Owens Corning NYSE:OC

Analyst/Investor Day

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Call Participants

EXECUTIVES

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President of Roofing & Asphalt

Julian Francis
President of Insulation Business

Liz Higgins
Vice President & General Manager, Components

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Nicolas Del Monaco
Vice President & Managing Director, Global Non-Wovens

Thierry J. Denis
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Presentation

Thierry J. Denis
Vice President of Investor Relations

Good morning. Good morning, everybody here. My name is Thierry Denis, Vice President of Investor Relations. And then I'd like to welcome you, all of those who have actually taken the trip to Toledo. I'd like to welcome the people on the webcast as well. We're broadcasting this event in real time through the web as well.

I'm excited to be here, and it's great to see a lot of familiar faces in the audience. This is my fourth Investor Day at Owens Corning. And I was reflecting on the experience that I've developed over time, and there's 2 great things about doing 4 Investor Days: One is, you get an opportunity to develop great relationships and friendships with some of you. The second point is it gives me a little bit of perspective on how things have evolved over time. And while our strategy has not changed, the story has evolved. And I'm sure, as you know, the financial performance has evolved as well. And so this Investor Day today feels different for me for a few reasons: One is, you'll hear from us some of the reasons why the financial performance you've been seeing is sustainable, and some of the structural improvements we've brought to the businesses. You'll also hear from our business leaders about their journey on creating growth for the company that delivers shareholder value as well. And then you'll also see a different look, the different feel for our presentations, which symbolizes the positive outlook we have on the future as well.

So it's a different Investor Day for -- to some extent a different company, a different Owens Corning. Now some of the things that have worked well in the past, we will not change. And that involves giving you opportunities to hear from our business leaders, who will have presentations from all the businesses as well as our key executives. We have opportunities to -- you have opportunities to meet them as well, interact with them, during the breaks, over lunch, some of you had the pleasure of sharing dinner with us yesterday. And then we'll leave plenty of time for Q&As because we value the dialogue that this opportunity brings.

So I hope you're as excited as I am to get into the content of today. Before we do that, for I have a few instructions to communicate. Throughout the day you will receive packets of information, you will be handed out presentations right before each section, and those will be available through the webcast at the same time. You have the opportunity, if you want, to connect to the network from this room. There is a dedicated Wi-Fi connection that has been set up, and you can actually download the presentations from the website, if you want, as they become available as well.

And then a couple of safety -- important safety instructions. In the unlikely event of a safety emergency you will hear a siren that sounds in the room, and it will be accompanied with a description of the nature of the incident. The exits to this room are located over here. So that's the doors -- those are the doors that you used on your way in. There's another exit up there behind the production booth, and there's actually another exit behind the screen of this side. If that were to happen, you will then exit the room and then you will actually be greeted by safety monitors who will give you further instructions on what to do.

Now let's take a quick look one more set of instructions. Let's take a quick look at Slide #3 in the presentations, where we offer a number of cautionary statements. And basically, there is 2 key messages in there: One is we will make forward-looking statements. And as you know, actual results may differ from those predictions because of risks and uncertainties. We describe these risks and uncertainties on that page. So take a moment just to read that text. And then the other key message here is we do use non-GAAP measures -- metrics because we think they are useful for you to understand the operating performance of the company. We do provide a reconciliation of these measures to the GAAP measures at the end of the presentation, so that will be available at the end of the financial deck that you will receive towards the end of the day.

Okay. So that -- that's it for now. It's an exciting day. I'm sure you're eager to get into the content of the day -- the program for today.

And with that I'd like to hand it over to Mike Thaman, Chairman and CEO, who will start with opening remarks. And then Mike will take questions at the end of the program -- at the end of the morning. Mike?

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Well, thanks, Thierry. Good morning, everyone, and welcome to the folks here in what we call Panther Hall, and also welcome to those who are joining us on the webcast. I hope everyone had a great night last night here in Toledo. It's a real joy of mine to host that dinner and let our investors see the depth of our management team. I think it's an exciting time. At our company we've got lots of great people, and I think being able to host that dinner, and bring 20 or 25 of our managers in and have them interact with our investors is great development for our people. And also great opportunity for you to see what I think is the lifeblood of our company, which is our talent.

I'm going to just make a few opening comments. I think you have a copy of my presentation. Set some context for today, and then we'll jump right into the presentations. I think one thing you will see today is you will see great continuity in terms of the main presenters, the 3 business Presidents, myself and Michael. It's the exact same lineup that was here 2 years ago for Investor Day. And then I think you'll also see some fresh new faces. So we're going to profile inside each of our 3 businesses some activities going on inside the business that we think would be interesting to you in terms of how we're kind of bolstering those businesses and adding some ballast to some really great growth stories, and some really good and high performing businesses. So I think you'll see a little bit of both today, which I think will be good for all of us.

So let's go on to the next slide. Slide called Owens Corning at a glance. I think most investors are pretty well aware of most of the facts on here. We're 79 years old, so next year we'll be an 80-year old company. 3 strong businesses, Roofing, Insulation and Composites. We're about 17,000 employees today worldwide. I think, most of the growth in our employees from about 15,000 2 years ago has come from acquisition. Generally, in our main legacy businesses, we've had very little employment growth and have really been focused on productivity in trying to leverage a growth in our markets in terms of our footprint.

We're now in 33 countries around the world. $5.7 billion of revenue last year, obviously, this year more than $6 billion, so 2 years in a row, I think, of very good growth.

And then finally, 63 consecutive years on the Fortune 500. I think that's a real source of pride for the company. There's only about 55 companies or so that have been on the Fortune 500 list every year since the Fortune 500 was started. We're one of those. I think if you looked at the rest of the list you'd see IBM, Procter & Gamble, Ford, GM, I mean, iconic-type companies. And when I see our logo on that chart, I think of us as an iconic company. I think, we've been on that list for a long time because we make useful and relevant products. We're exposed to the general economy, and we've competed and kept up. If you make products that the economy wants to buy from you and you compete very well every single day and you're resilient about continuing to keep your businesses relevant, you continue to grow, and we think we've done a good job of that over 63 years, despite all the different things that have gone inside our industries and gone inside in our company.

Let's go to the next chart. Let's talk about what you'll hear today. Kind of 5 key themes that we kind of hope you will see throughout the different presentations: One is obviously a track record of performance, that's very important to us. The second is that we have compelling investment opportunities. Demonstrated earnings power, not just looking backwards, but I think looking forward. So we believe we've really put together here 3 or 4 years of very compelling growth around both cash flow and earnings and top line. We don't think that that's done. We, certainly as we look ahead for the next 2 or 3 years, feel like we've got a compelling story around our ability to continue to grow earnings and cash flow. We'll talk a lot about sustainability and -- not just sustainability in the environmental sense but the sustainability of our performance. We think the performance that we're delivering is built on a sustainable platform of doing all the things you need to do in order to get a business to perform very well, and we're going to try to highlight across the spectrum of our businesses the things we're doing to makes our businesses as competitive as possible. And then finally, shareholder-friendly capital allocation. This has been a recurring theme. I think Michael and I -- I think, Thierry said this is his fourth -- Michael and I have done these for a bunch of years as well. I think, for us, it's always comes back to that fundamental question, which is generate the cash, and then how do you go put it to work for the investors and make sure that we're making good decisions on your behalf.

I think the sum total of this is we hope most people walk out of here and say this is a different company than the company we reviewed 2 years ago at Investor Day. So 2 years ago, when you were here, we were talking about the things we thought we could get going in our businesses. We are talking about why we thought Insulation was going to get a lot better. We're talking about the fact that the Composites restructuring activities were in the rearview mirror, that the industry had consolidated and become more attractive. And that we're going to start to put up good sequential growth in Composites. We were talking about a Roofing industry that was really going to help us deliver great results. And I think 2 years later we're now saying that's the reality. That's not what we're going to talk in terms of what we think might happen. That's the reality of the market we're in today. And really today's discussion is going to be about how do we capitalize on that, and turn that into additional growth in not just revenue and EBIT but also free cash flow and as a result stock price.

Let's go to the next slide. Pretty simple theme. When you hear all of our managers, and we talk about how we make great businesses better, we like businesses with attractive macro drivers. So generally, if you're in relatively stable industries and you're making products that the market wants to buy from you, we consider that to be a pretty good thing. If you look across the spectrum of our businesses, there is natural underlying growth for the product we make globally, which we think really supports not just revenue growth but also supports healthy industry structures. So we're in an environment where capacity and productivity and other things can be absorbed by growth in the market, which is very important. We like market-leading positions. And as we talk about certainly our acquisition strategy and some of the businesses we bought, we think starting from a very strong position in the market is a really good place to build from. So we generally would look to have market-leading business. We generally in our M&A strategy are looking for businesses that have a leadership position. We don't really consider ourselves a company that's great at taking the #4 player and trying to figure out how to make it more interesting.

We think we're very good at taking good businesses and making them better. And we really focus on 3 key things, improving competitive positions and earnings: One is we're always on the cost trail. So implementing sustainable cost improvements in each of our businesses. Some of that's through management processes. Some of that's through technology. A lot of competitive benchmarking. I think, that will come through as a theme as each of our business Presidents talk about understanding where we are relative to our competitors. So a lot of competitive benchmarking to make sure that we always have the cost position that puts us in a position to win. We also want to have that same position with customers. So we look to drive organic growth through market-leading positions with our customers. I think you'll hear that, again, from our business Presidents talking about how we relate to our customers. How our growth strategies are very customer driven.

And then finally, as a way of adding on to the organic growth and the organic earnings growth that we can drive out of our businesses, acquiring businesses with stable and attractive margins and strong synergy opportunities. And I think, both Brian talking about really the completion of our InterWrap acquisition -- integration, I mean. The completion of our InterWrap integration. And then Julian talking about where we are now with Pittsburgh Corning, and then also talking about our announced deal with Paroc, which we think will close sometime early next year. Talking about why we like those businesses, and how they fit that model of strong and stable margins in attractive industries with great synergy opportunities.

Next slide. So we do think we've put together a nice track record of financial improvement. We're late in the year here so in order to make the chart look good, we put in the 2017 consensus numbers to kind of not be talking about last year too much. You can see in the last couple of years a doubling of EBIT. And I think that's -- when we were standing here 2 years ago, we hadn't yet finished '15. So the most recent full year performance for us at that time was a $400 million EBIT year. We'll obviously be more than $825 million this year, which is what we said on our last earnings call. That has translated into a great improvement and return on capital. About a 5 point improvement, if you go back to 2014. One of the things that we knew was something we needed to get done, and I think we talked pretty openly about it was, during a period of time in the early part of this decade we were not generating a lot of free cash flow. We had a lot of requirements in our Composites business to do some restructuring and to get the asset base right. We also were losing money in a big portion of our Insulation business, which was the residential side. So we had 2 big cash users. We stayed the course in both those businesses because we know both those businesses have the ability to contribute greatly to shareholder value and greatly to the future of the company.

I think you see now in 2015, '16 and in the forecast for '17 about $1.5 billion of cash generation over a 3-year period of time. Cash conversion of over 100% of net income to cash flow. We feel that, that is sustainable. So Michael will talk more about where we are on that but our guidance had been -- over a 3-year period of time we thought we could average 100% cash conversion. Obviously, we're well above that guidance today. Not guaranteeing that in every single year will be above 100%, but we think for a period of time here with very good tax attributes and good growth in our business, we should be able to continue to drive that.

And then finally, one thing we've been very proud of is -- and a real passion, I think, of Michael's, we really have focused on our working capital. I think we've been helped by very good management systems here. We've also been helped by predictable demand. Knowing that demand is going to show up every quarter, every week, every month, allows you to manage your supply chain better. A little bit better market conditions allow you to get better terms with suppliers, better terms with your customers. We've been working all those levers. And you can see we've taken about 4 points out of working capital over the course of the last 4 years.

Next slide. It's been gratifying to have that performance be recognized by our investors. I look at this chart and my eyes tend to move to the right of the chart where we talk about 10-year performance. Obviously, our near-term performance has been very, very good. Up 65% in the last year, putting us in the top 5% versus the S&P 500. So obviously, a great story that we can stand in front of this chart and tell this story for a very long time.

But I think what you're going to hear today is that result is a byproduct of the cumulative impact of 3, 5 and 10 years' worth of work. So we've been working on the things that improve the fundamentals of our business throughout the last decade. And those are now, I think, come into fruition in terms of our cost position, our market position, our talent, how we operate in our markets, and I think we've produced a really good track record across really any period of time, you want to look at in terms of driving shareholder performance, which is obviously why we're here today.

Let me just talk broadly about the next slide, which is what we call our sustainable enterprise. So when we talk internally with our employees, and say, kind of, what are the pillars of how we want to build this company, we really say that there is 5 key things that are at the heart of building market-leading businesses. So if you really want to be a great business builder, if you want to have outstanding market-leading businesses, financial strength is a requirement. But -- financial strength is necessary, but not sufficient to build great and sustainable performance. I think you're all aware of the fact that we do a wonderful job on sustainability in our company, not just our safety performance, but we've been, I think, very, very good at reducing the footprint of our company. The emissions and the resources that we use. We also are very focused on expanding the handprint of our company. So how do we make products that are more useful and better to the world. And I think particularly, today, Julian will focus on some of the things we're doing in that area.

We're recognized by the Dow Jones Sustainability Index. We've been #1 in the world in the Building Materials category for a number of years. So we take a great deal of pride in what we do in that area. Operationally you have to be excellent, I mean you already heard me talk about driving low-cost, driving low-cost, driving low-cost. That's a passion of ours. We have many systems in place from a management point of view to continue to engage our employees and get them in the game and helping us take cost down. We also have a lot of technology investment in our R&D group to try to build the best process and process capability that allow us to have the lowest-cost products. I think you'll hear some of that today.

Customer-inspired innovation is a really big deal to us. This is a customer company. If you come to the core of what makes Owens Corning's people tick, it's finding a customer getting them to buy our product and then serving that customer and help them grow. I mean that's a very simple thought process in business. But generally, if you ask most of the people in our company, what's the primary driver of how we think about strategy, that's our starting point and our end point.

We need to know what our customers want. We need to know what our customers need in order to grow, and that we need to be the people who provide that to them first. And I think, that's a cumulative effect of many years of having the right people in the marketplace, good continuity in our commercial teams, allows you to continue to build that muscle. And I think today that muscle is strong and functioning in our company well.

And then finally, high-performance people. We have been on a talent journey in our company, trying to make sure that we have the ability to create and develop the leaders for the company. We've made a lot of progress in the last 5 or 10 years in terms of getting leaders internally ready for jobs, so our promote from within numbers have been improving because of our ability to attract leaders at mid-career, develop them, get them ready for senior-level positions. We're making progress in terms of leaving senior leaders in positions longer. So we're trying to reduce churn at the top, so that we have the opportunity to really build the relationships with our customers, build strategies and see those strategies through. Generally, I don't feel that in a 1 year, 1.5 years or 2 years that a manager can really define and execute a strategy. You've got to stay in that job long enough to see your actions come through, and you'll see that today in terms of the people you have here.

We're also doing a good job at entry-level recruiting. So we've got nice recognition from like our internship programs and other things. In terms of being a top-25 company for summer interns for engineers, finance and marketing-type talent. Interesting list. Mostly services companies. We're one of the few industrial companies on that list. So we're taking care of early career because we know that's also the lifeblood of where the future talent in our company is going to come from.

So a real passion around people and talent. And I think that's come through in terms of our ability to now think about growing the business through acquisitions. So if you go back 3 or 4 years ago, financial capacity might have been part of an issue in growing through M&A but I don't think it was probably the primary issue. I think management capacity and talent being able to deploy big groups, dedicated teams of highly-talented individuals to go make acquisitions happen and get them integrated and make them successful was an area where we started working 4, 5 years ago to get ourselves prepared for some of the deals we've done over the last 1.5 years. And I think you will see a lot of confidence and success from our team today in terms of how we've done that.

So this model is something we look at and think through. And as we evaluate our businesses, as we evaluate our performance, we say where are we in terms of the balance that we have in making sure that we're not just giving you near-term performance, but we're taking care of the things that are going to produce the 3-, 5- and 10-year performance that we saw on the prior chart.

So I'm going to summarize. Super happy to have everyone here. Really excited with the people on the webcast to be a part of our Investor Day. I think we have a great story to tell. I couldn't be prouder of the people of Owens Corning. I couldn't be prouder of my leadership team. We're very happy with the financial results we're producing, but we certainly don't feel the best is in our rear-view mirror. We think really the best is yet to come. And that where we have the position -- where we have the businesses positioned today, each one of our businesses you'll hear a story of growth opportunity, market opportunity, the ability to drive additional growth and earnings and the ability to drive additional cash flow.

So let's have a great day together. I'll be back after the end, as Thierry said, to handle some Q&A with you guys. And we'll enjoy the day together. So Thierry?

Thierry J. Denis
Vice President of Investor Relations

Thank you, Mike. So this is our agenda for today. We'll be together and alternate through presentations and Q&A sessions for the next 3 hours-or-so until 12. We'll have a break around 10:00 a.m. this morning. We'll start with the Composites business, and then we'll move on to Roofing. There will be Q&A sessions after each presentation. So we'll try to keep that balance of sharing information with you but also having that dialogue. A break around 10 that will take about 15 minutes. When we'll come back, we'll hear about the Insulation business, I'm sure many of you are interested about. And then we'll have the financial presentation at the end, and then a Q&A session with Mike and then Michael

McMurray, our CFO, as well at the very end.

Okay. That's our program. I think, we're ready now to start actually sharing with you the content of the first presentation, which is the Composites section. Within the room, we'll be distributing handouts that we'll use for the Composites section. And then those should become available on the website as well momentarily.

Now, while that's happening, I'll just share with you a piece of trivia about the Composite business that you may or may not know. Back in the history of Owens Corning, Owens Corning and GM, General Motors, collaborated to make the first production automobile made with fiberglass reinforced plastic. So anybody know what that is? It's the Chevrolet Corvette. And do you know the year? It's 1953. 1953.

So 64 years later, our Composite business is still growing strong, selling to that industry, we're also serving many other applications.

So I'd like to introduce now Arnaud Genis, who is the President of the Composite business.

Arnaud P. Genis
President of Composites

Thank you, Thierry. Good morning, everybody. It's great to be here. A lot of things have happened since 2015, since the Investor Day in Atlanta. I'm very pleased to report to you the progress we have made. But more importantly, what I would like to share with you is why these progresses are sustainable. Why mid-teen margins should be the new norm for Composites, and why double-digit return on capital is definitely sustainable. So when I was in Atlanta with you in 2015, we were about to cross a very important gate, which was the return of this business to a double-digit EBIT margin. When I was with you, I said "well, look, there is more gas in the tank. And actually, well, mid-teen margins are possible."

And at that time, I had a conviction that was supported by 2 beliefs. The first one was about the environment. And it was about the growth of the market and capacity utilization. The second one was about my confidence in the relevance of our strategy and in our ability to succeed in the execution of the 4 pillars that I outlined at that time. And these 4 pillars, if you recall, were cost leadership, product leadership. Product leadership for us is very important because it's our ability to enable our customers to make more money. Delivering products that enable them to be more competitive and gain market share.

The third pillar that I outlined at that time was our ability to capture price. And the fourth one, very important, given the focus that we have on return on capital was around capital efficiency.

So let me update you on the way where we are and what we have seen over the past 2 years. First thing, our theory around the market proved to be right. Composites continue to outperform the industrial production. They continue to grow 1.6x industrial production. It's a highly desired material because it solves a lot of problem, far better than steel, aluminum or other materials. Second theory we had was that, we would see higher capacity utilization over the period, and this has proved to be true. Now coming to the 4 pillars of the strategy, cost leadership, well it continues to be a key part of our agenda. You heard us in the second quarter earnings take the decision not to rebuild some subskill matters that would not fit within our definition of cost leadership. We have sustained a very high percentage of our network as a low-delivered cost.

When it comes to product leadership, we had a lot of work from our marketing team, from our S&T team. This year, 27% of our sales are coming from products that are less than 5 years. In an industrial business this is pretty remarkable. When it comes to price, since 2015, we have delivered $40 million of price improvement, and this is well in excess of inflation. And lastly, when it comes to ROC, well obviously, we have doubled our EBIT numbers since 2014. So we have doubled the numerator. But we've worked very high -- very hard on the denominator. We've been very disciplined in the way we have deployed capital throughout the network. And we have unfolded a new approach to capacity since 2014. I think you have heard when we closed one of our plants in China because we had been forced to exit the Hangzhou plant. We initiated a path where we were utilizing existing capacities in their world. By providing technology, providing a license instead of getting royalties being paid in return through products, access to capacity that would enable us to continue our growth pattern. This has enabled us over the past 3 years to avoid $150 million of capital expenditure.

So today, you're going to hear 4 things: The first one is that, well, Composites will continue to be a high-growth market. Fundamentally, it's a fantastic material solution. And I will talk to you later about well, which markets are badly needing Composites to solve some of their burning problems.

Second thing you're going to hear is that industry consolidation and barriers to entry are creating a very favorable environment. The third thing that I want to share with you is that the foundation that we have worked, and I have presented to you in 2015 is positioning us very well to capture our fair share of the growth that is going to happen. And we'll do that in a capital-efficient manner. And lastly, we will showcase nonwovens which is a high-growth business, accretive to CSB business, which we talked of in Atlanta, but we're going to do a deeper dive in this with Nicolas Del Monaco, who is sitting over there. I will introduce him later. He is the Vice President and Managing Director of that business.

So when I was in front of you in Atlanta, I told you that over a 35-year period, Composites had been growing at a pace of 1.6x IP. Actually, well over the past 3 years, this has proved to be right, again. Now in the meantime, what I told you in Atlanta was that demand growth would outpace capacity addition, and again, this has proved to be right.

Now turning to the future, economist consensus forecast is calling for an IP growth of 3.1%. Actually, the reality of 2017 is better than that. And the forecast for 2018 gives us confidence that 3.1% is definitely possible. This takes us, I would say, back to the kind of growth rates in industrial production that prevailed before the big economic crisis of 2008. If you apply the 1.6 multiplier to this IP, this gives a growth of 5.2%.

I said to you that there are some industries that badly need Composites materials. Just going to talk of one. I think I already covered some of it in Atlanta, which is automotive. You've seen the stringent regulations that are being applied in many countries. If you take China, India, Europe, the U.S. is still a question mark. But I would say there are new standards that are being implemented, as part of the COP21 Paris accord of -- that was done this year. Where as you go to electrical cars, you need to take weight out, so that the range -- the autonomy of the vehicle will be enhanced. In Europe, there is a shift from diesel engine to regular gas engines. Regular gas engines have higher CO2 emissions than diesel engines. You need to take weight out. There are more and more SUVs, heavy SUVs that emit a lot of CO2, you need to take weight out.

There was an analysis published last week about well, what's going to happen in Europe. In 2021, there are very stringent requirements about 95 grams of CO2 emission. And beyond 95, you have to pay fines. There are some OEMs that starting 2021, they don't take weight out. They will have fines of more than EUR 5 billion to be paid to the European Union. So that move, I'm giving the example of automotive. But there are many more industries that really need to solve some burning problems, name it corrosion, look at U.S. infrastructure, name it light weighting, look at these big changes that are happening in transportation that will require more Composites. So really exciting times for us, and I do believe that the 1.6x multiplier will continue to prevail.

Now we dedicate significant resources to a competitive industry analysis. We can project, I would say 2, 3 years out what's going to happen in the industry, in terms of capacity addition, based on the announcements of our competitors. But we also have, I would say, pretty sophisticated systems that enable us to know exactly where are the furnaces, what is the nameplate, when are they going to be rebuilt. And based on our intelligence, demand growth over the period to come will again outpace capacity addition. So pretty favorable environment. So this was my first point, which was about the growth.

My second one is about the industry trends. There are 3 big, I would say, developments in our industry. The first one is industry consolidation. I started in Composites 31 years ago. I would say at that time, there were tens of glass fiber producers. It was mostly a regional market. Today, this has become a global market with few big players. The last development that happened in the market was the acquisition of the PPG European and PPG American assets by Nippon Electric Glass. So the #5 in the world was acquired by the #6. Okay, one player less.

The next change that is going to happen very soon will be the acquisition by Jushi, who is the #2 in the world. The acquisition, the merger of Jushi #2 with Taishan, who is another producer, at #4. The 2 mother companies of these Chinese producers have merged. They're both cement producers. And as part of the restructuring that the Chinese government is doing of its assets, its equity instead on enterprise, the 2 mother companies have merged.

Today, they are still managed separately. They are still competing. They are still -- I mean, sometimes we see odd things happening in the market. We believe that very soon these 2 companies will go under a unified management. And again, it will mean one player less in this industry.

Now with this merger, Jushi, who is very close to us in terms of manufacturing output, will become larger than we are in terms of volumes. But this is a very China-centric player. I would say, in terms of geographic spread, technology, product portfolio, returns. I feel, I believe that we are still the market leader.

Now with these consolidations that I just mentioned, the top 5 producers who were accounting for 66% of the market back in 2014 will now represent 83% of the industry capacities. So it's a pretty significant move.

The second thing I would like to talk of is the changes that are happening in China. Between 2005 and 2008, the Chinese producers have emerged. They have built a lot of capacities. They have built over a 3-year, 5-year period 30% of the world capacity. This obviously has created a major disruption. Now since 2008, we have seen a very different approach to capacity buildup.

When this started to happen, we were convinced that this could not last forever. I mean it didn't make sense to have state-owned enterprise compete with one another, lose money, sell looking only at marginal cost. Or price looking only at marginal cost, and things have evolved. And actually, well, for those of you that travel to China, I'm sure that you have seen the changes, the very stringent regulations that are being applied by the new administration. We really started to see 3, 5 years ago a major shift. First of all, it started with the merger of some state-owned enterprise, right? You saw what happened to high-speed train producers, steel producers, flat glass producers, cement producers, well, in the glass fiber industry it's pretty much the same. And the Chinese government does not want to see overcapacities being built and its state-owned enterprise not returning cash. So now state-owned enterprise in China have to return cash. They have to get a permit. They have to prove that there will be good taxpayers. Because provinces have very limited energy quota, and they have to choose which industry are they going to authorize. Because fundamentally they want cash back, right? Environmental regulations have become really, really tough. So today, if you want to get a permit to build a new plant in China, first of all, you have to comply with a certain energy intensity per value-added. But also as far as air emission, water treatment, et cetera, I mean, this becomes not only difficult, but also very expensive once you get a permit.

So obviously, well this is creating a barrier to entry, there is a bunch of Tier 2 players in China who are struggling and who are questioning whether they should proceed or not.

And last but not least while costs are escalating, we see it in many different industries. We are producer in China. So we see the inflation in labor, in energy, in raw materials, but things are evolving pretty quickly over there. So all this is leading to a high-capacity utilization. Our fundamental belief is that the positive environment we've seen over the past 3 years will continue to prevail. And that nothing should change and that will -- this will enable us to have every year in average pricing offsetting inflation.

So you've seen that some of our competitors are building an overseas network. I will show you in a minute, our global network. It's pretty unparalleled. But companies like Nippon Electric Glass, Jushi, who are building -- acquiring assets or building capacities overseas. They have to learn their way. They have to learn how to operate their global network. In our case, I mean, we've been operating a global network for the past 40 years. So at a time they are learning their way through this global market, I'm very pleased with the 2 platforms we have. We are global leaders both in reinforcements and in nonwovens. When I look at our network in glass reinforcements, we have a low-delivered cost network, which is really covering the key markets that are using or that are major users of glass fiber.

In reinforcements, there are 2 things that are really important to me. First is the customer experience. I've talked to you about product leadership. But next to product leadership, we also do a lot of work on the ease of doing business. Fundamentally, our ambition is that the customer experience with us is second to none. How do we do that? I'm a metric guy, and I always start with numbers. So once a year we do a customer survey. We question 500 customers. And we check, "Okay, how are we doing?" And what we measure here is the Net Promoter Score. So we classify our customers between advocates, passive, detractors. And the Net Promoter Score is the difference between advocates and detractors. And I'm very pleased to report that over the past 4 years, our Net Promoter Score with our top 25 customers has jumped from 14 to 61. In a B2B environment, this is pretty remarkable. There are very few companies that have a Net Promoter Score north of 30, we are at 61. So all the work that we've been doing over the past 3 years is really paying.

When it comes to technology, as I said, I have been 31 years in a glass fiber business. I've visited many plants. I've been part of the acquisition, right? I was acquired in 2007, and I could compare side-by-side the various technologies. When I was acquired, I was stunned by the technology edge of Owens Corning. And I'm not saying it because I'm Owens Corning now. I mean, truly the glass technology of Owens Corning is the best. The energy intensity, how much energy we use per ton of molten glass. How much glass we produce in a given square meter of furnace. These are key parameters that are really, really important. And we have dozens of engineers in our labs in the U.S. and are focusing on developing the next wave of technology -- the next generation of technology. So this is a very critical component. And I'm very pleased with the progress we are doing here. Mike mentioned cost competitiveness is a key point. And obviously, well we do allocate significant resources to maintaining that competitive edge.

As far as nonwoven is concerned, you will hear from Nico in a minute that nonwovens is a highly specified, highly customized product where we really partner with our customers to develop unique solutions, and enable them to develop new building material to solve problems.

We have a track record of success. We really started 40 years ago when we acquired in the Netherlands a specialty paper, very fine lightweight paper producer that had converted their paper mill over to glass nonwovens. Instead of using pulp fiber, they were using glass fiber. And this enabled us to really acquire and master a paper technology. Nonwovens is very different from glass fiber. If you want -- if you are a glass fiber producer, you cannot operate these assets the same way you operate a furnace. And I think that we have -- we are very unique because of this mastery of the paper technology.

I've talked to you about capital efficiency and the focus that my team and I, we have on return on capital. You have here the network, so we have a network of 27 plants in 14 countries. In blue, you have the glass reinforcements plants. In green, you have the nonwovens plants. As I said, well, we've been very disciplined in the way we have deployed capital. So -- when 3 years ago, we said, okay, capital efficiency is a key indicator of success. A key goal. We started to roll out that concept of strategic supply lines. So again, we started in 2014 this approach. This has enabled us to get access to -- 10% of our volumes today are coming from assets that we don't own but that we operate. So we have transferred our technology to these assets. We have our people next to the owners of these assets, making sure that the products that came out of these assets meet all our specs and that for our customers it will be the same as an Owens Corning asset. Very creative approach. We have avoided $150 million of capital expenditure over 3 years.

Now there are certain parts of the world where we want to own our assets. India is a very important region for us. India is bound to have a massive growth. New government, business friendly. We see very nice growth and big needs in India for our products. We are doubling our capacity in India. The project is under execution right now. It's going well. It will be settled in the second quarter of next year. We are a first in, in India. We love our position there. We wanted to have our own asset. This was the best solution for our shareholders.

And then lastly, well, Nico will talk in a minute of the Gastonia investment. You remember, we commissioned the line, Q1, Q2 of last year. I'm very pleased with the progress we've done. The line is now producing all the portfolio of products that we sell in North America. We are qualified at all the customers. And the line is now fully loaded, and will be contributing significantly to our results in 2018, okay? So with no further ado, I'm going to introduce you to Nicolas. Nico will talk to you of nonwovens. So Nico is Belgian, so he has the same accent I have. Sorry for that.

He has been with Owens Corning for 17 years. He started in Owens Corning in financial position -- finance positions. Then he moved over to the U.S. He has had several operations jobs, and then -- well he grew through the GM ladder.

Okay. Nico?

Nicolas Del Monaco
Vice President & Managing Director, Global Non-Wovens

Thanks, Arnaud. Good morning, everyone. So it's really great to be here this morning to share more about the exciting story of the nonwovens business. And first I start by apologizing to those I was having dinner with last night. You asked me a lot of great questions about the business, but I was really trying to hold the interesting information for this morning.

So as Arnaud noted, the nonwovens business is an important element of the portfolio that has greatly contributed to the transformed performance of the Composites divisions over the past few years.

So who are we? So basically we play 2 important roles within Owens Corning today. So first, we are a world-class supplier to our Roofing divisions. As you know, we have vertical integrations from glass to nonwovens, and then ultimately, to shingles. And we believe that is a major competitive advantage that we have in the market. Secondly, as Arnaud mentioned to you, we act as a growth accelerator for the Composites division.

So where are we in the market? The largest market for glass nonwovens today is non-residential building and construction, a market that we estimate is growing at a pace of about 5% globally. Today, we are the global leader in this market with very talented teams established around the world. And we expect to grow this business at a pace that is about twice faster than the market.

This year, our revenue will be approaching about $0.5 billion. And over the last few years, we have consistently delivered sustainable margins that are, generally speaking, less exposed to broader business cycles. This year, as I just shared with you, so we have grown faster than the market. But on top of this, we have as well generated additional benefits. Thanks to the capacity additions we have made in Europe first, and then more recently, in North America.

So already, as Arnaud mentioned to you, with the glass nonwovens revenue growth, the type of EBIT margins that we can deliver and our return on capitals, all of these are very accretive to the Composites performance. And obviously, the more we continue to grow this business, the more we'll propel Composite supports.

So let me now try to explain you why this is such a great business. And I think to do so, it's important that I spend some time help you understand the technological expertise that we have grown and built over time. This technology really -- obviously, allow us to grow in the market, but also allow us to meet the market needs in a very differentiated manner. Basically, what the glass nonwovens does, it's adding functionalities to our products. And then ultimately, those functionalities will really solve customers' problems.

So on the chart here, we have tried to represent in a pretty simple manner what exactly we mean by that and what exactly this concept means. So if you start on the left-hand side, we've the first set of functionalities that we call our mechanical properties. So those are properties such as dimensional stability or tier strength. And those types of functionalities are very important in markets such as Roofing or Flooring applications that are the 2 largest markets in the world for glass nonwovens.

As you move further to the right, the next set of functionalities are those where the glass nonwovens act as a barrier. So for example, it will act as a barrier against water, mold and mildew, fire and so on. Those then become very important when it comes to market, such as Insulation, or the fast-growing market of gypsum board in North America.

Finally, on the right-hand side, and the most advanced type of functionalities we can add, is those functionalities about aesthetics and visuals. So those become very important when it comes to finishing the inside of a building. So for example, on the walls application or ceiling tiles. And I will come back on the example of ceiling tiles in a minute.

So as you can see on the chart here, I mean, the more functionality we add, the more value we create for the customers. And obviously, the more we had them win in their own markets. The second important aspect to note is where is the more functionality and the more differentiated we are versus our competitors. So really a very strong competitive advantage and control point we have into the market.

So let me now share with you a couple of examples where Owens Corning has demonstrated really a true market leadership by driving glass penetration into the market, and really are partnering with the key market leaders. Because it's a second aspect of this business, where we have developed a level of intimacy with our customers, that is very, very impressive.

So the first example is what we refer to internally as construction boards. So basically, whether they're being used on the outside of the building, on the roof or the inside, a large variety of construction boards are being used in the market, and they bring valuable functionality such as mold and mildew resistance, walkability or act as a barrier for water and fire.

As you can see here, this is a very large market. And today, we estimate that the level of glass penetration is in the range of 7%. Even though this might feel like a small number, it is worth noting that about a decade ago, this number would have been close to 0. So as I shared, really driving glass penetration over time has made the adoption of glass nonwoven in this market.

So we believe that as we bring the right functionalities in the market, this will better equip us to address customer needs and continue to grow the other side of the pie for glass nonwovens. One of those needs today we see is the labor productivity. So you know, labor productivity is a real bottleneck today on the North American construction market. And this is with you, where -- when you come with functionalities such as mold and mildew resistance or strength that will allow like lighter building or stronger buildings, those will then play a role in changing building practices, and ultimately, drive labor productivity on the job sites. So really, that's a large market in which we see a very large opportunity for us.

The next example I want to share with you is the one of ceiling tiles. So for -- I'm sure you know ceiling tiles are being used today in hospitals, schools, offices and all kind of building and construction. And basically, the role of a ceiling tile is to enhance the interior of a building, right? And they do so by providing better sound, better luminosity and so on. This actually -- even though a ceiling tile might look very simple from the outside, when you look at it, what you see is actually the glass nonwoven. So there is a bond which we laminate a glass nonwoven on it. And even though this might look very simple, this is actually a very complex market where products are highly specified. We need to develop very, I would say, engineered solutions that need to fulfill a lot of requirements. So as you can see on those pictures here, but basically, think of a ceiling tile that needs to be used in all kind of shapes, rounds, squares and others, all need to look exactly the same wherever you are in the room. All need to provide a same level, the right level of light reflections and luminosity as the architect will specify. At the same time, very often will act as a barrier for fire. And all of this needs to be accomplished without, obviously, compromising the primary role, which is to guarantee a certain level of acoustical performance in the room.

Finally, our products, as we accomplish all of this, needs as well do have the right level of mechanical strength to be -- to allow our customers to produce those tiles in a very efficient manner. As you see here, the market we estimate to be in the range of $180 million with about a 40% level of glass penetration, so which still leaves us a very interesting $100 million of revenue opportunity.

Finally, I guess, I could not be here with you today without providing you a little bit more details about our Gastonia investment. So as a reminder, we have invested about $130 million to build the state-of-the-art facility in Gastonia, North Carolina. And the primary purpose of this investment was on one side capture the growth of the North American market, and then on the other side really continue to enhance our global leadership position. Very pleased to see where we are today with the facility which is performing at a level of performance that we -- that is very much in -- in line with our expectations. And as Arnaud shared the facility today is probably the full portfolio of product and is close to its design capacity.

So we really believe that the success of this investment combined with the fact that, as you build a nonwoven line, the level of reinvestment over time is very, very low. Those 2 where we support the case for further investments in organic growth and deliver greater results for the business.

So before I hand it back over to Arnaud for his closing comments, I guess I would summarize by reminding you of some of the key compelling fundamentals that I believe are into the nonwovens business. I mean, this is really a great business where we are the global leader, where we have established a very strong position and where we are leveraging our unique capabilities and functionalizing our products and a very unique technology. As I said, this is a growing business, where revenue growth, EBIT margins and return on capital are accretive to Composites. And this is an investable business, and one in which we will continue to invest capital that will create value for our customers, deliver profitable growth for the company, and guarantee strong returns for our shareholders.

Thank you for your attention. And I hand it back to Arnaud for his closing comments.

Arnaud P. Genis
President of Composites

Thank you, Nicol. I will wrap up quickly because we are running over. And I won't be popular with our master of ceremony. But what -- you really heard 4 things today. The first one is Composites continue to be an attractive market, a high-growth market, our products are needed by many industries. The second thing is that the industry consolidation and barriers to entry will continue to create a favorable environment. The third thing is that -- we really changed a lot of the fundamentals of the business. The way we run that business, the way we go to market and delight our customers. And therefore, this will enable us to capture our fair share of the growth that is to come in a capital-efficient manner. And lastly, well, nonwovens is a very valuable part of our business. And we will continue to grow that franchise over the next cycle.

Okay. And now these 4 things are really creating the conditions for us to be very confident in our ability to sustain the current mid-teen EBIT margin and the double-digit return on capital where we are today. All right.
So with no further ado, I'm inviting Thierry for the Q&A session.

Question and Answer

Thierry J. Denis
Vice President of Investor Relations

Thank you, Arnaud. Well, as if you needed one more French accent today, I'm back here to facilitate the first Q&A session. So this is our time to learn everything about Composites. The way we'll proceed is we'll -- I would ask you that you raise your hand indeed, please. And then wait for the microphone to be brought to your desk. And then please identify yourself and the name of the firm. Thank you. Kathryn?

Kathryn Ingram Thompson
Thompson Research Group, LLC

Kathryn Thompson, Thompson Research Group. On -- acquisitions have been a little bit more challenging in the Composites segment, but there still are some opportunities, granted a bit smaller. Could you discuss those opportunities from the acquisition standpoint? And as you look forward for new products and end markets for growth, how do these acquisitions play through? Or do you really have a greater opportunity to develop these internally?

Arnaud P. Genis
President of Composites

Well, so indeed, Julian and Brian have done great acquisitions. In our case, well, you were -- you heard the acquisition we attempted to do in nonwovens, that was last year in Finland, Angstrem, which could not proceed because of regulatory approvals. I would say today, what we enjoy is a high growth market, Kathryn. You see us growing. I mean, this year, we're going to deliver $100 million-plus of organic growth. For us, I think, the priority is really organic growth. We are monitoring what is available in the market, but I would say there are not so many opportunities in our business. So -- in short, our focus right now is on organic growth. There may be opportunities to acquire some technologies that would enable us to grow Composites faster. But I would say, at this stage, the priority for us is clearly organic growth.

Kenneth Robinson Zener
KeyBanc Capital Markets Inc., Research Division

Ken Zener, KeyBanc. Arnaud, I appreciate the data you gave, specifically, the top 5 having, it sounded like, 83% up from 66%. So just a few facts here. So you guys grew volume 4% in '15, '16 -- 6% in '16, your revenue was only a 2% CAGR because of a lot of FX headwinds. The reason I present this data is that, your pricing of roughly 1 point a year FX, there is mix, et cetera, but it's only about 100 basis points of price. Is that something that you would expect within an industry where the consolidation, high fixed cost, top 5 83%? I mean, what is it that set the change in that dynamic? Or are you going to have not so much price as you move to more capital efficient model like you're doing in China?

Arnaud P. Genis
President of Composites

All right. No. Well, look, we do have a lot of emphasis on margin enhancement, right. It's one of the 4 priorities. Over the past 5 years, if I'm not wrong, we have delivered $120 million of price. So this has contributed significantly to the improvement of the bottom line. I would say, well, this year we have faced some headwind. And if you look at our numbers, this year has been a kind of abnormal year, because we faced in Europe at the end of last year a softer market and new capacities that were coming from the Middle East. So I think in your analysis, Ken, the numbers are kind of skewed by what happened at the end of last year. I would say things have normalized. In the middle of this year, we have announced a price increase, but you know that a lot of our volumes are under contract. We are just starting our contract season for 2018. I would say, I'm feeling encouraged by what I start to see, right. It's still early to say, but I would -- I mean, I feel that what we saw at the end of last year won't repeat this year. So will we see more price? Definitely in the market that grows 5% to 6%, with capacity utilization in the 90s, definitely you will continue to see price. And I would say one last point before we go to the next question. Right now, we're operating at very high capacity level, we, Owens Corning, right. I mean, we have these strategic supply agreements in place. We don't play only with price, but it's really also mix, right? Our capacities are not totally fungible -- but I would say our plants are specialized. In each plant, we have 2 product platforms that have been produced. So we have also that ability to ensure that we can go from one market to another if we cannot get our fair price in the market.

Thierry J. Denis
Vice President of Investor Relations

Mike had a question. Mike Rehaut?

Michael Jason Rehaut
JP Morgan Chase & Co, Research Division

In terms of the capacity additions, obviously very encouraging that in the last few years, it's been slightly below the market growth, and that's where you project for the next 3 years. I was curious, though, even within that -- there can be some short-term disruptions as you refer to with, I believe, the Egypt plant, and as it related to Europe. I was curious over the next '18, '19, where the capacity additions will be. If you have a sense of which competitors or -- and -- by region kind of where that addition might be concentrated?

Arnaud P. Genis
President of Composites

Sure, yes. So I would say there are 3 regions where new capacities are being built. Well, you are aware of the Jushi investment in South Carolina. This is the -- so following Egypt, Jushi announced in 2012 that they would come to the U.S. When they announced in 2012, they said that this plant would start in 2014. And this plant is not going to start until 2019. So I think it tells you also how much caution you have to have when you see big announcements made by some competitors. So plants startup in 2014, really happening in 2019. I think, it shows also the difficulty to operate in new regions for some of our competitors. This plant is due to start in 2019. I mean, to date, Jushi is selling much more than the design capacity of this plant, supplying from China. The Chinese market is growing high-single digit to double digit, or depending on the years, on the stimulus, on the trends in China. So we believe that the capacity that is being built in the U.S. will actually enable Jushi to sell more in China. The second announcement so recently Nippon Electric Glass following the acquisitions of PPG announced some capacity addition, but it's still unclear what is the size. I mean, they announced some expansion in the Netherlands. We believe that it's just a rebuild on the expansion of a melter. And the conversion of one furnace in the U.S. from textile [indiscernible] over to thermoplastic [indiscernible]. So I mean, all these are baked in the numbers that I showed to you. So no surprise for us. We were expecting that. And lastly, well there are some new capacities coming onstream in China despite, I would say, the barriers to entry and the difficulty to obtain permit in China, and you can still get some clearance. Usually, not in the coastal area. So deep inside the country. So all these numbers are baked in what I showed you for the 3 years to come.

John Lovallo
BofA Merrill Lynch, Research Division

John Lovallo from Bank of America. My question is on the 5.2% global growth that you guys are looking for through 2019. And you called out the automotive business as one of the drivers. So I guess, the first question is, your view on the U.S. auto cycle, given that it's probably the richest mix of CUVs, SUVs, et cetera, where light-weighting would be meaningful. And then you -- historically, it seems like the headwinds to the -- to automotive Composites have been -- the material cost impact performance, what happens in a repair situation, and also kind of the cycle times manufacturing. So what's the industry doing to address those issues? And what is OC doing?

Arnaud P. Genis
President of Composites

So -- well, obviously, where we supply raw material, right. So the way we are working in the automotive vertical is really to partner with Tier 1 suppliers and the OEMs to develop new solutions, right. As I said earlier, the real concerns for OEMs in Europe, by 2021, most of them are enabled to meet the CO2 requirements. There are new standards that are being put in Europe by 2030. So they don't -- not only they don't meet 2021, but -- I mean, evidently, they don't meet 2030. One of the difficulty of OEMs is that, well, they know how to design models with steel, aluminum, and fundamentally the legacy producers know a lot about metals. Composites is still a fairly unknown material. Aircraft producers have gone deep into Composites, right. And when you look at the Dreamliner, Airbus, et cetera, we do see more and more OEMs creating centers of excellence to develop Composite solutions. Actually they are being kicked also by the newcomers. I mean, guys like Tesla, they jump from nothing, immediately to the new material. So -- I mean, all this is creating a favorable environment. The difficulty, I would say, in the automotive cluster is that each Tier 1 supplier has its own recipe to build a Composite. And what we really need our industry to get to is to some standardization in how parts are designed and produced, so that this repeatability happens. You mention how to repair a car part. I don't think this is a problem. I mean, there are already many vehicles that are fully composites. This is a problem that is being addressed. Recyclability also of car parts is addressed. So I think all the solutions that are in place is more -- I mean, the inertia and the know-how around Composites.

Stephen Kim
Evercore ISI, Research Division

Steve Kim, Evercore ISI. Arnaud, I was wondering if you could talk a little bit about the nonwovens, which was addressed. I think, you'd indicated your goal was to grow at close to 10%, I think, double the industry, which is going 5%, I think, that's what you said. But your capacity constrained, I think, you'd also indicated. So I was curious as to how much capacity Gastonia added. Do you have the ability to sort of add there? Just kind of give us a sense percentage wise. What would that would -- what that added to your capacity? And what maybe, if you expanded, it could add? And then also you carved out, I think, barriers in aesthetic, potential opportunities in nonwovens. It wasn't clear to me, are those -- are you doing any sales in those today? I would assume you are. You'd given some numbers for addressable markets, I think, added to about $280 million. Just trying to understand, how much of -- is that the whole market? Or is that what you think your share could be? And what are you doing today?

Arnaud P. Genis
President of Composites

Right. Okay. So where do I start? In terms of capacity, well, indeed, Gastonia will be fully loaded next year. I don't want to give specific numbers about capacity. I think this is the first time we are disclosing nonwovens. I'm sure that some of our colleagues are watching carefully what's happening here. Now when I talked of capital efficiencies, Stephen, where we are working on -- in our labs, is also how do we debottleneck our assets. And clearly, nonwovens, Gastonia was a sizable investment. When you look at the capital intensity of nonwovens, it's similar. I mean, the upfront investment is a little higher than glass, but then over the life of the assets, you don't have any maintenance CapEx. You don't need to rebuild unlike melter. So from an ROC perspective, this is accretive to Composites. Now clearly, Nico and his team are working really, really hard on debottlenecking the lines that we have in the Netherlands. So we have also 2 assets in the U.S., and making sure that we can [indiscernible] them more and continue to grow. You had a question about the addressable market. So what Nico was showing is what is the full potential of the market. There is a trend for more sophistication in commercial buildings. The growth of ceiling, wallboards, et cetera, is, I would say accelerated by the need for nicer materials, more sophisticated. And then we already -- when you look at nonwovens, one of the reasons why we love this business also is that, the number of players is pretty limited. This is a market which is existing in Asia, but to a lesser extent, I think, well in the West, there is a very big focus on the quality of our buildings. And the partnership we have with our customers is just fabulous. So a great business.

Thierry J. Denis
Vice President of Investor Relations

Great, thank you. We have plenty more exciting material to go through today. So what I would suggest is we -- let's close the Composites Q&A session here. Thank you very much, Arnaud.

Arnaud P. Genis
*President of Composites*Thank you, everybody.

Presentation

Thierry J. Denis
Vice President of Investor Relations

And -- and so now moving on to the rest of the program. You're going to receive momentarily the presentations for the Roofing business. And those should be available on the website as well. While that's happening, I guess, I'll share another piece of trivia with you. This one about the Roofing business. Back in the '70s, the way Owens Corning got into the Roofing business, is actually because we had that great glass technology. And we thought that the glass mat, the glass substrate could be a very interesting component to make the asphalt proofing shingle is supposed to felt. That happened back in the '70s. 40 years later, to the day, we actually closed on the InterWrap acquisition, which you probably heard about and you'll hear more about it today. So I promise you, we won't wait 40 years again to continue to announce more good news about Roofing.

Brian Chambers is the President of our Roofing business.

Brian D. Chambers
President of Roofing & Asphalt

All right. Thanks, Thierry. And good morning, everybody. It's great to be here to update you on our Roofing business. In a few minutes, I'll ask Liz Higgins to join me up on stage here. Liz leads our Components business, which we're very excited to highlight as part of our presentation this morning.

So when I discussed the business at out last Investor Day, we were certainly facing a different set of market dynamics, with questions about overall Roofing demand, the impact of asphalt deflation would have on our margins and how we would grow the business. And during my discussion with you then, I stated that through a combination of improving market dynamics and strong execution, I believe, we will improve margins and grow the business. Since that time, our Roofing business has delivered outstanding results, driven by great execution to fully leverage the growth and remodeling in new construction markets we expected to see; to expand our operating margins by capturing significant asphalt deflation and improving our operating efficiencies; and to more than double the size of our Components business through both organic share gains and acquisitions.

And looking at our financial performance on the chart on the right, we're tracking to deliver over $700 million of revenue growth over the last 2 years and have achieved average operating margins of 21% over the past 8 quarters. While our revenue and earnings performance is certainly benefited from a growing shingle market, the investments we've made in our Components business as well as other key commercial and operational areas gives me confidence that we can continue to generate above-market growth and sustain our strong operating margins going forward.

During the discussion today, I would outline our plans to continue delivering strong financial performance. We have a solid track record, but we're not resting on our laurels. We continue to invest in and focus on key areas of the business where we can create and maintain unique points of value, which drives growth, gives us price premiums in the market and leverages our scale and operating efficiencies.

From a demand perspective, I expect us to continue to operate in a very good market as asphalt shingles remain the product of choice for residential roofing applications, and we continue to see positive trends in the overall housing market. Our Components business has been a real bright spot in our performance over the past 2 years. Liz will review our plans to continue to drive growth above the market at stable and attractive margins. After Liz is finished, I will then come back and discuss the key commercial and operational differentiators, which give us a sustainable price, cost and service advantage in the market.

Overall, the expectation for a solid and stable market, combined with strong execution of our key initiatives, gives us confidence in improving our guidance for the Roofing business to sustain operating margins of approximately 20%.

Our Roofing business operates within a $12 billion market, which includes other steep slope materials such as tile, metal, wood and slate. These roof-covering materials make up about $10 billion of opportunity with Roofing components, which are the underlayment materials, ventilation products and other finishing accessories needed to complete a roof installation, providing a little more than $2 billion of opportunity. When comparing all of the roof-covering materials, asphalt shingles are the most popular, capturing over half of the residential market because of affordability, appearance, performance and ease of installation. These product advantages materialize into a significant installed cost advantage versus the other roofing products used in residential applications, as shown on the chart on the right. At about $10,000, a typical asphalt shingle installation cost about 40% less than tiled, and almost half as much as metal and wood roofing. Given the wide range of styles and colors as well as their durability and low-installed cost, I believe, asphalt shingles will continue to be the preferred product of choice in the future.

And while the asphalt shingle market provides a solid base of business, we saw a big opportunity a few years back to drive more significant growth within the $2 billion-plus component space based on 3 factors: the increased use of these products by contractors when installing the roof; a big material conversion potential in synthetic underlayments; and the possibility for OC to provide products that could be used with other asphalt shingle brands as well as all the other roof-covering materials. Standing here today, we continue to see additional opportunities to expand our product portfolio and to increase our market share in this space.

Because of the popularity of asphalt shingles, we have seen steady demand growth tied to increased remodeling investments, new construction gains and strong storm activity. Our outlook for a healthy shingle market remains positive, as we see fundamental demand drivers continuing to support additional growth.

Remodeling demand has seen a strong recovery over the past few years driven by improved economic factors and the reduced impact of a lengthening shingle replacement cycle, which I spoke about at our last Investor Day.

Moving forward, we expect to see modest remodeling growth as increasing existing home sales, rising home prices in home equity and improving income support home renovation projects. Expected increases in new construction starts will also continue to fuel demand growth although this represents a smaller part of the overall roofing demand, making up less than 20% of the overall market.

Storm events, which create about 38 million squares of demand on average annually, could create a bit of a headwind on overall shingle demand in the near term. But its impact is generally more contained, as it is tied to specific regional events.

When you put all this together, we see an overall roofing market that is strengthened and is currently operating at healthy demand levels with some opportunities for continued growth. This chart shows the annual demand for asphalt shingles in the United States, which the industry measures in squares or 100 square feet of roofing sold. Over 80% of the market is driven by reroofing activity, which is a necessary maintenance and remodeling investment for homeowners, with the remaining tied to new construction activity. New construction demand, shown by the blue bar at the bottom of the chart, is expected to continue to grow with increasing housing starts.

The green bar in the middle of the chart shows asphalt roofing demand tied to age-related reroofing remodeling. After decline in demand from 2010 to 2014, as the replacement cycle for asphalt shingles lengthened, we have seen a steady recovery in demand, which can increase further as home remodeling activity grows and the U.S. housing stock continues to age.

Weather-related demand, shown by the pink and orange bars, is the most volatile and difficult to predict. Demand here has been above the long-term average since last 2 years, after 2 years of below average demand, and creates the most uncertainty going into 2018.

As discussed on our third quarter earnings call, assuming fourth quarter market demand flat to last year, we would expect 2017 to finish around 140 million squares.

If you use a standard approach to forecasting the market, the outlook for 2018 will be based on an expectation that there would be continued growth in new construction and remodeling volumes, and that total storm demand would come in at the 10-year average.

Rolling all this up, this would create a market forecast for next year to be somewhere in the mid-130s with the potential for good carryover momentum from this year, creating a strong first half. It's important to note even if we see slightly lowered roofing volumes next year, we would still be operating at healthy demand levels, supportive of a constructive market environment.

In addition to market growth expectations discussed at our last Investor Day, we also outlined a plan to leverage falling asphalt cost to improve our margins. This chart shows the relative comparison of roofing asphalt flex cost, excluding transportation and processing cost, as reported by Poten & Partners, to the EBIT margins for our Roofing business. For the 3 quarters after our last Investor Day, we successfully executed our pricing strategy to capture the benefit of lower asphalt cost and improved our EBIT margins back to 20%. From the middle of 2016 to now, we have maintained a disciplined pricing strategy while also continuing to invest in several areas of the business, which has allowed us to maintain this operating performance as we have experienced increased asphalt cost and turned to more inflationary environment in 2017.

The most significant investments have been in our Components business, which has become a much more material part of our revenue and earnings that Liz will discuss further. I will then come back and discuss the other key investments being made in our commercial and operational areas to maintain our competitive advantage in the market and sustain our operating margins around 20%.

Liz is the Vice President and General Manager of our Components business. She's been with OC similar to Nico for 17 years with operational and leadership roles in our supply chain, marketing and sales teams, and has been leading our Components business for the past 3 years. Liz?

Liz Higgins
Vice President & General Manager, Components

Thank you, Brian, and good morning, everyone. I'm excited to update you today on our Components business. This business has a proven track record of sustainable, material substitution-driven financial growth, with stable and attractive margins. 2 years ago, at this event, Brian talked about how this business was positioned to grow. Today, I'm here to talk about the results we've earned and why we're so optimistic about our future.

We have nearly doubled our legacy Roofing components business in just the past 4 years. And with our acquisition of InterWrap, our -- we have now quadrupled our overall Components business in that same time period.

And our position relative to the market opportunity, leaves plenty of room for growth from there. With revenues of more than $0.5 billion and similar operating margins to shingles, Components now has a significant impact on our earnings performance. And it has created value for Owens Corning shareholders.

The Roofing components market represents 20% of the $12 billion U.S. residential roofing market. It's a $2.3 billion market opportunity. There are 4 primary subsegments within this market. I'll provide an overview of each one of these segments and the potential growth in each.

The first segment, hip and ridge and starter strips, are labeled as shingle accessories on the slide. These products are most closely tied to our shingle business. As our commercial teams continue their successful, system-sell approach, the sale of hip and ridge and starter strip will continue to grow.

The second and third segments, the self-adhered and the ventilation, both provide great opportunity to highlight our total protection roofing system. Our self-adhered products create a waterproof barrier for a homeowner's roof while our ventilation products are designed to optimize airflow in attics. One of our key strategies with both of these product categories is to position them for use under all residential and commercial roofs, not just asphalt shingles.

The final segment, underlayment, was the heart of our decision to acquire InterWrap last year. Both the synthetic and the felt paper together make up a $700 million market opportunity, with the technically superior synthetic category rapidly replacing felt paper.

By acquiring 2 well-known and trusted brands, Titanium and RhinoRoof, and adding them to our successful ProArmor and Deck Defense product lines, we now have significant share in the synthetic category. And we are rapidly bending the adoption curve from felt paper to synthetic underlayment.

To build on the conversion story even more, this slide highlights the market opportunity, and it demonstrates our impact our commercial teams have had on integrating the InterWrap products into our portfolio.

The movement from felt paper to synthetic underlayment is a material conversion story similar to the fundamental conversion that Owens Corning created and led over 40 years ago, introducing fiberglass mat as the asphalt shingle substrate.

Our company knows how to sustainably convert an industry. And we're doing it again successfully by bending the curve of market adoption of synthetic underlayment products.

When we bought InterWrap, the 10-year annual conversion rate was approximately 3 points. Since we've owned the business, we've seen a significant positive shift in that conversion. In fact, over the last 12 months, we've seen an annual conversion rate of about 10 points.

The value proposition for synthetic underlayment is undeniable, a message that's clear when our sales team take their demonstration on the road to contractors. It's tougher and more durable. It's faster to install. It's safer for crews to walk, and it's lighter for our crews to carry. In short, it's a compelling sell to the contractor, and it's simple for the contractor to turn those benefits over to the homeowner.

Putting it all together, we've seen tremendous growth in this category. And we've accelerated this growth since our acquisition in April of 2016.

We believed from the beginning that all the pieces were in place for InterWrap to be an ideal fit with Owens Corning. With its vertical integration, global supply chain and low-cost scale advantages, we were confident that we could buy this business, operate it at a high-level and materially improve its profitability.

Those beliefs have proven out. In Owens Corning -- it has provided Owens Corning a really a sustainable competitive advantage in the market. As we discussed in our third quarter earnings call, the integration of InterWrap is complete, and our business is delivering significant shareholder value. I'm very proud of the effort our team has made to integrate InterWrap into our business. As with any global acquisition, there's significant complexity that needs to be managed. And our team did an overall excellent job. We've more than doubled the size of the already growing Components business, and we've generated $60 million of adjusted EBIT in our first year.

We committed to achieving a run rate of $20 million or more of commercial and operational synergies by the end of the year, and we delivered. There are really 3 key efforts that I want to highlight that were critical to our success: first, customer accountability was quickly and fully transitioned to our commercial teams, utilizing our strong sales capability and our market position, doubling our feet on the street and providing even greater support to our contractors and our distribution partners. Second, we've fully leveraged our material science capabilities across the InterWrap product portfolio and accelerated our material conversion journey from felt paper to synthetic underlayment. And third, the deployment of InterWrap into our IT infrastructure was a significant capture of back-office synergies. I have a deep and talented team of professionals that are working on this business, and I'm extremely proud of their accomplishments over the last 18 months. The Components business has delivered double-digit revenue growth. By the conversion of felt paper to synthetic underlayment, we've expanded our product offering and we service the market demand beyond just asphalt roofs. I look forward to this business continuing its double-digit growth in the future.

Thank you. Brian?

Brian D. Chambers
President of Roofing & Asphalt

Thanks, Liz. As you can tell, we're very pleased with the growth we have achieved in Components and our performance in integrating the InterWrap business into our company. Moving forward, we will continue to invest in and grow this attractive business segment.

In addition, we continue to invest in other key commercial and operational areas, which I believe drive critical sources of price and cost differentiation, supporting our ability to sustain margins.

Our commercial strategy to sustain our price premiums and market share focuses on strengthening our brands, offering innovative products and partnering with the best contractors and building materials distributors in the industry.

Owens Corning has the most recognized brand in residential roofing, which gives contractors using our products a tremendous advantage selling in-home. In addition to the Pink Panther, we have extended our brand strategy to leverage our -- and build out our other market-leading brands in our product portfolio, such as the synthetic underlayment category, where Rhino and Titanium are established and trusted names, and in our shingle business where Duration is known for its design and installation features.

In addition to our brands, we continue to focus on developing unique products that allow our distributors and contractors to upsell and capture additional margin. For example, our Duration Shingle combines more vibrant colors with our patented SureNail tape technology providing for faster installation as well as enhanced wind performance. This premium reroof product is our fastest-growing shingle because of these design and performance benefits that contractors can sell in the home.

In addition to Duration, we offer a broad line of other shingles with options that meet a wide variety of styles, colors and pricing needs. This allows us to respond to specific competitive situations in a very focused manner without impacting the entire product line.

Another critical component to sustaining price and market share is maintaining a strong contractor base. To accomplish this, we invest a significant amount of commercial resources to identify, train and support a nationwide network of high-quality local contractors who sell and install our roofing products in a wide variety of residential applications. Through our focused efforts, we help our contractors build their businesses around our brands, products and services. This ongoing effort to support the success of our contractors is accomplished through our national sales force who work directly with contractors to help them win more jobs, creating more demand for Owens Corning products.

To service all of this downstream -- our downstream customers, we maintain a strong and vibrant distribution network. Owens Corning is unique relative to most of the other manufacturers and our ability to maintain leading stocking positions with distributors who operate in all 4 of the primary channels to market. This broad network enables us to meet the different purchasing and service needs of contractors, builders and homeowners who want to use our products.

In addition to maintaining our strong commercial position, we also continue to invest in critical material science and manufacturing areas, which sustain our low-delivered cost position in the market. Roofing manufacturing is a material conversion process where, as you can see in this picture, we coat fiberglass mat on both sides with asphalt and embed coated granules on the surface to provide color and durability. Our ability to design and manufacture shingles cost effectively is greatly enhanced by our deep material science knowledge of each of these key raw materials. Our R&D and manufacturing teams work closely together to evaluate and combine these materials in distinctive ways that optimizes our product cost positions and ensures the highest operating efficiencies in our manufacturing plants.

As Arnaud and Nico highlighted, we have great support by our own composites team, providing us with leading designs in both fibers and glass mats, which greatly enhance our manufacturing speeds and shingle performance. And with the largest asphalt network in the roofing industry, with production co-located at most of our roofing plants, we are able to oxidize and process a wide variety of asphalts, giving us maximum sourcing flexibility and significantly contributing to our capability to design high-quality products with improved profitability.

In total, our capability to customize, process and convert our key raw materials has resulted in roofing products that have improved performance and are less expensive to make and ship than previous compositions, giving us a sustainable cost advantage in the market.

Our material science and vertical integration advantages are further strengthened by our manufacturing network, which is well positioned throughout the country to service regional demand. Owens Corning has the broadest asphalt shingle network in the industry. We operate 14 roofing manufacturing sites with 16 production lines, capable of making multiple shingle styles and types and serving both national and regional customers. We leverage our scale even further utilizing industry-leading production technology to make and ship the same color shingles from multiple plants without requiring our distribution partners to separate their inventories based on specific plant locations. And because transportation costs for both inbound raw materials and the outbound delivery of finish goods is such a large component of total delivered cost, our scale and national footprint provides us with a significant advantage versus many of our competitors.

In closing, we have a great business position to win. We have a track record of financial performance, delivering strong margins for close to a decade. We operate in an attractive repair and replace roofing market that has the opportunity to continue to grow. We are driving growth in our Roofing Components business through material substitution and new product innovation that I expect will continue to become a larger part of our revenue and earnings. We are strengthening our price and share positions in the market with leading brands, innovative products and a unique and strong contractor and distribution network. We are continuously pushing to improve our low-delivered cost position through material science, vertical integration and leveraging the scale of our manufacturing network. And last, but certainly not least, we have great talent, with a passion for our customer success and winning in the market. We have delivered average EBIT margins of 21% over the past 8 quarters, and I am confident we can continue to sustain operating margins of approximately 20% moving forward.
Thanks for your time this morning. Appreciate it. Thierry?

Question and Answer

Thierry J. Denis
Vice President of Investor Relations

Well, thank you, Brian. We're ready for the next round of questions about the Roofing business. Same process, so please raise your hand. I'm seeing Matt, I believe, raised his hand first. Please identify yourself and name the firm as well.

Matthew Adrien Bouley
Barclays PLC, Research Division

Matt Bouley, Barclays. I just wanted to ask about your, kind of, update to long-term margin guidance. You used to say mid-teens or better, and now you are saying 20% margins are sustainable. And clearly, the Components business is part of that. It sounds like you're doing over 20% margins in that business. So the question is, just what else, other than components, if anything, has changed structurally in the roofing business that gives you confidence in stating 20% margins are sustainable over the long term?

Brian D. Chambers
President of Roofing & Asphalt

Yes, thanks for the question. Certainly, when we created that guidance, in terms of mid-teens or better, we were always focused on the or better part of that. And when you look at the performance of our business and our operating margins since the beginning of the decade, we've certainly been at or above a little over 20% more times than not. And that was really based on a fundamental belief that over the course of the -- in the '08, '09 period, prior to that, we were making considerable improvements in our operating positions. We made sustainable changes in our composition, in our raw material inputs, how we ran the plants, and we felt that, that we were creating a very sustainable cost position relative to most of our competitors that would give us additional margin opportunity when you look across the network. I think we also believe that we had a very good commercial strategy and story. But we've really strengthened that. So I think the combination of, certainly, the components growth, which we continue to believe we have opportunities to and the margin performance there, really strengthening our commercial position with new products and brands. Our contractor positions are much stronger now. That creates a stickiness to our brand and product as we've worked with them to help build their businesses around our brands and products. As you know, the contractor network in the United States is very fragmented, very entrepreneurial, they tend to want to build their business around a trusted brand, partner with people that are in the market with them and around products and services that they can count on, and that creates a stickiness that I think we've created much stronger. And then really, again, our continuous effort to improve our cost position. Our material science capabilities in glass mat and asphalt particularly have really been able to generate product formulations and compositions that we think give us a sustainable cost advantage in terms of how we run that. And we think that can contribute to continue to grow our performance there. So I think you add up all those 3, you have growing components, really strong and building commercial strengths in the market and then our operating efficiencies give us confidence today that in the market we're seeing in front of us we can sustain those kind of margins.

Thierry J. Denis
Vice President of Investor Relations

I think Garik had a question. Do you still have the mic there? Okay.

Garik Simha Shmois
Longbow Research LLC

Garik Shmois with Longbow. You talked about confidence in growing components double digits. Just wondering in the context of a potentially down market next year, what's the relationship between components and traditional asphalt shingle market growth? You had several years of very strong asphalt shingle market growth, so just wondering how components compare to the overall market, your confidence in growing double digits even next year in a potentially down market, weather dependent.

Brian D. Chambers
President of Roofing & Asphalt

Yes, thanks for the question. A couple of comments. At a high level, when you look at the components market opportunity, if you look at how that's grown over even the last couple of years, relative to the asphalt shingle market, it's growing above that rate, so the component space is growing at a faster rate. Again, I think that's contributed to contractors and installation practices now are requiring or they are using more of these components in the installation practices. So I think there's a better growth curve against that piece. But I think part of our strategy and a really key part of is that when we look at the component portfolio we have today, what we've invested and what trying to grow, we've really expanded the pie. Our connection, our attachment rate used to be just our asphalt shingles and our brand on the product. So if though -- and now we look and say we've created products that can go under other asphalt shingles. But we've gone a step further to that to say now we have products that can go under metal, tile, slate any other roof covering. So even if asphalt shingles in that market contracts or moves around a bit, those other roof covering materials give us an opportunity to continue to expand and grow. And really, that's at the heart of our strategy of why we think that's a great opportunity. When you look at the $2.3 billion market, about $1.8 billion is in ventilation products, self-adhered underlayments, synthetic materials, those are all materials that are used in all kinds of roof coverings, not just asphalt shingles. And I think that's the opportunity for us to continue to grow and expand in with the business going forward.

Thierry J. Denis
Vice President of Investor Relations

Let's go to Scott over here.

Scott L. Rednor
Zelman & Associates LLC

Scott Rednor, Zelman Associates. Just on that last point, I wanted to maybe understand, on the future M&A, I think you guys had highlighted more on the component side. But why not or why did you not mention some of the other roof coverings, just given that you're already selling into that area on the underlayments business? And then just on top of that, maybe longer term, your view on solar and where OC could fit into that longer term?

Brian D. Chambers
President of Roofing & Asphalt

Yes, thanks for the question. I think when we look at the other roof covering materials in and we continually evaluate any changes in preference, in price point, in installed cost. But when we -- every year, we kind of look at those opportunities in metal, in wood, in slate, in tile, and it's really, we have not yet found an entry point where we can create more value as an owner of those businesses than the current ones through either leveraging distribution, our brand, our scale, technologies, our material science. So I mean, we always continue to look for that. If we find those entry points in those opportunities, we would get into those. But we haven't found those yet. Solar is an interesting one. We've been in and involved in solar for about 10 years now. We -- if you go back, we used to -- we tried to get into this product category with a product of our own. We got out of that. Dow has been in and out, there's been a lot of folks in and out. I think that when we look at the market opportunity, it's still very subsidized, it's very confined to a few states. And I think that hasn't grown tremendously, but it creates a couple of opportunities for us as we look at that in 2 ways. One is if you look at the primary solar mechanism today on residential roofs, it's through a panelized system that sit above the roof deck. That actually has created an opportunity for us in our shingle business because before a manufacturer or solar supplier will go in and put that on the roof and guarantee that for 20 or 25 years, they want to make sure that the roofing material's going to last that long. And that's actually created some reroof opportunity for us as we've partnered with the contractors in those markets to deliver that. So we see that as an upside in that space. When you go to the photovoltaic that are tile materials, the Tesla-type materials, they're very expensive, but they also do give us an opportunity in our component space. And so those same underlayments, materials that we're developing, we see as an opportunity to expand. So I think for us we may not manufacture the roof covering material, but we can get a piece of every roof that's being installed, and that's a big opportunity for us and that's really where our focus is in that space.

Thierry J. Denis
Vice President of Investor Relations

Okay, next question. Mike?

Michael Jason Rehaut
JP Morgan Chase & Co, Research Division

Michael Rehaut, JP Morgan. Really interesting on the components part of the presentation. And I believe you're still targeting double-digit top line growth there. You broke down the overall components market into the 4 segments. And I was curious how your own sales matched up against that breakdown. In other words, I assume a good portion is in the shingle-related segment, but also, you have the growth in the other segments as well with InterWrap. So I was just kind of curious, broadly speaking, how the $500 million-or-so of revenue breaks down and where you see the best opportunity is going forward in terms of supporting that double-digit growth.

Brian D. Chambers
President of Roofing & Asphalt

Okay, sure. Thanks. Yes. When you, kind of, take those 4 categories. The hip and ridge, starter, that bucket really kind of mirrors our shingle share in the market because it's really tied to our system piece. With the acquisition of InterWrap in that space, that's $700 million space, I mean, part of the attraction was we saw this great material conversion taking place. They are leader in the space and we're leading -- have leading brands. And so we've now taking that to another level. So in that space, we have a very strong share position and we continue to grow and invest. And the great thing about that platform for us is the reinvestment economics are fantastic. So we bought the facilities, and the asset's in place today. As we continue to expand out, we're expanding the current facilities to meet that market demand, those are very attractive returns so we can get super top line growth, we get great margins and we get return on capital that are really, really strong. So we like that investment strategy and that category to keep growing that space, and that's where we see a lot of opportunity, probably the most opportunity in the near term to grow in that category. Self-adhered, we have a good share position there, solid. We've made some investments organically to grow that product line, and we do think that's another opportunity because that's a product that can be used under other kind of roof covering materials. So we continue to invest there and do development. And then ventilation is probably our weakest category in terms of share position, but it's one that's growing and has some good opportunities for us. So that's how we kind of -- if I spin around the wheel, that's, kind of, how I'd break those out.

Thierry J. Denis
Vice President of Investor Relations

Okay, let's take one last question from Keith on roofing.

Keith Brian Hughes
SunTrust Robinson Humphrey, Inc., Research Division

Keith Hughes, SunTrust. On your 135 million square estimate for the industry for next year, I guess, within the storm aspect, you talked about a 10-year average, are you speaking of the major storms, which you call the other weather events there? If you get any more detail on what you -- and mention the last hurricane, what you expect from that?

Brian D. Chambers
President of Roofing & Asphalt

Okay, sure. And one thing I've learned now, this is my third Investor Day. Usually, the first question of the other 2 when I didn't put that chart up was, what's going to be the market next year, so I thought I preempt that this time, and put a -- put something up. But I want to be clear, what we've -- what I tried to layout there was just a framework, how you look at forecasting. We don't provide guidance in the roofing business till, kind of, the second quarter of next year. We do that because storms make such a large part, about 30% of the demand. And the only thing I know, for sure, January 1 is I don't know how many storms are going to be taking place in this year. So we wait till later in the season where we can get a really good feel for that. But in that scenario of next year's demand, we would expect to see new construction growth for starts, we expect to see remodeling growth for starts and average storm demand gets you in that mid-130s. And that's really where there's most volatility could be more, could be less in that space. I think part of that storm breakout is as we track, kind of, just everyday weather events, small hailstorms, wind events, this makes up the majority of that storm category. These have some volatility to them but a lot less. They're pretty consistent. It's the major storm opportunity, the massive hailstorms, the big hurricanes, that's where we've seen the most swings. And going into next year, that creates probably the most volatility in that category. Now there were 2 hurricanes here, Irma and Harvey. I'd characterize that the one in Texas, more of a flooding event. There are some coastal areas impacted that we're starting to see some demand coming through. And then Florida, more of a wind event. At our last earnings call, I believe we kind of put that in the range of 4 million to 5 million squares of total opportunity. I'd say it's in here today, we still feel that's in the right range of demand that should be created. We are starting to see that come through here in the fourth quarter. As now insurance adjustors are in and starting to cut checks and homes are starting to get repaired. The hurricane damage is generally more severe and has a little bit longer tail then hail. And so I think we -- that's where we believe the most carryover into next year is going to come from in those 2 markets with that hurricane carry over going into next year in that major storm category.

Thierry J. Denis
Vice President of Investor Relations

Excellent. Thank you, Brian.

Brian D. Chambers
President of Roofing & Asphalt

Thank you.

Thierry J. Denis
Vice President of Investor Relations

We're going to be taking a short break now about 15 minutes. The program will resume at 10:30. And for people on the webcast, you'll see obviously a break in the action. We'll be back momentarily. And the distribution of the Insulation slide deck will be made during the break, so we'll resume at 10:30 with Insulation. Thank you.
[Break]

Presentation

Thierry J. Denis
Vice President of Investor Relations

Okay. Welcome back, everybody. Welcome back. It's about 10:30. We're ready to resume the program. We're going to move to the second half of our agenda. And by now, you should have a copy of our Insulation presentation. Insulation is the next business on the schedule. I would like to invite to the stage Julian Francis, who is the President of our Insulation business. Julian?

Julian Francis
President of Insulation Business

Thanks, Thierry. Well, good morning, everyone. As Thierry said, my name is Julian Francis, I'm President of Insulation. I'm excited to be here today and to talk about the ongoing transformation of this business. Helping me do that today will be Todd Fister. Todd's Vice President and Managing Director. Todd joined our team in 2014 to head Strategic Marketing, but we've asked Todd to now lead our recently acquired Pittsburgh Corning FOAMGLAS business and our planned transaction with Paroc. Todd will join me on stage in a few minutes to discuss our plans for those businesses. But first, let me start with our strategy and the progress we've made over the last several years.

Two years ago, I sat in front of you and talked about the 3 pillars of our strategy. First, the growing demand in residential construction, driven by housing starts and code changes would lead to a positive pricing cycle and significant operating leverage.

Second, we would strengthen our technology platforms to enhance our world-class manufacturing and bring to market new products that would expand our margin profile.

And third, that our ambition to broaden our product platforms would allow us to serve growing applications in commercial and industrial markets both in North America and around the world, diversifying our portfolio into higher and more stable margin segments.

And we've made significant progress in all 3 areas in an environment in which our markets are operating well below their potential and in the case of housing in the United States, even well below its mid-cycle margins -- sorry, mid-cycle average. Pricing has improved in the residential market. We've built new capabilities, manufacturing, marketing and R&D. And we've already expanded our access to markets through acquisitions that offer strong growth potential. And as a result, our financial position has improved.

Now despite the setback last year, which I think you're all familiar with, the financial performance has improved greatly. When I joined the business in 2012, we had suffered a number of years of declining volumes and margin erosion, leading to significant losses. We set about developing a plan for the business that would return it to profitability and create new opportunities for growth. We first focused on improving our operations and lowered out breakeven by $100 million and our commercial execution delivered top line growth of almost $500 million. The combination of both delivered EBIT improvement of more than 5 -- $250 million and operating leverage in excess of 50% over the 4-year period 2011 to 2015, and we had 20 consecutive quarters of improved financial performance.

We now see a more constructive pricing environment as capacity tightens. While the LTM data does not show it, our current guidance for 2017 would indicate that our EBIT margin improvement is back to its earlier growth rate. In fact, if you were to look at our guidance for the second half of 2017 versus the second half of 2016, excluding acquisitions, you'd see about 50% operating leverage and significant improvement to double-digit margins. We have a track record of achievement, and the best is yet to come.

The agenda for the rest of our presentation is focused on the same 3 pillars. Our strategy is working and remains unchanged: capitalize on the recovery in U.S. residential construction through disciplined execution of pricing capacity management; continue to advance our technology, expanding our capabilities in the manufacturing space and bringing to market margin-enhancing product innovation; and continuing to grow our industry-leading product portfolio in engineered Insulation solutions for commercial and industrial markets globally.

Let me start by reviewing our first pillar, the residential insulation business. We shared charts similar to this in the past. This one is updated to reflect our latest estimates for pricing in 2017. We saw more than a 30% decline in price from 2006 to the beginning of 2012 and then a recovery starting in 2013 as homebuilding increased on the demand for insulation improved. We saw steady gains in utilization rates for the next 2 years, and price moved up around 15 points from the low. Last year was a bit of an anomaly. Large amounts of share moving back and forth during the year, and pricing went backwards as we adjusted to respond to competitive activity. Though our analysis indicates overall utilization rates continue to climb, our number fell well below the average for about 2 quarters.

Since the fourth quarter of last year, our share has stabilized. And this year, we continue to see rising utilization rates from the more constructive pricing dynamic. Today, our estimate of industry utilization rates is above 90%, with our number in the low 90s and competitors' more like the mid-90s. The recovery in U.S. housing starts, albeit slower than most economists have forecast, has still averaged about 11% since 2011, and demand has outpaced capacity adds, tightening out utilization rates.

To provide a little more detail, a typical production line represents approximately 3% of industry demand. With the growth rate of Fiberglas Insulation having averaged high single digits and the forecast for next year above 6%, at least 2 lines must be start and operate for a full year, just to keep the current supply-demand dynamic. Our competitive intelligence indicates there are 5 idle lines available, 3 of which are competitors. We see indications that 2 of these will restart in the next 6 months. Despite these restarts, we calculate the utilization rates will rise by a further 3 points next year on the basis of consensus housing starts at 1.28 million and the fact that one of those lines will not come up till the middle of the year. This should create further opportunity to recover lost ground in pricing, and we've already seen signs this year of a more positive environment. We announced 3 separate increases this year, all of which had some measure of success. In fact, I'd go as far to say that we've seen the most positive environment for pricing that we've seen since 2013, but with utilization rates more like levels heading towards the 2005 level.

And here, we've come back to a point that we've made before. And that's the impact of building codes. Today's code requires homes to be far more energy efficient than they were in 2006. In fact, it requires homes to use at least 20% more insulation per house. While building codes are not adopted uniformly across the country nor applied equally across states, we see far higher demand at this level of construction activity than in the past, and as more states and municipalities adopt the recent code, we will continue to see insulation demand increase.

This, coupled with the fact that significant capacity has been permanently retired, means that the industry will be operating at full capacity at around 1.4 million to 1.5 million housing starts. We are now hopeful that with our announced increase for early 2018, we will see price accelerate again and are confident about a return to prior performance levels with this portion of our business returning to double-digit margins and driving 50% operating leverage for all of Insulation, excluding the impact of acquisitions in the first year.

The second pillar of our strategy is to capitalize on our technology leadership, creating differential value and competitive advantage in the manufacturing and marketing of our products. I'm particularly proud of the effort our manufacturing and research teams have put in over the last few years. It's really difficult to optimize manufacturing networks that are running well below capacity, and we continue to look for new ways to advance our competitive position. Recent manufacturing performance has been a tailwind for us, despite the complete conversions of plants over to a new organic binder after decades of using formaldehyde. Now let me start by saying that insulation is a performance-rated product. So what I mean, by that is that by definition, an R19 has the same performance no matter what manufacturer makes it. There's no competitive advantage in product performance. An R19 or an R13 is an R13 or R19. The differentiating factors for customers are things like product quality and ease of installation. But a significant competitive advantage can be gained through excellence in manufacturing. One of our primary manufacturing metrics is product density productivity, which is a measure of the mass of glass it takes to manufacture our products. The higher the productivity index, the less raw material and energy it takes to make the products and hence, the lower the cost.

As you can see from the chart, we've been able to make progress year after year. The improvement on this chart is worth about $10 million over this time frame. As I said, over the past few years, new organic binder systems have been introduced by all manufacturers as a response to consumer demands. These new chemistries are much more difficult to process, but by focusing on research and manufacturing teams on this metric, we've seen meaningful gains. Now while we've continued to make progress in this area, on average, our competitors have not. In fact, in order to meet the product performance requirements, they have been adding material, and therefore, cost per unit. At our scale, this is an important element in our cost structure. Each point of density improvement we can make is a critical opportunity to reduce our costs by around $5 million. This is a critical area of focus for our manufacturing and research teams, as density control applies equally to the manufacturer of mineral fiber products, a great opportunity for us to leverage our capabilities across platforms.

And now, advanced process controls allow us to respond in real time to small variations in our manufacturing without human intervention, further increasing our efficiency. We see benefits to this at all points along our manufacturing lines, from the formation of the fibers to our packaging process. And we are trialing new equipment we believe will further enhance our cost position. The cumulative effect of our work on binders, density and automation will ensure sustainable competitive advantage for us into the future.

The other dimension to our technology leadership is the ability to bring to market innovative new products that allow us to capture greater margins by serving high-value niche markets. This year, we launched Pure Safety, the first and only insulation to be certified asthma and allergy-friendly. Products with this certification have been tested by the Asthma and Allergy Foundation of America and passed strict product testing guidelines. Our product was shown to generate significantly less dust during installation, a function of our manufacturing excellence. And it's also resistant to fungal growth, both causes of allergic reaction or asthma.

Other products to achieve this certification include 3M air filters and Benjamin Moore paints. Our research suggests an increasing focus on air quality will create demand for products like this, and we intend to grow the category to include products for schools and hospital applications.

We are also excited about our announcement at Greenbuild, an industry trade show, last week that our Insulation products are now manufactured with electricity exclusively generated from wind power. We find that an increasing number of architects and contractors are looking for more sustainable ways to design and construct their buildings. We are giving them ways to do this by significantly reducing the carbon footprint of our products, and as such, the impact their buildings have on the environment. Our Insulation products now have the unique distinction of not only saving energy once they are installed, but doing so while they're being manufactured.

And finally, we've greatly expanded our technology capabilities in mineral fiber, an important growth platform for us. This morning, we announced that our Thermafiber Perimeter fire barrier system and Thermafiber insulations design and installation services have been awarded SAFETY Act designation by the U.S. Department of Homeland Security. Owens Corning is the first Insulation manufacturer to be publicly listed with the U.S. DHS as having products for the SAFETY Act designated. Commercial building professionals and building owners who use SAFETY Act designated solutions in their structures will gain the most powerful liability protection in the event of a foreign or domestic terrorist attack on that building.

Now the cross-cutting theme here is that our ability to develop and capitalize our entirely new categories of products with difficult to replicate claims. With Pure Safety, our manufacturing capabilities give us great process control and, hence, new benefits. With EcoTouch and PROPINK, an installed base of wind turbines generate efficient power to run our plants. And with Thermafiber, a history of aiding architects in the design of passive fire containment systems. Each create unique value for customers. Each demonstrates our ability to create market leadership for Owens Corning.

The third pillar of our strategy is been to grow our presence in commercial and industrial markets. And, in fact, the picture you see up there of the tower is very recognizable. I think that most people recognize it as One World Trade Center, the Freedom Tower, and our thermal fiber products that we're just designated as under the SAFETY Act are installed in that building. Our commercial markets, primarily nonresidential buildings, office and retail buildings, schools and hospitals, Owens Corning is the #1 brand of Fiberglas with architects, and Thermafiber is the most specified brand of mineral wool. The industrial market is mostly focused on insulating critical material handling components such as pipes or storage tanks for large facilities. And here, FOAMGLAS is the most specified brand of cellular glass. And for some applications, FOAMGLAS foam is the basis of design, which means there are no equivalent products.

Applications in these areas are usually critical to the functioning of the facility, such as the Perimeter fire containment I just mentioned. And as such, customers are willing to pay for performance. And competitive intensity is not as high as we see in the residential markets, leading to a much more stable margin structure. Prior to the acquisitions of these 2 areas represented about 40% of our revenue. And last year, we shared a chart that showed this part of our portfolio was performing at record levels with about mid-teen margins. We emphasized our desire to grow, both organically and through value-creating M&A to expand our footprint globally.

Two significant drivers led us to this conclusion. First, energy efficiency trends are increasingly developing first in Europe or China, leading to new growth opportunities for those participating end markets. And second, the commercial and industrial markets are generally more global in scope, with end-use customers or specifiers looking for solutions they can deploy around the world. Participation in North America limits our growth potential. We think about this part of our business along 2 dimensions: temperature and geography. Our history had been to focus on the large, mid-temp section where glass fiber excels in terms of cost and performance. We have an excellent position in North America and profitable positions with good market share in China. With the acquisition of Thermafiber, we were able to participate in high-temperature and more critical fire protection applications though still focused on North American markets. With record performance in our core mid-temp markets and expansion of our high temp capabilities in North America through the addition of a new facility in Joplin, Missouri, and a contract manufacturing agreement in China, we wanted to further expand our technology to low temp applications, as well as to establish a foothold in Europe. Pittsburgh Corning represented the ideal opportunity to do both.

Pittsburgh Corning's FOAMGLAS product is the world's leading cellular glass brand with a manufacturing base in all geographies with strong operating margins and exceptional commercial talent. Synergies for the existing commercial teams in North America and China are already yielding new growth opportunities, which Todd will soon cover. But the remaining gap in our portfolio was mid- and high-temp applications in Europe. Paroc now fills that gap.

With this planned acquisition, we can serve the full temperature spectrum in the 3 big insulation markets. We have capabilities in 4 technology platforms: glass fiber, mineral fiber, cellular glass and foam and a technically capable commercial organization with broad geographic scope and deep local market knowledge.

Now as Mike said at the outset, our strategy is to build market-leading businesses, global in scope, human in scale. Quite honestly, we have a lot of confidence that they can execute on this part of our strategy because of the capabilities we've built as a company running global businesses. And as Arnaud said we've built a market-leading business globally in Composites, and we see the opportunity to extend our market-leading Insulation business in North America globally too, because we did it over the last decade in Composites. We have infrastructure, local market knowledge and capabilities in Europe and China that we can leverage. We will have more scale in both geographies creating the opportunity to improve the cost structure, and our talent pool is now much deeper. With these moves, we have reshaped our portfolio so now more than 50% of revenue will come from commercial and industrial markets. We will have about a $1 billion of revenue outside of the United States, and we've more than doubled the earnings power of this business. Let me now bring up Todd Fister to discuss how we will take advantage of our new global platform. Todd?

Todd Fister
Vice President & Managing Director

Thank you, Julian, and good morning. I'm a very happy to be here today to share the progress and the strategy for the

Pittsburgh Corning and FOAMGLAS acquisitions. So in June, we completed the acquisition of Pittsburgh Corning, which is the leading manufacturer of cellular glass insulation under the brand FOAMGLAS. FOAMGLAS is a really special type of insulation. It's incombustible, it's moisture impermeable, it's corrosion resistant. It has very high compressive strength, and its properties remain effective for decades. So this makes FOAMGLAS a really ideal insulation for the most demanding applications, both in cryogenic, water and fire-sensitive industrial processes, which represent about 60% of sales, but also in buildings where high performance and durability are important, which is the other 40% of sales. With that mix of demanding applications and really highly engineered solutions, this business produces very strong and stable margins on a global basis. We're in 81 countries today with sales. In the industrial market, our technical sales team has deep relationships with a global network of engineers who choose both the type and the brand of insulation that goes into industrial plants.

FOAMGLAS is often named by brand in engineering specifications, which means we benefit both from the initial sell-in, but also from ongoing repair and replacement work. FOAMGLAS is used in many stable and attractive end markets. Markets like ethylene and chemical processing and hot water, chilled water processes, among others. The biggest market, though, is liquefied natural gas, which represents about 25% of industrial sales, and therefore, about 15% of overall FOAMGLAS sales. We have a leading share of tank bases and pipe insulation in the large and capital-intensive LNG facilities shown on the screen. Over decades, global LNG infrastructure has grown significantly. However, we purchased Pittsburgh Corning in 2017 during a cyclical low in LNG investments, which are down about 50% from earlier in the decade. Our analysis of third-party data suggest that LNG investment levels could double by 2020 as the market returns to levels that we did see earlier this decade. In years when LNG construction rebounds, we will experience significant operating leverage from the resulting volume growth we're the only manufacturer with decades of proven field performance and a global footprint, and we tend to pick up the volume when the market recovers. This is a profitable business today, and we're optimistic about the long-term growth potential.

FOAMGLAS for the building market also is an attractive, profitable, growing business. In this case our technical sales team helps architects and designers create the iconic designs that deliver exceptional thermal and moisture performance. These architects value the flexibility that FOAMGLAS brings to their designs, enabling them to produce the architecture you see on this page. Today, this business is concentrated in Europe, and we see opportunities to make this a more global business in the future in North America and Asia, leveraging our broader Owens Corning footprint to serve new markets.

We purchased Pittsburgh Corning believing that we could drive core underlying business performance and create new value through synergies. The business continues to produce high margins, consistent with our communications and announcement. The FOAMGLAS commercial teams are performing well, underlying demand has been good and we're delivering more synergies faster than we projected. We originally committed up to $15 million in second half adjusted EBIT. We are now confident we will beat that number. The business is absorbing $1 million per month of step-up accounting impact, which is included in adjusted EBIT. We also are making nonrepeating investments in improving the business, safety professionals in the plants, business process mapping, other areas that will support future synergy realization. We're on pace for a $10 million synergy run rate by January, 6 months after close. And we have a high degree of confidence in achieving $20 million in synergies by the middle of 2019. Financial synergies have been strong, but we've also executed well on nonfinancial synergies. This business was experiencing about 3 to 4 injuries per month before we acquired it. With the work that we've done in the plants, we've got into a point where we had no injuries in August, no injuries in September, no injuries in October, no injuries so far in November. Overall, we're meeting or exceeding all of the financial goals that we set for the acquisition, and now with the additional acquisition of Paroc, we see opportunities to further accelerate growth in combination with the FOAMGLAS business.

Paroc is a leading European Insulation business that will be the foundation for our mineral business globally and also the foundation for our Insulation business in Europe. The business has historically produced very strong and stable earnings due to its cost position, the portfolio of products and markets and excellent customer loyalty. Combined with FOAMGLAS, we have products that insulate the full temperature range, from hot industrial processes, to homes and commercial buildings to cryogenic facilities, serving multiple end markets and geographies. This positions our Insulation business to produce stable earnings through the cycle while we deliver new value to customers in multiple markets around the world. The combined FOAMGLAS and Paroc businesses in Europe will produce in excess of $550 million per year in revenue. We'll have manufacturing or sales offices in 18 European countries, combining the primarily Western European FOAMGLAS footprint with Nordic, Baltic and Eastern European strength of Paroc.

For example, we see opportunities to extend our sales of FOAMGLAS in markets like Norway, Sweden and Finland, where FOAMGLAS has historically been under share and Paroc has deep relationships and a very strong brand. Both mineral wool and FOAMGLAS have advantaged fire properties compared to foam plastics. We see opportunities in Europe to leverage our fire, thermal, acoustic and moisture positionings to grow at above market rates, especially after the tragic Grenfell fire, and the resulting increased awareness of fire risk in buildings using foam plastic insulation. To support this growth, in October, Paroc announced a EUR 60 million capital expansion to their existing plant in Poland, a high return business plan that we will fund in 2018. We're excited and confident at about our ability to create a new European Insulation business that will drive short-term and long-term return on capital for shareholders. Julian?

Julian Francis
President of Insulation Business

Thanks, Todd. So in summary, our strategy is working. We are well positioned to take advantage of the recovery in the residential market in the U.S. and Canada. Today, capacity utilization is climbing, and the pricing environment appears to be accelerating. Our technology platforms are strong and getting stronger. We see further opportunities to enhance our cost structure by deploying greater levels of automation and improving our manufacturing capabilities. And we'll continue to bring innovative new products to market that enhance our customers' ability to do their jobs and provide higher margin opportunities for us. And finally, the expansion of our geographic footprint and product platforms will allow us to serve the largest markets in ways we could not even 6 months ago. We have acquired outstanding businesses and diversified our portfolio into more stable, high-margin segments with strong growth potential.

We are enhancing the earnings power of the Insulation business, creating new pads for growth. We are confident in return to historic level's performance in our residential business and in our ability to reduce our cost structure. And with the addition of new technology platforms and a more global footprint, we've created a powerful Insulation business for Owens Corning. Thank you. Thierry?

Thierry J. Denis
*Vice President of Investor Relations*Excellent. Thank you very much, Julian. We're ready to start the Insulation Q&A session now. I see a lot of hands going up already.

Question and Answer

Thierry J. Denis
Vice President of Investor Relations

Phil, I think, back there has not had an opportunity to ask a question yet.

Philip H. Ng
Jefferies LLC, Research Division

Phil Ng from Jefferies. I think you mentioned in your presentation that incremental margins in your Insulation business is roughly 50% in the back half. That's even before meaningful pricing thus far. So as we think about the medium term going forward, '18 and '19, could we see some upside on that incremental margin standpoint? And at what point do you need to bring on some of that capacity as you run fuller? And what kind of impact would it have on margins going forward?

Julian Francis
President of Insulation Business

So as I said, we did see the residential business being able to generate 50% incremental margins for all of Insulation, excluding acquisitions, in their first year. I think those were -- that was the statement. So the upside is really -- we think about that as -- we have a much bigger business overall postacquisitions, but we see still think that residential, incremental margin piece will drive a lot of incremental margin on the leverage side for the whole business. Now with regard to capacity, again, I'll go back to what I said. We've seen growth rates for Insulation demand in high single digits across the entire sort of residential market in the U.S. and Canada. We still see continued growth in new housing starts, which is the primary driver of that. We would expect to see 2 lines start up every year, just to cover the capacity and keep utilization rates about the same. But we just haven't seen that. And again, I said that we see 5 lines that are likely to be available. 2 of them, we think will come up in the next 6 months. I think it's inevitable that as the market continues to grow, that we would see the other lines come up. Our stand has always been that it's got to be economic for us to do so.

Thierry J. Denis
Vice President of Investor Relations

We've got Kathryn over there.

Kathryn Ingram Thompson
Thompson Research Group, LLC

Kathryn Thompson, Thompson Research Group. Given the shift in your end market to a greater industrial focus, we've come along with having some significantly improved margins. As you look forward, not just over the next year, but over the next, say, 3 to 5 years, what's the optimal balance of that res versus the more industrial? And given the step-change in margins, where do you see margins progressing realistically on a go-forward basis?

Julian Francis
President of Insulation Business

Sure. Thanks for the question. So I think what we've seen in our industrial side, the commercial and industrial side, as I said, today even before the acquisitions that we shared last year that, that was performing at record levels and it's about mid-teen margins. We think that, that's about a good performance for the commercial and industrial side -- mid-teen margins. Obviously, we now have a much bigger portfolio of that. What we've seen historically and I think we've shared this before in some of the charts, is on the residential side, obviously, more cyclical. But actually, it averaged about mid-teen margins over a cycle. Now the lower was much lower, the higher was much higher. So I think we would still expect to see sort of mid-teen margins over the cycle, but I think we're more bolstered -- we don't see the low as low, and we still see the potential for it to growth. Now as the residential market is growing faster than the commercial and industrial, we'll probably see a little bit of shift back towards the residential over the next few years. But if that happens, they would actually be at higher margin rates.

Thierry J. Denis
Vice President of Investor Relations

Let's go back to the other side. John?

John Lovallo
BofA Merrill Lynch, Research Division

It's John Lovallo from Bank of America. I was wondering if you could just give a few examples, going back to Slide 46 there, of what differentiates your manufacturing process to drive that huge delta in density control versus competitors.

Julian Francis
President of Insulation Business

Sure. This is probably something I could talk about for quite a bit of time. There's a lot of manufacturing technology involved. In particular, a couple of areas, one is around the binder technologies, and the other is around fiber forming. I mentioned in my prepared remarks that the binder technologies, those chemistries are much more difficult to process than the formaldehyde that was used. And I likened it to trying to squeeze through a window -- you've got a very narrow operating window for the binder technologies. And normally to drive through something that's small, you've got to slow down. We've actually found ways to get really tight control of our manufacturing process so that we can keep it going. And I think others have struggled with that. We've seen it. One of the big things that has driven the chemistries is, obviously, we compress our product. When you open the package, it springs back. The binder chemistries that are being used today, that creates a lot of difficulty. The way to get it to spring back is to add mass -- a mass of glass. That's how you do it, that's how you get the performance. We've actually been able to reduce our density. So really, really tight control of process. And then the other piece is around fiber forming. When it comes to the formation of fibers, I mean, obviously, it's a core competence for Owens Corning. We do it in our Composites business as well as our Insulation business. But length and diameter of fibers is a critical control point. That determines some of the thermal properties that allows you to reuse density again, so having really tight control. Now I'm, obviously, not going to talk a lot backers. As someone said earlier, our competitors are listening. But those are the 2 key elements of what we do. It's around binder technology and understanding a great process control and then on fiber forming, having very, very tight control around that. Very difficult.

Thierry J. Denis
Vice President of Investor Relations

Okay. Let's go back to the middle, with Keith.

Keith Brian Hughes
SunTrust Robinson Humphrey, Inc., Research Division

Keith Hughes, SunTrust. The graph you had on the Insulation contractor price index, if you looked at similar information on commercial and industrial, what would have it looked like the last 4 to 5? And what do you expect it to look like in the next several years?

Julian Francis
President of Insulation Business

So the price decline in the commercial would have been substantially less. Now I will also say that in the commercial market, you start off at higher prices. That's -- again, we've talked about that a little bit in the prepared remarks. So you start off at a higher price, they certainly don't go as low, and we didn't see that drop-off and we also see the recovery. So it's a little bit of a flatter curve, although quite honestly, the curve is not dissimilar in that market in the fiberglass side. Now what we've seen on the rest of the portfolio, in commercial, is we're not in the fiberglass business strongly. It's more mineral fiber, there's some foam and so expanding that -- and now into the FOAMGLAS. Those do not decline in the same way. The value that they create is actually quite stable. So you don't see the decline as you have in the sort of the light-density Fiberglas market.

Keith Brian Hughes
SunTrust Robinson Humphrey, Inc., Research Division

So in the nonfiberglass, would pricing now be higher than it was in 2006, just generally?

Julian Francis
President of Insulation Business

Just generally, yes. It would be.

Thierry J. Denis
Vice President of Investor Relations

Mike?

Michael Jason Rehaut
JP Morgan Chase & Co, Research Division

Mike Rehaut, JPMorgan. Congrats on, obviously, Pittsburgh Corning and Paroc. And now with that business, you said it's about 50%, or the overall commercial and industrial, 50% of the segment revenue. I was hoping if you could just remind us on the breakdown, geographically, of the entire commercial-industrial business by major region. And how to think about growth in that business over the next 2 or 3 years. Should we think about it more tied to just global GDP? Or are there certain drivers that might -- you've kind of mentioned some sales synergies, opportunities -- have above market growth.

Julian Francis
President of Insulation Business

Yes. I think that -- I have to go to Thierry to remind me of what we've said about our disclosure on the international side because, obviously, we don't break down the individual regions, and because of Paroc, our sales there in Europe has actually been 0 until this year. So I don't think we've made any disclosure.

Thierry J. Denis
Vice President of Investor Relations

No. But -- So, Mike, if you look at our disclosures, you'll find that the international commercial and industrial piece is probably in the 20s today, if you look at 2016 numbers. Now we're adding to that significant amounts of commercial and industrial business in Europe with, to some extent, Pittsburgh Corning, but also Paroc to a great extent.

Julian Francis
President of Insulation Business

What I can do, I mean, Todd mentioned about $550 million of sales with the combined FOAMGLAS business and Paroc. Then we had the businesses in China as well. And as I said, I think it was, outside of the United States, we will have about $1 billion of revenue. The second part of your question with regard to how you expect to think about growth, I think general GDP is sort of a good base. I think about it in terms of industrial production for the heavy industrial facilities. So those are the 2 big things. I think Todd mentioned, the idea around fire containment and fire protection systems, we do see the potential for that to create above market growth rates, both because of conversion away from some of that foam plastics that have been so much in the news recently, but also the excellent fire performance that we have with the products that we're now in, both in the U.S. and around the world.

Thierry J. Denis
Vice President of Investor Relations

Ken?

Kenneth Robinson Zener
KeyBanc Capital Markets Inc., Research Division

I'm just going to be referencing something Rockwool did in 2014, where they looked at the global insulation market, and plastic foam is the largest segment, I mean, it's in different category. So you guys entered [Stone] in Europe, that was a big deal just now. But over half of the market in the plastic foam, it's -- your market share would be significantly less there. Is there something structural about that within region or globally that would keep that from being a growth category for you in terms of where you'd would want to go?

Julian Francis
President of Insulation Business

So let me make sure I understood your question. You're talking right as being in the plastic foam business and growing the plastic foam business?

Kenneth Robinson Zener
KeyBanc Capital Markets Inc., Research Division

That are yet being more involved to crack.

Julian Francis
President of Insulation Business

Yes. I mean, I think that the way we think about it, I mean, we are in the plastic foam business, we have an XPS business in the U.S. It's a very well-structured piece of the business in the United States. We enjoy good margins in that business. In the rest of the world and in other forms, XPS is not the only form of foam plastics insulation or plastic insulation in general. We don't see that as much. In Europe, it's a much more fragmented business. In Asia, it's a far more fragmented business, although we do have a small XPS business in China as well. I think that we are very comfortable with what we can bring to the products that we have today with our technology. We certainly think we've got advanced technology in the United States with XPS, which we -- obviously, we've deployed in China as well. We've seen less opportunity to expand our product portfolio into other formed plastics. Quite honestly, we don't like the margin structures we see there or the competitive intensity.

Thierry J. Denis
Vice President of Investor Relations

Let's take one last question for Insulation. Kevin?

Kevin William Hocevar
Northcoast Research Partners, LLC

Kevin Hocevar, Northcoast Research. Just doing some back-of-the-envelope math here. You talked about market growing 6%. There's 5 idle lines -- each line has about 3% capacity -- meaning that in about 2.5 years, it seems 2020, we're going to be out of capacity. So what happens after that to meet this -- the demand, because I don't think imports are really a big factor here? So do you expect some new capacity additions to be announced? And how long does it take for a new plant to come online?

Julian Francis
President of Insulation Business

Sure. So, I mean, first of all, I think that from a growth standpoint, you have to make an assumption about the growth of the housing market, and growth has been less than we've said than the economists have predicted. So that's been a bit of a challenge. So I think that we've been trying to find ways to wait as long as possible before making any of those decisions. I think it also gets us to get perhaps late in the cycle. And we would tend to think about investment in new capacity late in the cycle, more likely utility would and producing a peaker. You've got to get that return in a very short rate of time. It's not easy with a significant investment. Typically, it would take anywhere from a year to 18 months to build a facility. Even inside an existing facility, to build a new facility, to go get the land, the lead time is a lot longer. Permitting has been challenging as well. So -- and it's quite a process -- 1 to 2 years. And like I say, I think that as you start to get through this cycle, you get to a point where the economics of building a new facility, you've got to think really, really hard about how you want to bring that up and make sure that you can earn a return pretty quickly.

Thierry J. Denis
*Vice President of Investor Relations*Okay. Excellent. Thank you, Julian.

Presentation

Thierry J. Denis
Vice President of Investor Relations

So now we're ready to proceed with the next batch of presentations. You've heard about the strength of the Composite business. You've heard about the strength of the Roofing business. You've heard about the strength of the Insulation business. Now we're going to put it altogether for you in that -- in the financial presentation.

So I'd like to invite to the stage Michael McMurray, our Chief Financial Officer.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Good morning. My name is Michael McMurray. I'm the Chief Financial Officer. December 1, I'll have been with the company for 9 years. And I've been the CFO for just over 5 years. Someone once said that New York, New York was a city so nice, they named it twice. This slide is so nice, we're going to look at it twice. Mike and I actually fought a little bit as to who's going to get to display the slide, and so ultimately, the concession was that we both would. But listen, I'm really proud of what we've accomplished as a company. And I think this demonstrates that our strategy is working. Two years ago, at the Investor Day in Atlanta, we made big promises, we made big promises to deliver strong business performance, we made big promises to deliver significant earnings growth and as a result, leading to significant free cash flow generation. We are pleased with results that we've delivered.

Based on 2017 consensus estimates, we will have done the following: we'll have almost grown earnings by 3x over the levels delivered in 2012, more than doubled our return on capital and significantly grown free cash flow. And I'm personally very proud of the working capital performance that we've delivered over the last 5 years because that's been a finance-led initiative in partnership with teams from commercial, operations, supply chain and sourcing. And we've improved working capital as a percent of sales by about 430 basis points.

OC today is fundamentally a different company. And looking forward over the next couple of years, all 3 businesses, facing positive macros, they should grow both top and bottom lines and free cash flow, and free cash flow conversion should continue to be very strong.

We are focused as a company in driving total shareholder return. Now I'm sure, at least I hope, most of you in this room know the components of a total shareholder return, profit growth plus free cash flow generation plus improvement in stock multiple equals TSR. And Owens Corning has been focused on the main value drivers for each component. So the first component is profit growth. So the main value drivers for profit growth are operating margins, growth through acquisitions and organic growth. From an operating margin perspective, as you saw in the previous chart, we have driven significant improvement in our operating margins over the past 5 years. From creating shareholder value through acquisitions, we have deployed significant capital in the last year on value-creating acquisitions, and we're about to deploy another $1 billion in the first quarter of next year. And then from an organic growth perspective, we're starting to build greater momentum. And you heard about that today when you heard from Nico and when you heard from Liz.

The second component is around free cash flow generation, and the key value drivers there are free cash flow conversion efficiency, return capital to shareholders and capital efficiency. From a free cash flow conversion perspective, we've delivered 126% free cash flow conversion over the period of 2005 -- 2015 to 2016, and expect strong free cash flow conversion in 2017. From a return of capital to shareholders, over 2016 and through the first 3 quarters of this year, we've returned almost or about $550 million to shareholders at the same time closing 2 significant acquisitions. And then our capital intensity is beginning to improve with the portfolio actions that we have taken.

The third component is improvement in multiple. And the 2 key value drivers there are cash gross margin and overhead efficiency. Again, from a cash gross margin perspective, over the last 5 years, we have significantly widened our margins. And then from an overhead efficiency perspective, we have sustained top quartile SG&A productivity versus our peers. So we are at the top quartile. We have maintained flat head count, excluding acquisitions, since 2009 in our legacy businesses. So we are focused on the key value drivers of TSA -- TSR, and it's being recognized in our share price.

All right. So over the better part of a decade, we have driven significant and purposeful actions across all 3 businesses, which has fueled our profitability improvement.

In our Composites business, we have delivered and sustained our low-delivered cost position. We have been driving product leadership, which is fueling growth and fueling margin expansion, and we've been investing in great businesses like nonwovens that have strong growth -- that have a great growth profile, strong and stable margins and lower capital intensity.

Within our Roofing business, we've delivered 500 to 600 basis points of sustainable cost improvements over the better part of the last decade. We've driven significant organic growth in our components business, and we acquired a great business in InterWrap that has above average growth, strong and stable margins and lower capital intensity.

In our Insulation business, you heard Julian, we lowered the breakeven point over the last decade by about $100 million. We acquired the Thermafiber mineral wool business, and we invested to meet market needs. And we drove -- we've driven significant price in residential with more to come, right, Julian? And we've implemented an acquisition strategy that will drive profitable growth and create future growth platforms. And most of these actions are permanent to the Owens Corning's earnings profile. So these are permanent additions to our earnings profile.

So we have significantly improved the earnings power of Owens Corning, and again, we've driven substantial actions and improvements across all 3 businesses, and the best is yet to come. Operating margins have almost doubled to 13%, and again, many of these improvements are permanent. And as we look forward, we see significant leverage to improvement in U.S. housing and residential insulation. And our other businesses have opportunities to improve as well. And then again, our Insulation acquisitions provide growth opportunities plus ballast for future residential cycles. So again, the best is yet to come.

All right. I love this chart. This is a chart that's from our roadshow deck, but it's been updated. It's been updated with Q3 LTM free cash flow and recent stock prices. And you guys know that our stock price has had a pretty good run this year, right? So our free cash flow yield after significant stock price appreciation 2017 is just under 7%. Now the gap has narrowed versus our peer group. But it's still over 300 basis points on average. And rest assured, free cash flow and free cash flow generation is going to be a focus of the company going forward, as it has been in the past.

Now the format of this slide is a little bit different. But fundamentally, our long-term capital allocation strategy remains unchanged. It's actually a lift from what I showed in 2015, which was actually a lift of what I showed in 2013. It's simple, but we think it's working. The first pillar is around maintaining an investment-grade balance sheet. This is a pillar of our financial strategy, and it provides -- an investment-grade balance sheet provides flexibility to support growth and also drives shareholder value, both in good times and in bad times. The second pillar is around maintaining the safety of our operations and productivity of our existing portfolio. And you've heard us for a long time that it's table stakes for us. And the third pillar is around driving growth and returning cash to shareholders. The first priority is investing in organic growth, and that's because organic growth tends to have the highest returns and the lowest risks. And the second priority is around driving value-creating M&A and returning cash to our shareholders. 2 years ago, we said we had the ability to do both. We had the ability to drive value-creating M&A but also return significant free cash flow to shareholders, and we've accomplished that mission. So we've gotten both of those done in the last 2 years. And I think this management team has a demonstrated track record in being disciplined around capital allocation and balancing the related priorities.

All right. I'll talk a little bit about our growth, investment focus and our M&A strategy, which, again, is largely unchanged from when we spoke 2 years ago. We remain focused on product and geographic expansion in our Insulation business, so not dissimilar to what we've gotten done here in the last 8, 9 months. Growing Roofing's core and its components business, and then a little bit more opportunistically, but also focusing on the downstream applications -- opportunities in our Composites business. Pursuant to this strategy, we've gotten a lot done in the last 2 years. So again, we acquired the InterWrap business in April '16, we acquired the Pittsburgh Corning business in June of this year and we expect to close on Paroc in the first quarter of next year. And again, you heard Arnaud talk about the Ahlstrom glass nonwoven's business in Europe that we tried to get done in the first half of last year, but ran into a few regulatory hurdles.

From an M&A perspective, generally, we focus on opportunities where Owens Corning is a better owner, where we see proprietary value to Owens Corning and then generally in and around our existing portfolio. And the strategic priorities for M&A are focused on platforms that provide for future growth, businesses that provide strong and stable margins with lower capital intensity and targets that provide product, end market and geographic diversification, and generally, opportunities where we can scale or leverage OC's global footprint. And again from an organic perspective, we look for opportunities that have similar characteristics like nonwovens.

I like this chart a lot as well. We have made significant progress in moving the needle in regards to our strategic growth priorities. InterWrap, Pittsburgh Corning, Paroc will significantly improve our portfolio. They both have -- all of them have platforms for growth with a strong and stable margins. InterWrap, obviously, has incredible capital intensity. And you heard Liz and Nico highlight 2 very attractive business that going -- that have great organic growth opportunities going forward as well.

All right. So I'll talk a little bit about creating value and executing a disciplined M&A strategy. So what I've done on this slide is I've taken the 3 deals -- so the 2 deals that we've done and the one deal that we expect to get closed in the first quarter of '19 and kind of put them all together. So by early next year, we'll have deployed about $2 billion on value-creating M&A. Each acquisition is accretive -- will be accretive to earnings in the year closed, okay? You heard Liz say that the InterWrap acquisition integration is done. The Pittsburgh Corning integration is ahead of plan. So it's off to a great start. And again, the Paroc transaction is expected to close in the first quarter of next year, and advanced planning activities are under way today.

As we look forward to 2019, and you put all these acquisitions together and take into account market growth, our commercial execution, synergy capture, so revenue about -- of about $1.2 billion in 2019 coming from these 3 deals, run rate synergies of approximately $60 million and incremental EBITDA of about $300 million. These are attractive additions to the Owens Corning portfolio and create significant shareholder value.

All right. So we have a disciplined and proven model for capital allocation and financing M&A. So the InterWrap transaction, which cost us about $450 million and the Pittsburgh Corning transaction, which cost us about $560 million, were both financed, 50% prepayable bank debt and 50% permanent debt. So 50% prepayable, 50% long term. In 2016, we retired all the bank debt associated with the InterWrap transaction, and we returned $328 million to our shareholders through dividends and buybacks.

Through the third quarter of 2017, we retired all the bank debt associated with the Pittsburgh Corning acquisition. And we returned about $226 million to our shareholders through buybacks and dividends. This is a testament to the company's ability to generate strong free cash flow and allocate capital that drives long-term shareholder value.

For the Paroc transaction, which is roughly about $1 billion, it's going to be financed about 2/3 prepayable bank debt and 1/3 permanent debt. We had $900 million of incremental financings put in place at closing, so it's a $600 million 3-year term loan and a $300 million short-term loan. We'll tap the bond market post close, so for about 1/3 of the transaction. And then, obviously, retiring the Paroc term loan will be a priority as we move into 2018 and through 2019. And it would be my expectation that it'll take probably about 18 to 24 months to take out that $600 million term loan. That said, we'll still have the capacity for some repurchase activity in 2018, which will increase as we move into 2019. I'll remind you that even post-transaction, we have a fabulous balance sheet.

Oh, one other item. So on or about closing, because this is a -- we're essentially -- all of our debt is USD denominated, this is a large euro-based transaction. So on or about closing, we'll swap about $500 million of our U.S. dollar-denominated debt to euro-denominated debt synthetically. And so that will pick up about 200 basis points of interest cost savings, which equates to about $10 million per annum.

So in closing, OC is a different company today. We have demonstrated our earnings power, and disciplined growth initiatives will drive future shareholder value creation. Strong free cash flow and strong free cash flow conversion will continue, and we expect conversion of about 100% over the periods 2017 to 2020. All 3 businesses face into favorable macros, and established momentum should continue. We now expect Roofing margins of approximately 20% going forward. We expect 50% operating leverage in our Insulation business going forward, excluding the first year impact of acquisitions. And now we expect Composites to deliver sustainable mid-teen margins. And don't forget that we expect significant contributions coming from our acquisitions as well. So $1.2 billion of revenue in 2019 and $300 million of EBITDA.

ROC continues to be a key measure, expect further improvements. You can expect disciplined and purposeful capital allocation will continue. And the portfolio improvements that we've delivered and continued strong execution will ultimately drive multiple expansion.
So thank you all very much. And with that, I'm going to ask Mike to come up for the Q&A session that will be led by Thierry.

Question and Answer

Thierry J. Denis
Vice President of Investor Relations

Very good. So I told as Mike comes up on the stage, I told you, we would have plenty of opportunities for Q&A. So this is your additional and last chance to ask all the questions that you have on your mind. And you'll have Mike, our CEO, and Michael, our CFO, asking the questions. Rory?

Rory Blake
Appaloosa Management

Michael, just going back to your presentation, you led with one of your charts for the 3 parts of TSR.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Yes.

Rory Blake
Appaloosa Management

And you guys have significantly improved the profit growth. The free cash flow conversion, it's tremendous -- it's been tremendous. It comes down to really this multiple correction. Now you put up a free cash flow chart where you're significantly undervalued versus your peers, interest rates are at historic lows. You've also mentioned savings 200 basis points, transferring some debt. Why is now not the right time to step up and pre-buy future earnings in OC stock? And can you talk about how you prioritize this free cash flow conversion over the next few years?

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Sure. So, I mean, listen -- so, I mean, and a couple of things, you heard me talk about that, our investment grade credit rating is a pillar of our financial strategy. And we're unwavering on that. We've gotten 2 significant deals done, and we've kept our balance sheet largely intact. We're going to -- we're stretching the balance sheet a little bit with the Paroc transaction button, but not materially. But we think it's important to deal with that term loan in a relatively short period of time. That said, it doesn't preclude us from buying back our -- buying back some stock in 2018, and then getting actually more aggressive, potentially, in 2019. And, I guess, the other thing I'd say is that, listen, from a business execution point of view, we've delivered pretty solid results over the last 5 years. More recently, we've gotten some pretty interesting things done from a deal perspective, which I think are great for the overall portfolio. I think with time, that the multiple will rerate.

Thierry J. Denis
Vice President of Investor Relations

We have Bob in the back.

Robert C. Wetenhall
RBC Capital Markets, LLC, Research Division

Good morning. It's Bob Wetenhall from RBC. You guys have made the case in the numbers for massive margin expansion. You've got strong free cash flow and you really have done a terrific job with accretive M&A. So I'm thinking back to the fourth quarter of 2014, the stock's stuck in the high 20s, and now we're at $83. So congrats, you've come a long way, which is terrific accomplishment. But when you're thinking about the multiple issue, Mike, what we're hearing from investors is, "Hey, where's the consistency?" And I think if you look in the last 12 quarters, you've been incredibly consistent. And so that would make a strong case for multiple expansion. Instead of being at 8x business, you're at 10x or 11x business. And some of that things you're saying about the individual business segments, like mid-teen in Composites, 50% incrementals are fantastic. So a long-winded question, but I'm trying to understand, is there a structurally less cyclical component to the Owens Corning's earnings profile based on changes in the business that you can articulate to the investor base? Is the quality of earnings better in the next 3 to 5 years? And is basically your presentation today and all 3 business leaders about making the argument the quality of earnings we're going to generate and what we're going to do with the cash flow that the businesses throw off, makes a strong case that we should be a 10x multiple or a higher business?

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Great question, Bob. And thanks for the nice comments about our stock price. We absolutely tried to make the case today that within the mix of our businesses, the businesses have gotten fundamentally better. Inside the businesses are some really nice pieces of the nonwovens business, the components business. Businesses have a predictable growth rate, predictable margin rates. We talked about the acquisitions, having $1 billion of Insulation sales outside the U.S. We talked about getting more exposure to commercial and industrial business, which typically has had more consistent margins through the cycle. So as we look at how we want to deploy capital, we're absolutely trying to make the operating performance of our existing businesses better. And then we're trying to put capital against those ideas where we see better growth and better and leveragable consistency of margins. I think one of that big things we said today and someone asked Brian about it was, we came on and said, we think -- we think operating margins of 20% or approximately 20% in Roofing are sustainable. I think you made the case that, that's cost reduction, price premium and product brand and Components growth driven, less so market and market dynamic driven. So we've tried to separate ourselves a bit from that. That doesn't mean we're completely independent of market dynamics. There are market dynamics there that could come and bite us. But for the most part, the way we built the business on the ground, we're gaining confidence in our ability to continue to operate in that range. What he didn't say and I think is also a big component of that is the reroof market is back. So 2 years ago or 3 years ago, when we were talking about how to get that business operating very, very well, we're in a really weak reroof market. Reroof is the bread-and-butter for roofing manufacturers. So having that market at reasonable levels and being able to go do great contractor work and sell that through -- I think really clarifies our position on Roofing. I think our position on Composites has been clarified, right? Whatever we were saying 3 or 4 years ago about the prospects or the potential of that business, I think we've just delivered like clockwork against the potential of that business. And you saw Arnaud lay out today the case that says the next 3 years look as good or better than the last 3 years in terms of our ability to grow and leverage the performance of that business. And then in Insulation, 2 big stories. One is res is getting ready to come roaring back. And the fact that that's cyclical right now is a very good thing, because we're in the part of the cycle where we're going to really enjoy having a gigantic res business. And then we build out a commercial and industrial business that I think will carry great insulation performance through any market environment. So as I talk through the things we said here on Investor Day and I come back to what does that mean in multiple, it certainly says to me that if we have the best free cash flow conversion and we're growing free cash flow faster than the other people in our sector, we have an earnings growth outlook that looks stable, sustainable and stronger than a lot of people in our sector, that our goal will be to see our multiple get to industry multiples first, and then we think we would deserve a premium multiple.

Thierry J. Denis
Vice President of Investor Relations

We've got Scott over here.

Scott L. Rednor
Zelman & Associates LLC

Scott Rednor, Zelman. I guess, must be dry in here. So 2 questions on the cash flow side. First, for you, Michael. The 100% guidance -- can you maybe talk about -- you're willing to stick to that through each year as opposed to an average? Because under your guys' assumption, your NOL will probably burn out at some point through there, so maybe what's a more sustainable rate? And then there is no CapEx discussion today.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Yes.

Scott L. Rednor
Zelman & Associates LLC

So maybe you guys could clarify what you think maintenance is, and then I imagine there's some discretionary cost benefit with M&A, but hoping you guys could clarify that.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Sure, sure. So the guidance we gave for free cash flow conversion was 100% on average, which means it could dip in maybe any given year. But that's good guidance that goes through 2020. And our NOL is going to be around, I think, long enough to make that all happen. From a capital perspective, maybe I'd kind of set things out from a macro perspective first. So you heard today that in a few of our businesses, we're running pretty high utilization rates. Labor markets are tight, and so there's probably some opportunity potentially to do some automation. I think you heard from Liz, you heard from Nico that both of their business are probably going to expose us to some interesting organic growth opportunities as we move forward. So as we look forward to next year in particular, CapEx actually could trend a little bit higher. So capital for this year will probably be just under $400 million. We're working on our business plans for next year as we speak. But capital -- capital next year could be as high as maybe $50 million to $100 million higher in '18 versus '17, but it's all good stuff.

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

And just one of the comment -- you talked about the NOL -- we don't really know what's going to happen here with tax reform, obviously. But the kind of tax reform that's being talked about now that would drop the corporate tax rate to 20% would be very advantageous to our company. So as we're working through a period of very, very good earnings where we are burning through this wonderful tax asset we have, which is a high-class problem, we have a lot of domestic earnings in fairly well-structured industries. We would not expect the lower tax rates would get traded through to the market in terms of lower margins. We'd expect lower tax rates would just create better free cash flow for our company. So I think very fragmented markets, you kind of imagine any of that advantage might get traded through in terms of after tax cash earnings. I think in our markets, there's more of a mind-set of pretax margin rates and driving the pretax margin rate. So I think lower tax rates on our U.S. earnings probably create a lot of shareholder value for our shareholders. So I think the timing on this is perfect. If we actually went through a transition around now from being NOL dependent as we run out of that to actually getting a territorial regime with 20% tax rates, that really helps the way we thought about putting the company together.

Thierry J. Denis
Vice President of Investor Relations

Okay. We had another question from Stephen here, and then we'll go to Sue.

Stephen Kim
Evercore ISI, Research Division

Yes. Steve Kim from Evercore ISI. Just one quick one on the Paroc and Pittsburgh Corning effects on the modeling. What kind of incremental margins should we be thinking about coming from those businesses? And is there going to be some sort of temporary, maybe 1-year, period where things will look a little -- not consistent with what you would expect on an ongoing basis, some sort of -- any kind of dysfunctionality or just adjustments being made in the first year that we should consider?

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Yes. Maybe I'll start on that and then Michael can fill in anything I missed. I think what we disclosed on both those acquisitions -- we said Pittsburgh Corning had a 4-year track record of EBITDA margins in the mid-20s. Paroc's EBITDA margins are around 20. So both those businesses are very profitable and very good EBITDA margins. I think the incrementals on growth at this point we would probably say will mirror the underlying economics we're seeing in the business today. So we don't -- we aren't looking at these as having big operating leverage plays. They're both fairly well-utilized today. They've both in fairly stable pricing environments. So there's not the big giant lever that's going to cause you to have a bunch of operating leverage. As you look a little further out, I think Todd talked about, if the LNG market comes back the way we think it can in the next 3 or 4 years, I think then you might get to a step-up in terms of capacity and demand in Pittsburgh Corning in the FOAMGLAS business, which could give us some additional operating leverage. The earnings growth above and beyond what are already great businesses will come from the synergies. So we'll see some margin expansion that will come from that, but I wouldn't characterize that as operating leverage. I characterize that as execution. We do have some near-term costs, I think Todd touched on that a bit with Paroc, in terms of both the step-up. But also we have IT teams working inside of that business. We put a lot of safety resources into the FOAMGLAS business early on. We're running those costs today in the business results. So those are going to be temporary or those are going to be temporal. So I think as we get them fully integrated, as we get our operating standards that meet our requirements, I think we'll be able to then pull some SG&A resources out of some of these businesses, and we'll get back to maybe historical margins, which today might be a little bit more muted because of the investment we're putting in to just try to get operating systems and management systems put in place.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Plus synergies.

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Yes, plus synergies.

Stephen Kim
Evercore ISI, Research Division

And Paroc, if I remember correctly, it's like mid-11s I think EBIT margins. Is that -- does that translate over similarly?

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Yes. I mean, we've guided on the EBITDA margins at this stage. And once we get the deal closed early next year, we'll give you more data.

Stephen Kim
Evercore ISI, Research Division

Okay. But they have filing?

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Yes.

Stephen Kim
Evercore ISI, Research Division

So, I think it was like -- okay, anyway. Right.

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

That's the operating company, not the parent company.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Just for clarity, yes, the filings.

Thierry J. Denis
Vice President of Investor Relations

Sue, and then we'll go back to Mike. Do we have any microphones for Sue?

Susan Marie Maklari
Crédit Suisse AG, Research Division

Sue Maklari from Crédit Suisse. Can you talk about how doing these deals has added to the knowledge and the talent base that you've got? And then maybe how you can leverage that to drive more of the organic growth just across the whole company and the different regions and the things that you're in?

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Yes. It's a great question, Sue, actually. If you look at the thread through the presentations today, I think one of the things that's kind of an unspoken strategic element or strength of our company is scale. So when Julian talked about manufacturing technology, when Brian talked about low-cost shingles and the composition of low-cost shingle, we have the scale to invest in material science and basic science to be able to improve our processes, to improve the design of our products. We leverage that across Composites, against Roofing, against Insulation. So that's a place where being bigger and having some scale creates value. These newly acquired companies are going to bring us new knowledge. I think that's going to be a 2-way transfer, right? I think we're going to learn a lot about mineral fiber manufacturing from the Paroc team, but I think we have some fundamental science on binder chemistry, fiber forming and densities that will probably benefit them. As we look at the Pittsburgh Corning team, in the FOAMGLAS business, the glass chemistries are very similar to the glass chemistries we work with. So while their expertise in foaming glass is something that we're learning, our knowledge of melters and how the precursors of that foaming glass process work, our glass chemists and our engineers walked into that on day 1 and immediately saw ideas and things that they thought we could be doing. If you then look at scale in terms of our global footprint, which really has primarily been afforded to us in the past because of our Composites business, having people on the ground in all of these markets gave us confidence to extend insulation in the market, because we really believe most of our markets -- it's a person-to-person business. I mean, it's -- we got to be out there, we got to have relationships in the marketplace, we got to be able to sell and we have to have pipelines of talent that we can manage our own destiny on that. I think having now bigger talent pools in Europe, bigger talent pools in Asia and bigger talent pool in the U.S. gives us a lot more strategic flexibility. So utilizing our scale to make these businesses a great success is job 1. But I think ultimately, they also create some strategic optionality for us in terms of having footprints in other parts of the world, where we're now going to start to see other growth opportunities that today we can't see. So I think that definitely impacts us organically. And then as we get through the integration of these deals, it will impact our inorganic strategy as well.

Thierry J. Denis
Vice President of Investor Relations

Mike?

Michael Jason Rehaut
JP Morgan Chase & Co, Research Division

Mike Rehaut, JPMorgan. So just a point of clarification on an earlier question, then my real question, the -- I just want to make sure I heard right that you said that the incremental margins on Paroc and Pittsburgh would be similar to the margins they're currently generating, if I heard that right. And then my...

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Plus synergies.

Michael Jason Rehaut
JP Morgan Chase & Co, Research Division

Plus synergies, correct. Okay, so -- that was correct, that's what you said. And then, the real question here, Mike -- you and I were talking last night about the significance of the Paroc acquisition, and you've been pretty acquisitive last 2, 3 years in general. And in the slide on M&A that was just laid out, still a lot of opportunity or potential opportunity over the next few years in the different businesses. How should we think about the cadence of M&A over the last -- next couple of years given the significance of what you've done already -- if this might be a little bit more of a gestation period in '18, '19? And if that would be the case, kind of reference, perhaps after debt paydown in '18 that share repurchase might rev up and perhaps that -- is that in the place of M&A? How we should think about things? Or...

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Let me talk about the cadence of what we've got done and then maybe you can talk again about our forward outlook on cash -- cash allocation. But when we began talking with investors and really and probably was most pronounced in our Investor Day in 2015 down in Atlanta, we started talking about -- we do think we've earned the right to grow, we're going to look a little bit more aggressively on trying to find some M&A that we can go do. We also explained at that time that we thought we had good M&A themes, but that the potential targets that are the result of M&A themes may not be visible to the public shareholder investing days. And I think generally if you now look and say, InterWrap, we've heard from a lot of investors, I probably didn't see that one coming, I didn't know about that company. A lot of people said, Pittsburgh Corning, I didn't see that one coming. I didn't know about that company. I think most people knew about Paroc, but didn't know that was actionable or for sale or that was something we could go do. So we've looked at a lot of things, we've -- we participated in a lot of activities, trying to find deals that would work. And we don't really have the ability to control cadence. We have the ability to find great properties, and we have the ability to execute because of our great balance sheet. And our view would be very selective, be very disciplined. And when you find something that you want to buy, you take action and you buy it. It just turned out that this year, we saw 2 things come to market in relatively the same time frame, which were both interesting to us. Again, a perfect world, we'd probably like to chunk out kind of one major acquisition per year and make the world look a lot like 2016 looked, buy InterWrap, integrate it, pay it off; buy Pittsburgh Corning, integrate it, pay it off; buy the next thing, integrate it, pay it off. I think in this case, we are -- we're not ahead of ourselves I think, but we have taken on a fairly large agenda. And I think you will see us digest here for probably 12 or 18 months before we would think about doing something else bigger. Now we continue to look for some small bolt-ons and small tuck-in stuff. And we don't feel anything we've done here would limit our ability to go do those kind of things and do those kind of things quickly. In terms of share repurchase, maybe just talk that through again.

Michael C. McMurray
Chief Financial Officer and Senior Vice President

Yes. Any maybe one thing, just to kind of emphasize. You heard me say, in my prepared remarks, that the strategy is largely focused on in and around our existing portfolio. And thinking through that, the Paroc transaction would probably be a pretty large deal, thinking kind of opportunities that are kind of going to become available that are in and around our portfolio. And again, just to kind of take you back through it, expect strong free cash flow generation next year. We want to make significant progress in chipping away against the $600 million term loan. But we're not -- doesn't necessarily mean we're going to pay it off next year. I mean, in the right environments, we'll buy back some shares in '18 as well. But obviously, as we move into '19, we'll be able to get more aggressive.

Thierry J. Denis
Vice President of Investor Relations

Okay, let's go to Ken for the next question.

Kenneth Robinson Zener
KeyBanc Capital Markets Inc., Research Division

To ask a question with a half, glass half-full. Your multiple, given your earnings momentum, given these acquisitions that you've done and the size of them, I think, fundamentally, the issue is that you have 1, 1.5 businesses that have very high-fixed cost leverage. We're obviously at the right point of the cycle right now on insulation. I think these acquisitions you've done dramatically shift the composition of your earnings. But like you've reiterated willingly, it's 50% incremental, because it's high fixed cost business. Composite seems to be well structured. Is there something you could offer that might address the cyclicality component? Because that's why your multiple is what it is, right? It's the high fixed cost leverage, where you are in the cycle. Is there something that you learned last cycle? Is there something fundamentally that's changed about how you manage these fixed cost assets that could justify a less cyclical multiple, perhaps?

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Yes. I think if you look at what happened in the last cycle, there were 2 completely independent events, right? One was an expansion of capacity in China that had no basis in reality. So in the decade of the 2000s, we just saw an expansion of the glass melting capacity in Composites in 2000 that was in that decade -- that was not related to any market knowledge or market concept. And we think that's completely come to a stop. So we do believe now that the rate of capacity addition in the Composites industry is going to just move right along with the rate of growth. And that as a result, we're going to be in a fairly stable market environment for a long period of time. So the cyclicality or the volatility of Composites earnings, I think, is really attributed a very specific competitive story that I think Arnaud articulated today very clearly, we believe has been changed and changed fundamentally from a regulatory point of view, based on important fundamentals. Environmental considerations, energy considerations, labor costs and a bunch of other things that are now headwinds and are being recognized in the China market that weren't recognized in the period of 2000. So I'd take Composites off the table in this discussion and say that was a fix the business, fix the industry problem that lasted really for the better part of a decade. And I think that's behind us, and it's been behind us now for 3 or 4 years. The second part, obviously, would be to look at our residential Insulation business. I see 2 things there. One is, I don't think anyone would ever think that the next cycle involves housing starts dropping again to 500,000 units. So I don't know what each of you are forecasting, but our view of that was, that was a credit crisis, not a demographics issue. It was not a home building issue, it was a financial crisis. We aren't even back to mid-cycle levels of housing and we have the largest demographic in the history of the United States coming into a period of time of being in household formation. So we think we're either not keeping up or if we are, we're barely keeping up with household formation at today's 1.2 million. And we don't really think that the housing market is overheated in terms of production. Now the fact that would support that point of view is, housing prices continue to go up pretty aggressively, which would say actually production is trailing the demand for people wanting to get into houses. We'd love to see that catch up. So if you were to see a cooling in the housing market, I think it would look more like what we've seen historically, which is maybe housing starts drop a couple hundred thousand units to 1 million, and then they start to recover again out of a more normal recession. In that environment, insulation -- residential insulation doesn't drop 30 points of price again. I think that's once-in-a-lifetime -- once in the history of our company type of cyclicality. Historically, in a really bad environment, Insulation dropped 5 to 10 points of price. So the recent history of our residential Insulation business, I think, is completely divorced from the reality of how that business will perform going forward. I think its peaks will be very high, but its troughs will be nowhere near what we've seen historically other than in terms of volume or what we've seen in recent history in terms of volume or price. So as a result, we've diversified ourselves a bit away from that to mute out the impact of that on the overall company by getting bigger in the commercial and industrial Insulation businesses. And I think we have a fundamentally better business that's going to go through a completely different cycle if we actually saw a softening of housing, which I think is many years off. I think that's really a question of the overall U.S. economy. But as long as the U.S. economy continues to go, we can't see a way housing doesn't continue to expand as a part of the economy.

Thierry J. Denis
Vice President of Investor Relations

Let's take one last question from John.

John Lovallo
BofA Merrill Lynch, Research Division

John Lovallo from Bank of America. Just curious if there's any update on TopBuild and that relationship postsettlement, if you see business potentially picking up there.

Michael H. Thaman
Chairman of the Board, Chief Executive Officer and President

Yes. I mean, I think Julian in his comments said we were in a very volatile situation in 2016 that had a negative impact, I think, on the overall performance of our business and certainly the performance of the industry. You saw the price index and other things as a lot of share moved around, and typically when that happens, it's tough on the manufacturers. And a lot of times, tough on our customers as well. We obviously entered into a settlement with them this year. So we're on good relationships with TopBuild. I mean, we do business together. We have certainly rebalanced our market share in the market back to an acceptable level for us and certainly much wider spread across a broader customer base. We would not characterize ourselves as being their top supplier in any way shape or form. They're an important customer to us, but they're nowhere near the importance of the type of customer that they were in the past.

Thierry J. Denis
Vice President of Investor Relations

Great. Well, thank you very much. Well, Mike will actually close the meeting and offer some final remarks. Before he does that, I'd like to thank everybody here, and as usual, I'll offer my help to follow up on any outstanding questions. So please feel free to reach out to me. For those of you who want to stay with us for the lunch, the lunch would be next door, and we're happy to spend more time with you. Mike?

Michael H. Thaman
*Chairman of the Board, Chief Executive Officer and President*Okay. Thank you. I think I had one last slide, which is a slide I presented earlier today. It said what you will hear today and now it says what you heard today. And hopefully, this is what you heard today, track record of performance, compelling investment opportunity, demonstrated earnings power, a nice growth trajectory and disciplined and shareholder-friendly capital allocation strategy. When I presented the slide, I said I hope that when we come to the end of the day what you realize is this is a fundamentally different company today than the company we talked to you about 2 years ago. It's fundamentally different, not just in terms of some of the M&A and our geographic footprint and what we've done to the portfolio, but it's fundamentally different also in terms of our execution, the strength of the position in our markets, the strength of our cost positions, the strength of our commercial positions, and again, continued continuity of management, leading in this market and leading against a strategy. The results we talked about today are really the result of a decade's worth of work. The cumulative efforts of our teams coming out of some of the challenges that we saw out of the last recession and continuing to build every day with an eye on the future to create a company that has the kinds of financial results we've presented to you today. We think our best days are still ahead of us. So I don't think there's any posture in this meeting that would give anybody the impression I hope that we see anything but the ability to continue to drive performance and continue to move the ball forward with Owens Corning. There's obviously a lot of energy in the company today and excitement around some of the M&A work getting back to Europe in a big way, being a bigger more scale company and then using our operating model to use that

scale to leverage our company and create a lot of shareholder value. So I think it's a very good story. We are proud to tell it today. I was very proud of my team. We have wonderful people in our company. We are going to do very, very good things, and we obviously get up every morning and figure out how we can work very hard for our shareholders to create a lot of value. So thanks for joining us. And I appreciate your time.