

Initial company report

DGC_Duc Giang Chemicals Group

BSC

03/06/2020

ON THE WAY UP

Recommendation Neutral

| | |
|-------------------------------|--------|
| Tu Nguyen tuntc@bsc.com.vn | |
| Target price | 43,200 |
| Current price | 38,900 |
| Upside | 11% |

| | |
|--------------------------------|-----|
| Duc Nguyen ducnt@bsc.com.vn | |
| Target price | N/A |
| Buy zone | N/A |

Market Data

| | |
|--------------------------|---------|
| Outstanding shares (mil) | 129.3 |
| Mkt cap (VND. bil) | 4,760 |
| High of 52 w | 43,000 |
| Avg Vol 10 days (share) | 274,325 |
| Foreign ownership | 0.87% |

Major shareholders (%)

| | |
|------------------|--------|
| Dao Huu Huyen | 17.83% |
| Vinachem | 8.85% |
| Ngo Thi Ngoc Lan | 6.79% |
| Dao Huu Kha | 6.10% |
| Dao Huu Duy Anh | 2.92% |

Chart (1 year)



Company Overview: DGC is a company operating in the production and export of chemical products (yellow phosphorus, WPA, phosphoric acid, ...). The company accounts for 50% of the export of gold phosphorus in Vietnam

Valuation

We recommend **NEUTRAL** on DGC stock with the target price of VND 43,200 per share, equivalent to the upside of 11% based on two approach FCFF and P/E with the proportion of 60/40. Although DGC has a lot of positive factors in FY 2020, a recently rally in stock price made the stock not very attractive.

BSC's FY 2020 Business Forecast

BSC forecast revenue and profit after tax of VND 6,282 bn (+23.4% YoY) and VND 842 bn (+47.4% YoY). EPS forward 2020 is VND 6,121 per share, P/W forward is 6.4.

FY 2020 Business Plan

The company set the target of revenue and profit after tax of VND 6,084 bn (+19.5% YoY) and VND 600 bn (+5.1% YoY). However, in 2020 AGM, Board of directors comments that profit plan may increase to VND 700 bn (+22.5% YoY).

Catalyst

- DGC plan to list on HOSE in June 2020
- Vinachem continue to divest from DGC in 2020

Investment themes

- (1) Leading enterprise with a complete value chain operating in an industry whose barrier of entry is high
- (2) FY 2020 business activities are supported by recovering demand and increasing gross profit margin.

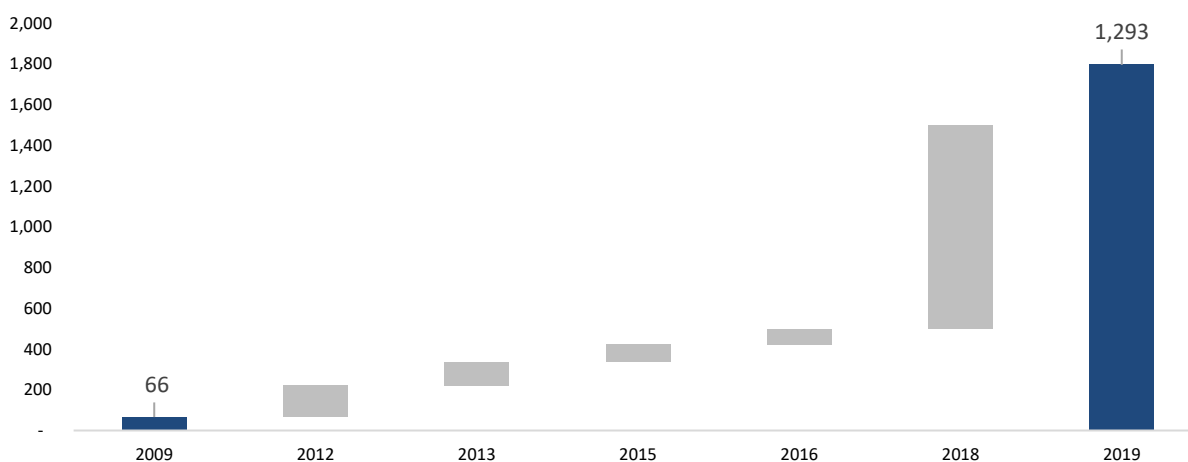
Investment risks

- (1) High policy risk due to increasing social concerns about environmental impacts.
- (2) Risks related to Duc Giang – Nghi Son Chemical Complex Project
- (3) Fertilizer faces fierce competition in exporting markets (particularly India)

COMPANY OVERVIEW

Duc Giang Chemical Joint Stock Company - formerly known as Duc Giang Chemical Company was established in 1963 with the original product "Duc Giang washing powder". The company was transformed into a joint stock company in 2004 and listed on the stock exchange in 2015. Along with the growth and development of the company, Duc Giang Chemical Group transformed from washing powder into chemical products from phosphorus: yellow phosphorus, extracted phosphoric acid, food phosphoric acid, ...

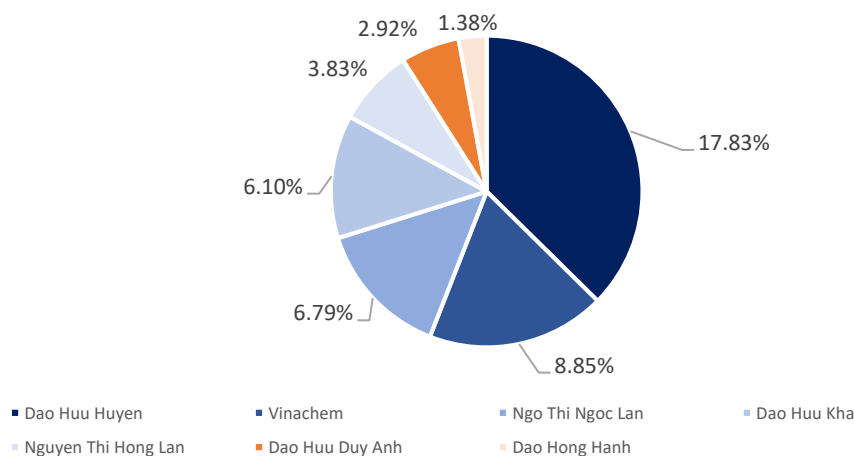
DGC's charter capital history



Source: DGC

BSC estimates that the Chairman and related persons hold about 38.8% of the company. Vietnam Chemical Group still holds an 8.8% stake and is planning to divest in the near future.

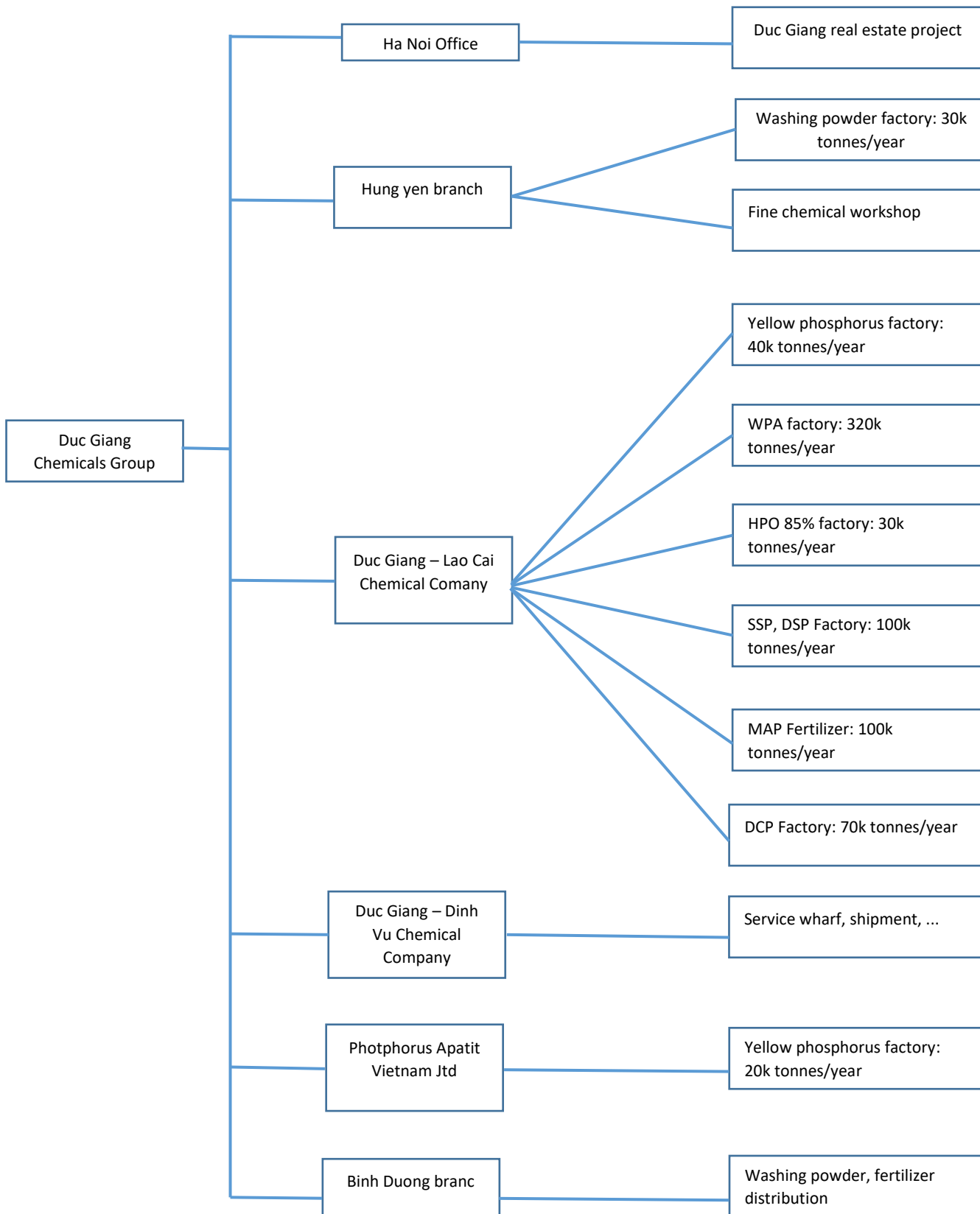
DGC's Shareholder structure



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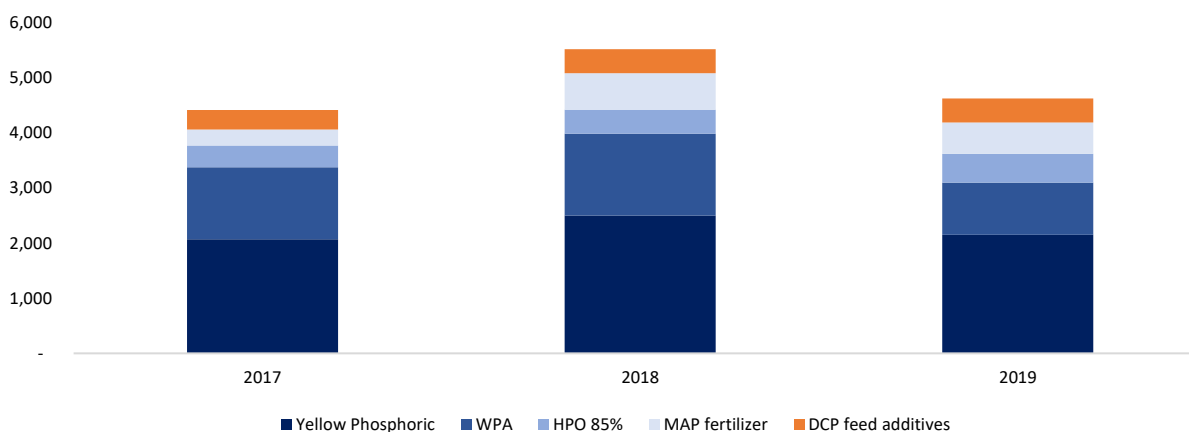


Duc Giang Chemicals Group



Although company's origin was washing powder products, Duc Giang Group has shifted to focus on phosphorus chemical products.

Revenue of some major products



Source: DGC, DGL

Yellow phosphorus which accounts for 42% of total revenue in 2019 has a capacity of 60,000 tonnes per year. All three of the factories are located in Lao Cai Province.

HPO 85% whose capacity is 30,000 tonnes per year is ingredient to produce phosphate salt used in food and beverage industry.

WPA whose capacity is 320,000 tonnes per year is crucial ingredient to manufacture different kinds of fertilizers such as MAP, DAP, ...

Table of some major products' volumes and exporting markets

| | 2019 volume | % capacity | Exporting market |
|--------------------|-------------|------------|--------------------------------|
| Yellow phosphorus | 34,461 | 57%* | Korea, Japan, India,... |
| HPO 85% | 26,939 | 88% | |
| WPA | 129,428 | 40% | India, Japan |
| MAP fertilizer | 69,693 | 69% | Domestic, India, Indonesia,... |
| DCP feed additives | 59,755 | 85% | Domestic, India, Indonesia,... |

*In Q42029, DGC increased Yellow Phosphorus capacity to 60,000 tonnes per year.

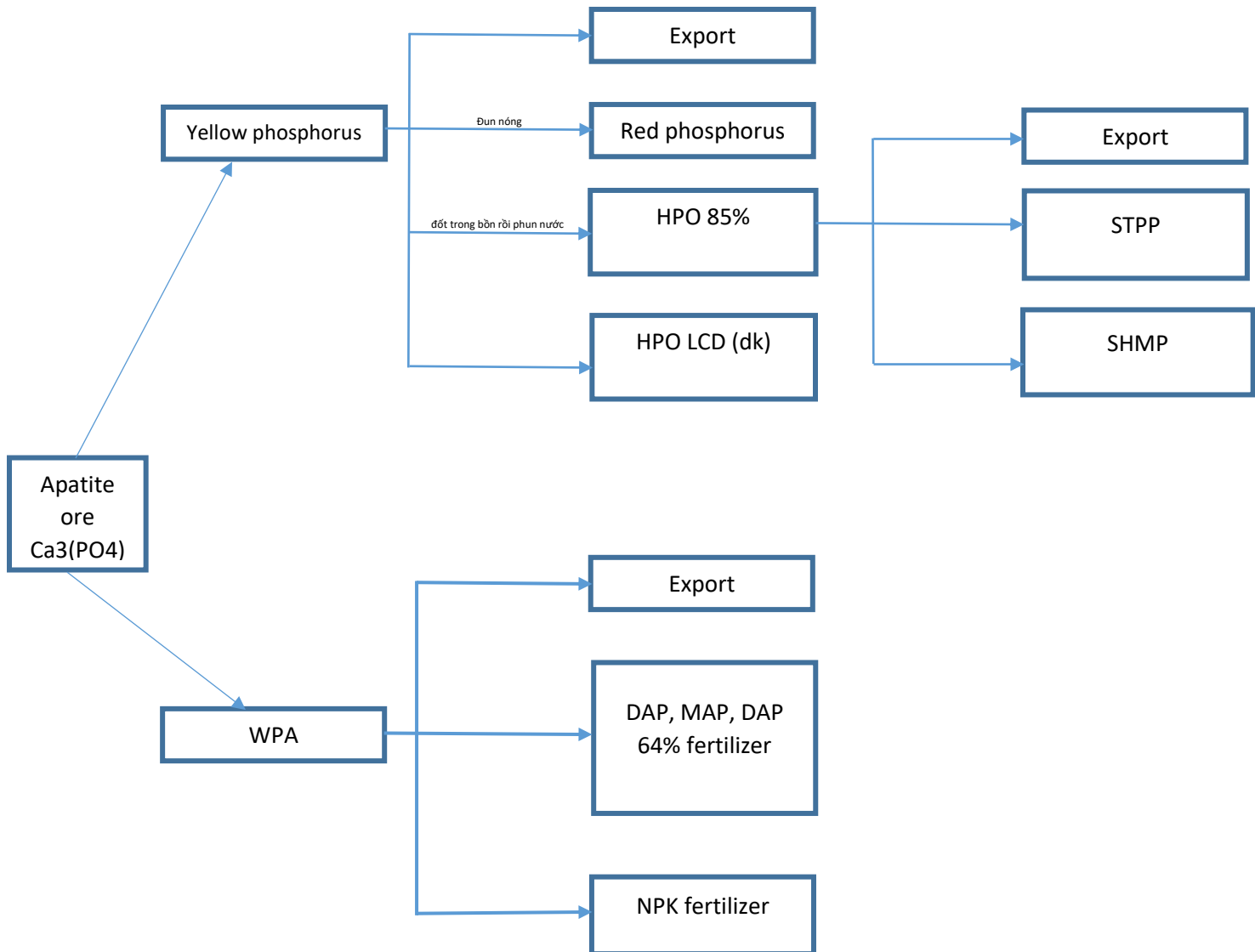
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Thanks to high quality (low arsenic and sulfur content), DGC's yellow phosphorus is able to export to high selling price markets (such as Japan, Korea, Taiwan,...). However, other products (Phosphoric acid, fertilizers) are mainly exported to India where competition is fierce.

Supply chain from Yellow Phosphorus



INVESTMENT THEMES

(1) Leading enterprise with a complete value chain operating in an industry whose barrier of entry is high

(i) Leading enterprise with a complete value chain from input (local), biggest capacity (50% capacity of Vietnam’s yellow phosphorus) and high quality products exporting to difficult markets (Korea, Japan)

DGC has raw materials produced in Vietnam instead of depending on importing raw materials as other chemical companies. Moreover, the company has specialized in Phosphorus – based chemical products, resulting more various products and lower cost. This advantage will be further strengthened when the company put 25 project whose reserve is 3,000 tonnes apatite ore into operation. However, BSC believes that the impact is relatively small as we estimate the reserve of the project in 1 year (divided by 5 years) provides about 6% of the input demand of DGC.

DGC has the largest market share in yellow phosphorus capacity. In Vietnam, total capacity is around 120,000 tonnes per year, in which DGC has 50% market share, equivalent to 60,000 tonnes per year. The second largest player is only about 20,000 tonnes per year, much smaller compared to Duc Giang Group.

DGC’s yellow phosphorus, well known for high quality (proportion of arsenic, sulfur is low) meets up to the requirements of high level markets (ex: Korea, Japan, Taiwan). Moreover, the company has the most biggest market share in these markets: DGC covers 75% of export volume of yellow phosphorus to Japan.

Duc Giang – Nghi Son Chemical Complex Project is expected to be a milestones of Duc Giang Chemical Group’s strategy to expand to new chemical products (Details about caustic soda in Appendix).

On 11 May 2020, Board of Directors had approved to establish Duc Giang – Nghi Son Chemical LLC in Nghi Son Industrial Zone whose charter capital is VND 1,000 bn (~ USD 43bn). The Complex Project will be divided in to two phrase: Phrase 1: Caustic soda and related products; Phrase 2: Caustic soda and PVC. Total capital expense for phrase 1 is VND 2,000 bn (in which factory, machines, etc is VND 1,079 bn).

BSC expects that when the phrase 1 is completed, DGC will surpass CSV to be the second largest player in manufacturing caustic soda (although CSV has the plan to increase caustic soda capacity to 50,000 tonnes per year, the progress is very slow). DGC’s director comments that expected profit from phrase 1 may reach VND 192 bn, equivalent to 34% of FY 2019 net profit). The company set the plan that the factory will begin to produce in October 2020.

Table Major chemical products in phrase 1

| | Capacity (tn) | Selling price (mn VND) | Revenue (mn VND) | Profit (mn VND) |
|----------|---------------|------------------------|------------------|-----------------|
| NaOH 98% | 50,000 | 9.3 | 465,000 | 50,000 |
| HCl 35% | 15,000 | 2.3 | 35,000 | 7,500 |
| PAC | 20,000 | 4.7 | 93,000 | 20,000 |

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| | | | | |
|-------------------------------|--------|------|-----------|---------|
| Ca(Ocl) ₂ 70% | 20,000 | 24.9 | 498,000 | 40,000 |
| Javen 30% | 10,000 | 2.0 | 20,000 | 2,000 |
| Cl ₂ (liquid) (99% | 2,000 | 6.0 | 12,000 | 2,000 |
| Chloramin B | 2,000 | 100 | 200,000 | 40,000 |
| Total | | | 1,533,000 | 191,500 |

Source: DGC

(ii) Chemical industry in Vietnam has high barrier of entry

Due to large initial capital requirement and high environmental impacts, new competitors face great challenges when entering the industry. Currently, to get the license to open new yellow phosphorus in Vietnam is very difficult (most of the added capacity is the expansion of already existing factories) while demand for phosphorus is stable and growing with the industrial activities. Therefore, Duc Giang whose size is largest is able to maintain its leading position and have supply power with customers.

(2) FY 2020 business activities are supported by recovering demand and increasing gross profit margin.

BSC expects that in FY 2020, DGC will be benefited from (i) recovering demand for yellow phosphorus in exporting markets (ii) gross profit margin get widened thanks to declining prices of raw materials.

(i) Yellow phosphorus demand recovers in exporting markets

Accumulated 4 months of 2020, Lao Cai Province where most of Vietnamese yellow phosphorus factories are located recorded USD 85.6mn (+35% YoY) in phosphorus export value. DGC with the leading position may be positively related with encouraging industry result.

Table Yellow phosphorus value exported to major markets (in mn USD)

| | Q1.2020 | %YoY | 4T.2020 | %YoY |
|----------------------|---------|--------|---------|------|
| Lao Cai | 58.27 | +18.7% | 85.63 | +35% |
| Major markets | | | | |
| Japan | 16.53 | -2% | 22.54 | -4% |
| India | 14.64 | -19% | | |
| Korea | 7.47 | +15% | 10.28 | +25% |
| Taiwan | 5.27 | +59% | 7.13 | +72% |

Source: BSC

Main exporting markets of Duc Giang group is Japan, Korea, Taiwan, America,...which use yellow phosphorus in semiconductors industry. BSC comments that the positive growth in first 4 month of 2020 is due to:

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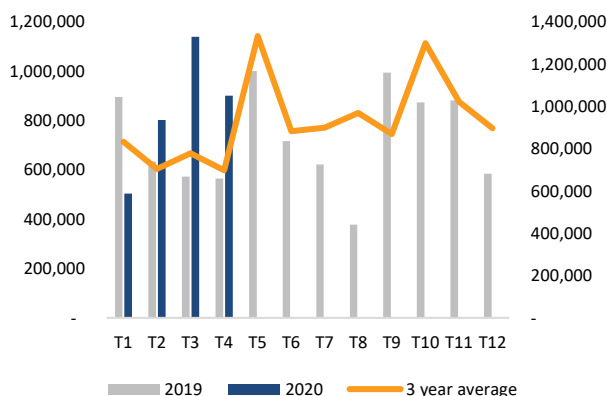
(a) Low base in 2019 (export value in 2019 was lower than three year consecutive average value) because of USA – China trade war resulting disrupted semiconductors demand from China.

(b) The two markets recording the highest growth in 4 months 2020 (Korea, Taiwan) are also the leading countries in producing semiconductors (TSMC and Samsung) and having plan to increase capacity of semiconductors serving for 5G network infrastructure.

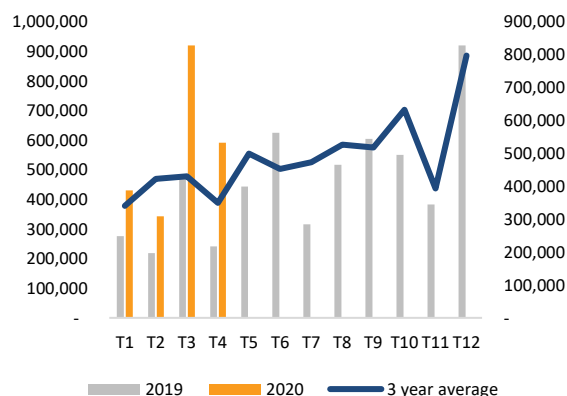
BSC expects that in FY 2020 export value will record a high growth before gradually declining in FY 2021.

First quarter of FY 2020 recored a impressive growth. The company announced its first quarter business result with revenue and net profit of VND 1,520 bn (+30.6% YoY) and VND 199 bn (+66.3% YoY) thanks to a growth of 30% in exported volume.

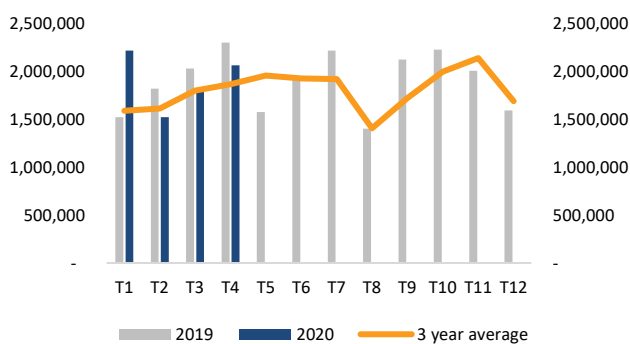
Volume of Yellow phosphorus exporting to Korea



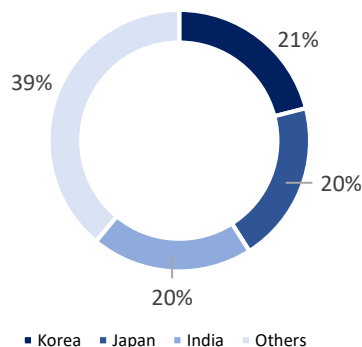
Volume of Yellow phosphorus exporting to Taiwan



Volume of Yellow phosphorus exporting to Japan



Yellow Phosphorus's export markets structure in Q1.2020



Source: BSC

(ii) First quarter of FY 2020 increased thanks to declining prices of raw materials while selling prices maintain the same level.

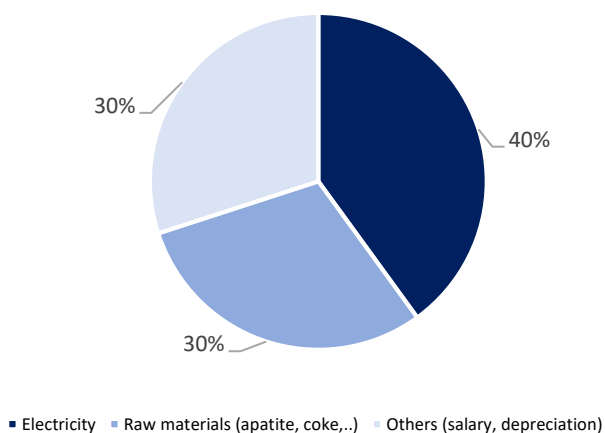
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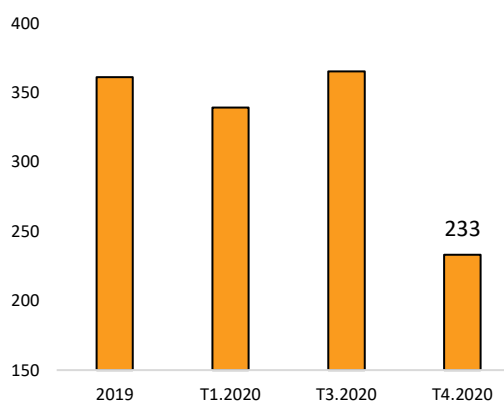
BSC comments that DGC is benefited from decreasing in raw materials prices: Electricity (~ 40% COGS) is down 10% in April and May; Raw materials (~30% COGS): Coke (-28% YoY), Apatite ore slightly decreases. For FY 2020, BSC forecasts that: coke price -20%, apatite ore -5%, electricity -2%.

On the other hand, selling prices did not decrease in first quarter and only slightly declined by 4% in April. BSC thinks that pressure to decrease selling prices is low due to (i) Vietnam dominates the yellow phosphorus exporting to major markets (2019: market share in Korea is 98%, Japan is 94%) (ii) DGC has high quality products, therefore, customers can not change supplier quickly.

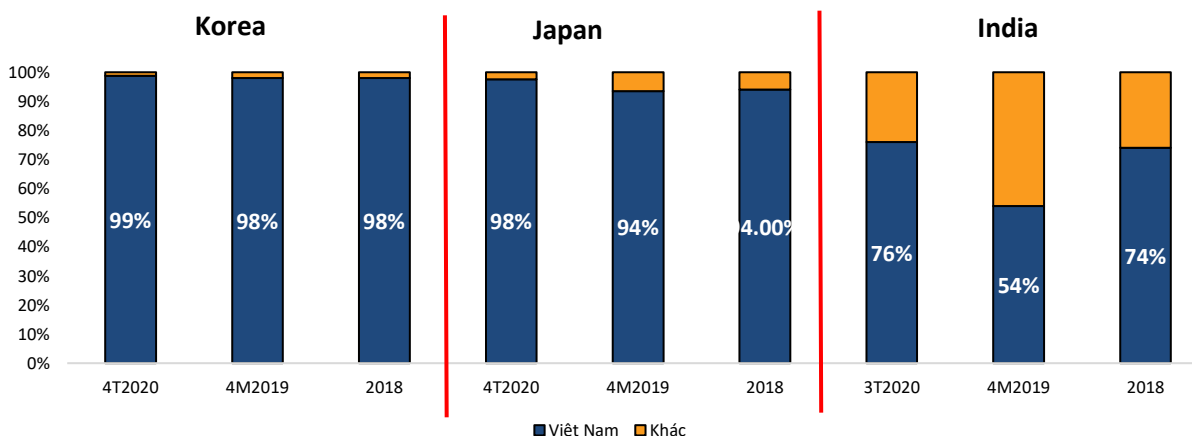
DGC's cost structure



Lao Cai's imported coke price (USD/tn)



Vietnames's market share of yellow phosphorus in some major markets



Source: Customs

FY 2020 Business Plan Update. DGC set the target of revenue and profit before tax of VND 6,084 bn (+19.5% YoY) and VND 600 bn (+5.1% YoY). In 2020 AGM, BoD comments that new plan is about to increase to VND 700 bn (+22.5% YoY).

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Table FY 2020 Bussiness

| Products | Volume | Price | Revenue | %YoY |
|--------------------|---------|-------|--------------|-------------|
| Yellow phosphorus | 48,000 | 60 | 2,880 | +34% |
| HPO 85% | 30,000 | 19 | 570 | +9% |
| WPA 50% | 144,000 | 7 | 936 | 0% |
| MAP fertilizer | 100,000 | 7 | 720 | +27% |
| DCP Feed additives | 72,000 | 7 | 468 | +7% |
| Total | | | 6,085 | +20% |

Source: DGC

INVESTMENT RISKS

(1) High policy risk due to increasing social concerns about environmental impacts.

Environmental problems increasingly attracts Government and Social's attention. Therefore, chemical projects will face many challenges to get license and have to meet up to many requirements. BSC evaluate that policy risks are (i) high and long lasting effect risks (ii) difficult to predict in the future. The severe impact of policy risk could be partially evaluated when Lao Cai province proposed to increase tax on exporting value from 5% to 20% (failed) in 2019. If the tax had been approved, most of companies operating in the industry would have recorded loss.

(2) Risks related to Duc Giang – Nghi Son Chemical Complex Project

Due to the importance of the Chemical Complex Project, any problems, delays or accidents will have severe impacts on the company.

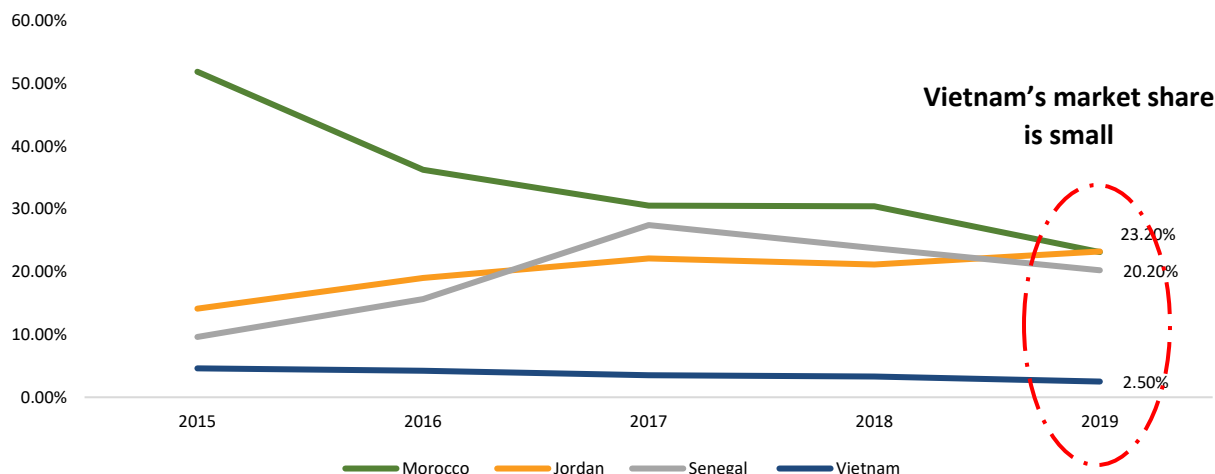
(i) Risks from raw materials: In the phrase 1, Duc Giang Group still depends on the imported raw materials (ex: industrial salt). Although the company expects to buy from local supplier, BSC thinks that the proportion is low as the quality of Vietnamese industrial salt does not meet up to requirements.

(ii) Risks from the operation: BSC thinks that there is high operation risk as Duc Giang Group does not have much experience in caustic soda operation.

(3) Fertilizer faces fierce competition in exporting markets (particularly India)

While Vietnam dominates the exporting markets in yellow phosphorus, other chemical products (ex: Phosphoric Acid, Fertilizers,...) do not possess this advantage. For example: in 2019, Vietnam's phosphoric acid has the market share of barely 2.5% in India and only 0.4% in Japan. Most competitors are Morocco, Jordan, China (in India market) and China (in Japan market) with lower cost.

Market share of Phosphorus acid in India



Source: BSC

FORECAST AND VALUATION

In 2020, BSC forecasts that DGC's net revenue and profit after tax will be respectively VND 6,282 bn (+23.4% YoY) and VND 842 bn (+47.4% YoY) based on the following assumptions:

(i) Revenue breakdown:

+ Yellow phosphorus continue to be the largest contributor with revenue of VND 2,966 bn (+38.1% YoY), accounting of 47.2% total revenue.

+ Phosphoric acid reach VND 1,626 bn in revenue (+10.5% YoY), equivalent to 26% of total revenue.

(ii) 2020 gross margin is expected to post 22.3%, strongly increasing from 19.8% in 2019 thanks to declining in raw materials while selling prices is flat. BSC forecast that apatite ore decrease by 5%, electric price decrease 2% and coke price plunge by 20%. Selling prices is expected to slightly decrease by 4%.

(iii) SG&A expense margin in 2020 is 8.2% of revenue; equivalent to margin in 2019.

Business Forecast Table

| Unit: VND bn | 2018 | 2019 | 2020F | 2021F |
|-------------------------------|--------------|--------------|--------------|--------------|
| Net revenue | 6,062 | 5,091 | 6,282 | 6,624 |
| <i>Growth</i> | 869% | -16% | 23% | 5% |
| Yellow phosphorus | 2,497 | 2,147 | 2,966 | 3,026 |
| Phosphoric Acid | 2,047 | 1,471 | 1,626 | 1,888 |
| MAP fertilizer | 656 | 564 | 631 | 637 |
| DCP feed additives | 436 | 436 | 512 | 520 |
| Cost of goods sold | (4,694) | (4,084) | (4,880) | (5,163) |
| Apatite ore | | | -5% | 2% |
| Electricity | | | -2% | 2% |
| Coke | | | -20% | 0% |
| Gross profit | 1,367 | 1,006 | 1,401 | 1,461 |
| <i>Gross profit margin</i> | 22.6% | 19.8% | 22.3% | 22.0% |
| Selling expense | (341) | (314) | (389) | (412) |
| <i>Selling expense margin</i> | 5.6% | 6.2% | 6.2% | 6.2% |
| Administration expense | (92) | (101) | (124) | (131) |
| <i>Admin expense margin</i> | 1.5% | 2.0% | 20% | 2.0% |
| Profit before tax | 916 | 599 | 915 | 992 |
| Profit after tax | 882 | 572 | 842 | 912 |
| EPS | 7,674 | 4,241 | 6,121 | 6,629 |

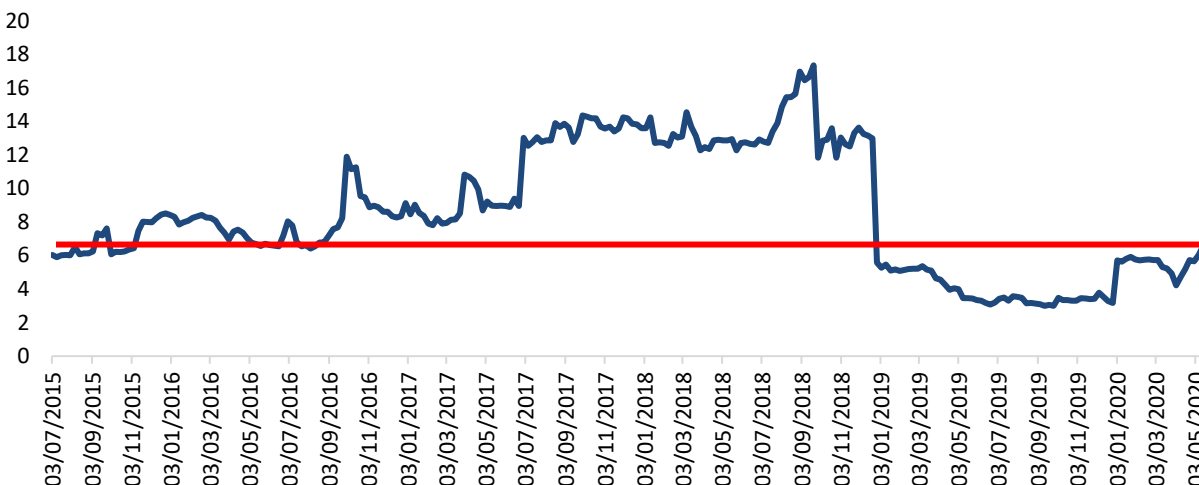
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+ PE valuation: Currently, DGC's stock price is trading around P/E trailing = 8.7. BSC chooses the target P/E of 7.5 (P/E median in 2015 – now excluding 2017 – 2018 due to impacts of merger with LFC, BTC, DGL) to determine the stock value after adjusting the business results forecasts in the coming years.

Price to equity ratio of DGC ticker



Source: Bloomberg

| PE Valuation | 2020 | 2021 | 2022 |
|------------------|--------|--------|--------|
| EPS | 6,121 | 6,629 | 6,539 |
| PE | 7.5 | 7.5 | 7.5 |
| Value of a share | 45,900 | 49,900 | 48,800 |

+ FCFF Valuation:

| | 2020 | 2021 | 2022 | 2023 | 2024 | WACC | |
|---------------------------|-------------|------|------|------|------|----------|-----|
| Free cash flow to firm | 731 | 625 | 465 | 331 | 452 | Rf | 7% |
| Cash and cash equivalents | 770 | | | | | Beta | 0.7 |
| Total firm value | 6,084 | | | | | Ke | 12% |
| Debt | 735 | | | | | Kd | 8% |
| Equity value | 5,349 | | | | | E/A | 60% |
| Number of shares | 129,363,616 | | | | | Tax rate | 20% |
| Value of a share (VND) | 41400 | | | | | WACC | 10% |
| | | | | | | g | 1% |

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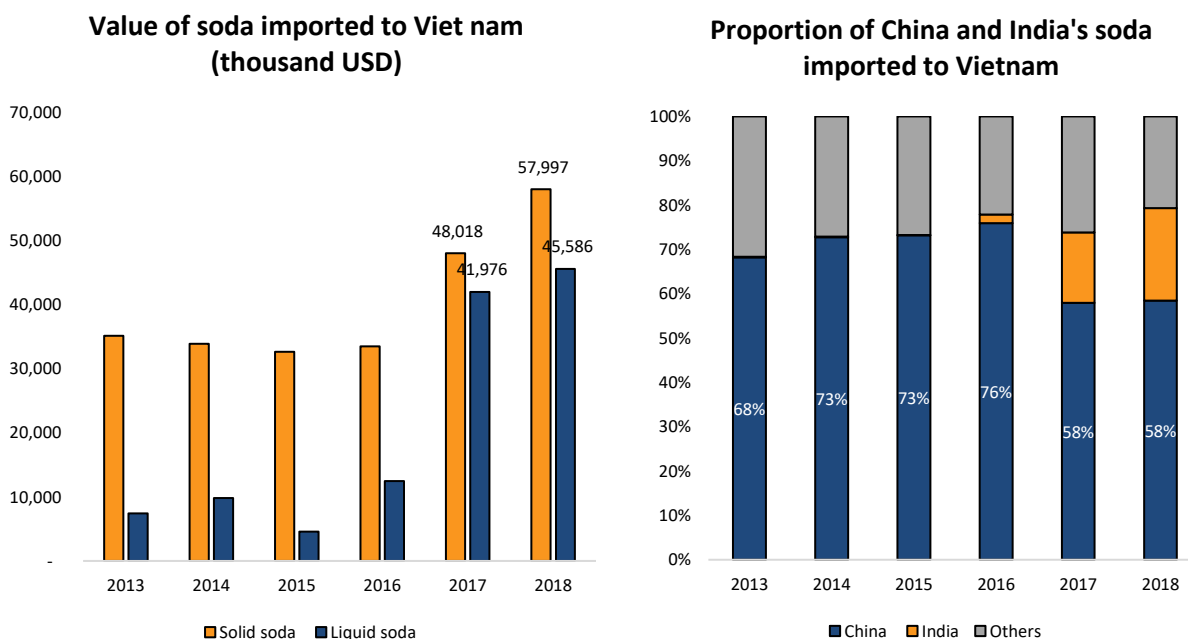
BSC

| | Price | Proportion | Average price |
|------|--------------|----------------------|----------------------|
| FCFF | 41,400 | 60% | 24,840 |
| P/E | 45,900 | 40% | 18,360 |
| | | Target price | 43,200 |
| | | Current price | 38,900 |
| | | Upside | 11% |

We recommend **NEUTRAL** for DGC stock with the target price of VND 43,200/share using FCFF and P/E methods with the proportion of 60% / 40%.

APPENDIX: VIETNAM CAUSTIC SODA MARKET

Local demand are mainly supplied by imported soda from China and India. Average local demand consumption of soda each year is around 350.000 tonnes with the historical growth of 10% per year while local capacity is annually 150,000 tonnes. However, local large manufacturers are only Vedan with interal usage and CSV whose factories are operated at 97% of maximum capacity. Therefore, clients tend to buy from manufacturers in China and India, enlarging larger marketshare of imported soda. According to Trademap, CAGR of imported soda reached 23% per year in the period from 2015 to 2018.



Source: Trademap

There are three different technology in manufacturing Soda: (i) electrolysis with mercury electrodes (ii) electrolysis with ion exchange membranes and (iii) electrolysis with diaphragms. DGC chose electrolysis with diaphragm to be used in DGn factory (Ashahi – Japanese technology) to produce caustic soda.

Table Technology used in caustic soda production

| | Electrolysis with mercury electrodes | Electrolysis with ion exchange membranes | Electrolysis with diaphragms |
|---------|--------------------------------------|--|------------------------------|
| Quality | Very good | Very good | Good |

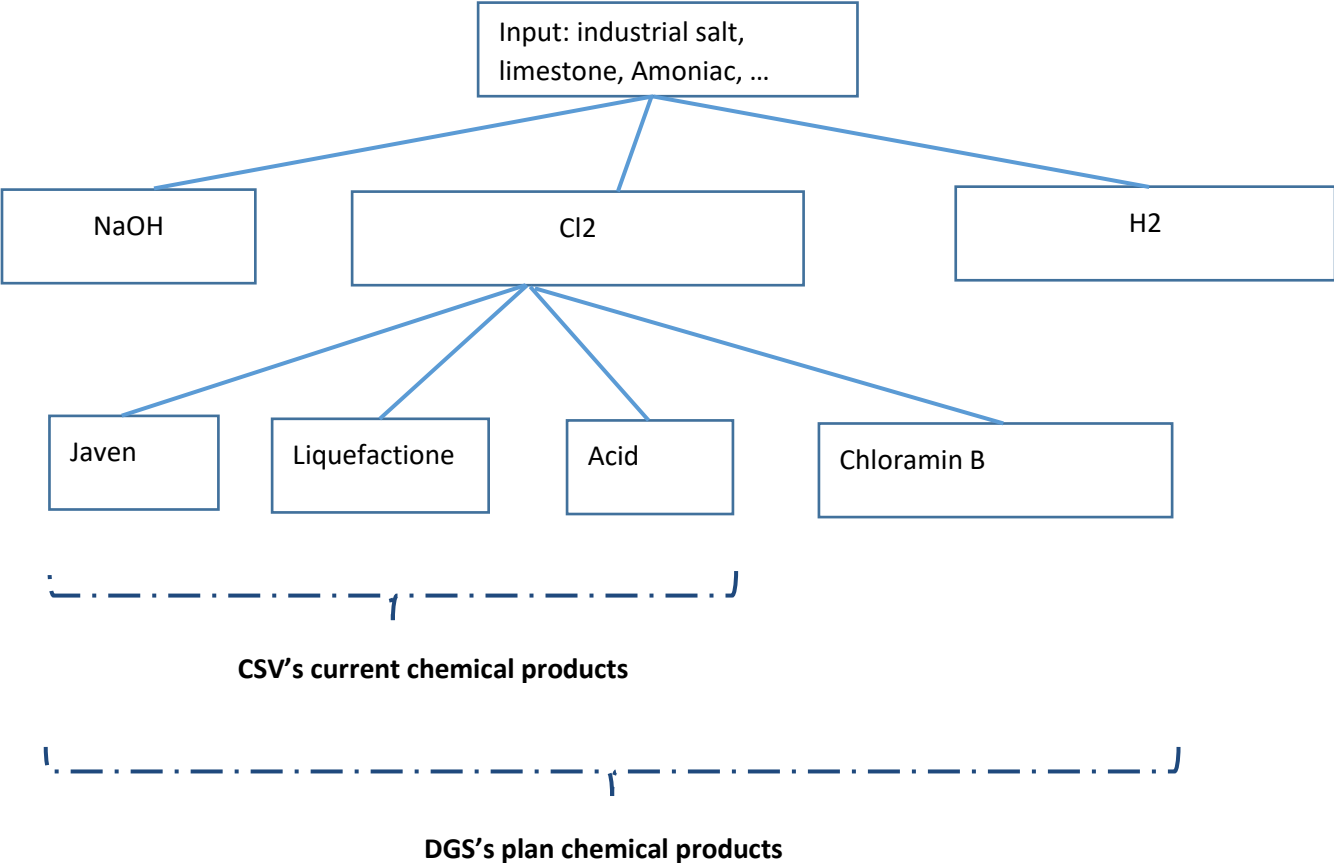
Source: BSC

Table Capacity of some big manufacturers

| Product | CSV | HVT | Others | Usage |
|------------|---------|--------|--|--|
| Liquid | 40,000 | 40,000 | Vedan: 80,000 | Used in detergent, paper production, oil refining, textile dyeing, ...industry |
| Liquid clo | 6,000 | 3,000 | | Producing paper, sterilizing, dye, food, pesticide, petrochemical, water cleaning and waste water treatment. |
| HCl 30% | 120,000 | 55,000 | Vedan: 80,000 | Used in metal cleaning industry, water treatment, oil exploitation, electroplating, ... |
| Javen | | 25,000 | DGC : 12,000 | Making pigments, mold stains, stains for textiles, bleaching porcelain enamel, sterilizing and disinfecting |
| PAC | 20,000 | 6,000 | Bac Giai: 10,000 Lau Tan Luas: 20,000 | Used in domestic and wastewater treatment, paper industry, etc. |

Source: BSC

An important issue in the production of caustic soda is the treatment of residual chlorine gas generated during electrolysis: on average, 1.1 tons of caustic soda will produce 1 ton of chlorine gas. While the demand for caustic soda in Vietnam is very high, the demand for chlorine gas is low. Therefore, the treatment of residual chlorine is a challenge for current caustic soda manufacturers to expand their capacity. At the General Meeting of Shareholders in 2020, DGC said the company will solve this problem by producing residual chlorine gas into chemical products such as Javen, Ca (OCI) 2, PAC, Acid Phosphoros, ...



Disclosure

The information, statements, forecasts and projections contained herein, including any expression of opinion, are based upon sources believed to be reliable but their accuracy completeness or correctness are not guaranteed. Expressions of opinion herein were arrived at after due and careful consideration and they were based upon the best information then known to us, and in our opinion are fair and reasonable in the circumstances prevailing at the time. Expressions of opinion contained herein are subject to change without notice. This document is not, and should not be construed as, an offer or the solicitation of an offer to buy or sell any securities. BSC and other companies in the BSC and/or their officers, directors and employees may have positions and may affect transactions in securities of companies mentioned herein and may also perform or seek to perform investment banking services for these companies. This document is for private circulation only and is not for publication in the press or elsewhere. BSC accepts no liability whatsoever for any direct or consequential loss arising from any use of this or its content. The use of any information, statements forecasts and projections contained herein shall be at the sole discretion and risk of the user. No part of this material may be (i) copied, photocopied or duplicated in any form by any mean or (ii) redistributed without the prior written consent of BIDV Securities Company (BSC).

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