

# The Mosaic Company

**Modeling with New Disclosures  
Linking Price & Drivers to Financial Results**

For questions contact: [Investor.Relations@MosaicCo.com](mailto:Investor.Relations@MosaicCo.com)

Date: March 29, 2021



# Forward Looking Statements & Non-GAAP Financial Measures

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This document contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements about proposed or pending future transactions or strategic plans and other statements about future financial and operating results. Such statements are based upon the current beliefs and expectations of The Mosaic Company's management and are subject to significant risks and uncertainties. These risks and uncertainties include, but are not limited to: the economic impact and operating impacts of the Covid-19 pandemic, the potential drop in oil demand / production and its impact on the availability and price of sulfur, political and economic instability in Brazil or changes in government policy in Brazil, such as higher costs associated with the new mining rules or the implementation of new freight tables; the predictability and volatility of, and customer expectations about, agriculture, fertilizer, raw material, energy and transportation markets that are subject to competitive and other pressures and economic and credit market conditions; the level of inventories in the distribution channels for crop nutrients; the effect of future product innovations or development of new technologies on demand for our products; changes in foreign currency and exchange rates; international trade risks and other risks associated with Mosaic's international operations and those of joint ventures in which Mosaic participates, including the performance of the Wa'ad Al Shamal Phosphate Company (also known as MWSPC), the timely development and commencement of operations of production facilities in the Kingdom of Saudi Arabia, and the future success of current plans for MWSPC and any future changes in those plans; the risk that protests against natural resource companies in Peru extend to or impact the Miski Mayo mine, which is operated by an entity in which we are the majority owner; difficulties with realization of the benefits of our long term natural gas based pricing ammonia supply agreement with CF Industries, Inc., including the risk that the cost savings initially anticipated from the agreement may not be fully realized over its term or that the price of natural gas or ammonia during the term are at levels at which the pricing is disadvantageous to Mosaic; customer defaults; the effects of Mosaic's decisions to exit business operations or locations; changes in government policy; changes in environmental and other governmental regulation, including expansion of the types and extent of water resources regulated under federal law, carbon taxes or other greenhouse gas regulation, implementation of numeric water quality standards for the discharge of nutrients into Florida waterways or efforts to reduce the flow of excess nutrients into the Mississippi River basin, the Gulf of Mexico or elsewhere; further developments in judicial or administrative proceedings, or complaints that Mosaic's operations are adversely impacting nearby farms, business operations or properties; difficulties or delays in receiving, increased costs of or challenges to necessary governmental permits or approvals or increased financial assurance requirements; resolution of global tax audit activity; the effectiveness of Mosaic's processes for managing its strategic priorities; adverse weather conditions affecting operations in Central Florida, the Mississippi River basin, the Gulf Coast of the United States, Canada or Brazil, and including potential hurricanes, excess heat, cold, snow, rainfall or drought; actual costs of various items differing from management's current estimates, including, among others, asset retirement, environmental remediation, reclamation or other environmental regulation, Canadian resources taxes and royalties, or the costs of the MWSPC; reduction of Mosaic's available cash and liquidity, and increased leverage, due to its use of cash and/or available debt capacity to fund financial assurance requirements and strategic investments; brine inflows at Mosaic's Esterhazy, Saskatchewan, potash mine or other potash shaft mines; other accidents and disruptions involving Mosaic's operations, including potential mine fires, floods, explosions, seismic events, sinkholes or releases of hazardous or volatile chemicals; and risks associated with cyber security, including reputational loss; as well as other risks and uncertainties reported from time to time in The Mosaic Company's reports filed with the Securities and Exchange Commission. Actual results may differ from those set forth in the forward-looking statements. The Company does not undertake any duty to publicly update any forward-looking statements.

## NON-GAAP FINANCIAL MEASURES

This document includes the presentation and discussion of non-GAAP diluted net earnings per share guidance, or adjusted EPS, non-GAAP depreciation, depletion and amortization, and non-GAAP adjusted EBITDA, referred to as non-GAAP financial measures. Generally, a non-GAAP financial measure is a supplemental numerical measure of a company's performance, financial position or cash flows that either excludes or includes amounts that are not normally excluded or included in the most directly comparable measure calculated and presented in accordance with U.S. generally accepted accounting principles, or GAAP. Non-GAAP financial measures should not be considered as substitutes for, or superior to, measures of financial performance prepared in accordance with GAAP. In addition, because non-GAAP measures are not determined in accordance with GAAP, they are thus susceptible to varying interpretations and calculations and may not be comparable to other similarly titled measures of other companies. Adjusted metrics, including adjusted EPS, adjusted gross margin, and adjusted EBITDA are calculated by excluding the impact of notable items from the GAAP measure. Notable items impact on gross margin and EBITDA is pretax. Notable items impact on diluted net earnings per share is calculated as the notable item amount plus income tax effect, based on expected annual effective tax rate, divided by diluted weighted average shares. Management believes that these adjusted measures provide securities analysts, investors, management and others with useful supplemental information regarding our performance by excluding certain items that may not be indicative of, or are unrelated to, our core operating results. Management utilizes these adjusted measures in analyzing and assessing Mosaic's overall performance and financial trends, for financial and operating decision-making, and to forecast and plan for future periods. These adjusted measures also assist our management in comparing our and our competitors' operating results. We are not providing forward looking guidance for U.S. GAAP reported diluted net earnings per share, gross margin per tonne, or a quantitative reconciliation of forward-looking adjusted EPS, adjusted gross margin and adjusted EBITDA because we are unable to predict with reasonable certainty our notable items without unreasonable effort. Historically, our notable items have included, but are not limited to, foreign currency transaction gain or loss, unrealized gain or loss on derivatives, acquisition-related fees, discrete tax items, contingencies and certain other gains or losses. These items are uncertain, depend on various factors, and could have a material impact on U.S. GAAP reported results for the guidance period. Reconciliations for Non-GAAP financial measures contained in this press release are found below. Reconciliations for current and 7 historical periods for consolidated adjusted EPS and adjusted EBITDA, as well as segment adjusted EBITDA and adjusted gross margin per tonne are provided in the Selected Calendar Quarter Financial Information performance data for the related periods. This information is being furnished under Exhibit 99.2 of the Form 8-K and available on our website at [www.mosaicco.com](http://www.mosaicco.com) in the "Financial Information - Quarterly Earnings" section under the "Investors" tab.

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# Overview of Approach

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***At their simplest, the fundamental drivers of our financial performance are volumes, prices, and costs.***

Complexities arise primarily in understanding the delay between the market prices you see and prices realized in our financial results.

- For revenues, sales may be priced a quarter before the product is delivered, depending upon the season and depth of order book.
- For raw material costs, purchases go through raw material inventory, are used in production, then realized when the product is delivered. Again, this could result in a delay of a quarter or more, depending upon the season, depth of order book and length of raw material inventory.

Costs, excluding raw materials, are over 80% fixed in our production businesses, and our long-term operating targets can help you identify how we are driving our cost trends beyond the current year. In addition, our disclosures include:

## 1. Market Price Drivers

- Sensitivity of our earnings to changes in P and K price for all segments
- Historical data by product and geographic mix, to help you align to market prices
- Historical detail on raw material sourcing for phosphates, to help you assign appropriate costs

## 2. Cost Drivers (excluding raw materials of sulfur and ammonia)

- Known changes to the base costs of the prior year
- Published and tracked progress toward multi-year targets
- Costs estimates necessary to reconcile adjusted EBITDA to adjusted EPS

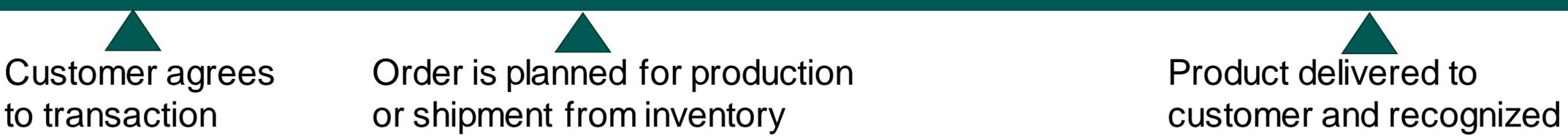
## 3. Volume Drivers

- Mosaic's expectations for global shipments by country. In normal periods, we would expect our volumes to reflect overall market growth.
- Volumes can be constrained by production capacity, and we will continue to disclose our operating capacity.

# Understanding the lag between market pricing and financial results

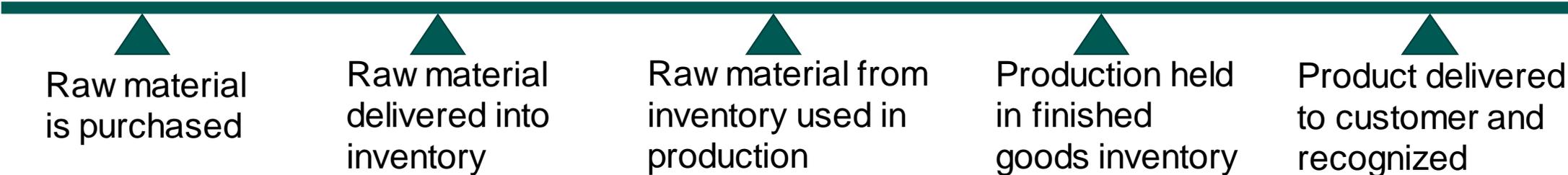
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## For Finished Products



*Time lines varies with finished goods inventory levels, seasonality and logistics timing.*

## For Raw Materials



*The company generally holds 20 days of ammonia and 35 days of sulfur inventory. However, Covid-19 impacts on oil refining has resulted in lower sulfur inventory in 2020, ~30 days.*

# Sensitivities using 2020 Cost Structure

Based on 2020 Actuals	
Adjusted EBITDA <sup>(1)</sup>	\$1.56 bn

Sensitivity	Full year adj. EBITDA impact	2020 Actuals
Average MOP Price / tonne (fob mine)	\$10/mt price change = \$65 million <sup>(2)</sup>	\$181
Average DAP Price / tonne (fob plant)	\$10 / mt price change = \$105 million	\$310
Average BRL / USD	\$0.10 change, unhedged = \$13 million	5.15
Average CAD / USD	\$0.01 change, unhedged = \$13 million	1.35

- Based on 2020 conversion costs
- The EBITDA sensitivity to average MOP and DAP price/tonne includes Mosaic Fertilizantes
  - ~5% of the average MOP price per tonne impact to EBITDA relates to Mosaic Fertilizantes
  - ~20% of the average DAP price per tonne impact to EBITDA relates to Mosaic Fertilizantes
- ~80% of Potash cash costs were fixed, excluding brine and CRT
- ~87% of Phosphates cash conversion costs were fixed

<sup>(1)</sup> See Non-GAAP Financial Measures for additional information

<sup>(2)</sup> Includes impact of CRT, which is expected to average 20-24% of Gross Margin excluding CRT in 2021, and 35% on a marginal basis

# Mosaic's Posted Price Dashboard

[Link to Investor Market Education Historical Pricing Trends](#)



Week Ending March 26th, 2021

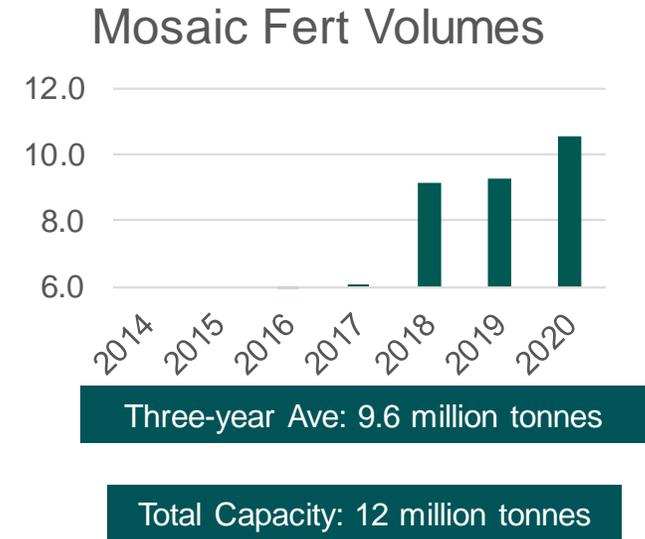
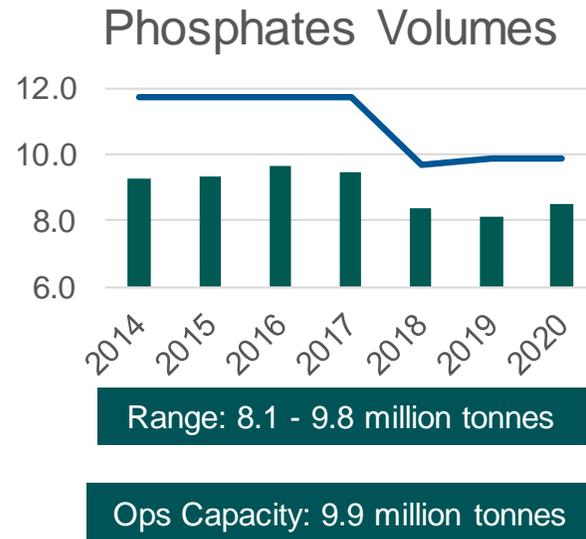
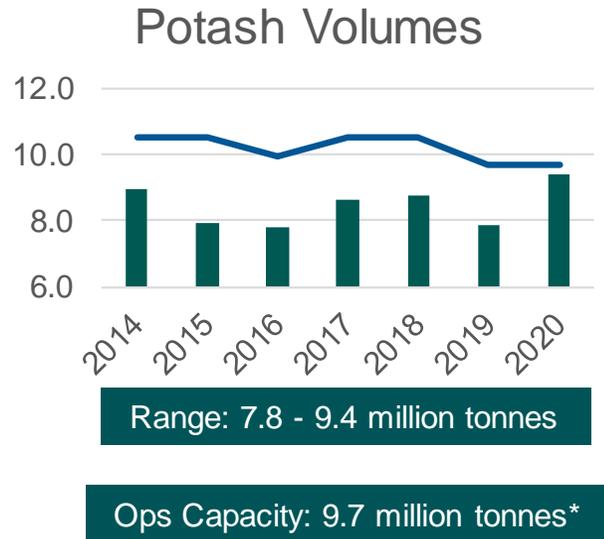
		Publication Date: Mar 25, 2021			Average vs.		Weekly Change	UoM
Market Average <sup>1</sup>		Low	High	Average	Prev Wk	Prev Yr		
<b>Phosphate</b>								
DAP	Tampa	585	586	585	585	309	→	\$/MT
	NOLA	537	543	540	539	271	↑	\$/ST
	CFL	550	550	550	549	305	↑	\$/ST
	Morocco	540	552	546	522	306	↑	\$/MT
	Saudi Arabia	500	560	530	522	305	↑	\$/MT
	China	554	559	556	558	307	↓	\$/MT
	India C&F	515	521	518	496	316	↑	\$/MT
MAP	Brazil C&F	613	627	620	625	318	↓	\$/MT
	NOLA	564	575	570	582	277	↓	\$/ST
<b>Potash</b>								
Granular MOP	NOLA	312	318	315	316	208	↓	\$/ST
	Corn Belt	343	357	350	351	248	↓	\$/ST
	Brazil C&F	322	333	328	313	226	↑	\$/MT
Standard MOP	SE Asia C&F	267	281	274	270	258	↑	\$/MT
<b>Urea</b>								
Granular Urea	NOLA	370	405	388	382	249	↑	\$/ST
	Brazil	399	412	406	409	248	↓	\$/MT
<b>Raw Materials</b>								
Phosphate Rock	Morocco	86	105	96	96	71	→	\$/MT
Ammonia - Contract	Tampa C&F	545	545	545	445	250	↑	\$/MT
Sulphur - Contract	Tampa C&F	96	96	96	96	36	→	\$/LT
<b>High-Analysis Phosphate Global Net Price<sup>2</sup></b>				389	399	227	↓	\$/MT

# Operating Driver Targets

	2018 actual	2019 actual	2020 actual	2023 target	
Phosphates	Cash cost of U.S. mined rock (\$/tonne)	\$38	\$41	\$37	\$34
	Cash costs of conversion (\$/tonne)	\$63	\$65	\$62	\$51
Potash	Cash costs of production (excluding brine) – MOP (\$/tonne)	\$66	\$74	\$56	\$49
	Cash brine management costs (\$ in millions)	\$123	\$101	\$73	\$0
Mosaic Fertilizantes	Cash costs of rock (R\$/tonne)	R\$346	R\$331	R\$331	R\$315
	Cash costs of conversion - Phosphates (R\$/tonne)	R\$265	R\$321	R\$313	R\$291
	Total Selling, General & Administrative Expenses (\$ in millions)	\$341	\$354	\$372	\$340
	Sales of Performance Products (in millions)			4.0	5.2

<sup>(1)</sup> Includes volumes of K-Mag, Aspire, Microessentials and Sus-terra.

# Sales Volumes Ranges



Phosphate and potash sales volumes are expected to be constrained by operational capacity, as inventories going into 2021 are limited.

\* Potash operating capacity excludes Colonsay and includes K3 starting with year-end 2019.

\* Phosphates volumes reflect the curtailment of Plant City production beginning with 2018.

\* Mosaic Fert total capacity includes distribution and production capacity.

# Additional 2021 Modeling Assistance

<b>Estimated reconciling items EBITDA to EPS</b>	<b>\$ in millions</b>
Adjusted Depreciation, Depletion & Amortization	\$910-\$920
Net Interest Expense	\$180 - \$190
Non-Notable Adjustments	\$80 - \$90
Effective Tax Rate	Mid 20's%
<b>Capital Expenditure Expectations</b>	<b>\$ in billions</b>
Sustaining Capital	\$0.75 - \$0.80
Growth Capital	\$0.30 - \$0.35
Total Capital Expenditure Estimate	~\$1.10

(1) See Non-GAAP Financial Measures for additional information

# By Segment Considerations



# Potash

- Product mix:
  - Standard product is the primary product sold under China and Indian contracts.
  - Granular product is the primary product sold into North America and Brazil.
  - Granular product is generally priced at a premium to standard, covering the slightly higher costs associated with the granulation process.
- In the short term, 80% of cash production costs are fixed.
- On average, Canadian Resource Taxes can be estimated by applying the rate of 20 to 24 percent of GM excluding CRT.
- Tonnes sold through Canpotex are priced net, with Canpotex responsible for transportation costs. Ergo, Canpotex revenues reflect net pricing.
- Tonnes sold in North America are priced delivered and both revenues and COGS include transport costs.

Market vs. Realized MOP Prices



Based on 2019 and 2020 monthly averages:

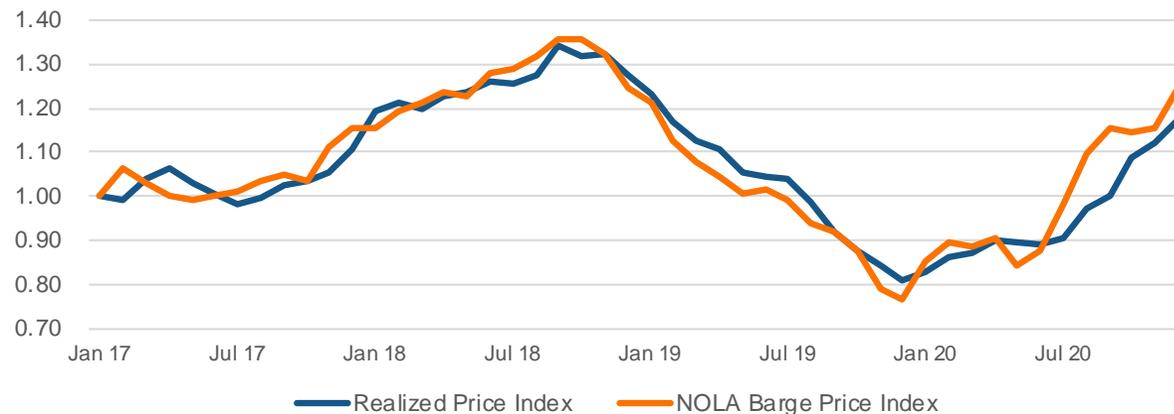
- Logistics costs / tonne = \$78 N.A.; \$83 Export
- Days lag pricing to revenue recognition:
  - Average = 50
  - Range = 25 to 75

Lag varies with seasonality and sentiment. The pace of buying and delivery increases when prices are rising. Fixed price contracts for China and India dampen correlations. Export logistics costs are not included in Mosaic's COGS or revenues.

# Phosphates – finished products

- Product mix
  - DAP/MAP product relative prices can vary based on geographic supply / demand considerations.
  - India is primarily a DAP market, while Brazil is primarily a MAP market.
  - MicroEssentials is a MAP based product, with finished product prices closely tied to MAP prices.
  - The company has significant flexibility in the manufacturing mix between MAP, DAP and MicroEssentials
- In the short term, 87% of cash conversion costs are fixed.
- Relative Product costs
  - DAP contains more ammonia than MAP. On average, Mosaic uses .18 tonnes of NH<sub>3</sub> per tonne of finished product.
  - MAP contains more phosphoric acid, generally 52% P<sub>2</sub>O<sub>5</sub> vs. 46% for DAP.
  - MicroEssentials contains less phosphoric acid, averaging 41% depending upon the product mix, but contains incremental micronutrients.
- All product revenues are based on delivered prices, and both revenues and COGS include transport costs.

Market vs. Realized DAP prices



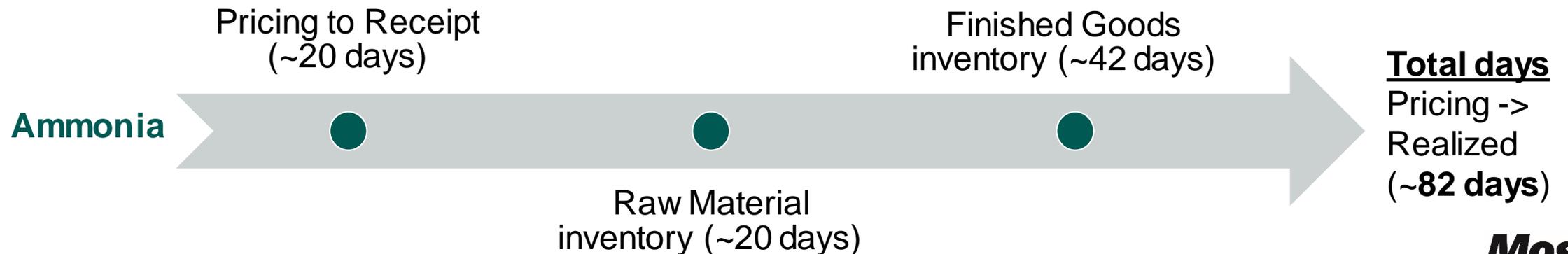
Based on 2019 and 2020 monthly averages:

- Logistics costs / tonne = \$42, fairly stable
- Days lag pricing to revenue recognition:
  - Average = 38
  - Range = 20 to 55

Lag varies with seasonality and sentiment. The pace of buying and delivery increases when prices are rising.

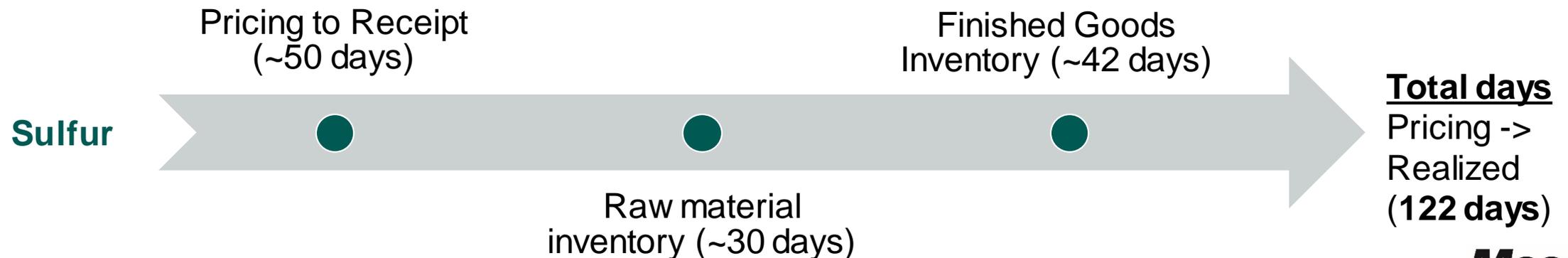
# Phosphates – ammonia

- Ammonia is used to granulate phosphate products used in agriculture (DAP, MAP, & MicroEssentials)
- The Company has three sources of ammonia:
  1. Contract with CF Industries for a minimum of 540,000 tonnes and maximum of 720,000 tonnes annually, and up for renewal in 2025
    - These tonnes are generally taken pro rata through the year, and changes in volumes taken under the contract require a 90 day notice.
    - Contract pricing includes a capital charge component.
    - The company views this contract as a hedge.
  2. Manufactured ammonia from Faustina, with an annual capacity of approximately 450,000 tonnes.
    - This is the company's lowest cost source of ammonia, generally 40 mmBTU's of natural gas plus \$70 / tonne of ammonia conversion costs, including ~\$10 / tonne of depreciation.
  3. Spot purchases to supplement the above sources.
    - Market prices to benchmark should align to Port of Tampa delivered prices.
- The company averages 20 days of storage capacity for ammonia at the port and chemical plants.
- Ammonia is primarily transported from the port to the plants via pipeline.
- Incremental transportation and storage costs are as follows:
  - To get CF ammonia, or manufactured ammonia, from Louisiana to the port of Tampa is estimated to be ~ \$35 / tonne of ammonia.
  - Incremental storage costs and transport from the port to the chemical plants is estimated to be ~ \$35 / tonne of ammonia.



# Phosphates – sulfur

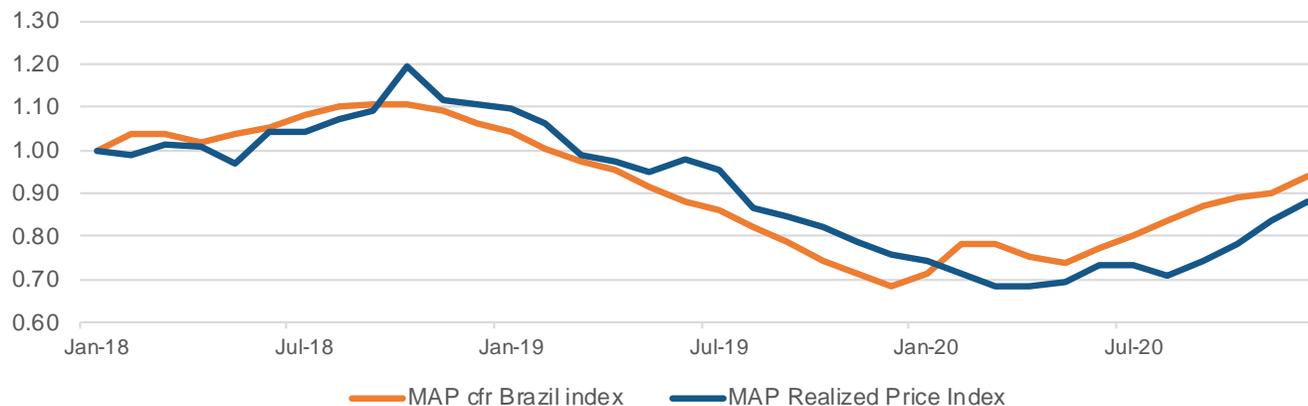
- The company uses sulfur to create sulfuric acid. The process is exothermic, and cogenerates electricity for the company's chemical plants and phosphate mines.
- The sulfuric acid is used to create phosphoric acid from the phosphate rock.
- At the plant, it takes approximately 1 tonne of sulfur and 3.6 tonnes phosphate rock to create 1 tonne of phosphoric acid.
  - It takes ~.46 tonnes of phosphoric acid to create a tonne of DAP, ~.52 tonnes to create a tonne of MAP, and averages ~.38 tonnes to create a tonne of MicroEssentials.
- The company uses two sources of sulfur, molten and prilled.
  - The company can take molten sulfur directly from gulf refineries and transport it cross gulf in special barges, then to the chemical plants in specially designed trucks. The molten sulfur must be heated to be kept in the liquid state.
  - The market price benchmark for sulfur reflects the molten, delivered Tampa price. By the time it is realized in COGS, there is an additional \$25 - \$30 / tonne cost of logistics.
  - Prilled sulfur is delivered in the solid form, then melted for use. Because of the energy used to transform it to molten sulfur, the costs are about \$50 / tonne higher than molten by the time it is used in production, but may vary depending on the cost differential between prilled and molten.
  - The company uses 10 – 20 percent prilled sulfur, depending upon availability of molten sulfur.
- The company has storage capacity for ~35 days of production for molten sulfur at the port and chemical plants, and ~15 days of prilled, however the company only used 10 to 20 percent prilled in production. In 2021, the company does not expect to use full storage capacity for sulfur due to the impact of Covid-19 on oil refining.
  - If there is no need for use of prilled, the realization of prilled sulfur cost may be even further delayed, as the company can easily store solid sulfur.



# Mosaic Fertilizantes – finished product production

- Mosaic refers to this portion of Mosaic Fertilizantes as the B2B business
- The costs in this business are primarily BRL based, with 20% in USD related to raw materials of sulfur and ammonia. As a result, the segment is short BRL for months longer than 3 months. Approximately 50% of this exposure is hedged, with the unrealized gain / loss on these hedges flowing through the corporate segment.
- Once the finished product is priced, with pricing generally tied to the USD price of the global product, the production and distribution businesses combined are actually long BRL in the short term, and the company hedges net cash proceeds into USD.
- In 2020, the business had approximately R\$4 billion in costs subject to local currency inflation, with reported 2020 IPCA inflation (the best proxy) at 4.5%.
- Mosaic Fertilizantes produces several phosphates products that generally trade relative to MAP prices. General ratios are: TSP = 80% MAP; SSP = 40% MAP
- Mosaic Fertilizantes also sells other products like animal feed, phosphoric acid, sulfuric acid and sulfur, as well as co products like gypsum.
- Our disclosures include produced volumes, which are typically recognized as sales on a one quarter lag.
- Only MAP uses ammonia, so the ammonia volumes used in production are significantly less than Mosaic's Florida phosphate operation.
- We also include MAP delivered prices to third parties in our performance data, to help track B2B realized sales price vs. market prices.
- Mosaic Fertilizantes produced potash is generally sold to the local market (near the mine).
- Of the phosphate tonnes produced in Brazil, approximately 20 percent are sold through the distribution business in Brazil. As we send fewer tonnes from Florida, this is expected to increase in 2021, to around 25 percent.

Market vs Realized Prices



Based on 2019 and 2020 monthly averages:

- Mosaic priced MAP on a delivered basis, inclusive of transportation costs from the plant to the customer.
- The chart shows realized pricing lagging market price, similar to Florida DAP
- Days lag pricing to revenue recognition:
  - Average = 45

Lag varies with seasonality and sentiment. The pace of buying and delivery increases when prices are rising.



# Corporate & Other

There are four primary categories of revenues and expenses you need to understand in this segment

1. Profit in inventory (PII)
  - This offsets intersegment profit before sales to final third party customers. For example: Phosphates segment will recognize sales and profits for MicroEssential products sold through transfer pricing to our Brazil distribution business, but those revenues and profits will be unwound in the corporate segment until that product is sold to independent third parties.
  - We have PII for Phosphate products and Potash products sold to Mosaic Fertilizantes or our China and India distribution businesses.
  - There is no PII recorded for intra segment sales from production to distribution within Mosaic Fertilizantes
  - PII is seasonal, negative when Brazil is building inventory before their seasonal peak in the third quarter, and positive when inventory from intersegment sales is being drawn down.
2. Unallocated SG&A
  - This is primarily corporate functions not directly aligned with segments.
  - 2020 is higher than normal run-rate due to investments in consulting for Supply and North American transformation.
3. Distribution businesses in China and India
  - These businesses sold 2.0 million tonnes of products in 2020, over 60% supplied from Canpotex.
4. Unrealized gain or loss on derivatives in COGS
  - This primarily relates to medium term hedges on BRL, and is excluded from adjusted EBITDA and adjusted EPS.

\*Other also includes StreamSong in this segment.

# Demand Growth vs. Mosaic's Volumes

Mm tonnes	2015	2016	2017	2018	2019	2020	2021
Global K shipments	61.7	60.8	65.0	67.0	65.2	67.5	68.0 – 70.5
Mosaic tonnes sold	7.93	7.78	8.60	8.78	7.84	9.40	Note (4)
Percent share	12.85	12.80	13.23	13.10	12.02 <sup>(3)</sup>	13.92	
Global P shipments	67.6	70.3	71.6	72.2	70.7	72.5	76.0 – 78.0
Mosaic tonnes sold <sup>(1)</sup>	9.35	9.68	9.46	8.39	8.18	8.53	Note (5)
Percent share	13.83	13.77	13.21	11.62 <sup>(2)</sup>	11.57	11.76	

(1) Phosphates tonnes sold reflect finished tonnes only.

(2) 2018 was the first full-year Plant City phosphates production was idled.

(3) Mosaic's weighting in North America meant volumes were significantly impacted by North American weather.

(4) Considerations for 2021 potash volumes:

- Mosaic expects to be capacity constrained

(5) Considerations for 2021 phosphates volumes:

- Mosaic expects to be capacity constrained
- Over time, expect improved efficiencies and recovery rates to increase operating capacity
- The majority of new greenfield projects have completed their ramp up

# Finished Product Tonnes

## Distribution of Sales by Quarter

		2016	2017	2018	2019	2020	Average
<b>Phosphates Segment</b>	Q1	23%	24%	23%	22%	22%	23%
	Q2	25%	27%	28%	27%	26%	27%
	Q3	26%	22%	27%	27%	24%	25%
	Q4	26%	26%	22%	25%	27%	25%
<b>Potash Segment</b>	Q1	20%	23%	19%	24%	20%	21%
	Q2	26%	25%	27%	28%	27%	27%
	Q3	28%	26%	28%	30%	24%	27%
	Q4	26%	26%	26%	19%	28%	25%
<b>Mosaic Fertilizantes</b>	Q1	19%	18%	17%	17%	20%	18%
	Q2	21%	22%	20%	23%	24%	22%
	Q3	33%	34%	39%	37%	34%	35%
	Q4	28%	26%	23%	24%	22%	25%

# Global Phosphate Shipment Forecasts by Region

February 2021

DAP/MAP/NPS*/TSP Mil Tonnes	2019	2020E	Low 2021F	High 2021F	Comments
China	17.8	18.3	18.4	18.6	Domestic phosphate shipments in 2020 increased for the first time in five years, and higher ag commodity prices are expected to spur further growth in 2021. This reversal removes the largest headwind to global phosphate shipments. Domestic DAP/MAP production in 2020 declined by nearly 0.4mmt (as per CPFIA data), illustrating the continued structural changes taking place in their industry, while CPFIA's producer DAP/MAP inventory figures showed a drop of nearly 1.1mmt y-o-y at the end of December. DAP/MAP/TSP exports in 2020 were nearly 0.8mmt lower y-o-y. Despite the rally in international prices, we expect 2021 export volume to remain constrained, driven in part by a further modest increase in domestic demand.
India	11.3	11.4	10.8	11.2	2020 shipments were revised higher on solid Q4 imports (as well as being rebased higher to include additional NP products). DAP imports ended the year up by nearly 700kt to 6.3mmt, while production fell by over 600kt to 4.1mmt. This, along with a strong domestic sales pace pushed total DAP inventories down by ~1.3mmt y-o-y. Looking ahead to 2021, higher international prices and the potential for limited additional subsidy could see MRPs increase sharply and curb demand, and we have lowered our shipment and import forecasts to reflect this. We continue to look for further guidance on the subsidy, while farm economics and the monsoon outlook continue to look favorable.
Other Asia/Oceania	9.4	9.7	10.2	10.4	Farm economics continue to be conducive to a more meaningful rebound in demand, particularly given the strength of ag commodity prices and generally benign weather. Fertilizer demand, however, continues to lag due to continued issues with labor movement restrictions, and we have pared back our demand growth expectations to reflect this.
Europe and FSU	6.6	7.0	7.1	7.3	Shipments in Europe/FSU are expected to continue to see moderate y-o-y growth in 2021, led by growth in Russia, while demand in the EU is expected to be stable. Dry conditions continue to be monitored in Germany/Poland.
Brazil	8.4	9.7	9.9	10.2	Strong imports in Q4 have resulted in a further upward revision to our 2020 shipment estimate. DAP/MAP/NPS/TSP imports were nearly 1mmt higher y-o-y, while channel stocks were little-changed (i.e. higher imports were a demand-pull paradigm). The ag sector continues to be lifted by higher prices and still-weak FX, and purchasing activity continues to run ahead of historical norms. We expect this robust demand pattern to persist through 2021.
Other Latin America	3.9	4.5	4.5	4.8	Similar to Brazil, favorable farm economics resulted in strong growth in 2020 (note the rebased figures include additional NP products). Our forecast for 2021 continues to show a slower, yet still robust demand growth across most countries.
North America	9.8	9.8	10.0	10.3	Normal spring and fall weather, increased acreage, lower imports (down ~25% y-o-y) and improved farmer balance sheets (in part due to improving crop prices) led to a recovery of on-farm demand in 2020. This strong demand allowed channel inventories to clear and put availability in the spotlight as the market turned to 2021. The recent rally in ag commodity prices portends strong on-farm demand in 2021 and with a depleted channel is expected to necessitate an increase in shipments y-o-y.
Other	5.2	5.2	5.1	5.3	We have revised our 2020 estimate higher due to the inclusion of additional NP products. Demand growth is expected to be constrained in 2021 due to higher prices curbing demand, most notably in Africa.
<b>Total</b>	<b>72.5</b>	<b>75.5</b>	<b>76.0</b>	<b>78.0</b>	Rebased global shipments are estimated to have increased 3.0mmt or 4.2% in 2020, to 75.5mmt. Our forecast range for 2021 is rebased and revised higher to 76-78mmt with a point estimate of 77.3mmt. This represents demand growth of 2.4% y-o-y.

Source: IFA, CRU and Mosaic  
(regional figures may not sum to total due to rounding)

\* NPS products included in this analysis are NP and NPS products with a combined N and P<sub>2</sub>O<sub>5</sub> nutrient content of 45 units or greater.

# Global Potash Shipment Forecasts by Region

February 2021

Muriate of Potash Mil Tonnes KCl <sub>2</sub> .	2019	2020	Low 2021F	High 2021F	Comments
China	15.8	16.2	16.1	16.4	China MOP imports recovered in H2 2020 and ended the year down only 3% y-o-y, while port inventories declined meaningfully in Q4 (and were <3.0mmt at the end of January 2021). Strong agricultural fundamentals, boosted by high crop prices, are expected to support potash demand in 2021. We revised our shipment forecast to higher in 2021, with domestic production stable at ~7.5mmt (though sales slightly higher than that) and imports down slightly at 8.6mmt (as suppliers may be unwilling to commit large volumes at the BPC-settled contract price).
India	4.0	5.1	4.5	4.8	India MOP imports reached the 2 <sup>nd</sup> highest level in a decade and exceeded 5.0mmt in 2020 (up 24% or 1.0mmt y-o-y), due to an excellent monsoon and kharif season. However, a lower subsidy allocation and expectations of higher MRP (and with P taking a larger share of farmer wallet) may result in lower potash demand this year and greater nutrient use imbalance. We have cautiously revised our forecast lower for '21.
Indonesia & Malaysia	3.9	4.1	4.4	4.7	We expect MOP imports to continue to recover more meaningfully in 2021, driven by the strength of palm oil prices (currently ~3900 Rngt/tonne) and generally benign weather. Tight palm oil supply/demand fundamentals continue due to disappointing production (-4% y-o-y in January 2021) and low inventories (-25% y-o-y), particularly in Malaysia.
Other Asia	4.4	4.4	4.6	4.8	Import demand in the region is estimated to be broadly flat in 2020, versus our previous expectations of moderate growth. Preliminary trade statistics suggested that higher imports in Vietnam and Thailand were offset by lower imports from Japan and other small markets. Demand prospects in the area remain positive, however, and we expect moderate growth in 2021 on improved farm economics and good weather.
W. Europe	4.8	4.8	4.7	5.0	Shipments in 2020 appear to have come in slightly ahead of our expectations and we have slightly increased our forecast for 2021.
E. Europe & FSU	5.8	6.0	6.1	6.3	Our estimate/forecast for 2020 and 2021 are unchanged. Russian demand continued to grow, and agricultural expansion there and a few other key markets in the region, coupled with elevated wheat prices, are expected to support higher potash demand in 2021.
Brazil	10.5	11.4	11.7	12.0	The strength of the Brazilian market was exceptional and supported by very favorable farm economics in 2020. The overall fertilizer market is estimated to have grown to 37.8mmt and MOP shipments surged to a record 11.4mmt last year. We expect Brazilian MOP shipments to expand another 4% in 2021 on top of the 8% increase in 2020. Fertilizer sales for both the corn and soybean crops are ahead of last year's pace and we expected strong farm economics, driven by elevated crop prices, to sustain shipment growth in 2021.
Other L. America	2.6	2.7	2.7	3.0	Potash demand has yet to recover to its peak level of ~3.1mmt a few years ago, but we continue to expect imports to grow gradually, underpinned by strong agricultural fundamentals.
North America	9.2	10.1	10.2	10.4	Strong demand continued into Q4 and tight market situation resulted in rising prices and an uptick in offshore imports to bring the full-year total to ~1.7mmt, in line with 2019. Positive acreage prospects (90+ million acres of both corn and soybean) in 2021 and strong farm economics are expected to result in healthy demand.
Other	2.8	2.8	2.9	3.1	We have pared back our estimate for 2020 slightly, which has carried through to a slightly lower forecast for 2021.
<b>Total</b>	<b>63.8</b>	<b>67.5</b>	<b>68.0</b>	<b>70.5</b>	Our estimate of global shipments in 2020 has been revised nearly 2mmt higher on a stronger-than-expected Q4 and other adjustments, representing nearly 6% y-o-y growth. We expect shipments to increase again in 2021, though at a more moderate 2.2% or 1.5mmt. We have thus increased our 2021 forecast range from 66-68 to 68-70mmt, with a point estimate of 69.0mmt.

Source: IFA, CRU and Mosaic  
(numbers may not sum to total due to rounding)