improvement in quarterly revenue and NPAT, thanks to new drilling contracts in Q3 and Q4 2021.



Sources: PVD, PVS, FPTs Research

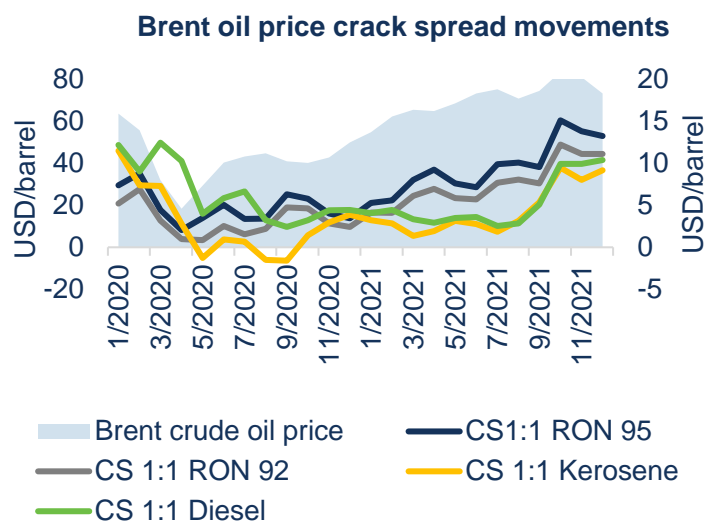
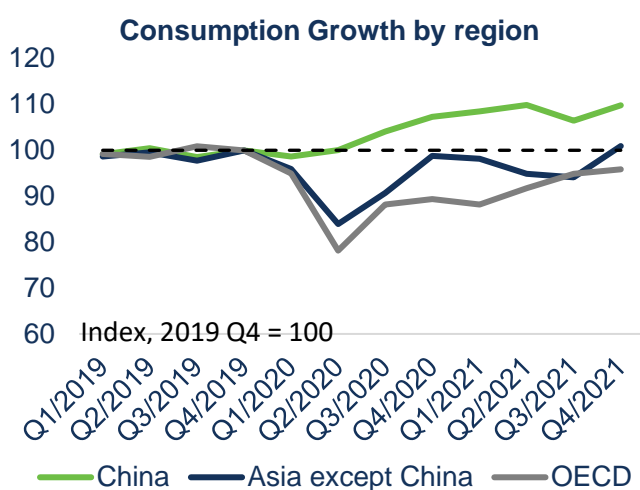
## 2. Refining and Petroleum Consuming enterprises: Financial results recovered in line with the upward trend of crude oil price movements, despite decreased consumption caused by social distancing

### 2.1. Refiners: Positive results thanks to oil price recovery and widening crack spread

Refineries have witnessed the highest growth in 2021, owing to **(1) the upward momentum of oil prices** and **(2) the widening gap between the price of petroleum products and the price of crude oil (Crack spread)**.

Refineries are required to maintain a minimum inventory of 30 days' estimated consumption. In addition, the price of petroleum products is always aligned with the crude oil prices. Hence, the upward trend of crude oil prices in 2021 has made refineries' inventories cheaper than the crude oil in the market, boosting the profits of refineries.

The strong increase in consumption in China has enabled the crack spread of petroleum products to expand in 2021. Particularly, the crack spread of RON 95, RON 92, and Diesel products reached USD 14.25/barrel, USD 11.51/barrel, and USD 10.07/barrel in Q4 2021 respectively, up 1.7 times for gasoline and 1.4 times for Diesel compared to the beginning of the year.

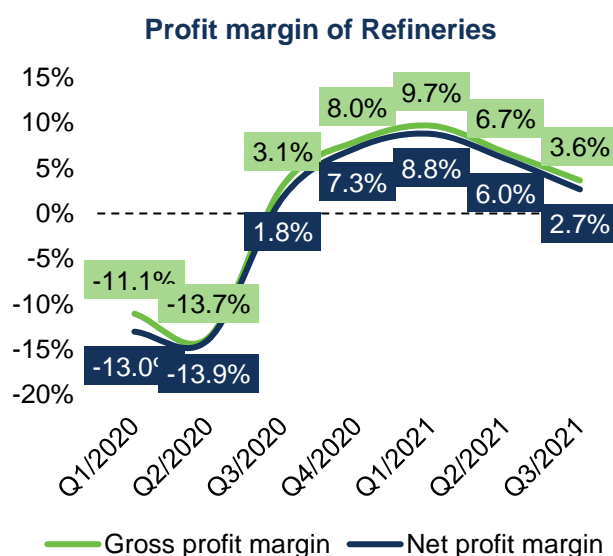


Sources: EIA, Platts, FPTs Research

In 1H2021, the combination of rising oil prices and widening crack spreads contributed positive financial results. Specifically, the gross profit margin of the oil refinery company reached 9.7% in Q1 2021 and 6.7% in Q2 2021 respectively.

Crack spread in the region, especially gasoline, continued to expand in Q3 2021. Nevertheless, the social distancing in the country caused a sharp drop in domestic gasoline consumption. The gross profit margin of the domestic oil refineries in Q3 2021 decreased to 3.6%, due to (1) a reduction in the capacity utilization of the oil refineries to 80% in Q3 2021 and (2) an increase in the proportion of Diesel oil (lower profit margin than gasoline) in the product structure as gasoline is difficult to consume.

The performance of the oil refineries in Q4 2021 improved when the economy reopened. Accordingly, refineries gradually increased their capacity to 100%, and crack spread on the market continued to widen, especially in Diesel and Flight Fuel.



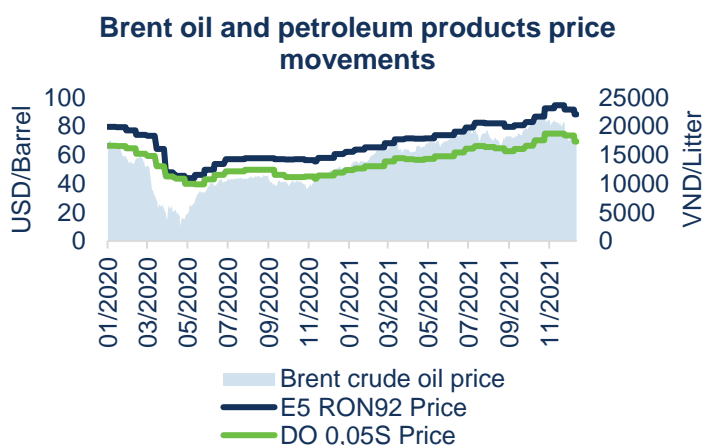
Sources: BSR, FPTs Research



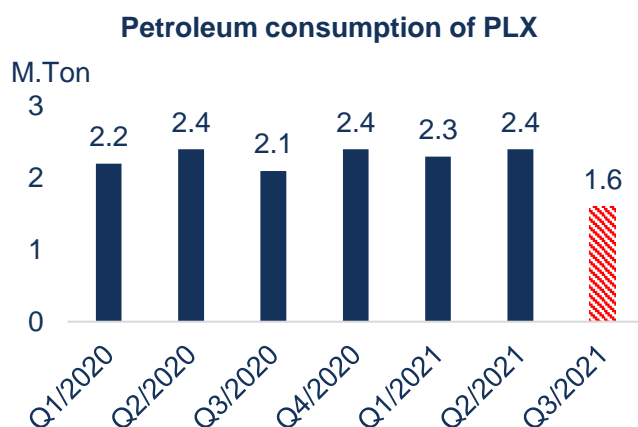
## 2.2. Petroleum distributors: Retail prices continuously increased sharply, bringing positive results, despite consumption was negatively impacted by the social distancing

**Petrol retail price increased dramatically:** The domestic retail price of gasoline, benchmarked against the base price, has continuously been adjusted upward in 2021, following the increase in world crude oil prices and regional gasoline prices. Prices of RON 92 gasoline and Diesel oil reached VND 22,080/liter (+38.5% YTD) and VND 16,320/liter (+41.3% YTD) respectively.

**Consumption volume declined because of the COVID-19 pandemic:** The domestic petroleum demand grew slightly during 1H2021 due to the lack of social distancing as enacted in April 2020. However, in Q3 2021, gasoline consumption was negatively affected by provinces/cities that implemented strict social distancing according to Directive 16. PLX's gasoline consumption (~ 49% market share) exhibited a minimal increase of 1.5% in 1H2021, however, a moderate drop of 22.8% YoY in Q3 2021, contributing a total decrease of 6.2% YoY in 9M2021.



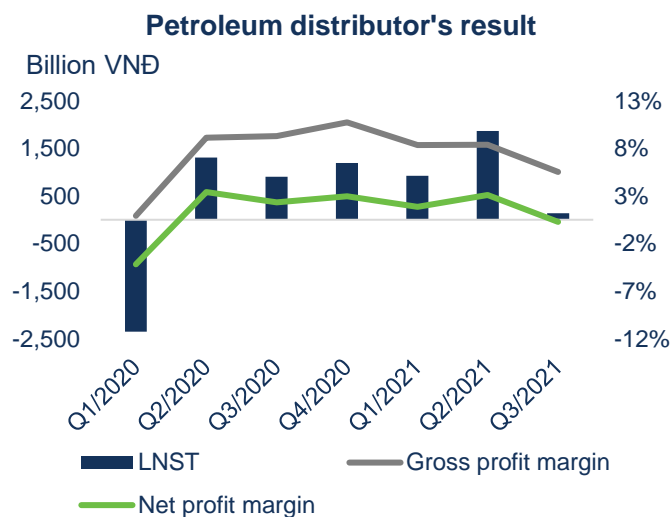
Sources: Bloomberg, MOIT, FPTS Research



Sources: PLX, FPTS Research

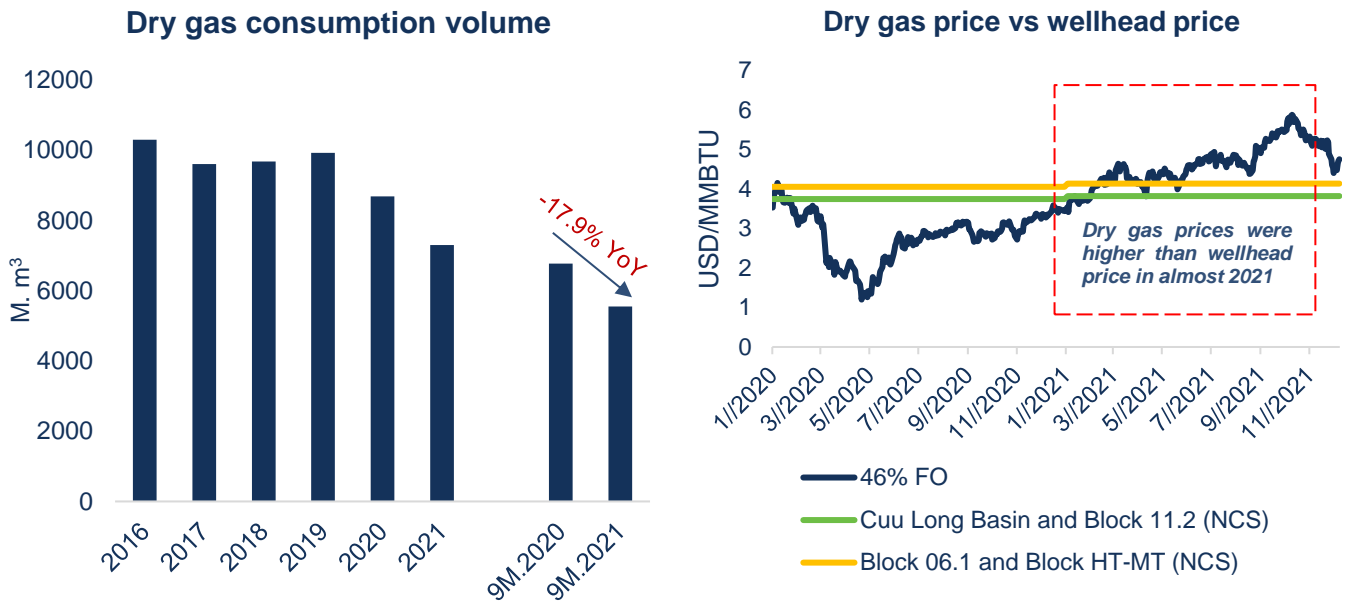
The financial results of petroleum distribution businesses in 9M2021 were strong when NPAT reached VND 2,931 billion compared to a net loss of VND 138.4 billion in 9M2020. In Q2 2021, NPAT reached a record high ~ VND 1,868 billion (+ 42.8% YoY).

In Q3 2021, NPAT of distribution enterprises only stood at VND 136 billion (-85% YoY) with a margin of 0.32%, lower than the average quarterly rate ~2.3%. The decline is attributable to lower consumption and increased fixed costs such as depreciation and labor cost because of 3 on-site model.



Sources: PLX, OIL, FPTS Research

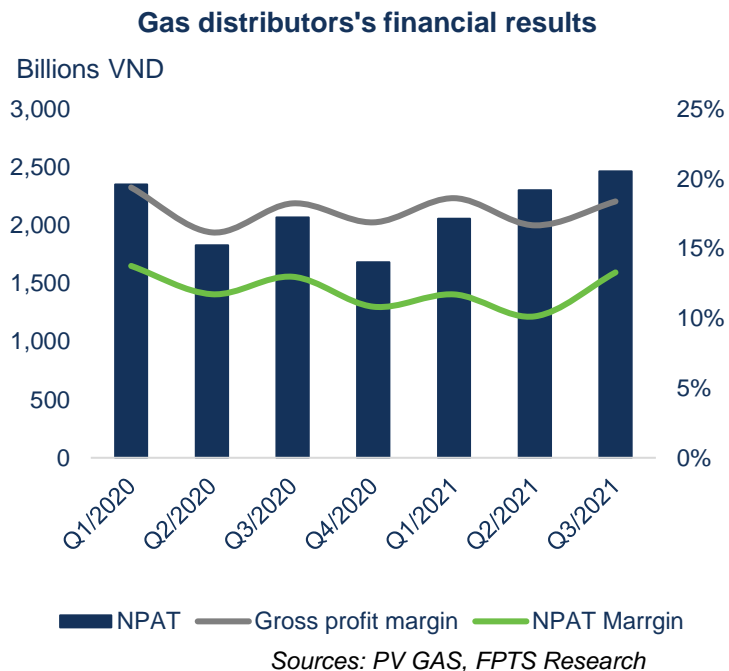
### 3. Gas distribution enterprises: Strong financial results dry gas price increases in line with the uptrend of crude oil prices, more than offset the decrease in output caused by COVID-19



**Dry gas consumption volume decreased by 17.9% in 9M2021, resulted from a reduction in demand.** The volume of dry gas consumed in 9M2021 reached 5,555 million m<sup>3</sup>, down 17.9% compared to that in 9M2020. The decrease in dry gas production was a consequence of a 25% decrease YoY in the gas mobilization for power as the demand for electricity decreased sharply due to the epidemic and gas power was competed by hydroelectricity and renewable energy.

**Dry gas price above the wellhead price is a bright spot for gas distribution companies.** Vietnamese gas price is calculated by 46%\*MFO. In 2021, the MFO price increases corresponding to the crude oil prices, pushing the dry gas price up to average 4.5 USD/MMBTU in 2021, +64.9% compared to 2.7 USD/MMBTU in 2020 and higher wellhead prices at two main gas fields (average 4 USD/MMBTU). The dry gas prices above the wellhead price enabled gas distributors to gain more profits from the spread beside the transportation fees.

Although mobilized gas output dropped sharply in 9M2021, the sharp increase in dry gas price in line with oil price outweighed the shortfall in output, improving slightly the 9M2021 results of gas distribution enterprises. The revenue and NPAT in 9M2021 of gas distribution enterprises reached VND 58,815 billion and VND 6,822 billion, respectively, up 21% and 9.2% over the same period.



### III. 2022 OUTLOOK – Positive prospects thanks to stable high oil prices and demand recovery

As mentioned in the oil price outlook section, the average Brent oil price in 2022 is forecast to reach 70.08 USD/barrel (-0.4% YoY), remaining at a high level, thereby resulting in (1) a positive outlook for exploration and production activities in Southeast Asia and (2) a high level of gasoline and gas prices. Besides, demand recovery from low levels in 2021 will be the driving force for refineries, petroleum and gas distribution enterprises.

#### 1. Providing exploiting services enterprises: a positive outlook thanks to a high level of oil prices, which boost exploration and production activities

Under the Brent oil price forecast to average USD 70.08/barrel in 2022, much higher than the breakeven point in Southeast Asia (about USD 48/barrel), we suggest that exploration and exploitation activities will be active in 2022 in Southeast Asia. It could be seen that new drilling contracts signed from Q4 2021 for the whole year of 2022, which are signs of vibrant exploration and exploitation activities. **We propose a POSITIVE outlook for businesses in the exploration and exploitation services sector as the 2022 business results are forecast to recover from the 2021 lows.**

#### Operation schedule of PVD's drilling rigs:

Oil rig	Q1/21	Q2/21	Q3/21	Q4/21	Q1/22	Q2/22	Q3/22	Q4/22
PVD I		Vietsovpetro			Vietsovpetro			
PVD II	Vietsovpetro		Hoang Long JOC		Extend option/Potential contract			
PVD III	Kris Energy		JPVC		Respol (Malaysia)			
PVD IV	Eni		TL JOC		Extend option/Potential contract			
TAD					Shell (Brunei)			
PVD XI					GBRS			

Inactive
  Assured/Occurring contract
  Extend option/Potential contract

Sources: PVD, FPTs Research

#### 2. Refineries and petroleum distribution enterprises: Demand recovery facilitates profit growth

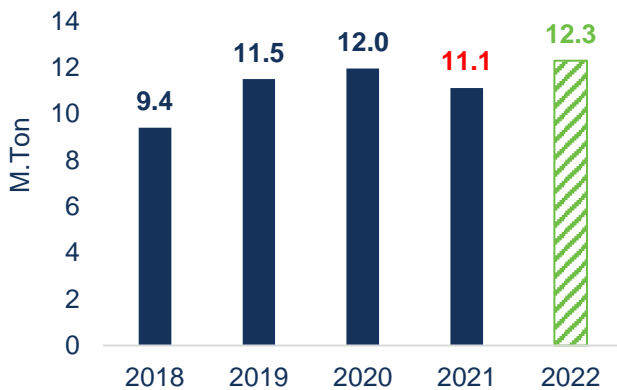
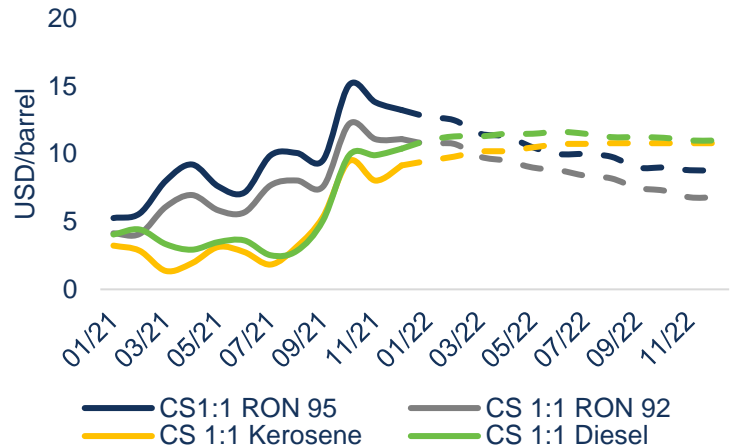
We expect that the economy will recover and the social distancing will ease in 2022, which in turn, induces the petroleum demand recovery of 7.5% YoY in 2022 from the 2021 lows, and facilitates the profit growth of refineries and petroleum distributors.

##### 2.1. Refineries: Petroleum demand recovery boosts refinery capacity and crack spread

Crude oil price movements in 2022 are expected to be stable, enabling (1) enterprises to control input prices and (2) crack spread not to fluctuate erratically. Under the prediction that domestic consumption will recover, we estimate:

**Refinery capacity will gradually increase to ~106%:** In 2022, refineries will not undergo any major maintenance schedule as experienced in 2020 and 2021. The demand recovery is expected to boost the refinery capacity to ~106% (because domestic supply only meets 65-70% of domestic demand), and petroleum outputs by 11.1% YoY in 2022.

**Crack spread of Diesel and Jet fuel will rise:** In the COVID-19 pandemic, jet fuel demand has dropped significantly. This has led to a reduction in the proportion of jet fuel production and an increase in the proportion of Diesel, engendering the oversupply of Diesel as well as hampering on Diesel crack spread as a result. Under the expectation that jet fuel consumption will improve thanks to the recovery of the aviation and tourism sectors, we forecast that the Crack spread of jet fuel and Diesel will increase accordingly in 1H2022 before stabilizing. We forecast Crack spread for gasoline RON 92 - 95, Flight fuel and Diesel to be USD 10.5 - 12.3/barrel, USD 10.5/barrel, and USD 11.2/barrel respectively – up 11.3%, 143%, and 119.1% compared to 2021.

**Forecast for 2022 petroleum consumption**

**Forecast for 2022 petroleum Crack spread**


Sources: MOIT, FPTs Research

With the above catalysts, the financial results of the refineries are expected to be **OPTIMISTIC** in 2022.

## 2.2. Petroleum distributors: Expectations of recovery to the pre-pandemic periods

In 2022, petroleum consumption is forecast to recover to the pre-pandemic level, fostering a moderate growth of 7.5% YoY in petroleum distributors' revenue. NPAT is expected to recover about 15 - 20% because the proportion of fixed costs in the cost structure reduces when consumption is stable.

From January 2<sup>nd</sup>, 2022, the petrol prices calculation has changed (*according to Decree No. 95/2021/ND-CP*): (1) Petrol prices will be recalculated after 10 days instead of 15 days, (2) The domestic and imported gasoline prices are taken into account instead of only including the price of imported gasoline as in the past:

### Old calculation: recalculated after 15 days

**Base price = Market price + Transportation and insurance cost + Standard cost + Stabilization fund reserve + Standard profit + Tax + Other expenses**

### New calculation: recalculated after 10 days

**Base price = Import price x Import share + Domestic price x Domestic share**

#### Where:

- **Import price** = Market price + Transportation and insurance cost (from abroad) + Standard cost + Stabilization fund provision expense + Standard profit + Tax + Other expenses
- **Domestic price** = Market price + Transportation and insurance cost (from domestic refinery) + Standard cost + Stabilization fund provision expense + Standard profit + Tax + Other expenses
- **Import share & domestic share:** calculated based on the volume of imported petroleum and domestic petroleum in the previous quarter

*\*Taxes include: Import tax (applicable to import prices), excise tax, environment tax, value-added tax*

Sources: FPTs Research

This Decree somewhat helps petroleum distributors control input prices in line with changes in the world oil prices as well as reduce costs in order to stabilize the profit margin.

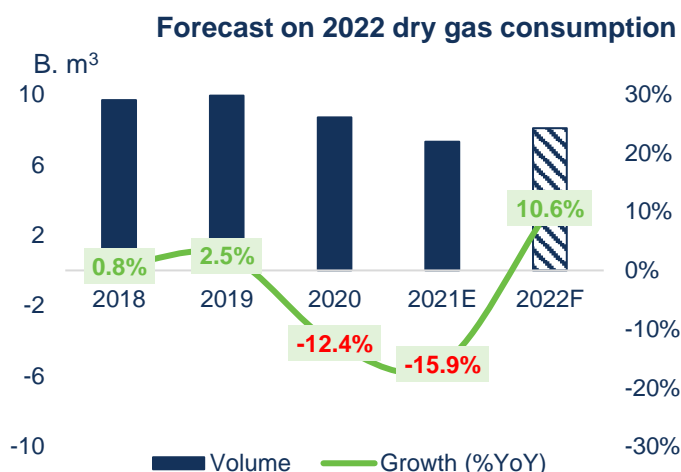
**We expect that the financial results of the petroleum distributors will gradually recover to the pre-pandemic level thanks to the recovery in demand. We suggest an **OPTIMISTIC** outlook for the petroleum distributors in 2022.**

### 3. Gas distribution enterprises: Positive outlook thanks to demand recovery besides high gas prices

In 2021, gas prices rebounded strongly corresponding to the Brent oil price movements. However, the output did not meet expectations because of the low demand. In 2022, we expect gas prices to remain high and results of natural gas distributors to grow thanks to the demand recovery:

**Selling price:** The Brent oil price anchored at a high of USD 70/barrel helps the gas price in 2022 to remain high, at an average of USD 4.5/MMBTU (equal to the 2021 price).

**Output:** In 2022, we forecast dry gas production to recover to 8.08 billion m<sup>3</sup>, up 10.6% from the 2021 lows thanks to gas mobilization for power supply when the economy reopens. However, dry gas output only reached 93% of the 2020 level because: (1) La Nina continues to exist in the first half of the year, benefitting hydropower industry, and (2) High gas prices make gas-fired power hardly compete with other power sources.



Sources: GAS, FPTs Research

Under the dry gas consumption recovery in the context of expected high gas prices, we suggest a **POSITIVE** prospect for gas distributors.

#### IV. UPDATES ON LISTED COMPANIES

Ticker	Market cap. at Jan 7, 2022 (bil VND)	Revenue 9M2021 (bil VND)	NPAT 9M2021 (bill VND)	NPAT growth	NPAT margin	ROE (TTM)	P/E
PVD	13,287	2,665	-13	-112.1%	-0.5%	0.10%	426.4x

**PVD** is an enterprise providing drilling rigs, technical services for drilling and wells, human resource supply services in the field of oil and gas drilling and wells (offshore and onshore). PVD's revenue fluctuates sharply over the years depending on the oil and gas exploration and production demand in Vietnam and Southeast Asia.

In 2021, PVD's result is negative due to the low rig utilization rate in Q1 2021. In the first 9M of the year, PVD recorded revenue of VND 2,665 billion, down 39.6% YoY, and a net loss of VND 13 billion. However, we see a recovery in the last months of the year when the jack-up rig efficiency in Q3 is 88% (compared to 55% at the beginning of the year) and new drilling contracts are signed until 2022.

**Prospect:** Stable crude oil price assumption about USD 70/barrel in 2022, higher than the break-even level of oil and gas exploitation in Southeast Asian countries (about USD 48/barrel), we expect oil and gas exploration and production activities to become active in the region, boosting drilling rigs demand, bringing growth prospects to PVD

BSR	75,342	66,592	3,998	N/A	6.0%	3.92%	13.64x
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**BSR** is the operator and trader of products from Dung Quat Refinery - the first oil refinery in Vietnam. BSR's business model is to refine crude oil into consumable products like gasoline, diesel, plastic pellets, etc. Crude oil price movements and the gap between petroleum products and crude oil prices (Crack spread) are factors that strongly affect BSR's business results.

In 2021, BSR's results are positive thanks to the rising price of oil and widening crack spread. In the first 9M of 2021, BSR recorded positive results with a net profit of VND 3,998 billion compared to a loss of VND 4,094

billion in 9M2021. The positive results came from oil prices increasing sharply, helped BSR's inventory become cheaper than the market, and the crack spread of products recovered. However, the recovery momentum did not continue in Q3 because the social distancing period negatively affected domestic petroleum demand, causing BSR to operate at a low capacity.

**Prospect:** We expect the recovery of petroleum consumption in 2022 will help BSR reach a capacity of 106%, to a stable level before the epidemic. The recovery of global petroleum demand helped the Crack spread to expand, especially the Crack spread of Diesel and jet fuel. Besides, the assumption that oil prices are stable at a high level, BSR will not face the risk of inventory price reduction when oil prices drop sharply.

<b>PLX</b>	<b>69,001</b>	<b>119,812</b>	<b>2,410</b>	<b>+90.5%</b>	<b>2.0%</b>	<b>3.24%</b>	<b>22.6x</b>
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**PLX** is the leading enterprise in the domestic distribution of petroleum products with a 50% market share. According to characteristics of the petroleum distribution segment in Vietnam, enterprises receive a profit of VND 300/liter of petrol consumed. Thanks to the strategy of focusing on retail, PLX has a much higher profit margin than other businesses operating in the domestic petroleum distribution segment.

In 2021, PLX recorded positive growth thanks to continuously increasing gasoline prices, however, growth was restrained by social distancing. PLX's NPAT in the first 9 months reached VND 2,410 billion + 90.5% YoY thanks to rising oil prices and recovering demand in 1H2020. However, the recovery momentum of PLX is no longer in 2H2021 when the whole country implements strict social distancing. PLX's Q3 2021 NPAT only reached VND 79.5 billion, -91.4% YoY.

**Prospect:** We expect gasoline consumption to recover thanks to the absence of strict social distancing, which will help PLX's revenue in 2022 grow slightly by 7.5% YoY. PLX's NPAT is expected to recover 20 – 25% to the pre-pandemic level

<b>GAS</b>	<b>205,750</b>	<b>58,815</b>	<b>6,822</b>	<b>+9.2%</b>	<b>11.6%</b>	<b>4.27%</b>	<b>24.5x</b>
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**GAS** is the only enterprise in Vietnam operating in the field of dry gas transportation, processing, and distribution. GAS transports moist gas from offshore to inland, processes moist gas into dry gas products, and distributes it to the market. GAS's business model is relatively stable thanks to a specific buying and selling price mechanism anchored to the MFO oil price, applying the floor price as the wellhead price. The company's profit comes from (1) Gas transportation fee, (2) The spread in the price of dry gas consumed and purchased wet gas.

In 2021, the increase in gas prices offset the decrease in consumption volume, helping GAS to record a slight growth. Dry gas consumption dropped by 17.9% in 9M2021 as demand was affected by social distancing. However, the sharp increase in MFO oil price helped the dry gas price to be higher than the wellhead price, bringing a part of the profit to compensate. GAS recorded slight growth in NPAT of 9.2% YoY (VND 6,822 billion) in 9M2021.

**Prospect:** With a view that oil prices are stable at a high level of ~\$70/barrel, gas prices will reach \$4.50/MMBTU, equal to gas prices in 2021. In terms of output, we forecast dry gas output will recover 10.6% YoY to 8.08 billion m<sup>3</sup> in 2022 and equal to 93% of gas consumption in 2020 thanks to gas mobilization for power supply recovery.

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