S&P Global
Market Intelligence

DowDuPont Inc. NYSE:DWDP

Company Conference Presentation

Thursday, May 17, 2018 3:10 PM GMT

COPYRIGHT © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All rights reserved

Table of Contents

Call Participants 3

Presentation 4

Question and Answer 10

COPYRIGHT © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All rights reserved

Call Participants

EXECUTIVES

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

ANALYSTS

Joel Jackson
BMO Capital Markets Equity Research

Unknown Analyst

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

Presentation

Joel Jackson
BMO Capital Markets Equity Research

All right. So our next presentation is from DowDuPont. Of course, the top 3 global seeds and chemicals supplier. Also, industry leader in material specialty products in the chemical space. So providing the update today for DuPont -- for DowDuPont, sorry is Jim Collins, the CEO of the Agricultural Division, also known as Corteva. And that's [indiscernible] of, of course, next June. So I'll turn it over to Jim.

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

All right, great. Thank you, Joel, and good morning to everybody. And also greetings to those that are joining us via the webcast. I'm pleased to be here to talk to you a little bit about Corteva Agriscience, which is the agricultural division of DowDuPont. Since the close of the merger, which is nearly 9 months ago, we've demonstrated the strength of our combined pipeline and how it will deliver. At the same time, we're illustrating our ability to stay focused on our commitments in the face of some very unexpected weather conditions, all the while continuing the crucial progress in the near term and in the march up towards our intended spin.

So today, I'll step through how our combined pipeline, which is targeted to peak sales of greater than $22 billion, positions us well to deliver on our priorities through an industry-leading product depth and geographic scale. I'll also provide some greater detail on our strategic vision, which is providing the roadmap for our continued execution.

So turning to Slide 2, I'll remind you that during the course of the presentations, I will make forward-looking statements. All statements that address expectations about the future are forward-looking. Although they reflect our current expectations, these statements are not guarantees of future performance but involve a number of risks and assumptions. Please review DowDuPont's SEC filings for a discussion of some of the factors that could cause these actual results to differ materially. My forward-looking statements are current only as of today, and we disclaim any obligation to update them or the factors that may affect the actual results.

So turning to Slide 3. Corteva Agriscience is a key agriculture industry player, building on a robust reputation as an industry-leading industry innovator. We continue to work alongside producers to connect the dots across the value chain and deliver targeted products and services designed to enable increased productivity while maintaining our commitment to responsible stewardship, food safety and security. Now these have -- they technologies helped to drive record production in our industry in recent years, a necessity in keeping pace with record consumption that has occurred in this same time frame. So as we look ahead, we anticipate the need for agriculture technology to continue to increase as farmers look to further improve the productivity of their farming operations, sustainably growing more food.

On Slide 4, in today's $100 billion production ag industry, we are a market leader in the majority of our key market segments, and we'll leverage this strong position to continue to drive value for all of our stakeholders. Our balanced engine of growth is powered by a product pipeline and a geographic scale, which, together, provides a tremendous source of competitive advantage. Longer term, we are focused on identifying opportunities to grow this scale and reach while continuing to realize new value from our significant cost and growth synergies, which I'll discuss more in just a moment.

So turning briefly to our first quarter performance on Slide 5. Weather-related delays across the Northern Hemisphere and Brazil impacted both top and bottom line results for the Ag division in the first quarter. It was officially the coldest April on record, which delayed a significant portion of the planting season. To recap a few comments and put the impact of those delays into perspective, through our advantaged route to market, pioneer brand sales reps typically deliver seed to growers within only a few days of planting. And in the normal season, we delivered the majority of our North American corn volume over a 4-week period between the end of March and early April, which straddles our current fiscal year quarter-end.

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

With planting delays into early May, a large portion of our seed sales in North America was shifted into second quarter. I'll pause on this point. After the intended separation, Corteva Agriscience will be a stand-alone ag company, and we see this milestone as a chance to measure our performance as a stand-alone ag company, shifting our fiscal year and getting the planting seasons aligned with the same quarter. It's a move we see as value-add in bringing clarity around our overall results.

So as we estimated earlier this month, deliveries increased sharply as weather warmed around the mid-month, with farmers accelerating the pace of planting. As expected, our deliveries have returned to normal levels by this date. We expect net sales to grow in the low 20s percent range, and operating EBITDA to grow in the high 30s percent range for the second quarter. So as we adjust our lense to the path in front of us, we remain confident in the expectations that we set for the Ag division earlier this month during the DowDuPont first quarter earnings call. Building on these points, we also expect to see net sales increase at the low single-digits percent for the full year of 2018 outlook. These results will be delivered by the strength of our new product launches, together with the realization of cost synergies, which provide an important source of momentum as we look ahead.

So turning to Slide 6. Our combined product pipeline boasts leading-edge solutions that draw from our strengths in biotechnology, crop protection and agronomy, with targeted innovations creating new advantages in critical areas moving forward. For example, we are making important progress in seed-applied technology, targeted breeding and digital agriculture. Collectively, the strategic choices we are making, coupled with our near-term product launch engine, embedded expertise and balanced focus, are enabling us to deliver greater choice and value immediately while establishing Corteva Agriscience as a leader in production ag.

Our robust pipeline is fundamental and sustainable source for forward momentum in each phase of this strategic journey that we are on. To chart this path, we've developed milestones that continue to guide our progress, which are illustrated on Slide 7. These are: improving margins through the achievement of our $1.1 billion in cost synergies for the Ag division; driving top and bottom line growth through the successful new product launches and capturing the growth synergies, enabled by a combination of these heritage businesses; and creating novel new technologies over the long term that will continue to move the industry forward.

I'll share more on the transformation we're driving over these 3 horizons, which serve internally as our guidepost, together with providing some transparency on how we continue to progress. So turning to Slide 8. We entered 2018 from a position of strength, with a strong pipeline and a playbook of cost and growth synergies. And amidst the challenges resulting from the recent near-term weather-related headwinds, we are confident in our ability to maintain that strength as we look ahead. One of the most important steps that we took early on was to create a best-in-class organization, establishing 2 leading platforms: Seed and Crop Protection. By integrating our sales organization in these first days, we streamlined our cost structure and put in place important efficiencies right from the beginning, enabling faster decision-making, a higher level of accountability and an even closer connection to our customers. We delivered cost synergies in the first quarter, and we remain on track to deliver 75% of our cost synergies on a run rate basis by September, with more than $300 million realized in 2018 versus 2017. Now keep in mind that our product cost-related synergies take longer to realize, given our inventory cycles and the planting seasons. Therefore, our 2018 expected synergies will be a little more weighted towards the second half.

Now turning to our pipeline. We will continue to drive growth through new product launches across our Crop Protection and Seed platforms, with ongoing progress in the emerging area of digital agriculture as well. Collectively, we see peak sales opportunity of approximately $4.5 billion from 2017 and 2018 product launches. These technologies we are delivering represent needed solutions to pressing agricultural challenges. Importantly, the manner in which we are getting these solutions to our customers' hands illustrates the depth of our relationship focus, with a route to market that recognizes the unique needs of our stakeholders while delivering the highest value for our business. Case in point, our Brevant global seed brand launch earlier this year in Brazil and the recently announced multichannel and multi-brand strategy that we announced for the U.S. market, which I'll talk about a little more in a minute. Importantly, as we drive progress in the areas of cost and growth and accelerate our competitive advantage in the market, we continue to make substantial progress looking forward to our June of 2019 intended separation.

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

On Slide 9, let's take a closer look at the work underway in the areas of growth synergies. As you model what this area looks like, you can break down our progress into 4 key areas: innovation and technology, portfolio, new business models and market access.

Starting first with innovation and technology. We are targeting approximately $9 billion in peak sales from 2017 through 2021 product launches across our combined pipeline. And through the strength of this pipeline, we can also expect to realize growth synergies where we see the intersection of Seed and Crop Protection, growing our proprietary portfolio through the expanded application of seed-applied technologies across a larger pool of active ingredients. The strategic actions we've taken through the updates to our business model, notably in the areas of insect management as well as row crop herbicides and nitrogen management, are enabling us to recapture and expand our business following the remedies, while at the same time, identifying opportunities to further grow our advantage in key market segments and geographic regions. And finally, through our focus on market access, we are increasing a growth opportunity from these launches by offering through enhanced route to market and optimized sales channels while utilizing an enhanced launch playbook, as I mentioned, with the rollout of our multichannel and multi-brand strategy a few minutes ago.

Let me talk a little more about this point on the next chart. Our multichannel, multi-brand strategy shown here will provide a differentiated way for Corteva Agriscience to drive growth. This enhanced approach allows us to have a complete go-to-market strategy, covering direct dealer and retail distribution chains.

Moving forward, Pioneer will remain the company's global flagship seed brand, which is provided through a unique direct route to market globally. Dairyland Seeds, Hoegemeyer, Seed Consultants, NuTech and Terral will serve the U.S. regional market. And finally, Mycogen and Terral will serve the U.S. retail market, and Brevant will serve those retail markets outside of the U.S. as we announced earlier. So following the merger, our product portfolio included more than a dozen seed brands in the U.S. that sell Corteva Agriscience corn and soybean seed. Realigning this multi-brand approach was necessary to better focus our product and service offerings, helping us to best serve customers through a focused, segmented strategy.

So turning to Slide 11 and looking out to the future of our pipeline. 2022 and beyond, in this phase, we will further expand our market leadership position through the innovations that we are driving today across our pipeline, leveraging the benefit of the strategic steps that we're taking now to expand our customer relationships and external collaborations.

Our combined pipeline is robust, and the programs shown here are expected to deliver peak sales figure of greater than $22 billion. We also have a strength embedded deep into this pipeline. With ongoing enhancements to our R&D capabilities, we will accelerate the pace at which we are able to deliver innovation well into the future.

Now our focus on expanding digital agriculture will also help us to support and further drive this accelerated pace, enabling additional value delivery mechanisms for the customer and for our business. I'll touch more on digital in a few minutes.

So let's take a little deeper look at the seed platform on Slide 12. In seed, we're bringing together market-leading technologies that are enabling our #1 or #2 market positions in key market segments. Our strong North America presence is an important part of our sales strength in seed, an advantage we look to grow through the full Enlist and Qrome launches as well as through strengthening our global position, especially in Latin America. For example, the ramp up of Leptra and continued POWERCORE penetration as well as the introduction of Conkesta soybeans represents important progress we are making in Latin America. And with Conkesta E3 integrated solution, these highly anticipated launches will provide much-needed insect control as well as a proprietary tolerance to multiple herbicides for improved weed management.

Longer term, increased strength and depth across core insect and herbicide trade areas will enable this combined pipeline to deliver against multigenerational needs for insects and weed control, and new product launches will enable us to shift the portfolio over time to a more proprietary offering, enabling margin improvements.

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

Looking first at our breeding portfolio on Slide 13. We are building the strongest and most-diverse breeding engine in the industry. Today, our genetics and germplasm lead the industry and are supported by proprietary traits that are helping to deliver needed solutions right to the farm -- customer.

In digital breeding, we are expanding the strength of our technology and utilizing innovative methods to drive productivity and dramatically shorten our time-to-market. In fact, we've taken 1 to 2 years off the development cycle for delivering new genetics and transgenic traits. For example, our A series varieties are developed from the most-extensive localized soybean breeding program and product testing program in the industry, one which is focused on customizing varieties for local yield environments. By increasing our molecular marker throughput by over 20x, we have introduced 110 new A series varieties in the last 2 years. And our research pipeline is full with soybean lines that will help to continue to increase yield potential in soybeans.

Turning to targeted breeding. We are rapidly adopting and deploying CRISPR technology to accelerate the development of new trade concepts broadly across crops. Early successes with waxy corn illustrate technical validation and the potential for new trade concepts more broadly. Here, we are on track to start selling our next-generation waxy corn hybrids for first planting in 2019, an outcome that represents a best-case, reduced time-to-market and more than 50% or 3 to 4 years faster than our normal digital breeding methods. Advantages and progress across our breeding portfolio are fueling overall increases in the scale and quality of our integrated breeding pipeline and further support the solid investment profile of our Seed program looking ahead.

I'll turn now to traits on Chart 14. In corn, we're developing technology that has an opportunity to boost margins, improve efficiency, renew our portfolio and create out-licensing opportunities. Here, we're pursuing a balanced portfolio of proprietary and licensed trait technology. We're doing so by effectively managing the product life cycle of each trait combination and have plans to ensure a seamless transition from old to new technology.

Now with our combined pipeline in soybeans, shown on Slide 15, we have the ability to transition to a more proprietary trait package offering. This transition would maximize our stack options for new product concepts and increase our out-licensing opportunities. Through our strong geographic position, we are expanding farmers' access to much-needed soybean trait technologies, such as Roundup Ready 2 Xtend, Plenish, Enlist E3 and Conkesta E3. We intend to offer these solutions to maximize customer values over time, leveraging our right-product, right-acre approach across this expanded portfolio of products. In the coming years, we'll grow our overall company position in Enlist E3 seeds to a market-leadership position for this technology.

So turning now to Slide 16. In the intersection of our Crop Protection and Seed business, we are delivering cross-platform solutions that customers want and need. The value we expect to capture in this area is an important aspect of our growth synergies program and a solid proof of a crucial long-term advantage of having a complete product portfolio.

Starting with Enlist, the full Enlist system demonstrates the unique strength and advantage of a complete solution. Our proprietary Colex-D technology has been validated in field, with proven reductions in both drift and volatility. These proof points further support the value we expect this complete system to deliver for farmers dealing with complex resistance issues. We are targeting approximately $2 billion in peak sales from this full system. The targeted steps we are taking in the area of seed-applied technology further builds on Corteva Agriscience's unique competitive position in cross-platform capability.

Looking ahead, we expect to expand the applications of seed-applied technology, resulting in a larger footprint treated with technology, such as Lumivia and Lumiderm. We're also excited about the launch of Lumisena, which has been applied to a majority of the Pioneer brand soybean seeds planted in the U.S. this spring and driving up to a 4-bushel per acre yield advantage. Our robust offering of seed-applied technologies continues to address targeted challenges in insect control globally, a market segment which we expect to achieve peak sales of more than $400 million with our existing portfolio.

So turning to Slide 17. In addition to supporting our strong value case for cross-platform solutions, we are rapidly ramping up Crop Protection innovations that will build on our strengths and position in key

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

markets, such as herbicides, where we hold the #1 position globally. Additionally, we will continue to target higher-margin returns while maintaining strict focus on strong portfolio discipline.

On Slide 18, we are quickly ramping up new Crop Protection technologies to monetize our pipeline and drive expansion in key sectors while, at the same time, building on successful launches, extending and improving technologies across this diverse product portfolio.

Beginning with our upcoming launches on the left side of this chart, gain from new technologies are well positioning us to drive growth. In our disease control pipeline, which represents the broadest in the industry, novel technologies, such as Vessarya and Zorvek, are enabling top line expansion. Arylex, a broadleaf herbicide for use in multiple crops, provides growers with a powerful low-dose herbicide with very favorable environmental profiles. We expect Arylex to deliver approximately $800 million in peak revenue.

In insect management, Pyraxalt, which is targeted towards insect management in rice, will be important to strengthening our position in Asia-Pacific. It's expected to deliver $150 million in peak sales. Herbicide technologies, like Rinskor, will further expand our leadership position in the rice market, and by adding a new mode of action, will enable expansion beyond rice protection. It is expected to deliver more than $400 million in peak sales and, similar to Pyraxalt and Rinskor, has such a favorable environmental profile, reinforcing our ongoing commitment to delivering sustainable products for our customers.

The gains from this -- these molecules and this portfolio, coupled with those from our existing products, such as Isoclast and Spinetoram, will enable us to achieve double-digit growth across these technologies in 2018. And we started off the year with strong global growth in insecticides, as evidenced in the first quarter. We expect more than half of our Crop Protection business growth in 2018 to come from the gains across the insect management portfolio, including those in the areas of seed-applied technology, which I touched on earlier.

The ongoing expansion and improvement of other actives included here on this chart further illustrates how we are rapidly advancing the innovation across our pipeline, creating momentum today to enable targeted above-market growth for Crop Protection. We are targeting more than $3.5 billion from the existing pipeline programs in stage 2 and beyond.

So on Chart 19, to deliver the growth we are targeting in the near to midterm horizons, we are also maintaining a strict focus on enabling future cost advantages and product portfolio discipline. Here, we are leveraging our strong market position, enhanced scale and rightsized operating model to make targeted market -- margin improvements, helping to accelerate our cost-competitive cost advantages across the Crop Protection platform. In the near term, we expect these improvements to be driven primarily by the execution against the synergies, which I touched on earlier.

So as we look ahead, we will sustain this growth momentum and enable future cost advantages through this proactive approach to portfolio management. In the near to midterm, we are making -- we will target strategic acquisitions to build on the existing core businesses while looking for opportunities in close adjacencies that provide new attractive areas for long term sustainable growth. During this period, we will also implement a best-owner strategy, divesting molecules that are no longer strategic to our product portfolio. Together, this work will shape our total Crop Protection offering to best deliver value.

So turning to Slide 20. As we think about the future of our industry, our progress in emerging areas, such as digital agriculture, will help to shape new connections to customers and consumers, enabling new sources of advantage across our business. Our 2017 acquisition of Granular represents an important milestone in this journey. Through this investment and the ongoing progress we've made, we continue to build on new opportunities to partner with customers while further enhancing our digital products and services. And our strategy is working. In fact, more than 40% of our new Granular contracts that we signed in the first quarter were a direct outcome of our Pioneer reps leveraging their strong customer relationships to make a meaningful connection with the Granular team, and the real winner is the farmer. The digital agricultural solutions powered by Granular support both our Seed and Crop Protection business platform by enabling efficiency and transparency across the value chain. They enable farmers to access information quickly, accurately and holistically to help farmers make the best-informed decisions to

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

ultimately help improve the profitability of their overall farming operation. We are the first in the ag industry to deliver both agronomy and a complete end-to-end farm management solution.

And looking further ahead, our long-term vision is to create a portfolio of products and digital capabilities that work seamlessly together to improve profitability, efficiency and sustainability of farms globally.

So to summarize on Slide 21, the strength of our combined product pipeline, together with the lead -- industry-leading expertise embedded across the integrated operations, will enable Corteva Agriscience to be a global leader in the production agriculture industry. We are committed to drive progress against our 2018 priorities, addressing the challenging start to the year with resolve and a collective focus on our ongoing financial and strategic commitments, including the ongoing implementation of our multi-brand, multichannel strategy, rapid and successful new product launches and continued preparations for our intended spin in June of 2019.

Looking further ahead, we'll continue to deliver on our cost and growth synergies while accelerating the robust pipeline, building on our competitive advantages in new and innovative spaces to shape agriculture well into the future. I remain confident that we have the right people, the right tools and the right capabilities in place to meet those commitments.
With that, Joel, let's take some questions.

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

Question and Answer

Joel Jackson
BMO Capital Markets Equity Research

Time for a few questions. I have a couple of questions coming on the app first, all the same topic, so let's address that. It's basically around the Pioneer global direct and Crop Protection. So do you envision selling Crop Protection through your global direct Pioneer?

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

So as we talked about earlier, this is kind of multichannel, multi-brand approach, we recognize the need for multiple routes to market for our different products. Clearly, Pioneer is focused as our flagship seed brand in North America. And this was part of the driver of creating a strong retail brand by reinvigorating the Mycogen and Terral brands with enabling germplasm so that we can actually work more with retail and distribution in North America and globally to serve, I think, a very powerful and an important part of our go-to-market structure. So I don't see it as either or, Joel. It really is both ands.

Joel Jackson
BMO Capital Markets Equity Research

We'll take questions first from the room.

Unknown Analyst

With two of your biggest competitors being taken over, Syngenta and Monsanto, will they become more vigorous competitors? Or do you see opportunity in that in what's happened to them?

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

Well, it's a little hard for me to comment on kind of where they will be headed. What I can say, I believe, our speed, our timing is to our advantage. I also believe the kind of fully integrated organization that we have that is very balanced, at least against one of those that you mentioned, gives us an advantage. And I really think the cultures of these 2 companies, coming down to the culture that existed at Dow AgroSciences and at DuPont, we're actually a lot more alike than different. I've had great relationships with the leaders in DAS over the years and had always thought to myself, wouldn't it be great if these two companies could come together? And now that they have, it just reinforced that message and belief. And we're hearing that from our customers and our collaborators, our partners in the industry, who feedback to us. "Jim, you guys had some of the best talent in the industry and you've really put together a pretty talented team that's out doing a lot more listening today than ever before." So I'm proud of the team that we've put together. I believe we have the right stuff to be darn competitive, but I also believe we have the right approach to be successful with our partners as well.

Joel Jackson
BMO Capital Markets Equity Research

Jim, what are the key opportunity, key challenges to really get the net around in Spinosad to really help to regain share against -- or not experienced [indiscernible] that's what I mean, sorry.

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

Yes, thanks for the question. First, it had to do with just making sure we had the supply of those key products in the industries. These are naturally derived products, and they're obtained through a more complex and a more difficult fermentation process. So over the years, through some challenges, we just haven't quite been fully enabled with the supplies necessary to compete broadly in segments where that chemistry would've had substantial advantages, but we just didn't have the quantities to go after it. But

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

as I've talked recently, we solved many of those issues through fermentation enhancements, productivity enhancements and some capital expansion. So all said, step 1 is, I just got to make sure we have the supplies out there in the market so we can go compete. The other aspect would be labels. Making sure that we've done the homework to expand the labels and, really, understanding our chemistry better than anyone else. And as we learn more about the pest spectrum of these products, they're actually quite advantaged in a number of these segments. So we're incredibly excited about those products, but also the entire portfolio. You add methoxyfenozide, you add Isoclast to that mix, we believe as we bring the full breadth of that out there, together with the footprint that we have globally and the real strategic relationships that we've built up over the years, we like our chances in that discussion.

Joel Jackson
BMO Capital Markets Equity Research

So a question came in on the app about the dicamba drift. So obviously, on the expense side, dicamba -- how -- what's been done -- I guess, the question is what's being done to address this year? How's it going? What are your thoughts?

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division

Well, look, first, we're fully supportive of the Roundup Ready 2 XTEND technology. We made a commitment to that technology a few years ago. And honestly, we saw very little within the Pioneer brand of some of the issues that were seen out there, and I think part of that is because of the stewardship that we brought to it. This advantaged, very direct, high-touch route to market allowed us to sit down with every one of our customers who was going to use the technology and make sure that they were following all the rules and using the technology appropriately. So we believe it can be used safely. We have a substantial portion of our lineup this year in Roundup Ready 2 XTEND, and we're ready to support that technology again fully with what I believe is the best stewardship approach in the industry. That said, depending on how things turn out with other issues that might be going on, we'll be the only company that has the other alternative with the Enlist system. And so we're encouraged by the Enlist launch in cotton that went really well. We've got Enlist now fully enabled in corn this year, and we'll see some exciting results there. And we're closely watching and waiting for import tolerance approval from China to make Enlist fully available in soybeans. We will have some limited trials to have -- so that customers can get some experience with the technology. So we're positioned well, no matter which way the industry unfolds.

Joel Jackson
BMO Capital Markets Equity Research

Great. Thanks, Jim.

James C. Collins
Chief Operating Officer of Corteva Agriscience™, Agriculture Division
Okay. Great, thanks a lot.

Copyright © 2018 S&P Global Market Intelligence, a division of S&P Global Inc. All Rights reserved.

Copyright © 2018 by S&P Global Market Intelligence, a division of S&P Global Inc. All rights reserved.

These materials have been prepared solely for information purposes based upon information generally available to the public and from sources believed to be reliable. No content (including index data, ratings, credit-related analyses and data, research, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of S&P Global Market Intelligence or its affiliates (collectively, S&P Global). The Content shall not be used for any unlawful or unauthorized purposes. S&P Global and any third-party providers, (collectively S&P Global Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Global Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON "AS IS" BASIS. S&P GLOBAL PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Global Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages. S&P Global Market Intelligence's opinions, quotes and credit-related and other analyses are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Global Market Intelligence may provide index data. Direct investment in an index is not possible. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Global Market Intelligence assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P Global Market Intelligence does not act as a fiduciary or an investment advisor except where registered as such. S&P Global keeps certain activities of its divisions separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions of S&P Global may have information that is not available to other S&P Global divisions. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

S&P Global may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P Global reserves the right to disseminate its opinions and analyses. S&P Global's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com and www.globalcreditportal.com (subscription), and may be distributed through other means, including via S&P Global publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.
© 2018 S&P Global Market Intelligence.