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EDITED TRANSCRIPT

Cabot Corp Investor Day

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PRESENTATION

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Good morning, everyone. Thank you for coming, and welcome to Cabot Corporation's 2021 Investor Day. My name is Steve Delahunt. I'm the Vice

President of Investor Relations and Treasurer for Cabot.

And for those of you who are here in person, it's great to see you. It's been about 18 months since I've seen a lot of you, so it's really good. We appreciate that you can join us in person. And for those of you who are joining us online, it's great to have you joining us virtually. So thank you for that as well.

Before we get started, I want to remind you that all of today's materials are posted on our Investor Relations website, which is cabotcorp.com. I also want to bring your attention to our safe harbor statement. I ask that you familiarize yourself with the language and the terms on this slide as they do pertain to information that we will discuss throughout the day. And before I get started, I also want to remind you of the hotel's COVID policy. So we do ask that you wear masks when you're not eating or drinking. So thank you for that.

So moving to the agenda, you can see that we have a pretty full agenda today. We'll start with Sean Keohane, our CEO and President, who will talk about our new strategy and give you an update on our 3-year outlook. Martin O'Neill will give you an update on our ESG efforts. And Bart Kalkstein will give you an overview of our Reinforcement Materials segment.

When we -- then we'll have a Q&A session with those 3 speakers. They'll join us up on stage here, followed by a 10-minute break. When we come back, Jeff Zhu will introduce the Performance Chemicals segment by discussing the Performance Additives business, including a deep dive into battery materials. And then Aaron Johnson will discuss the Formulated Solutions business, including an update on our inkjet product line. And finally, Erica McLaughlin will provide a financial and capital allocation update, followed by some closing remarks from Sean and then a Q&A session to wrap up. We will be having lunch served. So we ask that -- those of you in person stick around to join us as the executive team will be available for questions at various tables.

So with that, I'll turn it over to Sean.

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Thank you, Steve, and good morning, everyone. And I echo Steve's comments in terms of it's great to see everybody. It used to be -- that greeting, it's good to see it used to be sort of a trivial thing we say. And now when I meet people, I say, no, it's really great to see you. So that applies here.

So good morning, ladies and gentlemen. And again, welcome to Cabot Corporation's Investor Day. And again, for those that are participating virtually, thank you as well. I think we have a larger group of virtual participants this year given the obvious COVID concerns, but we appreciate you joining. And we certainly will be accommodating your questions throughout the program as well as the questions that come from the audience that's in person here.

So my name is Sean Keohane. I'm the CEO of Cabot Corporation. And for those that I haven't met before, maybe just a bit of brief background. I've been with the company now for close to 20 years in a range of different roles, operating roles, including President of the Reinforcement Materials business, President of the Performance Chemicals segment as well as a number of regional and functional roles over the years, including responsibility for launching our commercial excellence initiative, which you'll hear about today, that was some 7 or 8 years ago. Prior to joining Cabot, I worked for United Technologies and was in a range of general management roles with UTC in both the United States and the Asia Pacific region. So it's great to be with you again today.

And on behalf of the management team, we're really excited to share with you our strategy for leadership, our growth agenda and the case for why we believe that Cabot offers a differentiated investment opportunity. Over the past 6 years, we've focused our portfolio around our core strengths. We've made investments in areas where we have what we call a right to win. And we've dedicated ourselves to a commitment around execution over the past 6 years. And as a result of these accomplishments, we really think we're poised for elevated growth and break out value creation. So we look to talking about that today.

As we progress through the program today, we'll focus our discussion on 5 key themes that you will continually hear as each presenter is on stage. First, the management team and the entire Cabot Corporation team are committed to execution, and we understand that following through on this commitment is the foundation of credibility. Second, leadership matters. In each of our businesses, we hold the #1 or #2 global position in our footprint of manufacturing assets, technology labs and go-to-market teams is unparalleled in our businesses. These form a durable competitive advantage, a moat in a sense around our businesses, which enables an attractive level of profitability and growth potential.

Third, we've invested in and nurtured over the last several years a number of exciting growth vectors that are connected in compelling ways to important macro trends from enabling a new form of mobility to harnessing the power of digital. Fourth, sustainability is really at the core of Cabot and everything that we do, and we have a long record of ESG leadership. We'll continue to lead by bringing the power of innovative chemistry to help solve many of the world's sustainability challenges, and we'll do that with an unwavering commitment to operating responsibly. And finally, with our portfolio focused now and fundamental growth investments in place, our strategy is evolving to a new phase of growth and breakout value creation. And we look forward to sharing that strategy with you today and giving you a window into this exciting time for Cabot.

Before we progress too far, perhaps a quick snapshot of the company is good grounding especially for those that are a bit newer to the Cabot story. So we're a company with a very rich heritage dating back to our founding in 1882. And the heritage is one of leadership, innovation and global expansion. As I just mentioned, our businesses hold the #1 or #2 position in their respective markets. And our footprint of sales and assets is truly global, with approximately 75% of our sales generated outside the United States.

Our end market exposures are diverse, with the largest being the very resilient replacement tire market. In addition, we produce a wide range of valuable products that are critical to many automotive applications, the infrastructure in industrial sectors and a broad range of consumer applications. Across this portfolio of products and applications, the quality of returns is strong, with EBITDA margins of close to 20% and a return on invested capital substantially in excess of our weighted average cost of capital. And additionally, with our strong balance sheet and cash flow power, we have maintained a continuous and growing dividend since 1968, which is the year the company went public.

Our management team is here today, and you'll have a chance to hear from a number of them throughout the course of the program. The team has been built over the last several years to bring together a really unique blend of skills and diversity, a balance of experiences, both inside and outside of Cabot, and a global operating mindset. In fact, the majority of the executive team has experience in roles outside the United States and most have rotated through a range of leadership positions in the company over the years. We view this as a critical success factor for such a global enterprise.

Let's now take a look back at the past 6 years of our Advancing the Core strategy. We've accomplished a great deal, and our success has laid the foundations for our next phase of growth. When we launched the Advancing the Core strategy, we built it around a commitment to execution in our core businesses. This meant divesting those businesses that we deemed noncore. We successfully divested the

Specialty Fluids business in 2019, and I am pleased with our recent announcement to sell the Purification Solutions business. By doing so, we can focus our management attention and our capital on growing those businesses where we have strong leadership positions and a pathway to differentiated growth.

Pursuing our strategy has also entailed investments in new, high-growth markets where we have a right to win. I'm excited about our progress in battery materials, inkjet for packaging applications and the potential for E2C to capitalize on a changing mobility landscape. You'll hear more about these opportunities during our presentation today and see how we believe they will drive breakout value.

While shaping the portfolio has certainly been critical work over these last few years, we've been equally committed to building a strong operating platform that is fundamental to our competitive advantage. Commercial excellence and operational excellence form the foundations of our operating platform and are the basis of our customer value proposition. Recently, we established a global business services organization to bring focus, scale and end-to-end process management to our ways of working. And finally, digital advancements offer incredible potential to harness the power of automation and enhance data analytics.

Our work has yielded strong results, with adjusted earnings per share over the period exceeding our target range. Capital stewardship has been at the core of every decision we make and strong -- our strong ROIC performance, I think, reflects that commitment. Cash flow generation is also a strength of the Cabot portfolio. And in 2021, we generated record discretionary free cash flow of \$353 million. Our cash flow power has meant that we have funded these advantaged growth investments while returning 64% of our discretionary free cash flow to shareholders since 2015. All the while, we've maintained our commitment to a strong balance sheet and to an investment-grade credit rating.

Let's take a look more closely at our financial performance during this strategy period. We grew adjusted earnings per share and EBIT 12% and 10% compounded annually, respectively. And our commitment to execution and capital discipline have yielded strong returns with an adjusted return on invested capital of 18% in 2021.

I'd like to spend a few minutes now outlining the second theme in my key messages, and that is the theme of leadership and durable advantage. Our portfolio is comprised of leading upstream product positions in Reinforcement Materials, specialty carbons and fumed metal oxides, where we hold the #1 or #2 position globally. These positions are complemented by unique and deliberate downstream positions in formulations such as elastomer composites, specialty compounds, inkjet colorants and battery materials. And we view this linkage between upstream and downstream as a real differentiator as we can manipulate multiple formulation handles to deliver performance to our customers, and we can take up a position in the value chain that we think is the best to both deliver and capture value.

The portfolio that we have is underpinned by an unparalleled global footprint in all the major geographies that matter in our end markets, and we have committed -- we have a commitment to local management everywhere we operate. We lead in sustainability through our commitment to circularity in our operations, and we have a record of innovation and strong brands that are underpinned by deep application knowledge. And finally, we have a portfolio of high-value growth vectors that are built from positions of strength and where we have a right to win. Each of these dimensions works together to create a durable advantage, and this is how we win in the marketplace.

An important part of Cabot's leadership over the years has been our development of the China market. China is the second largest economy in the world and a market where approximately 50% of the world's chemicals are produced. China also makes almost 40% of the world's tires, 50% of the world's silicones and is the largest market for lithium-ion batteries. These are key end markets for Cabot and one simply must be there in order to grow and be a true global leader.

Our record of disciplined execution in China and our long-term commitment to the market have resulted in very strong performance over a long period of time. We have grown local profitability at a compound annual growth rate of 18% over the last 20 years since 2001. We've accomplished this impressive record of performance by being a best operator in China. And I'd like to describe for you the key elements of that formula. It starts with our long history in China, which dates back to the late 1980s. Over the past 30-plus years, we've built out a broad footprint, which has allowed us to fully develop our in-country make and sell model. In each of our businesses, the

China market is principally a domestic one. While there are some product flows between China and other countries in the Asia Pacific region, there is very little product flow between China and the markets of the Americas and Europe. Thus, we can operate and win in China without there being a material impact to our other geographic markets.

Our ecosystem of relationships in China runs very deep, whether that's with our blue chip list of joint venture partners or through our deep community relations. Cabot is respected for our long history in China and for our leadership in sustainability. Coupled with this is our deep connection to customers, both local customers and the multinationals that operate in China. Our commitment to local talent is truly a differentiator, and that allows us to serve our local customers in this highly dynamic market.

As we progress through the program today, you'll hear each of the presenters discuss how Cabot's businesses are connected to the key macro trends of a changing mobility landscape, an increasing focus on sustainability and how we're becoming a more connected world. Our product portfolio connects to these important macro trends in diverse ways, and the potential for innovation and growth is compelling. We're particularly excited about our emerging growth vectors in battery materials, inkjet for packaging applications and our E2C product line to improve tire performance. You'll be hearing more about each of these programs from Bart, Jeff and Aaron later in the program.

As we think about our strategy, sustainability is at the core and integrated into everything we do at Cabot. We have a long history of ESG leadership, beginning first with our deep commitment to personal safety and product stewardship. Over the years, our focus has naturally extended to include environmental performance, community engagement and human capital factors. The hallmark of our approach is strong governance, transparency and disclosure, clear goals and a commitment to continuous improvement and leadership. We were the first in our industry to embrace the external reporting such as the Carbon Disclosure Project, or CDP, and we produced our first GRI certified sustainability report back in 2010. Most recently, we've extended our disclosure to include adoption of the SASB framework and have completed an assessment according to TCFD guidelines.

We've been recognized for our leadership by countless organizations, including Newsweek's most responsible companies where we announced today that we have made this list for the third consecutive year, and recently, by Investors Business Daily, as one of their 100 best ESG companies in 2021. We are proud of our heritage, and we look forward to sharing more about our ESG commitment when Martin O'Neill speaks after me.

Our Board has been built to support our strategy and is a model of strong corporate governance. We've constructed a board that brings the skills necessary to support our strategy, and we have a great blend of experience with Cabot and the freshness that comes with disciplined Board renewal. Our average tenure is 6 years, with 40% gender and ethnic diversity. 90% of our directors are independent, including an independent chairwoman.

A unique feature of our governance structure is the fact that we have a dedicated independent committee focused on sustainability, and this has been in place for over 20 years. I think this speaks volumes to the Board's commitment to operating responsibly and integrating sustainability into everything that we do.

At the core of our company is our purpose, and I'm very excited to share that with you today. At Cabot, our purpose is to create materials that improve daily life and enable a more sustainable future. I'd like to share now a very short video that will hopefully bring this purpose to life.

(presentation)

Sean D. Keohane Cabot Corporation - President, CEO & Director

Thank you. This purpose motivates us in our work. It guides our decisions, and I think it serves as a unifying message as we engage all of our stakeholders. The Cabot team is a highly engaged team that truly live our purpose every day.

With our portfolio now focused, and progress and track record over the last 6 years firmly established, we're excited to launch our new strategy, Creating for Tomorrow. In Creating for Tomorrow, we've evolved our strategy and will leverage our strengths to lead in

performance and sustainability today and into the future. And we'll deliver on this strategy by focusing on 3 key pillars: driving advantage growth, delivering innovative chemistry and relentlessly pursuing continuous improvement in everything that we do. You'll hear a lot today about how we win the competitive advantages that differentiate us in each of our businesses and a compelling set of growth investments that are expected to create significant value for Cabot and with the potential to reshape the valuation of our company.

Our Revolve strategy preserves the underlying fundamentals of our previous one while drawing a strong connection to our purpose. Let's explore the strategy in a bit more detail and the 3 pillars of grow, innovate and optimize. It all starts with growth. We're seeking advantage growth, and that means growing by building on our unique advantages and from positions of strength. We'll continue to extend our strong global reach and invest organically in differentiated capacity and through tuck-in acquisitions in key growth markets.

Our recent announcement to acquire the Tokai Carbon plant in Tianjin and our previous announcement to acquire and expand the Nippon Steel chemicals carbon plant in Suzhou are good examples of how we're using M&A to support our growth strategy in a capital-efficient manner and with ROIC discipline at the core.

Innovation remains at the center of the strategy, and our efforts will be further focused on how we can develop innovative products and processes that support our customers and enable a better and more sustainable future. In fact, one of our 2025 sustainability goals is to have 100% of our new product or processes delivering a sustainability benefit. We think there is enormous potential here for Cabot to bring innovative chemistry to address these challenges and the opportunities that come with an increasing focus on sustainability.

A couple of examples might be helpful here. Our work in batteries is a great example of how our chemistry innovations can enable the electrification of mobility. On the process side, we're working on novel ways to reduce the environmental footprint of our manufacturing operations by exploring the use of reclaimed or recycled materials and alternative feedstocks. And we'll also continue to make choices about where in the value chain to play and our work will be built on an ever-strengthening foundation of application understanding.

And finally, optimize. The work of our manufacturing plants is central to our strategy. This is where the innovation comes to life, and this is where the brand promise to our customers is built. We'll continue our impressive journey of world-class manufacturing performance, and our work will evolve to deepen our focus on capital efficiency. It will also be important that we continue to renew our ways of working and bring the power of digital tools to differentiate us from our competition. By pursuing our strategy, Creating for Tomorrow, we'll grow, transform and reshape the valuation potential of the company.

Along with our purpose and evolve strategy, we are launching a new set of long-term targets. Our outlook is for a supportive market environment and strong momentum in the key macro trends I discussed earlier that will drive our businesses. We expect very strong volume growth in Performance Chemicals ranging from 9% to 11% over the period with capacity additions. And in Reinforcement Materials, we expect a very resilient replacement tire market to drive steady volume growth underpinned by a supportive market environment. In Battery Materials, we expect a compound annual growth rate of earnings of 50-plus percent over the next 3 years. And overall, we expect adjusted earnings per share to grow at a compound annual growth rate of 8% to 12% over the period and to generate over \$1 billion in discretionary free cash flow to support growth investments and cash return to shareholders.

This is the most important slide of the day because it brings together everything that we're trying to do and illustrates why Cabot offers a differentiated investment opportunity. When we launched the Advancing the Core strategy back in early 2016, we had a legacy portfolio of businesses that included some with strong leadership positions and some businesses that were deemed noncore. Over the past 6 years, we've divested the noncore businesses and invested in our operating platform to extend our leadership in Reinforcement Materials, specialty carbons, fumed silica and specialty compounds. And additionally, we've made sustained investments in new vectors of growth that build from positions of strength and where we have a right to win.

As we sit here today, we've grown the profitability of the core to a new and durable level of earnings. Additionally, the investments in our targeted high-growth markets of battery materials, inkjet for packaging and E2C for next-generation tires are beginning to contribute, and we expect them to reach materiality in waves over the coming years, beginning with battery materials.

As we look forward, we expect the core to continue to grow in size and value and expect the new high-growth vectors to become material

value contributors. In fact, given the underlying growth rates and margins in these high-growth vectors, it's reasonable to believe that in the coming years, they should be a larger part of the company valuation than our current core businesses. The core businesses have a deep moat around them, thereby underpinning strong cash generation that will fund our growth plans and enable a continued return of excess capital to shareholders. The combination of strong cash flow generation and breakout value from these high-growth vectors presents a compelling case for investment.

If you take away one thing from today's presentation, this is it. We look forward to sharing more about our strategy over the course of the program today.

And I'm now pleased to introduce Martin O'Neill, who is our Senior Vice President of Safety, Health, Environment and Sustainability. And Martin will be discussing more about our strategy for ESG. Martin?

Martin J. O'Neill Cabot Corporation - Senior VP of Safety, Health and Environment & Government Affairs

Good morning. Thank you, Sean. It is my pleasure to be with you today to talk about our ES&G accomplishments as well as our future ambitions. As Sean said, I'm Martin O'Neill. In the 21 years I've been with the company, a great company, I have had the privilege of serving in a number of operational roles as well as leading our safety, health, environment and the ES&G area.

I'm going to focus today's discussion on these 4 topics. The chemicals industry plays an important role in enabling the transition to a lower carbon economy, and Cabot's portfolio of businesses and products will lead to a more sustainable future. We do this by creating products that will help avoid emissions downstream and reducing our environmental footprint.

We are the best operator in our industries, and we have a long track record of leadership in this regard. Best operator to us means that we can attract and retain great talent. We can meet the regulatory requirements and develop a trusting relationship with regulators. This translates into value creation, confidence with our customers, neighbors and communities as well as regulators and makes us a highly reliable manufacturer.

Now Sean mentioned Cabot's right to win, and I want to connect the dots on that last point. We see a strong connection between leading in the ES&G and business success. And our customers consistently tell us that there's value in our ES&G leadership.

Sean shared this slide with you before. I'm going to make a few more points on it. Our journey in sustainability started more than 25 years ago. So we're not new to this. And it started with a relentless commitment to employee safety as well as board level oversight of safety, health and environmental performance, and subsequently ES&G. We push ourselves to improve year-over-year by setting ambitious targets that measure -- help us measure our success. We were the first in our industry to embrace external ES&G reporting by producing a public sustainability report in accordance with the Global Reporting Initiative, or GRI, and through our participation in the Carbon Disclosure Project, or CDP. Over the years, we've increased our visible commitment to external conventions such as the UN Global Compact and the Sustainable Development Goals, the CEO Diversity and Inclusion Action and the Ellen McArthur global initiative on plastic waste.

Our disclosures have evolved over time. We utilize globally accepted standards such as CDP, Sustainability Accounting Standards Board, and most recently, the framework recommended by the Task Force for Climate Financial Disclosures, or TCFD. We believe that it is important to align with these prominent and accepted industry standards.

Sean mentioned chemistry and the important role that it's going to play in a lower carbon future. And our portfolio of products are addressing many of the sustainability challenges our customers are working hard to address. In mobility, our advanced carbons are making cars lighter, which enables better fuel efficiency. Our E2C platform extends the life of tires and reduces Scope 1 emissions of the tire producers. And our conductive carbon additives enhance the performance of lithium-ion batteries, increasing the growth of electric vehicles, which will ultimately reduce the reliance on fossil fuels, reduce greenhouse gas emissions as the grid continues to green.

Our infrastructure solutions enables the production of larger wind turbines, improve performance of insulating materials with our compounds and specialty carbons, and enhances the efficiency and performance of the electric grid. These solutions promote alternative

energy options and solve challenges that will ultimately enable the transition to a lower carbon energy future.

Our products also play an important role in consumer applications where they enable the transition to environmentally friendly options for dyed fiber and enhance the circularity of supply chains by increasing the possibility of recycling. Many of these innovations will result in lower Scope 1 and 2 greenhouse gas emissions downstream of Cabot.

Circularity is central to our operations, and we continue to innovate to increase the use of recycled content in our products. Three of our most significant business segments utilize a byproduct of another production process as a raw material. Carbon black manufacturing converts up to 70% of the carbon from the raw material into an effective product for our customers. In Fumed Metal Oxides, we convert a waste material into a usable intermediate that is returned to our partners while a portion of the converted material is further enhanced and sold by Cabot as a high-value product.

We are holistic in our view of circularity and look to create value by eliminating waste from our manufacturing operations. Our carbon black operations convert waste heat from the manufacturing process into usable energy at a rate of 125%. And we are on the path to increase that to 200% by 2025. So let me try to put that in perspective for you. While many organizations today are attempting to achieve energy neutrality in the future, we are generating more energy than what we purchase in carbon black today. And by 2025, we will be generating 2x of the amount of energy we purchase to use in our operations. This is another example of value creation from our focus on sustainability, circularity and being excellent in maximizing the recovery of waste from our production processes.

I'd like to spend a few minutes on our -- discussing our 2025 sustainability goals. We announced our first set of sustainability goals in 2010 and broadened our external commitments to align on our material topics in 2019 when we announced our 2025 goals. Our broad set of goals aligned with our material topics, and it can be thought of in 3 sustainability pillars: caring for our people and our communities; building a better future together; and acting responsibly for the planet.

Our focus on caring for our people and communities starts with the safety of our people. We are very proud of our safety performance. We continue to rank at the top of the chemical industry, which creates -- and this creates tangible advantages in attracting and retaining the best employees. Superior safety performance is just one of the many positive aspects that come from an excellent operating culture. A safe operation is a reliable operation, which is valued by our customers as well as Cabot. We supported our teams throughout COVID and continue to do so today. And we're especially proud that we were able to serve our customers for the last 21 months despite the additional operating challenges presented by COVID.

We are also very proud to be an inaugural sponsor of the Future of STEM Scholars, or FOSSI, which is a chemical industry-led effort to support and attract talent from historically black colleges and universities. Why is that important to Cabot? Because we believe in the power of a diverse workforce and are committed in a very real way to the next generation of technical talent. That will help us to diversify our workforce and once again enable us to attract and retain the best talent.

Our building a better future pillar is a direct reflection of our commitment to grow and increase our value while providing challenging opportunities for the Cabot team. We're investing in our growth and sustaining our manufacturing base through capital projects and technology investments. In the last 2 years alone, we have made important strategic investments in our battery materials portfolio. The acquisition of Sanshun, the acquisition and plans to convert 2 acquired carbon black plants in China are just a few examples of that commitment to smart growth.

We're creating products that will ultimately solve critical sustainability challenges the world face. That means working with our customers to bring our innovations to bear to solve their problems and enable them to win in the marketplace with superior products. It also includes innovations in our production processes that will lead to improvements in efficiency and lower the direct emissions from our operations. Lastly, we understand our role in the supply chain. We work with our upstream as well as downstream suppliers to continue to drive lower footprint from cradle to gate.

We're very proud of our improvements that we've made in the environmental performance and the leadership we've demonstrated in our industry. Over the last decade, we've reduced our Scope 1 and 2 greenhouse gas emissions intensity by 15%, and we are on our way

towards our 2025 goal of 20% reduction in greenhouse gas intensity. In accomplishing the 15% reduction to date, we've reduced greenhouse gas emissions by 850,000 tons, which is the equivalent of taking almost 300,000 automobiles off the road every year.

We've also made progress in other environmental metrics, most notably in the reduction of SOx and NOx emissions, where we have achieved 36% and 82% of our 2025 reduction goal. We are beginning the construction of the last of 3 advanced abatement projects here in the United States, which will further reduce our emissions and help us achieve our goal.

We believe in the value of third-party certifications such as responsible care. We are well on our way to having 100% of our operating facilities certified to a safety, health and environmental management standard, which gives the public regulatory agencies and our communities confidence in our operations and our safety standards.

As I've said before, we are committed to transparency in reporting and disclosures. Third-party disclosure standards such as GRI, SASB and TCFD provide a standard to measure the effectiveness and completeness of disclosures. In 2020, we completed the TCFD scenario analysis for climate risks and opportunities, and you can find a summary of that work on our website. As a signatory to the UN Global Compact, Cabot has aligned our targets and material topics by focusing on creating products that will have a net positive impact while continuing our work to decrease our environmental footprint.

We are especially proud of the recognition we've received along the way. In 2020, the European Rubber Journal rated our E2C products as one of the top 10 elastomers in ESG benefits. Our most recent EcoVadis ranking placed Cabot at platinum level, which means we are ranked at the top 1% of chemical producers by the leading supply chain ESG rating agency. And Sean mentioned Newsweek and Investor Business Daily as just a recent 2 examples of our recognition. The takeaway here is that we have committed to leading in ES&G, and we're continuing to doing that going forward.

I promised at the start of my session that I would give you some insight into our future ambitions, and this is my most important slide. Today, we are very pleased to announce that our ambition to be net zero by 2050. On the left-hand column of this slide, you can see we're emphasizing continued commitment to transparency to report our progress as we proceed down our journey. This is an important consideration for investors. Our path to net zero starts with a commitment to develop interim targets, and we intend to work with the science-based target initiative or SBTi. SBTi collaborates with organizations to develop interim greenhouse gas reduction targets.

The technical path summarized on our pathway pillar and expanded upon in our approach can be thought of in 2 broad buckets of technology: investments that we are currently making and viable technologies that we need to better understand how they can be adapted to the unique characteristics of our operating network. We've been evaluating several technologies and advancing innovations to increase yield and the use of recycled content in our portfolio. Those efforts will lower our Scope 1 emissions. Examples of existing technologies that we need to learn more about and adapt to the unique situation in our network of plants include the use of bio-based feedstocks and carbon capture and storage.

The entire chemical industry will take this journey, and it will require collaboration, innovation and support of public policy. Cabot is prepared to engage with all stakeholders on these important issues.

My wrap-up slide, just to recap what we've talked about today. We have exciting examples in our product portfolio today that enable the lower carbon future, and we're helping our customers win in the marketplace by enhancing sustainability attributes of their products. While we are making great progress against our 2025 sustainability goals, we are not standing still. And our today's announcement to be net zero by 2050 is an example of that.

We're committed to continuing our work on process yield and optimization to reduce Scope 1 emissions as well as enhancing waste heat recovery and increasing the use of renewable energy in our operations to reduce Scope 2 emissions. We're advancing circularity in operations with the use of reclaimed carbon, recycled polymers and alternative feedstocks, and we'll look to adopt other technologies in our network of plants around the system. All of these efforts will reduce our emissions and overall environmental impact.

Lastly, we will continue to report our progress with transparency and with a vision towards the future. At this point, I'd like to introduce

Bart Kalkstein, our Senior Vice President of Reinforcement Materials.

Hobart C. Kalkstein Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region

Thank you, Martin, and hello, everyone. It's great to see those of you who I've met before here again today. And for those I've not yet met, my name is Bart Kalkstein. I run our Reinforcement Materials business and a role I've been in since 2016 and have been with Cabot for 17 years. And I'm extremely excited to be here with you today to talk about Reinforcement Materials, the state of our business and the road ahead for us. I think it's a very, very promising one. And today, I'll talk through 4 key themes.

First, Cabot is the global leader in reinforcing carbons. We have a global footprint and a first-class customer base of global and regional customers. The business generates strong EBITDA and very strong cash flows.

Second, our earnings stream has been and will continue to be a durable one. We have continued to sharpen our operational execution, and we have stretched our existing capacity. And from this platform, we see opportunities to further grow and expand.

Third, the industry structure for our business is a good one and allows for a supportive commercial environment. Capacity additions have been limited in much of the world, and our customers have specified our products into their formulations. And the industry operates with a cost pass-through mindset so that feedstock, environmental and other cost oscillations can be managed. This combination has allowed us to strengthen our margins in recent years, with more opportunities still ahead.

And fourth, the mobility landscape is rapidly changing with the development of electric vehicles and a desire for more sustainable solutions. Our proprietary high-performing engineered elastomer composite solutions provide a very bright future for us while we also are focused on developing a more sustainable reinforcing carbon manufacturing process. In summary, the business is strong, and the outlook is very bright for us.

So what do our products do? Well, our reinforcing carbons are used in combination with natural and synthetic rubbers, and in part, important properties to that rubber. Our reinforcing carbons make tires last longer, handle better and reduce road friction with extended vehicle range. They also help make hoses, belts and other mining equipment more durable. Demand for these products grows at about the rate of GDP, propelled by miles driven, new auto builds and investments in the mining industry. As our production process converts fossil-based feedstocks into value-added carbon, it also produces air emissions that require an increasing level of control. And this is limiting new capacity builds around the world as it has become significantly more difficult to secure permits in many places as well as significantly more expensive for new entrants.

Meanwhile, the business is largely a make in region, sell in region one. So it has been mostly insulated from the supply chain disruptions around the world. As for Cabot, we have the largest capacity footprint and serve our customers all around the world wherever they operate. We demonstrate our technology leadership in driving high production yields and producing high-performing products. And as we do this, we also capture the waste heat from our process to produce green power with no additional emissions whatsoever.

As both Sean and Martin mentioned in their sections, we produce far more energy today in the form of power and steam than we consume in our own manufacturing processes. And finally, we're the only player in our space to have a downstream investment like our E2C solutions. And this differentiates us from our competition.

In terms of our geographic spread, you can see here that our business is about similarly sized in the Americas and Asia, which are both about twice as big as that as our EMEA business. As I mentioned on the prior slide, our locations are well matched to our customers, and we make and sell largely in region from our 20 plants distributed throughout the world.

Let's move on now to the primary usage of our materials. As you can see on the left-hand side of this chart, about 80% of all reinforcing carbons are consumed in tire applications, with light vehicles, including SUVs and pickup trucks and heavy commercial vehicles like 18-wheelers and buses making up the majority of the volumes. Industrial rubber products make up the other 20%.

On the right-hand side, you can see the breakdown of replacement and original equipment tires. And this is a very important feature of

our business. As you can see, about 77% of all passenger car tires are replacement tires, or in other words, there are over 3 sets of replacement tires for every passenger car on the road and over 6 sets of replacement tires for every heavy commercial vehicle on the road. This means that we are largely shielded from the cyclical nature of the auto segment, and our business is driven more by the steadily expanding global miles-driven statistics for both passengers and freight.

Let's dig into this a little bit more and look at the -- a quarter century here of market data. We have 3 data sets here. Vehicle parc is on the left, vehicle production in the middle and tire production on the right. And let's start with vehicle parc. The vehicle parc is simply the number of vehicles that are out in the world to be used. You can see by looking at the axis that there are about 100 million vehicles produced every year and about 1.6 billion or 16x as much that are out there in the world today in the vehicle parc. Why is this important? Well, the number of vehicles that are there in the world are a very good proxy for us as we think about miles driven.

Now there are a couple of important things to call out here with the parc. First, notice how smooth the growth trajectory is. Recessions don't impact the number of vehicles out in the world really at all. While there may be a temporary downturn in miles driven given a recession due to market uncertainty, those slowdowns are decidedly short term. And even in the recession of 2009 and the COVID periods where lockdown stopped mobility for a couple of months, the dip in replacement tires was smaller than that of autos, and the recovery was quick and strong due to the number of vehicles that exist in the parc.

Finally, notice that the China parc remains small relative to the vehicles that are produced in China. It will take several more years still before the China parc reaches levels like that in the rest of the world, and this provides good momentum for replacement tire growth for some time to come.

So now that we've spent some time looking at the markets we operate in and the drivers of those markets, let's shift our attention to our business performance. As you can see here, we've been very successful in driving EBIT, EBITDA and cash generation growth over the past several years. The business delivered record results in FY '21, and I'm extremely proud of our team, their commitment to excellence and their execution and delivery.

One comment on the chart to the right. Here, we are showing something we've called excess cash generation. What this is, is the amount of -- the amount leftover from our business EBITDA after all of our capital investments have been made. So this includes compliance in sustaining and improvement, growth capital, all capital for our business. As you can see, we generate a significant amount of excess cash that the company is able to use to fund the exciting growth programs we're talking about today such as battery materials, inkjet and E2C as well as inorganic opportunities while still returning cash to shareholders.

So now let's talk about how we've delivered this performance. As Sean mentioned in his remarks, we have a culture of strong execution here at Cabot, and I'd like to call out 3 specific things in the Reinforcement Materials business. First, commercial excellence. Our leading supply position with global and regional tire and industrial rubber products customers is one that's been earned and must be maintained through ensuring that our customers get the products they want and need at the quality and consistency they need right when they want them. This is job #1 for our commercial team and has been the key driver to our improved performance over the last several years.

We've also been sharp in our pricing formula evolution. I mentioned at the top that one of the key things about our markets is the philosophy of having a base price and cost pass-through mechanisms. Generally, these costs are set relative to published indices, but sometimes we need to evolve. And the addition of a DCA or delivered cost adjustment that we introduced a couple of years ago is a good example of this. We recognize that the implementation of new marine fuel requirements in 2020 would create some disturbances in our feedstock markets. And so we introduced this factor that would pass on potential additional costs as well as potential additional savings to our customers to ensure that the integrity of our commercial relationships would stay strong. This helped us not only with the shift in marine fuel requirements, but also during all of the COVID disruptions over the past 1.5 years.

Second, operational excellence. A key performance marker for our manufacturing teams is OEE or overall equipment effectiveness. This is a measure that tracks how well our manufacturing plants are producing relative to the capability of our equipment. Specifically, we measure 3 things: our production rates; how much off quality or OQ material gets generated; and the uptime of our units. And relative to our 2017 performance, you can see here that we've improved by 5 percentage points, and this improvement has been a key contributor to

unlocking an additional 150,000 metric tons of effective capacity, which has helped support our volume growth over the past several years. It also helped support the volume growth in specialty carbons, specialty compounds and battery materials business as we've optimized our fleet.

And finally, yield and energy management. Our continuous improvement actions continue to increase our product yields, which not only improves our economics but reduces our CO2 intensity for key grades. We have expanded our energy center capabilities, and therefore, revenues across our network, and this has grown at a 12% CAGR since 2015.

Looking forward, we have a set of capital-efficient plans to drive our growth for the future. The first step here is to continue to unlock capacity through further OEE improvements across the network. And we anticipate to unlock an additional 100,000 metric tons of capacity from this program with a very low level of capital required. We also intend to move forward on our Cilegon, Indonesia expansion. Engineering for this project began a few years ago, but it has been slowed down due to the pandemic. Today, we are the only carbon black manufacturer in Indonesia, and this site serves customers throughout the ASEAN region, which, as you saw earlier, is growing at the fastest rates in the world.

Meanwhile, the region is short of capacity even as there is a continued build-out of new tire plants in Indonesia and beyond. So this expansion will add 100 -- sorry, 80,000 tons of capacity, and we anticipate start-up in 2024. And finally, we expect that inorganic growth opportunities will be a bigger part of our mix going forward. Nearly half of the current manufacturing sites we operate were acquired by Cabot through our history. And we feel that the addition of bringing certain competitive sites into our network is a prudent way to grow.

Now I've mentioned the importance of structural cost pass-through a couple of times this morning. And so let's take a look specifically at environmental costs. There's no question that regulations around the world continue to be focused on air emissions for manufacturing processes everywhere. And for us, that primarily means SOx, NOx and CO2. We have long mitigated our SOx and NOx emissions at a number of our sites, and particularly in China where we have operated all 3 sites with air pollution control systems for many years. And we have completed the installation of SOx and NOx reduction technology at 2 of our 3 U.S. sites with the project at our third site well underway. Meanwhile, on the CO2 side of things, primarily this has taken the form of additional costs through cap and trade schemes, and that is particularly focused in the EU thus far.

Now if you look at the combined costs of SOx, NOx and CO2 mitigation, significant price increases are needed to cover these increased costs and a reasonable return on our capital investments. So what does that look like to a tire maker? Well, let's look at the middle panel here. It really isn't much. If you think about a tire maker making a typical 17-inch tire for an SUV vehicle, the weight of that tire is about 10 kilograms, and the loading of carbon black is about 30% or 3 kilograms. And given the retail price of that tire in the \$150 to \$200 range, you can see that reinforcing carbon makes up only about 3% of the tire's price. So even a meaningful price increase in our reinforcing carbons is really negligible in terms of a price increase to the end user.

Most importantly, we've proven this out. In North America where we have been making significant environmental investments in SOx and NOx capture over the past several years, we have successfully increased our pricing to pay for these investments. And this has allowed us to grow our RONA in North America versus 2015 levels, and we are at levels well above our weighted average cost of capital, just as we have in other regions. I have confidence that this is durable and that we will be able to continue to use price increases to pay for this needed investment as we move forward.

Let's transition now to how the changing mobility landscape is affecting us. This is the data we saw earlier, but now we've cut it by type of powertrain: Internal combustion engines; battery electric vehicles; and hybrid vehicles. As you can see here, while our projections assume that 1/3 of all vehicles produced will be EVs or hybrid by 2026, only 17% of tires produced will be for EVs and hybrids as the parc will still largely be comprised of traditional powertrains. Thus, while this trend to EVs is real and exciting, the majority of tires produced will still be for traditional powertrains throughout the decade. Still, we are very well positioned to benefit from these macro trends that Sean shared earlier with us this morning.

As the mobility landscape shifts to electric vehicles, automakers will need to deal with the challenges of higher torques, heavier cars and a desire by the consumer for lower noise and longer range. These needs present excellent opportunities for us in terms of volume growth,

better product mix and the opportunity for new materials. Meanwhile, the increasing focus on sustainability is driving a push for more circularity and a smaller environmental footprint. And this gives a boost to our E2C solutions and other new materials that are made from a new set of feedstocks. I'll talk more about this in a minute.

And finally, as the world becomes more connected, so too will auto fleets that are autonomous and support ridesharing. We believe that autonomous vehicles will lower the cost per mile, and so more miles will be driven. Additionally, these cars will be on the move all the time, introducing a different level of fatigue stress and creating additional opportunities for new materials that we are well suited to deliver.

So our development activities in R&D are squarely focused on creating more sustainable solutions, which will bring additional value to our customers and help to drive our growth.

On the material side to the left, we have programs focused on bio-based and new morphology additives such as those we announced yesterday in a partnership with IFF Health biosciences. We are also working with the residual carbon reclaimed the tire recycling process to help our customers create more direct circularity in their products. On the right-hand side, we are working on a set of process innovations, including those that would lead to reduced CO2 emissions, increased energy capture and the identification and upgrading of a more sustainable feedstock fleet. And finally, on the bottom, you can see the importance of our E2C solutions, which can deliver significantly improved rubber performance through the patented processes that we have. These processes can enable the incorporation of sustainable elastomers and additives that are more challenging to manage in the traditional rubber mixing process.

Now let's look a little more deeply at E2C solutions, which is the most exciting growth opportunity we have in our Reinforcement Materials business. When we look at worldwide consumption of rubber compound, it's about 40 million tons a year, a bit more than that. And this is -- represents a total addressable market of over \$100 billion in rubber compound. Now our E2C solutions deliver a high level of performance at a premium price. So some of that opportunity won't be a fit for us. Still, even just a 1% to 2% penetration into this addressable market would generate \$1 billion to \$2 billion of additional revenue, and this would be a very, very significant addition to our business.

So where are we today? Today, we have launched products aimed at the mining markets, specifically ultra large mining tires, where our technology lowers the level of heat buildup in those tires and allows for trucks to move faster, which allows mines to output more payload more quickly, improving their profitability.

Additionally, our technology can help tires -- those tires last longer. This allows mine owners to improve their sustainability footprint and lowers their cost. E2C solutions for this application have been commercialized, and tires are being used as we speak out in mines today. Looking forward, our development team is hard at work in a series of new E2C materials that can improve the efficiency and life of long-haul truck fleets. Much of this market is fleet operated, and those fleet operators work hard to reduce the cost per mile of their operations. So tires with better rolling resistance and longer life that can be enabled through our E2C solutions help these fleet operators in 2 ways. They reduce fuel costs as well as the number of tires that they need, and this reduces their environmental footprint. We anticipate that products for this -- for long-haul trucks will be commercialized by the midpart of the decade, helping to accelerate our growth then.

And finally, by the end of the decade, as EV-specific tires begin to become more desired, we will have products that help deliver greater performance to electric vehicles. As I mentioned a few minutes ago, the vast majority of tires will be for internal combustion engines for a while. But by the end of the decade, we will see EV tires growing fast in terms of their share as the replacement cycle really begins to kick in.

We also will likely see fleet operators expanding their use of electric vehicles in both the passenger ridesharing and goods delivery segments. Enabling greater range and helping these fleet operators lower their total cost of ownership presents a very attractive opportunity for us, and we expect to see that this business will continue our sales growth, creating a very meaningful new part of the reinforced materials in the future.

So I hope I've given you some insight into our market, our business performance and the opportunities in front of us today. We are a global leader with a robust cash generation, a durable earnings base with attractive growth plans to continue into the future. And we operate in a market with supportive industry structure. Finally, we believe that the macro trends in front of us are positive ones for our business, and we're excited about the reinforcing product and process innovations we're working on as well as our E2C solutions being a true differentiator and platform for advanced growth in the future.

Thank you for your time today. I look forward to continuing our conversation in the Q&A period that comes up next. And as we transition to that, we have a short video wrapping up both my and Martin's sessions from this morning.

(presentation)

QUESTIONS AND ANSWERS

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Thanks, Bart. I'd like to invite Sean, Bart and Martin back up for -- on stage for our Q&A session. We're targeting roughly 20 minutes for Q&A, and we ask that you target your questions to these 3 speakers as we'll have another Q&A session later in the program. (Operator Instructions)

With that, I'll turn it back to Sean.

Joshua David Spector *UBS Investment Bank, Research Division - Equity Research Associate - Chemicals*

Josh Spector with UBS. Just a question on the EV car parc comments you made earlier. Just curious if you can clarify, is that a net benefit for you overall when you think about that from 2030 or not? And maybe today, on EVs, are they using higher silica content tires or not? That might be helpful to understand.

Hobart C. Kalkstein *Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region*

Thanks. There we go. Thanks for the question. So EV tires are a net benefit for us. So let me start there. The principal reason is the stresses on -- that are delivered today by electric vehicles are a lot higher than those that are delivered from the traditional internal combustion engines. It starts first with the motor. And so there's just a lot more torque that comes from electric motors. That puts more stress on tires. It wears them more quickly.

The second thing that happens with electric vehicles today is range is the most important thing. And so it comes from range is the use of a lot of silica in tire treads. Now that's actually not so different than much of the passenger car tires that are sold in the Western world today. Almost all of Europe has highly loaded silica treads. Much of the Americas today now has highly loaded silica treads. And so those are important ingredients for electric vehicles as well. Still, the bulk of the rest of the tire composition, the carcass, the under tread, et cetera, those are carbon black supported. And so a higher loading of -- sorry, a higher level of tires from electric vehicles is a positive thing for us.

One more thing maybe to comment on, and you'll hear more about battery materials from Jeff after the break. But as batteries continue to get better and better, the need for range becomes less and less acute. And then consumers will wonder why their tires are only lasting 20,000 or 30,000 miles on their new Tesla. And that is something we think is actually quite a positive thing for us for carbon black relative to silica and especially for E2C.

Yifei Huang *Deutsche Bank AG, Research Division - Research Associate*

David Huang, Deutsche Bank. On the 2% to 3% volume CAGR for the next 3 years you gave, given the growth outlook you talked about for the end markets, and potentially, automotive OEM recovery in the latter half of next year, why do you think you can't grow faster than the 2% to 3%? And are there any share gain opportunities out there given your leadership position and now customers placing more value on more secure supply?

Sean D. Keohane Cabot Corporation - President, CEO & Director

So yes, Bart, why don't you take that? I think the question is geared to Bart in reinforcement and trying to understand a little bit more about the growth rate that Bart talked about, which I believe is more of a long-term growth. Why do you take that?

Hobart C. Kalkstein Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region

Yes. No. So that's right. So first of all, the 2% to 3% growth rate that we talk about really is a long-term growth rate. And so there was a step down, of course, during COVID. The market has come back, I'd say, most of the way to 2019 levels, but there's still growth opportunity ahead of us that will likely be in the short term a little bit faster than that 2% to 3%. But that 2% to 3% growth rate, if you look at the market growth that we saw, that's really quite durable over time. There's usually -- after a downturn as there's been in COVID, there's usually a bit of a rebound that pulls things up and then it puts you right back on that, basically, that GDP growth rate schedule, and we've seen that for a very long time.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Sean, I have a question from Chris Kapsch from Loop Capital. The company's new strategic narrative shifts from Advancing the Core to Creating for Tomorrow, which will include accelerating growth in certain areas, and presumably entails some greater capital allocation to address these opportunities. What can management say to ensure investors that the capital discipline associated with the Advancing the Core strategy will govern future investments in pursuing these attractive growth investments?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Good. Thanks, Chris, who's with us virtually today. So as you saw during my presentation, and you'll hear more about in the course of Bart and Aaron's presentation, some of these high-value growth vectors that we've been investing in and nurturing over the last few years, battery materials, inkjet for packaging, and as Bart talked about, E2C.

Now I think the importance of capital allocation and capital discipline is something that's sort of at the center of everything that we do now. And so what should give investors confidence and what gives us confidence is that these investments are built from positions of strength. So each of these, whether you're talking about battery materials, we have defined our field of play here around conductive carbon additives. We are -- we have long been in the space of conductive carbon additives. And now this is a new application for batteries, but they've long been used in EMI shielding, in high-voltage power distribution cables, a range of applications that need the conductivity that's imparted from a high-value carbon. So this is not a stretch for us. This is from a position of strength. So I think that gives us high confidence, number one.

And then as we define our field of play, it's really about having confidence that we have what we call a right to win. And so clearly, there's a technical aspect to that, that we have the technology to do this, number one, as well as the assets, the footprint, the technology labs, the go-to-market model that you need. All of those elements really form what we call a right to win. And so we've got a very high standard about where we're going to invest, and it has to be from a position of strength and where there's a clear right to win case for us. And so that's why we feel confident that these are the right investments for Cabot, and they are investments that we will execute on and win in these markets.

Unidentified Analyst

[Alice Smith] from JPMorgan. Could you offer more color about the Indonesia plant being worked on? Is it still expected to add about 90,000 tons of capacity per year? And when might it come online?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Go ahead.

Hobart C. Kalkstein Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region

Yes. So thanks for the question. This plant exists today in Cilegon, Indonesia. And currently at that site, we have about 120,000 tons of capacity operating today. The project we have will add, I said today, 80,000 tons, a bit more than 80,000 tons. And we will certainly push it back to the 90,000 we talked about last time. And we expect that to be online -- we anticipate it to be online in 2024. The project, as I mentioned, had to slow down basically a pause because of COVID. Specifically in that part of Indonesia, things were very

challenging for our team on the ground there and for the contractors that we were working with. And things are getting better. And so we hope to restart that project soon and have it online by 2024.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Sean, I've got a question online from Kevin Hocevar from Northcoast Research. My question is, you mentioned that you generate more energy than you produce today, and that's at 125%, and expect to get to 200% by 2025. I'm assuming this is related to energy centers. Is that correct? And can you explain how you will get to 200% over the next few years? And what is the financial benefit to Cabot?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Good. Thanks, Kevin, for the question. And I'll start out, and then maybe Bart can elaborate a little bit more. But an important part of our commitment to circularity over a very long period of time is to try to use all waste streams in our process. And so when Bart talked about carbon that comes in, in the feedstock up to 70% to 75%, depending on grades, can get captured in the product -- in the value-added product that goes into then a tire. And what doesn't then takes the form of CO₂. But we have a very high value -- high BTU value tail gas stream, so a waste stream in the process, that we capture that and invest in a form of waste heat recovery. Now it can take the form of steam. It can take the form of actually producing electricity. And therefore, what that does is it offsets our need for purchased electricity to run our operations. So when we talk about 125%, we're producing enough energy -- more than enough energy for what we need to purchase to run our operations.

Now the plan here is that, that will grow, and we've got one of our 2025 sustainability goals that, that will grow to 200% by 2025, and that will come from further investments in energy centers. So Kevin is right on this question, as well as continuing to drive up the utilization and effective recovery of those energy centers.

But I don't know, Bart, if there's anything more you want to add to that.

Hobart C. Kalkstein Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region

You've covered it quite well, Sean. Just a little bit of specifics. So in our recently completed canal project in Louisiana, one of the investments that was made there was an energy center with that project in partnership with the utility provider in Louisiana. As we're moving forward in our Ville Platte, Louisiana site, additionally, we are working on an energy center at that site as well. So these are the pieces, Kevin, as you said, that would be additional sites.

But I want to emphasize Sean's point about the continued yield progression we continue to march on that has an economic benefit. It also means we use a little less power to run per unit of output, and that's another contributor for us. And then we continue to find ways to -- for existing energy centers to put more and more waste heat through them. And so this is a real focus of our operations.

Sean D. Keohane Cabot Corporation - President, CEO & Director

And the power that we produce here -- so if we export power, so we capture the BTU content, produce cogen. And if we export power, then the utility gets the benefit of that green power. So it is a CO₂ benefit that accrues downstream of us, but happens because we made the investment in the cogeneration asset and take on the operating responsibility to run the plant to feed that cogen asset. But I just wanted to draw that linkage for people. And so utilities like (inaudible), as Bart mentioned, in Louisiana are highly inclined to engage in projects like this because it allows them to grow the proportion of their green energy in their portfolio.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Okay. Sean, I have another question from the webcast, the website. With the continued focus on ESG, how do you think about carbon black in the portfolio over the long term?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Yes. Important question. Did that -- not sure who that came from, but I think it's an important question. So let me first start by reminding everybody of the importance of the carbons that we make in application. And so whether you're talking about the reinforcement of a tire or the balance of reinforcement and fuel economy in a tire, whether you're talking about converting the car fleet to electric vehicles, you need conductive carbon additives. Power distribution cables need conductive carbon additives. So the world benefits from these

high-value materials, now often those benefits accrue downstream in the value chain. But when we sit here today, the carbons that we make are essential to the world. They are not functional substitutes for this product. And in many cases, as in the case of batteries or some of the exciting things that Bart talked about in terms of E2C, they are enabling downstream CO2 benefits. And so the world needs these materials, number one.

Now what do we do? We're really charged with doing 2 things: one, bringing the value of these materials to our customer to help them enable their sustainability goals and then trying to drive our own improvements in our footprint in our manufacturing plants through things like the energy recovery or some of the things Martin talked about in terms of improving yield and other investments to bring down the CO2 footprint. So this is a highly engineered and critical material for the world, and we don't see that going anywhere. And so now it's a question of how do we, together with our customers, bring the power of this material to its full value and how do we make sure that as we're doing that, we're improving our own footprint?

And along the way, I think there are going to have to be -- and I think everybody recognizes this in the chemical industry and in industry broadly that I think there are going to have to be changes in the way that the counting and accounting of CO2 happens. So that little example that I gave earlier about when we export power, Cabot doesn't get in the accounting, Cabot doesn't get the benefit of that green power that accrues to the utility who's downstream. I think everybody recognizes that over time here in this journey, we're going to have to get the counting and accounting right so that the incentives and benefits around investment balance out. But if I come back to the core of this product, it's a critical product for the world. There are no functional substitutes for it, and in part, incredible performance that the world needs.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Great. Thanks, Sean. So we're up against the deadline here. So we'd like to take a 10-minute break, if we could, and then come back and we'll talk about the Performance Chemicals segment, and Erica will give us a financial update.

(Break)

Jeff Ji Zhu Cabot Corporation - Senior VP, President of Performance Additives Business & President of Asia Pacific Region

Good morning, everyone. Welcome back. I'm Jeff Zhu, President of Performance Additives and the President of Asia Pacific Region.

Cabot's Performance Chemicals segment is made up by 2 businesses: Performance Additives and the Formulated Solutions. I'm going to provide you an overview of Performance Chemicals segment and then dive into fundamentals and the growth potentials of Performance Additives, which includes specialty carbons and fuel metal oxides. I will also discuss more details of Battery Materials, which is part of the specialty carbons product line. After my comment, my colleague, Aaron Johnson, will give you an outlook of Formulated Solutions.

The Performance Chemicals segment is facing tremendous growth opportunities and our product lines are addressing clear global macro trends, including electrification, digitalization and the sustainable development needs. The segment consists of portfolio of product lines with high margin, high growth and high barriers to entry. Over the years, through our continuous investments, we have built technologies and asset network. Our strong manufacturing, commercial and R&D capabilities enable us to capture premium value and a solid return on investments. Last but not the least, our strong positions in battery materials and inkjet for packaging enable a significant value creation for Cabot stakeholders.

From 2015 to 2021, the segment has achieved a CAGR of 4% in volume growth and 3% in EBIT. We achieved a GDP plus volume growth despite headwinds from external environment, which demonstrate the strong and resilient demand of our product lines. At the same time, we continue to invest in areas with significant growth potentials. Resulting EBITDA of \$284 million in 2021, our investments have started to fuel more growth. Overall, we are very excited about our positioning and are very confident that these investments will drive significant growth of the segment.

Our Performance Chemicals portfolio is well balanced with diversified end markets. Roughly 44% of our business is derived from industrial and infrastructure applications, 26% from transportation and the 30% from consumer and other markets. Our products enable a wide range of functionalities, ubiquitous in everyday life, resulting in resilient demand in many attractive applications. We are

supporting 3,000 over customers globally with 1,000-plus products.

Now turning to our global footprint. As you can see, we have a broad asset base across globe and have been strategically investing to continue to grow this space. In past years, we have invested in multiple growth projects, including the Xuzhou NCC acquisition and the conversion to the Specialty Carbons. The acquisition of Zhuhai CNT in Battery Materials in China. Just 2 weeks ago, we announced another acquisition and conversion project in Tianjin, China, to further expand our capacity in battery materials. In our fumed metal oxide business, we invest in new capacity in Carrollton, Kentucky and Wuhai, China. In specialty compounds, we are building new lines in Cilegon, Indonesia, to meet growing Southeast Asia customer needs.

Here is a high-level overview of our Performance Chemicals business. I will not spend much time on that as you will hear more details of Performance Additives and Formulated Solutions shortly. Our market-leading positions in these product lines support strong financial performance and our growth projection.

Now I'd like to go into more details about Performance Additives product line. I will start with Specialty Carbons followed by a deep dive in Battery Materials, and then finished by a fumed metal oxides. Just a reminder, Battery Materials business is a part of the Specialty Carbons product line.

In 2021, Performance Additives business delivered \$232 million EBITDA with an EBITDA margin of 29%. At a product line level, these are high margin, high growth and a high barriers-to-entry businesses. We have invested significantly in both product lines to strategically position them for outsized growth.

Allow me to provide you an overview of Specialty Carbon product line. From a demand point of view, we see strong global high-growth rate driven by megatrends such as electrification, digitalization and the sustainability needs. Rapid vehicle electrification presents the single biggest opportunity to us. Importantly, customers are keen to source materials from responsible and the sustainable suppliers, such as Cabot. We actively engage with customers to develop sustainable solutions together.

In the competitive landscape, Cabot is leading global producer in conductive materials, including carbon black, carbon nanotubes and the carbon nano structures. The industry utilization rate is high and yield high returns.

On the right side of the slide, we present you some examples of the markets we serve, so they can appreciate the specialty carbons essential in our daily life. We are a leader in medium- and high-voltage cable market, which is essential for renewable energy distribution. We are a leader in conducting materials for batteries which is already transforming the automotive industry. We also serve many consumer applications. Customers are keen to collaborate with us because Cabot has deep expertises in these advances, functionalities and offer innovative solutions.

Our business is positioned to outsized growth because we have strategically aligned our investments with key macro trends. In the automotive industry, we invest and develop broad, strong carbon additives portfolio to become a leading supplier in lithium-ion battery. In sustainability, we are a leader in renewable energy and the clean water distribution. We developed innovative solutions so that synthetic fiber producers can switch to dope-dye process from traditional bar dyeing process so that they can eliminate environmental influence. In digital space, our CMT and the CNS technologies provide high conductivity at very low loading, enabling lighter and smaller devices. On the right, we highlight some of the key growth investments we'll make in the business to drive the outsized growth.

In summary, we're very excited about the growth opportunities in specialty carbons and our strong positioning to capture that growth. Some market segments we have focused and invested in are at an inflection point of massive growth, particularly in lithium-ion batteries. We have a full range of conducting additives to meet battery customers demand.

Today, top 8 battery producers command a total 90% of lithium-ion battery market, and we have programs with every one of them. More excitingly, we have sold Cabot carbon -- Cabot conductive additives to 6 of them. In terms of growth investments, our Xuzhou plant will be commissioning in mid-2022, and we started the conversion project with our newly acquired Tianjin Tokai's facility. These investments will enable us to grow Battery Materials rapidly, and we anticipate a significant value creation.

Now I want to present you the most exciting part of the performance additives that is Battery Materials. I've been working in chemical industry to close to 3 decades with different companies, different markets, different customers, different regions, different product lines. I have not experienced such kind of breathtaking opportunity. More importantly, as Sean called out, Cabot has the right to win in this space. We have invested heavily in this business over the past many years. Lithium-ion battery business has a very high barrier to entry. We worked very hard and we are seeing great success today. This single biggest opportunity presented to us, and we aim to turn this opportunity into real success for Cabot.

First, the market grows at an explosive rate. Today, most third-party sources converge electrical vehicle growth projections to about 30% CAGR over the next decade. This means the market doubles every 3 years. This is driven by numerous announcements, plans by countries and automotive manufacturers in the commitment of EV development. By 2035, it is estimated that 50% of global passenger vehicles sold will be EV-powered with lithium battery. We are quite convinced by the EV market growth rates.

In line with the EV growth, battery demand is expected to grow in all regions and the battery manufacturers are racing to install capacities around the world. As conductive carbon additives, we call them CCAs, are ubiquitous in battery manufacturing, lithium-ion battery growth will translate into corresponding CCA growth. So logically, we expect CCAs to also grow at roughly a 30% CAGR. Looking at the 2 major categories of CCAs, we expect CNT will grow at a CAGR at roughly 35%, while carbon black will grow at a 26% CAGR over the next several years. Cabot is set to benefit as we possess expertise in both technologies.

This is probably the most important slide I want to share with you. It is about why conductive carbon additives are critical component to make lithium-ion battery work and why both conductive carbons and carbon nanotubes are needed. Conductive carbon additives connect active materials within the electrode for efficient charge transfer. They provide pathways for electrons to move and to enable charging and discharging.

In most formulations, conductive additives add little in weight and make up just less than 2% in total cost of batteries. Conductive carbon additives also enable good lithium-ion diffusion as conductive carbon and CNT are structurally different. A combination of both will provide optimized short-range and long-range conductivity and other optimized properties such as energy density.

While there are many developments in battery technologies, no matter which one prevails, there will always be a need for conductive carbon additives in the formulation to transfer electrons, enable the fundamental function of a battery, which is charging and the discharging. This is simply the chemistry, this is simply the science. Batteries will not work without CCAs.

Now that you understand the growth potentials of conductive carbon additives, the question becomes why Cabot is the winner. First and foremost, Cabot is a leading player in the world, has a full range of CCAs and each of the additives offer different functionalities and benefits.

Cabot is able to blend these additives into formulations to achieve the optimized battery performance. Secondly, Cabot has a clear advantage as we have manufacturing platforms to transfer and manufacture these CCAs around the world, including U.S., Europe and China. Today, auto manufacturers demand that battery producers have supply security, and this is also promoted heavily by U.S. and European governments.

Naturally, battery producers are keen to work with Cabot because we are truly global player. Furthermore, there are high barriers to entry and expertise required to ensure safety, quality, consistency, processability and even cost containment. Cabot has clear competitive advantage, not only in technologies and asset set-ups, but also in commercial, technical service, distribution capabilities, which enable us to penetrate 6 out of 8 top battery producers.

Lastly, Cabot continues to develop innovative solutions in next-generation battery technologies such as local batt cathode, dry or aqueous process and the silicon carbon anode. These R&D programs enable us to build strong partnership with battery producers and position ourselves early in the game to capture new growth opportunities. Let me say again here, whichever technology is adopted, there's always a need of CCAs.

Here's our global asset technology footprint. And we are getting more interest from customers to discuss a global supply chain arrangement. They all understand, including Chinese battery manufacturers that the traditional business model made in China ship around the world is not going to work in the battery space. Cabot's philosophy has been always managed globally and supply locally.

Our organizing structure is designed for that with a global network and alignment, and we are proud that our strong local teams have excellent execution capabilities to support our customers. You have heard multiple times today from Sean and other Cabot executives that execution is the key success factor of Cabot, same to the battery business here.

In 2021, we doubled our revenue to \$80 million versus 2020, and this growth is built on a serious investment we have made in past years. The most important investment we made was the \$100 million acquisition of Xuzhou CNT business in Zhuhai, China in April 2020. Cabot's CNT business today is a leading player in China and globally. After Cnano, a Chinese company listed in Shanghai Stock Exchange.

Two weeks ago, we announced the acquisition of Tokai Tianjin site and we'll start to convert units there to produce battery grade immediately. We have earmarked around \$105 million over the next 3 years to expand capacity in conductive carbons and the CNTs to meet the surge in demand from battery customers.

In summary, we are extremely excited about our battery business. We expect it will deliver a 50%-plus EBIT CAGR over the next 3 years and become a significant growth engine for Cabot. We are confident in this outlook given our strong commitment, investment plan, customer programs, talented team and clear competitive advantages. I'm looking forward to updating you on our results in the future.

Let's move to another attractive product line within Performance Additives, fumed metal oxides. In Cabot, we also call them as fumed silica. Fumed silica is a very versatile performance additives used in a wide range of applications with growth driven by megatrends such as alternative energy and digitalization. As we introduced at the last Investor Day event, this industry has a unique industry structure, require fence-line partnership set up and this set-up naturally creates a high barrier to entry for feedstock accessibility and long-term contracts. Meanwhile, fumed silica produced in a fence-line setup have a lower carbon footprint, more cost efficient and enable our customers to pursue sustainable solutions. This model is one of the best examples that Cabot's pursuit of circular economy.

Looking at the competitive landscape, 3 global players command 2/3 of global market and the utilization rate is very high. In the past decade, the silicon industry has migrated to China, and we are holding #1 position there. There's no doubt, we are in a very good position to capture the growth opportunities further.

Now I would like to discuss some key macro trend-driven growth opportunities in our fumed metal oxide business. First, in mobility, fumed silica is used in structural adhesive for light-weighting vehicles. In sustainability, we are the #1 supplier into bonding paste adopt in wind blades and we have seen very strong growth.

In digital space, fumed silica is a very versatile additive, valuable in chemical-mechanical planarization slurries in silicon wafer production. We have been investing significantly in capacity expansion and we'll continue to do so to meet these growth opportunities.

In summary, our fumed metal oxide business benefits from a sustainable operating model and serve a wide range of applications, which have resilient demand. It's direct linkage with silicon-based materials is expected to accelerate the growth. The healthy industrial structure will sustain the high return. We are confident in our ability to further grow the fumed metal oxide business.

Here comes to the end of the Performance Additives, I hope you are excited as myself for the fundamentals of this business and for the growth potential in the future. Thank you very much. I will now turn over to my colleague, Aaron Johnson.

Aaron Johnson Cabot Corporation - Senior VP & President of Purification Solutions Segment

Thank you, Jeff. My name is Aaron Johnson, and I lead Cabot's Formulated Solutions businesses. I've been with Cabot for 16 years with experience working with most of Cabot's businesses across all 3 of our major geographies, and I've been in this role for the past 2 years.

For the next 15 or 20 minutes, I'll give an overview of Cabot's Formulated Solutions product lines, specialty compounds and inkjet. And I hope that by the time I'm done with my presentation, you'll be as excited about these businesses and the opportunities Cabot has here as I am.

Before I dive into specialty compounds, I'd like to provide some context on both the specialty compounds and inkjet businesses. The Specialty Compounds business is a high-ROA formulation business focused on black masterbatches and conductive compounds. Cabot is unique in this space as a backward-integrated and global player. As such, Cabot is well positioned to deliver innovations and capture macro trends in areas such as sustainability, mobility and infrastructure.

Cabot's inkjet business is a leading supplier of water-based dispersions to the inkjet market. Cabot has about 30% share and is developing a market-leading position in the commercial and packaging segments where we expect the majority of growth to be in the coming years. And that growth is significant. Over the next few years, we see an opportunity to grow that business by 25% per year and even more as the packaging segment takes hold in outer years.

Focusing on specialty compounds, we talk a lot about the value of being integrated -- backward-integrated in this business. So we've included this slide to provide a bit of background on the plastics value chain and where Cabot participates. In this business, we make what the industry generally calls masterbatches, sometimes they're called concentrates as well as fully formulated compounds. Because specialty carbons play such an important role in formulation design, being part of Cabot, a global leader in specialty carbons, gives us tremendous leverage in formulation development and credibility with our customers.

Now one point I'd like to make as I go forward talking about specialty compounds is that even though Cabot participates both in specialty carbons and in specialty compounds, when I speak of profitability in the compound space, that's profit after paying a market-based transfer price to Jeff's business for the specialty carbons that we use.

So turning to Specialty Compounds. Specialty Compounds is a great business. We serve customers from a broad range of GDP plus markets, including the ones that you see on the right-hand side of the slide. This is -- oftentimes that we see in these end markets are customers who are consolidating and looking for partners who can serve them worldwide. Cabot is well positioned to do this given our global network of manufacturing assets in the specialty compounds business and also the specialty carbons business as well as strategically placed technology centers in both Belgium and China.

The pie chart in the middle of the slide shows the competitive landscape, which includes names that you probably know, along with many more smaller players in a highly fragmented space, which provides opportunity for consolidation like we have done recently in the Americas and Southeast Asia. Cabot is the leading global player in this space with competitive advantages around focus, brand and backward integration.

In terms of focus, Cabot is the largest global manufacturer of black masterbatches with low-cost, high-throughput assets. Cabot's brand in this space is very strong and the company is known for its expertise in black plastics, both from the specialty compounds business and our application expertise that comes from our work in specialty carbons. And we also get benefits from integrated site economics and supply chain integration.

You've heard a lot about sustainability today and this space is no exception. With a strong push by customers and ultimately consumers for sustainable solutions, and we believe Cabot has the scale and the expertise to differentiate in this area. And one more thing before I leave this slide, something that's really important to understand about the specialty compounds business is that it's a formulation business. And this is a business where success is all about fast-cycle innovation. That requires close connection to customers, deep know-how, assets close to the market and sharp execution. All of these are things that we have at Cabot.

One thing that's a bit different about this business than many others at Cabot is that our path to ROA, or return on assets, is driven by asset turns. By driving high asset turns through capital efficiency and working capital management, we're able to deliver industry-leading RONAs even with EBIT margins in the low double digits. At the same time, as you can see on the bottom chart, Cabot has delivered consistent variable margin growth in the business, well in excess of GDP by making strategic choices on where we focus

and through commercial excellence. When you combine the strong RONA with proven growth, you can see why we're really excited about this business. And our strategy is to continue to balance these elements to drive long-term performance and create value for shareholders.

As with other businesses at Cabot, specialty compounds is well positioned to benefit from the changing mobility landscape, increased focus on sustainability, and the shift to a more well-connected world. For example, our formulations designed for engineering thermoplastics enable metal replacement in cars and trucks. This results in weight reduction and therefore, greater distances for electric vehicles or greater fuel efficiency for vehicles powered by internal combustion engines. We also have masterbatches especially formulated for applications in agriculture and infrastructure that help businesses and communities with water conservation and support sustainable development. And as the Internet of Things proliferates and connected devices become both smaller and more ubiquitous, the need for better and more flexible electromagnetic shielding increases. By using Cabot's proprietary nanostructured carbons, we've developed trade-off breaking masterbatches that provide EMI shielding, resulting in lighter devices and components and increasing design flexibility for manufacturers. All of these are key competitive advantages for Cabot.

As I noted earlier, one of the key drivers to success in this business is close connection to customers. One example of this is how we worked with a global polymer producer that was looking to take their engineering solutions for automotive applications to the next level. We collaborated closely with our teams in Europe and Asia to develop formulations for their targeted applications.

The work paid off, we expanded our work with that customer from 2 regions to 4, and we increased revenue nearly 6x. As ultimate validation of the work that we did, the customer awarded Cabot its strategic -- excuse me, its Supplier Innovation Award in 2021. We were selected from over 350 strategic suppliers to that customer. The combination of our global footprint, our deep application knowledge and upstream integration allowed us to work with this customer and develop solutions in a way that no other masterbatch player could.

Looking forward, I'm really excited about the growth opportunities that we have in this business and very optimistic about our future here. Over the next 3 years, we anticipate EBIT growth in excess of 10% CAGR with industry-leading RONAs as we continue to deliver growth in target markets like automotive, infrastructure and consumer while leveraging recent bolt-on acquisitions to expand our participation in the Americas and Southeast Asia. To enable this, we will increase sustainable new product development and also expand capacity through operational improvements to further optimize our assets and also through growth investments like the new capacity we have planned to come online in Indonesia in fiscal year 2023. Finally, we will continue to explore opportunities for bolt-on acquisitions, both to extend our capabilities and also to fuel growth.

Turning to inkjet. Sean talked earlier about 3 major growth areas as part of our Creating for Tomorrow strategy. Before the break, you heard from Bart, who talked about E2C, then you heard from Jeff talking about battery materials. And now I want to share my excitement about the opportunity we have in inkjet, where we're in the early stage of a significant shift to digital printing in both commercial and packaging segments.

This slide illustrates the value chain for inkjet production printing, and you can see the steps from ingredients on the left to printed materials on the right. Two things I'd like to highlight in this slide. One is that water-based inkjet technology is really complicated. Dispersing pigment and water in a way that it stays suspended and works effectively in print heads is nontrivial and requires knowledge -- deep knowledge and capability to innovate. This creates a barrier-to-entry that is really helpful for Cabot.

The second thing I'd like to emphasize here is that dispersion is a key control point in ink formulations. Unlike analog printing, where a standard ink might be used in a range of different kinds of printers and printing processes, in the digital space, ink formulation is tightly linked to printer and printhead design. As a key component of ink formulation, dispersions like the ones made by Cabot are also integral to the overall system design and printer performance. This makes the link between Cabot and the printer OEM critical to the success of both the OEM and Cabot.

A key underlying driver of growth for Inkjet is this trend away from analog to digital printing. This shift supports shorter print runs, allows more customization and reduces waste. At the right-hand side of the slide, you can see the major end markets we serve, each of which is

at a different phase of transition to digital printing. For example, work-from-home is basically 100% digital at this point, while commercial and packaging segments are at much earlier stages with inkjet penetration in commercial printing at about 10% and inkjet penetration in packaging at about 1%.

In terms of the competitive landscape, Cabot is roughly tied for #1 share with few other significant players in the market. Cabot's advantage in the market is derived from our broad technology platform, which includes proprietary small molecule and also polymer encapsulated technologies. We also have incumbency secured with multiple leading OEMs in the fast-growing Corrugated Packaging segment.

As I mentioned on the prior slide, one of the key advantages of digital printing is it allows shorter print runs. This means less waste, more ability to customize. It also allows brands and retailers to react more quickly to market changes and capture opportunities more quickly, and it also lowers working capital for brand owners. Inkjet technology enables the shift by providing the right combination of quality, productivity and cost position. Additionally, inkjet has a strong sustainability story since it's water-based and you only print what you need, which reduces waste.

If we look at the right-hand side of this slide, the commercial segment is a good example of how the shift to digital printing is impacting inkjet demand. Inkjet printing in commercial has reached an inflection point and is poised to grow aggressively over the next 5 years as digital printing takes hold in segments like book printing, direct mail and brochures. As you can see in the chart, volume in this segment has more than doubled since 2017 and is set to more than double again by 2025. Dispersion performance at a reasonable price is a key enabler to this digitization trend.

As with commercial printing, inkjet offers many advantages in the packaging segment, and we're already seeing a movement to inkjet in corrugated packaging. Here, you can imagine ultimately reaching a point where when you've gone home and you open your box from Amazon, there's messaging printed on the inside that's customized for you. In this space, dispersion is an important cost and performance control point, which creates an opportunity for Cabot as it works with printer OEMs and ink developers. So far, 5 OEMs have launched or announced presses where Cabot is specified in the ink and we expect digital penetration to hit 10% in the corrugated market by 2027. That's up from where it is today, which is around 1%. So significant growth over the coming years.

On the right-hand side, the pie chart that you see in the bottom is our estimate of who will be the winners in this space in 2027. Of those, Cabot is currently launched or specified with more than half. And we are also the leading candidate with 2 more. So we feel we're very well positioned to capture this opportunity as it takes off.

Critical element of winning in packaging is establishing incumbency with OEMs since systems are designed around dispersion choice. On this slide, we highlight 2 examples of how Cabot is working closely with OEMs to support their success and establish incumbency at the same time.

On the top is an example of Cabot working with an established analog OEM that's making the shift to digital. Here, the OEM has deep expertise in the packaging space, but is relatively new to digital and inkjet printing. In this case, Cabot's proprietary surface-modified technology was selected because of how it works with the pre-coat technology used by the OEM. It's a really good example of how Cabot was able to engage early with the customer and bring a unique solution to support the customer shift to digital printing.

Looking forward, I'm very excited about the transformative growth we expect in inkjet, thanks to the transition to digital in the commercial and packaging segments and the position that we've established with leading OEMs. Over the next 3 years, we anticipate inkjet revenue will grow in excess of 25% per year, and we're tracking at about 50% share in the corrugated packaging segment, and we believe we can maintain this level going forward.

Meeting demand will require growth investment, and we expect to spend roughly \$55 million over the next 3 years to increase scale at our existing U.S. facility and start work on our next manufacturing location. Pullin in altogether, the outlook for inkjet is to be a high-growth, high-ROA business over the next 3 years and into the 2030s with near-term EBIT growth of 25% plus CAGR and ROA in excess of 30%.

Now let me pull the lens back a little bit to the overall performance chemical segment and summarize some of the key themes and outlook for each of the business that we discussed. In Specialty Carbons we're adding capacity to continue to serve markets where macro trends are driving demand for products like our conductive carbons. In the Battery Materials business, our complete portfolio of conductive carbon additives, global footprint and continued capacity additions position us for rapid growth as we serve the exploding electric vehicle market. In fumed metal oxides, we're building on our leading position with strategically located manufacturing facilities and a business with an attractive industry structure, serving GDP plus markets. In specialty compounds, we have a unique downstream position with a growing footprint, delivering industry-leading returns. And in inkjet, we're well positioned to deliver transformative growth as digitization changes the printing landscape for the commercial and packaging segments. Each of these businesses and their respective opportunities are different. But the excitement across them is universal. Put together as a portfolio, they make up a segment that's well positioned to deliver 9% to 11% volume CAGR and 12% to 15% EBIT CAGR over the next 3 years.

Very exciting segment. I hope you're as excited as we are. And with that, I'm going to hand things over to Erica McLaughlin who will discuss Cabot's financial framework.

Erica J. McLaughlin Cabot Corporation - Senior VP & CFO

Good morning. I'm Erica McLaughlin, Cabot's CFO. It's great to have you here today, and I thank you very much for spending the time with us. For those who don't know me, I've been at Cabot, similar to Sean, almost 20 years in a number of finance and business roles. I've been in the CFO role since 2018.

You've heard today about our accomplishments and many of the exciting areas that lie ahead. I'll spend some time to bring it all together in terms of our financial performance. Our strong execution since the implementation of our Advancing the Core strategy cuts across all aspects of our financials. We've remained disciplined with regards to our capital allocation framework and we've done exactly what we said we were going to do, and now as I look ahead, I will let you know what to expect from our creating for tomorrow strategy and how we will continue to deliver value for our shareholders.

As you can see from this slide, we have delivered on our financial commitments. We set an adjusted EPS CAGR growth target for ourselves of 7% to 10% and we've delivered 12% since the inception of the Advancing the Core strategy through fiscal 2021. This is more than a doubling of our adjusted EPS and puts our earnings at a much higher level. This was delivered through strong growth in both segment EBIT and EBITDA. While delivering this growth in earnings, we also significantly improved our return on invested capital from 8% to 18% in 2021.

We also focus on improving our net working capital days. This is an important metric and is included in our short-term incentive bonus program. We set continuous improvement targets for ourselves each year, and we have delivered year-over-year improvement in days. And when you look back to 2015 through 2021, we've delivered 31 days of improvement. Reducing net working capital has allowed us to grow and absorb the impact of higher oil in our inventory and receivables balances without much of a total increase in dollars of working capital on our balance sheet. This is yet another example of our strong execution and action.

If I now turn to our dividend. As Sean mentioned, we have had a continued impressive run of an uninterrupted dividend since 1968. Even with the impact of cyclical downturns and COVID, we were able to maintain this attractive dividend because of our strong cash flow performance. You can see on this chart, this has resulted in an 8% CAGR since we started paying the dividend. And we just announced a 6% increase a couple of weeks ago in November that demonstrates our continued commitment to maintaining an attractive dividend for our shareholders.

The consistency of our dividend, along with significant amount of share repurchases since 2015 has enabled us to return over \$1 billion to shareholders over the last 7 years. Again, this is consistent with our capital allocation framework that we communicated under our advancing the core strategy. We believe it is important to do what we say we are going to do, and we did just that. We returned 64% of our discretionary free cash flow to shareholders, and we reduced our share count by 10%. We understand the importance of the cash return to our shareholders and they remain important parts of our capital allocation framework going forward.

Even with such a strong return of cash to our shareholders, we have been able to manage our balance sheet in a disciplined way. Our net debt-to-EBITDA has remained in an attractive place. We experienced an increase in 2020 because of the impact of COVID on our results, but we managed through that very well. And we've been able to bring the ratio back down to 1.5x within the year. This positions us really well as we look ahead, and we have plenty of firepower available for our investments in organic growth projects and for acquisitions.

We have an investment-grade credit rating with a BBB from S&P and Baa2 from Moody's. We have a staggered maturity of our outstanding debt and over \$1 billion of available liquidity. We have a maturity that comes due in 2022, and we expect to refinance this in the third quarter of the fiscal year. So as we look at where we are right now, we are incredibly well positioned for the future to support our Creating for Tomorrow strategy.

As we think about our capital allocation priorities going forward, we will prioritize high-confidence, high-return growth investments. You have heard from the segment leaders today about the exciting opportunities we have for growth projects. These growth projects are at the top of our list in terms of priorities because we feel we have many projects with compelling business cases to grow the company. And we expect that we'll be able to fund these with our strong cash flow.

As we think about the hurdle rate for these types of projects, we usually fund projects with an IRR of 20% or greater. We also anticipate that we will execute attractive bolt-on acquisitions. The focus area will be in areas that enhance the performance of our existing businesses, and I'll talk about the specifics in a bit. And as I previously noted, we expect to maintain our industry-leading dividend yield, and we continue to expect to opportunistically repurchase shares. We believe we can do all this while maintaining our investment-grade credit rating.

In terms of our growth outlook over the next 3 years, you have heard about the attractive opportunities underscored by strong macro trends and based on our robust leadership positions across our segments. As we look at Reinforcement Materials, we expect our volumes to grow 2% to 3%, which is aligned with market growth. Along with the volume growth, we also will continue to optimize margins through the levers that Bart talked about and expect EBIT to grow in the 5% to 9% CAGR range over the next 3 years.

We also anticipate capital expenditures for the segment to be approximately \$130 million per year focused on maintenance capital to maintain our world-class assets, the completion of our U.S. EPA compliance capital and for additional capacity in Indonesia, as Bart talked about.

For Performance Chemicals, we expect our volumes to grow between 9% and 11% over the next 3 years, which is above market rates. This is driven by our expectation for product lines like our legacy carbons, specialty carbons and fumed metal oxide to grow a bit above market due to our participation in chosen applications and geographies.

We also have high growth anticipated for Battery Materials, specialty compounds and inkjet in the range that was discussed by Jeff and Aaron. This is expected to yield the growth of EBIT in the 12% to 15% CAGR range over the next 3 years as we add capacity to meet this volume growth. This will result in capital expenditures that we will -- that we anticipate would be in the range of \$140 million on average over the next 3 years, focused on growth investments along with the necessary maintenance and compliance capital.

So as you think about these segments growth rates in terms of EBIT contribution over the next 3 years, we expect this will yield an additional \$50 million to \$100 million of EBIT for Reinforcement Materials, and \$85 million to \$105 million for Performance Chemicals. This will bring our expected total segment EBIT to grow from \$550 million in 2021 to an anticipated \$685 million to \$755 million. These figures are based on expectations for growing above market, driven by differentiated applications like Battery Materials.

There is investment needed to deliver these financial results. We will continue to invest approximately \$125 million per year on maintenance and compliance capital, which is at a similar level to 2021. This will enable us to maintain our world-class assets to ensure reliable supply for our customers while also investing in the compliance-related environmental capital. As the segment leaders have highlighted, during the discussions, we will focus growth investments on high-return, high confidence projects where we believe we have the right to win. The growth projects are detailed here are focused on capacity expansion to enable the growth we talked about, particularly in the more differentiated parts of our portfolio.

So for the consolidated company, this results in an expected adjusted EPS growth of 8% to 12% CAGR over the next 3 years. There are a number of assumptions that go into these expectations and they're detailed on the slide. We will invest approximately \$200 million to \$300 million of CapEx per year, with much of this investment focused on growth projects. This will be enabled by our expectation for over \$1 billion in discretionary free cash flow generation over the next 3 years.

We expect that discretionary free cash flow will be at a new level, which started in 2021. We've been able to increase our discretionary free cash flow from an average of \$223 million from 2015 through 2020 to a new level of roughly \$350 million in 2021 driven by our strong and increasing EBITDA. Going forward, we anticipate that operating cash flow will continue to grow as EBITDA grows.

We expect net working capital changes will moderate and -- as oil becomes more stable over time, and we invest where we need for growth. We anticipate our maintenance and compliance capital will remain relatively stable to our 2021 levels.

We have aligned our compensation targets to the stated financial objectives in the past, and this has helped us deliver to date. Going forward, we will continue to have our compensation metrics aligned with these targets that I've talked about today. In our short-term incentive program, we have 3 targets in segment EBIT, net working capital days and discretionary free cash flow. Our long-term incentive compensation metrics include 2 metrics, adjusted EPS and adjusted RONA. And we will have continuous improvement expectations in our ESG performance geared towards our 2025 goals.

As we think about how M&A fits into the strategy, we will continue to look for opportunities for bolt-on acquisitions that strengthen our existing business positions. As we think about this, our investment criteria are for growth and margin-enhancing opportunities that are accretive and strengthen our competitive positions in our businesses and where we expect to see an ROIC in excess of WACC in the first 3 to 5 years.

Example areas that we would prioritize are in high-growth areas of the portfolio, areas where we can increase scale in our existing businesses or to access new technologies. The financial targets I have laid out do not include any acquisitions that we have not yet announced. So this could be upside to the targets depending on when and what we acquire.

So in conclusion, we have executed very well against our targets we set for ourselves under the prior strategy. We have a balance sheet that is in great shape to support our future growth and we will continue to be disciplined in our capital allocation framework focused on accelerating growth and driving attractive value for our shareholders. We expect a step-up in discretionary free cash flow to fund growth and return to shareholders while maintaining our investment-grade credit rating.

Cabot is well positioned for the future. And in my 20 years here, I've never been more excited as to what lies ahead. Thank you for your time today. And I'll now turn it back over to Sean for his closing remarks.

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Great. Thanks, Erica. I'll just take a moment or 2 here to try to tie it all together and underscore why Cabot is positioned for really attractive growth and value creation and why we offer a differentiated investment opportunity.

As you saw throughout the presentations today, we participate in a really diverse set of applications that are connected to really strong macro trends. And you have a sense now of how each of those macro trends are playing out in our respective businesses. They offer great potential for growth and innovation.

Our global position is unrivaled. Our innovation pipeline is rich, and we're investing in applications where we have a right to win. And I hope you have a much better sense of that having listened to the Battery Materials, inkjet and E2C vignettes here during the course of the morning.

We started the day talking about 5 key themes, and I want to come back to those to close out the formal presentation. These are the key themes to remember about the investment thesis for Cabot.

First, we're committed to execution. Erica just touched on that and we've established a new and durable level of earnings in the company and built a track record of doing what we say we will do.

Second is that leadership matters in any business, and we hold market-leading positions in our major businesses. And our footprint of manufacturing assets, technology labs and go-to-market teams around the world is really unparalleled. And these advantages form a sort of a moat around our businesses and I think enable really attractive growth and profitability.

Third, we've nurtured a really exciting portfolio of growth vectors. And again, we spent some time on those today, Battery Materials, inkjet and E2C and they're expected to contribute materially in the coming years.

Fourth, sustainability is at the core of everything we do. I hope you have a much better sense now of our long tradition of leadership in the space of ESG and how, with our Creating for Tomorrow strategy, sustainability is sitting right at the center of the decisions we make, the places we invest and how we spend our time.

And finally, with our portfolio very focused and the advantaged growth investments that we've been making taking hold now, we expect to create significant value for Cabot and with the potential to reshape the valuation of the company. And so this is Creating for Tomorrow.

So I want to thank you all for joining here. I think we'll go now, Steve, to another Q&A session, and we'll probably do it in the same way. I guess we'll take some questions from the room as well as those that are online.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

So you'll remain on stage, Sean, and we'll have Erica, are you going to join Sean?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Yes.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

And the other 4 presenters are still available for questions, they're just seated at their table.

Yifei Huang Deutsche Bank AG, Research Division - Research Associate

David Huang, Deutsche Bank. On the 4 high-growth areas you highlighted, can you talk about the M&A pipeline and where the valuation levels are? And out of the \$1 billion plus discretionary free cash flow, do you have a target of per year or in combination, how much you would spend on M&A?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Sorry, could you just repeat the first part of the question? I think it was on M&A?

Yifei Huang Deutsche Bank AG, Research Division - Research Associate

Just overall, your acquisition pipeline in the 4 growth areas you have right now.

Sean D. Keohane Cabot Corporation - President, CEO & Director

Yes. Okay. Good. So I will make a few comments and then invite Erica to share her perspectives as well. So M&A will certainly be an important part of what we do. It will be very focused. And so it will be either tuck-in in nature, where that's giving us an extended position in markets where we're already strong, or could be in the space of capability enhancements to the company.

So let me try to give 2 examples there and then try to give you a sense for how we think about what represents attractive value in an acquisition. So we've announced a recent acquisition of the Tokai carbon plant in Tianjin, and our intentions to convert that asset to produce materials, conductive carbons for energy materials and specialty carbons more broadly. Now that investment as was disclosed

was, I think, a very capital-efficient investment. It will require some some further investment in terms of capability upgrade. But if you look at the valuation of that relative to its potential for Cabot, I think it was a very capital efficient capital-efficient arrangement. So we'll continue to look for opportunities to achieve these growth objectives in the most capital efficient way.

An example of a capability acquisition I would look back to our acquisition of CNT capabilities in China, where a couple of years ago, we bought in 2019, I think it was we closed in 2020 -- I can't remember exactly the date, but we acquired Sanshun, which was the #2 player in the CNT space to the battery market, the lithium-ion battery market in China. So that was clearly a case where we were bringing in capability through acquisition to complement with our already strong conductive carbon black portfolio to strengthen our position in batteries. And so we'll look for opportunities in those spaces as well that bring capability in.

I just want to link back to a question that came up in the earlier session about about where we invest. Each place that we invest will be from a position of strength. So you won't see us moving to some place where we don't have that position of strength. We're always trying to build out from that. And so that will guide our philosophy on this.

I think the question on returns. I've talked about the, I think, attractive prices for the assets that we've purchased or announced recently. The case in the battery space, of course, multiples are much higher there. I think our Sanshun acquisition will prove to have been a very attractive deal in the fullness of time here as we deliver on this plan. But certainly, broader acquisitions in the energy materials space would come at valuations that are higher than some of our traditional businesses.

I don't know, you want to add to that, Erica?

Erica J. McLaughlin *Cabot Corporation - Senior VP & CFO*

Sure. I'll add to the second part of the question on discretionary free cash flow. So we expect that to grow over time as EBITDA grows. It was at roughly \$350 million in 2021, and we'd expect that to grow to roughly \$450 million by 2024. So the cumulative number that we gave was the \$1 billion over the 3 years.

Joshua David Spector *UBS Investment Bank, Research Division - Equity Research Associate - Chemicals*

Josh Spector, UBS. Just a question on the EPS guidance as it links to EBIT. So my rough math, if I assume the midpoint of your EBIT guidance, I get to the high end of your EPS guidance pretty quickly. So I'm not sure if there's anything between EBIT or EPS which would be missing. And then -- and that's assuming flat interest, same tax rate, no buybacks. And then linked with that, I assume your guidance includes minimal buybacks and you already said no M&A. Can you just confirm that?

Erica J. McLaughlin *Cabot Corporation - Senior VP & CFO*

Sure. So I think the only thing in between the segment EBIT would be the unallocated corporate costs, which would likely grow somewhat over time. And then you're right, there's interest, there's a minority interest as well as taxes. And so those would be the other elements that could impact us within the range. At this point, the tax, we assume between 27% to 29%. And so that's before any reform that could come. But if there's any meaningful reform either in the U.S. or elsewhere, that could impact the tax rate. I think for share repurchases, our view is to at a minimum, offset dilution and then opportunistically repurchase over time as well as part of the impact.

Joshua David Spector *UBS Investment Bank, Research Division - Equity Research Associate - Chemicals*

And if I could just follow up with a non-numbers one. Just the inkjet story is pretty interesting, but I don't know the size of that relative to formulated solutions. Can you size roughly sales, EBITDA from that business versus the rest?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes. I think you saw the breakdown on formulated solutions there between specialty compounds and inkjet. And so the inkjet business would be -- you could think about it as somewhere around 1/3 of that number, something in that range.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Thanks. Sean. Michael Richards from PNC. You provided a lot of detail today and on the earnings call last month regarding Cabot's long-standing position in China. Given some of the current concerns of operating in China, can you provide some color as to Cabot's continued commitment to invest in China?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Yes, sure. Thanks. Thank you.

So I touched on some of this earlier, but let me try to recap a little bit for folks. So if you look at just the absolute size of the economy, of course, it's the second largest in the world, with expected growth rates that will still be in the roughly 6% range over the foreseeable future here in terms of GDP growth. So it remains one of the higher -- or highest growing markets and the expectation is that will continue.

If you look at our sectors where we participate, China is very important. So it does produce close to 40% of the world's tires. That's a structural development that took 20 or 25 years to establish and not something that would change overnight. So the market in China is growing. The car park is growing, miles driven is growing, all of those things that Bart talked about. But that structural presence of China as it relates to the tire industry is significant and I would say, not something that reverses in any sort of quick fashion, given how long it took to build it.

So the world is structurally dependent on tires that come from China, particularly the replacement tire market. That's just -- that's a fact. If you look at the other markets that we operate in, in silicones, close to 50% of the world's silicones are produced there. And it is the largest market for lithium-ion batteries today and likely for some significant period of time.

China is very aggressively pushing the electrification of the car fleet. They started that by electrifying the government bus fleets. Government owns the buses. They made a commitment to electrify those. That created volume and scale basically that allow the battery industry in China to come down the learning curve. And so the presence of China in battery market is substantial. I think 2 out of the top 3 or 4 battery producers, CATL and BYD, are Chinese producers.

So what does that all mean for us? It means that China is important. Now the second part of your question is, of course, people -- not everybody is as successful as we've been in China. And I think it comes down to our model around being the best operator. I think our long tradition there and experience there, the fact that we rely on local management there, which many multinationals do not, I think that really differentiates us and allows us to win with local customers and to deal with what is a sort of several dynamic elements of operating in China. We just -- we know how to do that well. And I think that really differentiates us.

So China remains an important market for us, one where we have had a long track record of profitability growth. And I would say, a best operator model there, we know how to win in that market. And so we'll continue to both invest there, but -- and also generate strong earnings and returns from there as a piece of our overall portfolio.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Okay, Sean. Next question comes from Mike Leithead from Barclays. The question is, does having both carbon black powder and carbon nanotubes provide a competitive advantage in winning sales?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Say it again, Steve?

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Does having both carbon black powder and carbon nanotubes provide a competitive advantage in winning sales?

Sean D. Keohane Cabot Corporation - President, CEO & Director

Okay. I think Mike is asking in batteries.

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Yes.

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

In the battery application. So as Jeff talked about, conductive carbon additives or CCAs are critical to the battery chemistry. Current technology that's out there as well as any of the emerging technologies that are being worked on and developed like dry or aqueous-type battery chemistries, the role of conductive carbon additives is essential in -- no matter what the technology selection.

Now the role of traditional conductive carbon blacks and carbon nanotubes, they're just -- they're different forms, different ways of making conductive carbon additives, one's better at short-range (inaudible). To optimize the battery, you need both. And so we believe that going forward, formulations of blends or both short-range and long-range conductive carbon additives will be the way the market grows, there's all it goes. There's already evidence of that. And so with our participation in traditional conductive carbon black as well as CNTs and an ability to make dispersions and blends of those that we are well positioned. So I guess the short answer is our view of how the market will develop is yes, that both will be critical for an optimized formulation over time.

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Okay. The next question comes from Chris Kapsch from Loop Capital. And the question is, has the higher energy prices and/or greater adoption of CO2 cabin trade schemes in Europe impacted the ability of the industry to drive a greater return on invested capital that you are entitled to, especially given recent sustainability investments?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes. I think Bart talked, I think, nicely about this in his presentation. He talked about what are the forces at play as it relates to environmental investments and they're principally in the space of SOx and NOx, nitrogen oxide and sulfur dioxide and CO2. And if you look at a case where all -- if you do the hypothetical of, well, what happens if all of those come in, what's the ability to pass that on down the chain, we've been quite successful. And the composition or the proportion of the total battery sell -- tire sell price is quite small.

So ultimately, I think what's going to happen, not just in this case, but probably in most cases, as players have to make sustainability investments is that ultimately, we as consumers will -- and will pay a little bit more for that. And so ultimately, there may be an extra \$1 or \$2 in the price of \$150 or \$200 tire to accommodate this greener, more sustainable product.

So I would say that's sort of high level how to think about it. And as Bart touched on, we've been successful in recovering these environmental costs through various mechanisms, sometimes through things like surcharges, sometimes through things like our delivered cost adjustments. It depends, but we've been successful in recovering those, and it would be our intent to continue to pursue recovery of those and do that by helping our customers understand the importance of this to delivering a more sustainable product.

I don't know, Bart, anything you want to add to that?

Hobart C. Kalkstein *Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region*

No. No.

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Okay. Any questions from the audience? Okay. Then I'll read another question from Mike Leithead from Barclays. If the battery material market is expected to grow at 30% CAGR, should Cabot grow in line or faster? And if so -- and if faster, why?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes. So Jeff touched on this. So certainly, our expectations over the next 3 years are to grow faster. So we'll be growing the EBIT in this space. We expect to grow the EBIT in this space at a 50% CAGR plus, whereas the market is growing in that 30-ish, 30%, 35% range. So we will be outpacing the market. And we'll do that through really the package or the right to win package, basically, which is a unique portfolio of products that we have, both conductive carbon additives, CNTs, carbon nanostructures and the ability to formulate blends of those for optimal performance, number one.

Number two, our footprint to produce conductive carbon additives and our network of technology labs and go-to-market teams, given how global we are as a company, is an outstanding foundation that we'll build from. And so while we don't make every conductive carbon additive in every location of the world, the foundation that we have in terms of a footprint, and again, the technology labs that we have in the different regions and the go-to-market teams that we have are real differentiators.

So the combination of our leadership, recognized leadership in the space of conductive carbon additives and this set of factors or advantages that we have is really what's going to -- we expect allow us to outperform from a market share standpoint over the next few years.

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Okay. So Sean, we've had a number of questions regarding technology in the battery materials space. So we've kind of summarized it. And the question is, there have been reports talking about a shift in EVs from lithium-ion batteries to solid-state batteries. If that's the case, what would the impact be to CCAs or conductive carbon additives in the battery from this transition?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes. I guess a couple of things there. I would say that that work in exploring solid state is certainly something that's underway, but likely something that takes some time because the world right now is focused on industrializing at the massive volumes that will be required, the current chemistry to meet the ramp, so number one.

Number two, as Jeff said, probably is most important takeaway was no matter what the battery chemistry, the role of CCAs is critical. Some would say in a solid state, it might actually even be higher in terms of the role of conductive carbon additives. But I think the takeaway that no matter what the chemistry development, that fundamental role that the conductive carbon additive plays as a conductive pathway for electrons to move. As Jeff said, it's just the chemistry. And so we see it as neutral to current state. And then depending on how technology evolves, there's a possibility for it to be additive to it. But that's the way to think about it, and that takeaway that Jeff talked about is the most important one.

Steven J. Delahunt *Cabot Corporation - VP of IR & Treasurer*

Okay. Great. The next question comes from Chris Kapsch at Loop Capital. Can you provide more color on the 2022 tire contracts since the Q4 in the order of magnitude?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes. So maybe I'd pass that over to Bart here.

Hobart C. Kalkstein *Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region*

That probably should be on.

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Come on over here.

Hobart C. Kalkstein *Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region*

We're being webcast, right?

Sean D. Keohane *Cabot Corporation - President, CEO & Director*

Yes.

Hobart C. Kalkstein *Cabot Corporation - Senior VP, President of Reinforcement Materials Segment & President of Americas Region*

So I can say hi to Chris on the video. Yes, so we are still in negotiations with customers for 2022. We're coming to the end of that time. We have concluded with several customers and are near to conclusion with some others. A couple bits of context for this. First of all, ultimately, supply-demand balance is very important. And we've gone through, obviously, a very interesting time in the last 18 months. Interesting may not be the best adjective, a difficult time in the world with COVID. And so that has caused our customers to have some

uncertainty on what their demand profile looks like.

And so the #1 most important thing for our customers in the cycle really is supply security and making sure that they have product as recovery cycles come in various places. And so that's been a key theme with our conversations this year. And of course, with our footprint being globally distributed and very near our customers, we can offer a strong level of supply security.

The other thing, of course, when it comes to supply-demand balance is what's happening with capacity. And in general, it's a pretty stable time for the industry in terms of capacity. There's not a lot of capacity adds in the Americas, there are none in Europe, basically none right now as well. And so with a stable supply-demand footprint, a need for supply security. And then the final element here is the environmental costs as we've discussed this morning and the need to recapture from customers, the cost that we are putting in, particularly in North America right now, with our EPA capital. These are all important factors.

And so as we described in the earnings call, as Sean talked about in the earnings call a few weeks ago, we feel good about the process this year. And the conclusions we've reached with customers, some more weeks to go to finish this up, and I think we'll have some more specifics to talk about once the season is finally concluded at the end of December and on our earnings call in January. But I'm pleased with the work the commercial team has done and feel good about where we are.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Okay, thanks, Bart. Sean, the next question is -- it's stated as a lot of differentiated growth opportunities and initiatives were mentioned throughout the day. Which of these opportunities do you see as the most impactful to Cabot over the next 3 years?

Sean D. Keohane Cabot Corporation - President, CEO & Director

As I talked about these growth vectors coming in waves over the coming years, Battery Materials being the first. So that is clearly the one that has the pathway to most materiality in terms of growing earnings in the company because our position and the success we've been having in terms of winning customers that Jeff talked about, I think we're in a really good spot there. And with the market growing as fast as it is, I think that one has (inaudible).

And then I think the question will be, when I talk about reshaping the valuation for the company, you basically have enough information to think about what the energy materials, the Battery Materials business could be for us. And there are a number of players that operate in this space and operate at different valuations than Cabot. So I think there's a real opportunity to reshape the valuation profile of the company as we deliver on this battery growth here over the next -- well, the question was 3 years, but I think the runway here is, of course, longer than that.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Okay. Opportunity in packaging seems like it could be very large. What is the size of the inkjet opportunity?

Sean D. Keohane Cabot Corporation - President, CEO & Director

So maybe I'll ask Aaron to take that question and just try to frame it. Clearly, while he's joining us up here, I think it's going to be all about penetration. And so what's happening in these commercial and large-scale packaging markets as they're converting from analog to digital. The new presses that are going in today are digital. Older assets retire, new capital comes in, what's that rate of penetration. But maybe Aaron can try to just give a sense for that.

Aaron Johnson Cabot Corporation - Senior VP & President of Purification Solutions Segment

Yes. I think it's hard to know kind of longer term. But as we look at it right now, our estimate is that by 2027, inkjet could be about 10% share of that space. And just to kind of put some numbers around it, that space is about -- so the packaging segment is about 10x larger than the consumer segment. So if you look at kind of the size of that, it's quite substantial. And again, the key thing here is you're going from basically a very, very small base of less than 1%. So I think the way that I think about it is opportunity through kind of 2030-ish time frame, is about 50% CAGR per year or over that time in packaging.

Sean D. Keohane Cabot Corporation - President, CEO & Director

The other thing I would say is, just to remind you all that our historical participation in inkjet has been in the consumer space. That's the first place where inkjet took off in terms of the small office home office as well as some of the networked office printers. And so Aaron gave you a sense now relative to that, which is our historical position, a market that's much bigger. But hopefully, that gives you some context on this.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Okay. Thanks, Sean. So I think that's it for questions.

Sean D. Keohane Cabot Corporation - President, CEO & Director

Great.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Sean, if you want to wrap up or...

Sean D. Keohane Cabot Corporation - President, CEO & Director

No. So I won't repeat what I said, but I just want to thank you all for joining, both in person. For those of you that are here, it really is great to see you. And for all of those that joined virtually here, I hope that it was a productive and engaging way to hear about the Cabot story. We will be hosting a lunch here, the executive team at various tables. And so we look forward to continuing the conversation over lunch.

Steven J. Delahunt Cabot Corporation - VP of IR & Treasurer

Thank you, everybody.

Sean D. Keohane Cabot Corporation - President, CEO & Director

Thank you very much.

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