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PRESENTATION

Steven Eric Winoker ***General Electric Company - VP of IR***

(presentation) Good morning. And I don't know about each of you, but if you're an employee of GE, that video sent shivers down your spine. It does for me anyway. Anyway, welcome everybody to GE's 2022 Investor Day.

For those of you who were here with us last night and couldn't quite stick it out, Clemson beat Michigan State 4 to 2, pitcher's duel 6 hits, okay? I know we've received some questions on that front.

Now what you're used to hearing from me before we start are the following. Investor materials are available on our website. You've got our statements that are forward-looking in nature and, as such, are based on our views -- our best views of the world as we see it today and our businesses as we see them today. And as described in our SEC filings and on our website, those elements can change as the world changes.

Now it is great to be here in person with so many of you in Greenville, South Carolina, one of GE's largest facilities. And you've come to Gemba, the place where the work actually is. And so that is meaningful, and we hope you see it and enjoy it. What that also means is that we start off all of our significant moments at GE with a safety moment. Remember, SQDC, safety is always first. And as such, we have

John Kenney, our Greenville plant manager, here to kick us off.

John, welcome.

John Kenney *GE Power - Greenville Plant Manager*

Welcome. My name is John Kenney, and I'm the site leader here at the Greenville site.

I have the privilege of doing 2 safety moments with you this morning: one, on your personal safety for the day; and two, to tell you about some of the safety improvements we've made here at the Greenville site.

First, we'll talk safety today. So, in this room, in case of emergency, you have exit in the front and exit on either sides of the building. Prior to the tours today, you will be given all the personal protective equipment you need along with additional safety instructions. Currently, our COVID policy does not require face masks, which is great, and I'm sure everybody is pleased with that part. And above all, if anything comes up today, anything safety-related comes up that you're not sure about or you have a question, please stop work and ask, and let's address the issue.

Now I'd like to talk a little bit about how our lean transformation has helped improve the safety here at the Greenville site. We started our lean journey a little over 4 years ago, and safety has been one of the biggest benefits. A specific example that you're going to see more on the tour today is how we transformed our turbine blade manufacturing area. And this is -- the turbine blade is a critical component in the gas turbine, and we manufacture over 50,000 of these annually. Prior to our lean transformation, these 50,000 blades traveled over 10 miles per day to 100 different locations across the factory to get the necessary operations done before they are ready to go out to our customers.

We started our lean work and our lean transformation in this area by putting the operator at the center of our lean kaizen action workouts. In total, we had over 300 operators participate in these events. We work with the operator to identify waste associated -- wasted motion associated with their standard work. As a result of this, we connected flow our connected operations, resulting in the 5 lean lines we have in that area today. And you'll get to see our newest lean line on the tour today.

One of the biggest -- we had 2 big safety benefits from connecting these flows. The first one, by connecting the lines, we were able to eliminate the need for operators to lift parts which weigh 20 to 25 pounds a piece in and out of boxes in every operation. In total, this is the equivalent of 400,000 lifts annually or we were asking our employees to lift 10 million pounds per year. And secondly, by putting operations in line, we were able to eliminate 10 miles of forklift or park movement traffic daily. So, this eliminated any risk associated with that movement.

These improvements, along with many other kaizen events, has allowed the Greenville site to reduce our number of recordable injuries by over 60% since we started our lean journey. Safety is our #1 priority, and our lean journey is helping us make a safer workplace for our coworkers.

Thank you, and look forward to seeing you on the tour later today. Steve?

Steven Eric Winoker *General Electric Company - VP of IR*

Thanks, John. It's so great just to continue to hear about continuous improvement, which you'll see. We've made a lot of progress. There's always more to go, but it's just great to hear that.

So I'm joined here by Larry Culp, our Chairman and CEO for GE; Carolina Dybeck Happe, our CFO. We have our business CEOs: Pete Arduini of Healthcare; Scott Strazik, who runs our portfolio of energy businesses; and John Slattery, who leads our Aviation business, and their respective teams. Many of you got to interact last night, this morning, hopefully, through the day today.

We have a packed agenda for the day. We have innovation showcases around you and upstairs. Hopefully, you had a chance to explore those. If you haven't, you'll be seeing those on your tours today. We have lean tours at both the Power and Aviation facilities. And I am personally excited for -- I hope you see what we see, which is not just the results that we're delivering, not the what but the how. And it's the how that drives those results on a sustainable basis. And for me, that's been the most enlightening thing over the last few years here at GE.

So, with that, I'll share logistics at the conclusion of the webcast. Without further ado, Larry.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Thank you, Steve. Thank you, John.

I am so excited that you're going to get a chance to see what John and his team have done here in Greenville. I met John 3 years ago, beginning the lean journey. And well, I don't want to ruin the rest of that. You'll see it for yourself. Steve, thanks for giving me a couple of minutes here. We have a very packed agenda. But we're just really thrilled that so many of you were able to make the trip to Greenville, particularly those of you who were with us last night. I know the GE team really enjoyed the informal interactions with each of you talking about a whole host of things and the handshakes, a few hugs. Just it's good to be back operating in this way.

We've got a lot to cover, but just at the outset here, I want to make sure that we not only recognize everybody in the room, but everyone who has dialed in, and we've got people all around the world who have joined us bright and early here in Greenville. We'll work through a lot of material here, but hopefully, you come away with a better sense of where we are today, more importantly, where we're going tomorrow.

I do want to make a couple of comments, though, at the outset relative to the events in Ukraine. I'm sure we are all just devastated, if not depressed, with respect to what we've seen over the last 2 weeks. Make no mistake, the GE team stands and stands proudly with the Ukrainian people in the face of these unrelenting attacks on their homeland. There are a couple of things that we can do as a company, and we have done those thus far. The first is we have suspended our operations in Russia with the exception of some mission-critical activities, primarily in Pete's business in Healthcare. We've also made a $4.5 million contribution primarily in the healthcare space to assist those that have been directly impacted by the events over the last several weeks. Like every company, directly or indirectly exposed to what's happening, there is more uncertainty today with respect to what lies ahead than we saw just a month ago.

There are many things we don't know. But with each day, we certainly learn more. And as we learn more, we're going to share that with you. But what I do know, I know 2 things. One, given what's happened in the last 2 years in the wake of COVID, the GE team is a resilient team. This is a team that will figure out how to move forward, serve our customers and serve you as our investors. The other thing I know is that we'll be focused -- hyper-focused on controlling the controllable. There are going to be things that are out of reach, but there's many things that we can do. I think we've demonstrated that in the last couple of years. That will continue.

So, let's jump into it. The foundation of what you're going to see during the course of the morning really is the businesses, 3 strong franchises that we're excited about relative to where they are and the growth opportunities, let alone the margin expansion and cash opportunities that we see in the future. I'm thrilled that you're here because you're going to see how we're running the teams, how we're running the businesses differently. And that really starts with the teams. You met a number of our leaders last night. You'll meet more through the course of the day, really, I think, a strong combination of GE experience and new perspectives.

Peter Arduini, a great example in that regard, took the helm at Healthcare just at the first of the year. He'll follow me here in a moment. We've got a number of other new leaders who joined us very recently. I see Frank Jimenez, the new General Counsel. Frank, put your hand up. At Healthcare, just joined is Betty Larson right here, working with Frank and Pete in Healthcare leading the HR organization. And Scott Reese is somewhere here as well. Scott is in the back. Scott has just come over from Autodesk to lead our digital operation.

It's a strong team, in my view, I hope you feel the same way as we part. We'll talk a lot about lean. You got a little bit of a taste of that from John's slide. But I think you'll also see the way we're running the businesses differently with an eye toward decentralization. And that simply means running the business from the bottoms up because it's the 30 P&Ls that deal with customers every day, not those of us in Boston. And that's been a mindset shift, one that has served us well. But as Pete was reminding me just the other day, one that really is just gathering momentum, and that's exciting relative to what lies ahead.

But you've seen the financial results that have come as a result of this work, $87 billion of debt by the Boards, nearly $6 billion of free cash last year. And that really sets us up to have made the announcement that we did last November relative to the creation of 3 independent GEs in the not-too-distant future. So, there's a lot that we're excited about, but it's not about yesterday, it's a little bit about today, most importantly, it's about tomorrow.

I won't drain this slide. There's a lot of detail you'll see from each of the CEOs and their teams. But I do want to reiterate that GE today starts from a very strong position, right? Over $425 billion of backlog, over $70 billion of revenue with half of that in services. And we all like the financial characteristics of services. But what I like most of all is the fact that we are day in, day out, side by side with our customers. Good times and bad, helping them sort through what's important relative to what they're trying to do, be it a healthcare provider, be it a utility, let alone an airline. So, it makes coming to work at GE every day exciting, challenging and, dare I say, important.

You will hear a lot about lean. And in many respects, what I hope you take away are a few core principles. The first is, at its essence, lean is about the customer, serving the customer to the fullest and best extent possible. Lean is also about the elimination of waste. You saw on John's slide some great examples of how we've rung out Mouda from the business. Imagine those lifts, imagine those walks, neither of which serve customers, represent safety hazards, clearly cost, gone. And there's more where that comes from. But you've got to see it to be able to remove it, and you have to know how to remove it in a sustainable way, and I think you'll see that.

And then finally, priorities. Many of you have heard me talk before about how I have been so impressed by the sheer ambition of this company over the last 3.5 years. But even GE can't do everything, so we need to prioritize, be it in the 2 facilities that you'll see today, be it in the 3 businesses that we'll give you an overview of. And that ruthless prioritization is also a critical element in a real lean transformation.

And I know many of you want to understand, well, what does that mean to me as an analyst, as an investor? Where do I see that in the P&L? Where do I see that in the cash flows? I would argue you see it everywhere because lean is, when it's fully implemented, ubiquitous in that way. But I would argue the most important impact and what we're really driving for at GE is not the financial impact, it's the cultural change. Now I realize some of you just had your eyes roll over. That's okay because we know this is the way we're going to make GE the most valuable enterprise and, in time, the 3 most valuable enterprises we possibly can. I guess it's that cultural change driving humility, rewarding transparency and reinforcing focus at every turn that's going to allow GE to realize its full potential. I hope you come away with a sense of that from what you hear today. But more importantly, we brought you to Greenville, so you could see it. You could smell it. And in some instances, safely, you can touch it, both in John's facility and then in Tim's facility down the road in Aviation.

Results do matter, though. And as Steve highlighted at the outset, when we talk about results, when we talk about results with respect to lean, it's safety before quality, quality before delivery, delivery before cost. Cost is important particularly in this inflationary environment, but that is not an acronym, it's a priority set that we are striving to make instinctive in our company on a regular basis. There are a host of ways we do that. But with that operational foundation, we really do set ourselves up to accelerate the profitable growth in the company.

And I think throughout the course of the presentations, you'll see examples of how this is setting us up to be more aggressive and more effective commercially, expanding the visibility we have on opportunities in our served markets, let alone increasing our win rates where we want to win, in turn, setting us up not only to spend more in new product introductions but to really put those investments where they have the most impact with customers. That's new product development done well, all the while continuing to make the longer-term technology bets, be it in CMCs, be it in superconducting generators, to make sure that GE does as it has for over a century, and that is lead in technology.

And when we do that, the flywheel begins to spin. And that sets us up all the more both in terms of the balance sheet and, frankly, in terms of underlying capability to do more inorganically, right? And just look over the last 12 months, this team has put forward a very creative approach to exit our aircraft leasing business. Really pleased to join forces with Gus Kelly and the team at AerCap. In turn, you'll hear more from Roland Rott and what we're doing in Healthcare Ultrasound with our BK Medical acquisition; and then more recently, what Scott and his team have done with the Steam Power divestiture to EDF. A whole host of different transactions, all of which build on that operational foundation and what we're doing by way of organic growth to set us up, I think, for a strong outlook with respect to sustained profitable growth with these businesses.

The outlook that we shared with you at earnings and reiterated in Miami just 2 weeks ago remains intact. High single-digit organic growth, at least 150 bps of op margin expansion, we think that will drive EPS in the $2.80 to $3.50 range; free cash in the $5.5 billion to $6.5 billion range. Again, no change, mindful of it. There are a host of things that we do not know relative to the situation in Ukraine, too many uncertainties, and it's probably premature to try to incorporate that today.

But what we do know is that Russia represents less than 2% of our overall sales. And from an operational perspective, what we're most focused on today is the safety and well-being of our teams in Ukraine, in Russia and elsewhere in the region. And we're doing all we can to help and support them in that regard at this precarious and unfortunate time.

So, we'll build off that base in '22. And as we look forward, we continue to see continued progress financially. We think we've got $10 billion of operating profit, translating into $7 billion of free cash flow in '23. But also, in '23, you're going to see us take action in the wake of the announcement from November to create 3 independent GEs, sharing a common GE heritage but all with targeted, focused, independent futures. And we're excited about this. I think we've seen this in, frankly, the last month in the run-up to this meeting, not only in terms of what employees and customers and many investors have shared with us relative to their support and their enthusiasm for this path, but I think as importantly, what we're seeing just in the run-up to coming to see you relative to the businesses' sense of accountability.

Okay. we're making commitments now, right? I think that's a beautiful thing. And that's -- when we talk about accountability and focus, that's part of why the Board took the decision that we took. We've also talked about alignment, right, from the boardroom, through management, the entire team in each of the 3 businesses, all the way through to you as investors. That alignment is going to be critical to our success. And while we're talking about the Board for just a moment, I hope you saw the announcement we made earlier this week, 3 outstanding individuals coming to join the GE team: Steve Angel, former CEO at Linde; Bella Goren, the former CFO at American Airlines; and Tom Mihaljevic, the current CEO of the Cleveland Clinic. Outstanding individuals, clearly have domain relevant to the future of GE, we're excited to have them joining us to really set us up for the path that we're on.

And finally, with respect to capital allocation, we know that we've got a lot in front of us now, in many respects, what we couldn't envision even a couple of years ago. But as we look forward, each of these 3 Boards is going to have a wealth of capital allocation options in front of them. You saw the buyback authorization we put in place on Sunday but one in the near term, but each of these 3 Boards will tailor the capital allocation strategies to the businesses appropriate to those opportunities and those outlooks. So, we're excited about that.

But let's get to it. I want to get the CEOs up here. We're going to go in this order. We'll start with Healthcare. We'll talk to Energy and then Aviation. I think the Healthcare algorithm, we've talked about mid-single-digit growth. Rest assured that doesn't satisfy Pete. I'm excited about that. Continuing to drive margin expansion, and we think we can get in that high teens 20% range. We should be able to do that with excellent cash conversion. You've seen the team demonstrate that the last couple of years.

We wanted to begin to frame up, though, what is that algorithm for both Energy and for Aviation. As you can see on the slide, Energy may well be a lower growth business but tremendous opportunity for continued margin expansion particularly in Renewables. That will take a little bit of time. Scott will take you through that. But we think this can be a high single-digit business with strong cash conversion.

And Aviation, we know is on the cusp, but not only a post-COVID recovery but an OEM ramp with our major airframe customers that we're excited to support and see through. This is the business, clearly, that should be a mid-single-digit grower, probably higher in the near term. John will take you through that, with excellent margin potential here as well. And as you'll see at Tim's facility later in the day, an opportunity to convert that in a high-quality, strong cash flow performance way.

So, with that, I appreciate everybody again joining us today. We hope we'll make this trip worthwhile to you. And without further ado, Pete Arduini.

Peter J. Arduini ***GE Healthcare - CEO***

Thanks, Larry. Good morning, everybody. What a great kickoff. It's great to be here in Greenville and an opportunity to talk about Healthcare, our business, the opportunities we have for growth. I think some of you that were here got a chance to see the showcase and some of the cool toys that we have up there make a difference for clinicians every day. I've got a few members of my team. I'll introduce them in a second as we get to that slide.

So, some of you may know that I was with GE Healthcare for 15 years earlier in my career. I left and went to Baxter Healthcare, where I ran the Hospital business. And then for the last 11 years, I was running a public company called Integra LifeSciences, which is an interventional therapeutic-focused company. But look, I'm a healthcare guy and super excited to be back here at GE.

So, what have I been focused on? And you see in the chart here, these 4 areas, it's been 60 days in the role, looking at growth opportunities. What's our pipeline look like, what's our commercial structure look like, and seeing those kind of things that are out there. The other part is focus and fundamentals, Larry mentioned focus. What are we putting our time on, is it the right things. What's our capabilities, we have some really good skills, where are some things that customers are saying we need to do a little bit more effectively. So those are the fundamental areas and things that I've been focused on.

And then obviously, this last piece here about optimizing for speed and agility, it's a big deal. I came from a mid-cap company, and speed and agility were crucial for survival. And that focus is something that I want to continue to bring in our -- into GE Healthcare particularly using the lean toolkit to do that. And you see #4 up here, our bold path forward, spinning out, getting the right people in place, the right constructs so that in early '23 we can be ready to spin.

I'll just leave you this little anecdote. I mean I had a chance last fall to join John and the team at Lynn, at the Aviation facility, which is a super cool facility to begin with. But I did a week-long kaizen with the team before I started. And it was my vacation week that I went, and it was just a great week to really see the power of lean, both for customers but for our folks on the floor and just the range of effect, as Larry mentioned, on culture.

So, let's -- we'll jump in a little bit further here relative to markets and things. So, what we are focused on at GE Healthcare is to be an innovator in enabling personalized care. And I'll talk more about what that means, precision health. This integration of clinical data, the integration of the patient journey as well as the devices is what this really comes down to. And if you think about precision health, all of us are slightly different, right? What may be a cure for you could actually be an effect negatively for me. And so how do we determine that? With genomics data, better imaging and the convergence of that. That's all great stuff. And you're going to hear more about our impact on that capability.

So, look, on the -- what we focus on from a purpose standpoint is really improving lives in the moments that matter, both for patients but also caregivers on this journey. And our market has multiple needs, but these are 3 of the big ones. Efficiency is a huge deal around the world. I think, obviously, we all know the labor challenges that have been in the marketplace. I was just out with 3 CEOs of big systems out in the United States, and one of the #1 things is somewhere between 15% and 20% turnover in their core staff. And so what can you guys do to help us with productivity? And you'll hear more of the focus that we have there.

Improved outcomes. Obviously, we're in the business of helping people be healed, what can we do with our devices and technologies to help the caregivers?

And digitization. So much data explosion, what role we can play in getting the right data at the right time? All of that while providing better access to patients as well as doing it in a sustainable way. That's really what we're broadly focused on here.

So, look, our messages today are really threefold, as you can see here on the page. First is about a strong global franchise. This is a great business. I love this business, grow up it -- when I grew up in it. I love it even more coming back to it. I'll talk about our numbers, about the scale of this business. But we are at the middle of this precision healthcare capability. And we're one of the very few companies that has the reach and capability to make that difference. That's what's super cool about us. So you're going to hear more about that.

Secondly, is driving operational excellence using lean. This focus on safety, quality, delivery and cost resonates. It makes a difference for our customer satisfaction focus and also delivers to the bottom line.

And third is obviously the spin. But the key about the spin is I view it really as a once-in-a-lifetime opportunity to take a 100-year-old company that has all this great capability and optimize it to be a faster, more agile company that results in better growth and also results in better profitability. That's really our opportunity that's out there.

So look, we've got a bunch of our Healthcare leaders here. Some are going to be presenting, that are up here, but I also have some others spread out here. I'll quickly introduce.

So, Larry mentioned this, we're setting up our structure to move less matrix and index more towards P&L. Why? Because it drives accountability. And in most of our businesses as well, they're very scientifically and clinically focused. So aligning from that customer back can make a big difference.

So let me just quickly introduce, you'll see on the chart here, Jan Makela. Jan, stick your hand up. You guys, Jan's in the back of the room. Roland Rott, who's leading our Ultrasound business; Tom Westrick, I think Tom's in the back, leads our Life Care Solutions business; Kevin O'Neill as well, Pharmaceutical Diagnostics; Catherine Estrampes, who's President of our United States and Canada business; Yihao, you'll meet on video here shortly, who runs China; Helmut is our Chief Financial Officer; Betty Larson, Chief People Officer, here's Betty; and also Frank Jimenez, who is our General Counsel. And as Larry mentioned, both Frank and Betty joined from public positions just 1 week and 2 weeks ago. Also on the chart are Rob and Elie at Intercon and EMEA. We left them back to keep selling while we're here in Greenville. So look, energized team, we're really focused on making a difference for patients, customers and obviously, ultimately, for our shareholders.

So a little bit about GE by the numbers that I mentioned about. We touch 1 billion patients a year with 48,000 employees and really around 2 billion procedures. So it's quite a large reach into the health system around the world. 4 million-plus pieces of installed base equipment, and we'll talk more about the makeup of some of that. 4 business units that I'll go through here shortly, and we spent about $1 billion in overall R&D. $18 billion in revenue of the company is, and 50% of that is fundamentally services or reoccurring revenue, which is going to be a continued focus for us as we move more and more into the digital space. 55% of our revenue comes from outside the U.S., so it's quite a diversified global base. And you can see our margins here in '21 were at 16.7%. We started '22 with strong demand supported by a strong market. And we see that continuing again as the pickup here in precision health continues to drive the need for, in many cases today, more imaging.

So I'll touch on a little bit of the highlights for '21. And some of the reasons that our demand remains stronger, some of the products that you see up on this page and some of the products that came out just the year before. We've had actually a really nice lift in R&D investment over the last couple of years, and the result are some of these leading products that come out.

So obviously, for folks on the webcast, you haven't seen all these. Some people in the room had. Everything from our Vscan Air, first handheld tetherless ultrasound unit; our SIGNA Hero, which is the 3T low-helium consumption magnet. And there's an assortment of applications that have been enhanced either for productivity or better clinical outcome using artificial intelligence and machine learning. And we have a platform called Edison you're going to hear more about. It's a really important component of how we see changing the game and baseline of imaging. In many cases, the imaging of just 5 years ago is completely being viewed differently with artificial intelligence tools.

And then we've done some big refreshes. This Revolution Apex that's up here on the CT scanners, a completely new platform redo that really allows scalability from a mid-tier all the way to a premium to upgrade ability to future capabilities, which is super cool. And I'll just point out one other one on there, StarGuide. You may hear the term Theranostics, which is an up-and-coming therapeutic approach to use a radioactive tracer to go to a cell and zap it. And you need to know how well it works and how you track it. That's really one of the only key devices in the world that does that effectively. We just launched that this year.

And then you're going to hear about a couple of acquisitions and partnerships we did. Zionexa is a biomarker company, great fit for our plays with AI. And then BK Medical, our interventional ultrasound product Roland is going to speak to in a few minutes.

So look, one of the things just quickly on this convergence around precision care. If you look at this triangle here, this is what's happening, and you feel it but you probably don't see it every day when you're involved in the healthcare system, there's just this integration of imaging and data. I mean how many people out here have done a 23andMe or something like that, that have done any type of data on your genomic data. That's going to become more and more a part of how your doctor makes a diagnosis with the images that we take, with other types of capabilities. And so that's great. That drives personalization, but it also drives this explosion of data.

Same thing is happening on the therapy side. There are very few cases where someone says take this pill and you're cured or this one surgery. It's usually a combination of things. And same thing with the follow-up in monitoring, particularly around chronic disease. And so we play a critical role in that. This convergence is where GE really can make a significant difference in the convergence of these devices but also kind of lassoing around this data to take all these disparate pieces of data and bring them back in insightful ways that your clinician can make the best decision for you. That's really what the hope is of precision health and really one of the reasons that we're all excited about this journey going forward.

So what do we do? So we are a top player in all the markets that we compete today. Here's our 4 segments that are listed up here today: Imaging, Ultrasound, Life Care Solutions and Pharma Diagnostics. Imaging covers the wide gamut of things from MRIs to CAT scans, to women's health, to interventional cardiology. A $23 billion equipment market, we have $10 billion in sales of equipment and service.

You see our Ultrasound business. Roland will go through this in a little bit more detail, $3 billion sales for us today.

Life Care, which is a composite of critical care things. The anesthesia machine that's used in every surgery, monitors throughout the hospital, million-plus-sized installed base, EKG systems, we are a leader in those areas, and that's about a $3 billion in revenue business as well.

And then our Pharmaceutical and Diagnostics business, which is the contrast agent used to inject in someone to get a better image, we are a leader in that area as well as a growing leader in molecular imaging. So the agents to actually track and diagnose Parkinson's disease or the biomarker amyloid beta plaque to actually diagnose Alzheimer's, we have those products as well. And that will be a growing business for us.

Down below, you see these products that run horizontally. So we have a very big service operation, probably one of the largest on-the-ground service organizations throughout the world. That's about a $6 billion revenue generator, really a strategic asset for us on how we can maintain and manage uptime and remote fix. And then we have our digital enterprise business I'll talk more about, but that's about $1 billion in revenue. And this is software sales. It's a host of other products that are involved in there around this digital arena. All these come together then around these care pathways. We look at cardiology all the way through how these devices connect. We think of oncology, how they connect. And that tying together, again, is a critical part of our future.

So let's flip forward here. And I'll just want to talk about -- I had mentioned lean when I opened. I mentioned about my Aviation experience and stuff and how foundational it is to driving growth and capabilities with customers. It may not sound that intuitive, but when you think about safety, there's obviously safety for our employees, but patient safety in my world is everything as well. And a focus on safety, a focus on quality, mission-critical products that cannot break when you're in an operating room. Delivery, can I get them at the right time when I need them and the right cost with all these dynamic markets around the world. So I want you to hear just a quick example from Ralston Baker, who's our lean leader in Ultrasound, talk about a recent project.

Ralston Baker ***GE Healthcare - Ultrasound Lean Leader***

My name is Ralston Baker, the lean leader for our Ultrasound business. We believe that world-class product availability and on-time delivery are key drivers of profitable growth. Our journey started 2 years ago by addressing urgent needs within the 4 walls of our sites. One example of this was the transition from push to pull replenishment on our probes, a key component driving missed deliveries. This approach delivered the throughput and speed required to go from 3 to 5 inventory turns over a 2-year time frame.

In addition, we laid the foundation needed to carry us into the future, establishing lean fundamentals and expanding our lean IQ. But we are not done. As we continue our lean journey, we are now taking a more holistic wing-to-wing approach. We are getting closer to our customers and getting our suppliers close to us. This results in a better customer experience, improved inventory performance and a more resilient supply chain. This focus on our customer and the systematic elimination of waste results in a win-win.

Peter J. Arduini ***GE Healthcare - CEO***

Thanks, Ralston. And so look, for us in Healthcare, this is really just the beginning. We've got many, many projects throughout the company. But when we talk about optimization to drive 17% to 20% margins, this is a huge part of that toolkit.

So look, before I hand the microphone over to Helmut to talk a little bit more about -- I want to talk a little bit more about our long-term outlook. And first, starting with we are focused on being a mid-single-digit grower. Do I think there's upside down through the road? Yes, I do. But I think as our core markets are maturing, growing as we enter into other markets, this is critically a focus area for us, is being able to be a mid-single-digit grower. And we have some good dynamics that are happening in the marketplace today.

The other part here is this pathway to 17% to 20%. And so we see the benefits of lean being a separate organization and, again, really optimize the business around the customer, particularly this focus in individual businesses. And I think you'll get more of a feel of that as we walk through some of the presentations here this morning.

So with that, I'll hand the microphone -- or excuse me, the clicker over to Helmut. Helmut joined us just a year ago from Midea, a publicly traded company. Helmut?

Helmut Zodl ***GE Healthcare Inc. - CFO***

Thank you, Pete, and good morning, everyone. It's great to be here, and I'm super excited to talk to you about the opportunity ahead for Healthcare.

The market fundamentals are strong with need for better patient outcomes, improved productivity and digitalization of healthcare. Precision health is really coming to life. You see on this page our financial model and our outlook for 2022. We expect to grow our margins low to mid-single digits, improve our operating profit 25 to 75 basis points, and our cash flow conversion will continue to be above 100%.

I'm going to take you through now each of those 3 components in a little bit more detail. We see positive market dynamics in -- on revenue driven by mostly investment both from the public and private sector as well as implementations that we are seeing from our customers. We continue to invest in R&D and technology. And you see some great examples in our showcase up today this morning. We're moving from traditional imaging offerings into therapy and surgery solutions, which is really exciting. About 50% of our revenues are recurring from traditional services offerings to solutions in the digital applications as well as contrast media and consumables. Our order backlog and order book is strong. We expect to grow our revenue by low to mid-single digits in 2022 and mid-single digits in 2023.

Let me move to gross profit margin performance. Lean is a key enabler for our productivity, and we will continue to use lean as a tool to optimize our footprint and portfolio. Pricing discipline is very critical in the current market environment as well as inflationary management that we are managing very, very tightly. We will continue to do tuck-in M&A acquisitions where it makes sense. And you've seen the examples of BK Medical and Zionexa earlier today. We expect to expand our gross profit margins by 25 to 75 basis points both in 2022 and in 2023. And you can see the range of outcomes here on this page. Majority of the margin expansion in 2022 is going to come in the second half of this year. And for 2023, I want to caveat these numbers here are excluding any public company costs.

Our capital allocation is very, very simple. First and foremost, we expect to be investment grade on the day of our spin. And we will continue to improve that investment-grade rating as we go forward. We will continue to invest back into the business with a high focus on ROI and productivity. Working capital management is very critical as we improve our cash collections, our inventory performance and our supply management. We expect our cash flow to be up both in 2022 as well as in 2023 with more than 100% conversion. And we've delivered on that conversion over the last couple of years.

If I go into the spin update on the next page, we have a small project team working fully dedicated on the spin, but the majority of our teams are working 100% executing our day-to-day business. We've laid out a couple of key milestones, as you can see on this page here, from the operating model, the corporate governance, branding as well as the capital structure. And we will share more of those decisions as we go throughout the year as we prepare for the spin.

We'll transform where it makes sense, but we will also make sure there is strong continuity as we execute this spin. I'm very confident that as we execute the spin, deliver on our financial model, we will become a faster, more focused healthcare company that is driving better outcomes for patients and customers.

With that said, let me hand over to Roland Rott, our CEO of our Ultrasound business. Roland will talk to you about what's happening in Ultrasound. Roland?

Roland Rott ***GE Healthcare - CEO of GE Ultrasound***

Thank you, Helmut. Good morning. I'm really pleased to talk to you about GE's Ultrasound business today. I'm 11 years with GE Healthcare. I have been in the software industry before.

Now ultrasound is a fascinating technology for Healthcare because it allows us, it allows physicians to look inside the body in real time without ionizing radiation by just emitting sound waves, right? And we have visual insights which can help to understand the condition of the patient. This is a very cost-effective method. And for this reason, ultrasound has been over several decades developed from cardiology and women's health into many new and additional care areas.

That's the reason also why the ultrasound market is a very consistent, resilient growing market, $7 billion market in 2021. And we expect it to keep growing in mid-single digits towards '24.

Our Ultrasound business in GE Healthcare is actually in a strong leading position today, but we have been a pioneer and an innovator for a long time. We have actually been the company who introduced the first high resolution 4D ultrasound system for women's health and fetal health. Maybe the parents amongst you will recognize that, Voluson. We have also been amongst the first companies to introduce artificial intelligence in the ultrasound workflow to make ultrasound more efficient and easier to use for our users.

So we have become a highly respected player in this field, and we serve customers in dedicated clinical segments. You see these different segments here, radiology, women's health, cardiology, point of care and primary care. In all these 5 segments, we have very distinct, different customers, customer needs. And for that reason, we have dedicated teams and research development but also in the go-to-market side with dedicated channels because the understanding of the deep expertise of a cardiologist is very different than of a gynecologist. So that's truly an advantage we have.

Now in quarter 4, we were excited to close the acquisition of BK Medical because with BK Medical, we actually now approach the operating room. BK Medical has developed very innovative, real-time surgical guidance solutions. And such solutions now, in combination with our diagnostic ultrasound portfolio, allow us to have a complete range from screening to diagnosing, to supporting treatment of certain diseases. Now this entire portfolio is enriched by a digital platform, Edison, Pete mentioned. Edison allows us to bring artificial intelligence to these devices as well as other applications, make the devices smarter and make the users more efficient using them.

Now let me give you 2 examples of the fastest-growing areas of Ultrasound today. First of all, Vscan Air and handheld ultrasound. So handheld ultrasound is the fastest-growing market in ultrasound. Why? Because the way how care is provided in our world has changed, not the least through COVID. It's not only taking place in the 4 walls of the hospital, but it pretty much can go anywhere, even including the home. So, we have just launched last year a device, I have it here. it's called Vscan Air, a wireless handheld ultrasound device which a physician can literally pair with their smartphone and take to any place. It's a whole-body ultrasound system which allow us to immediately get instant insights. So, this category of device, handheld ultrasound, has the potential to truly transform healthcare and actually go to the point of care wherever that may reside.

A second example here I have obviously to talk about is really BK Medical. So, BK Medical we welcomed in Q4, and it is really our entry into the operating room. BK is highly complementary as an acquisition because we have not had significant presence in this space before. What BK did is focused ultrasound for surgeons, so assisting surgeons with real-time navigation during operations. The BK team has focused these innovations on specific procedures like neurosurgery, general surgery, urology. And in these areas, there is a lot of minimally invasive and robotic surgery taking place. All these areas are fast-growing categories in healthcare where we did not have a presence in before.

So, in summary. We couldn't be more excited at GE Healthcare to keep growing the impact of ultrasound in Healthcare and further transform Healthcare towards precision health. Thank you very much. And with that, I hand it further to Catherine Estrampes, our CEO of U.S. and Canada.

Catherine Estrampes ***GE Healthcare Inc. - CEO of U.S. & Canada***

Thank you, Roland, and good morning. I'm very happy to be here today to talk about our region's structure and capabilities.

And you heard GE Healthcare is undoubtedly a trusted partner of customers around the globe. And you heard Peter talk about the vast installed base that we have, which is served by approximately 1,500 channel partners but also 48,000 employees, 10,000 of them which are commercial people, another 8,000 of them servicing the technology, as you can see on the right of the screen here. We also have a global infrastructure, which allows us to serve our customers where, when, and how they want it with 41 manufacturing sites and 20 R&D centers around the world. And then finally, our reputation is solidly rooted into a leadership position in solutions and technology, whether it is Imaging, Ultrasound, Life Care Solutions, Digital or PDx.

Four regions, as you can see on the screen, I will quickly walk you through the growth and the revenue in 2021. And please note that those numbers include Healthcare Solutions and PDX. U.S. and Canada is the largest revenue producing region with approximately $7 billion and a mid-single-digit growth in '21, excluding our ventilation partnership with Ford. EMEA delivered $5 billion. China delivered approximately $3 billion with a double-digit growth. And Intercontinental, which is our newly formed region, delivered approximately $3 billion with a high single-digit growth in 2021.

Let's shift now to how we serve the growing needs of our customers with our commercial and service structure. While the combination of our global scale, global platform, our local market expertise and our in-depth extensive commercial capabilities actually allow us to serve our customers in all delivery settings, as you can see on the screen in the middle. And specifically, we start from understanding and listening to their needs, their challenges, their opportunities, balancing the horizontal value delivery with deep domain expertise.

If you think about horizontally, our account executives and our enterprise sales team actually co-create with C-suites and with head of departments, solutions to address efficiencies, digitization and improving outcomes, which are key, key challenges in the industry today while, at the same time, and you heard Roland talk about it, our dedicated product sales specialists bring to bear their technical and clinical expertise to support our customers. And obviously, throughout the life cycle of the equipment, our field service engineers and our clinical application specialists constantly engage.

Why is this important? This is important for 2 critical things. Number one, it allows us to deliver and to add value across all departments and think about some of the care areas that Peter talked about, oncology, cardiology, women's health, all critical to precision health. Number two, it allows us to really deepen and create and deepen long-term value partnerships to solve around improving outcomes.

A great example of that is HCA, which is a 25-year partner of ours and one of the largest healthcare service providers in the United States. Next, you will hear from Marty Paslick, the CIO of HCA, who will share his thoughts. And this will be followed by Yihao Zhang, who is our CEO for GE Healthcare China. Thank you.

P. Martin Paslick ***HCA Healthcare - CIO***

Above all else, we are committed to the care and improvement of human life. Hello, my name is Marty Paslick. I am the CIO of HCA Healthcare. And that is the mission of our company. It's important for us to find partners to help us achieve that mission especially in technology, and GE Healthcare has helped us over the last several years to be more innovative and to care for our patients in a more efficient and effective way.

We've worked with GE Healthcare on a number of innovative platforms over the last several years. I'd like to highlight 3 of them. The first is the GE Command Center. The center enabled us to create tiles and specifically tiles to highlight COVID statistics so that we could better care for that population within our hospitals.

The second innovation that we've worked with GE Healthcare on is called Mural. And it is a technology that further digitizes how we care for mothers and their children.

And then the final one is a product called Heart. And it is a product that we use to improve the digital telemetry for our patients. It enables us -- instead of using voice calls and using dashboards, it enables us to send alerting directly to a nurse's phone in order to take prompt action. As we continue to pursue the mission of our company, GE Healthcare will continue to be a key partner of ours as we look for more innovative and transformational types of technologies.

Yihao Zhang ***GE Healthcare Inc. - CEO of GE Healthcare China***

Thanks, Catherine, and I am pleased to be part of this important event. This is Yihao from China. I've been in the healthcare business for more than 12 years, with GE Healthcare for almost 3 years.

GE Healthcare China is one of the most successful med-tech health care companies. We have $2.7 billion sales revenue with double-digit growth in 2021. We also have a growing installed base, an important competitive advantage that we have, bringing more value to our customers over the product life cycle. We are also a market share leader in CT, MI, PET/MR, ultrasound and media contrast.

Today, GE Healthcare China has approximately 7,000 employees, 5 manufacturing plants and R&D team of approximately 1,200 engineers developing innovative products, not just for China market but also for the world. We have manufacturing in China for more than 30 years. 47% of the product we sold in China last year are locally manufactured.

China is among the fast growth market with forecasted double-digit growth in healthcare spending. And China healthcare market is also very dynamic. Aging population, urbanization and rise of key disease driving the future demand.

Meanwhile, Chinese government had made a great effort in expanding access to quality and affordable healthcare through policy enforcement such as country-level hospital upgrade, specifying the localization requirement, and the volume-based purchasing. We believe our accelerated localization approach will allow us to continue to capture the growth opportunity in China. Our local-made strategy with our agile supply chain will enable us to meet local policy requirements quickly.

For example, after the new localization requirement policy came out in May, we had already launched local-made premium ultrasound last month. This enabled us to better compete locally.

Our local innovation strategy. We innovate and deliver solutions tailored to the specific need of China. For example, China engineering team innovated Revolution Maxima CT can improve scanning efficiency. This innovation played an important role in China fighting against COVID-19.

Finally, our local partnership is helping us build a China diagnosis plus therapy plus digital ecosystem. For example, we partnered and invested in local digital start-up to provide a mammo AI solution for breast cancer, which enable unskilled county-level doctor to screen 4,000 patients within 3 months. We believe GE Healthcare China is best positioned to meet the local policy, serve local customers and local patients, and successfully grow our business in China.

Now I will hand the presentation back to Peter. Thank you.

Peter J. Arduini ***GE Healthcare - CEO***

Thanks, Yihao.

So hopefully, you've now had a chance obviously to see some of the team. So, from Helmut and Catherine and Roland and Yihao, and you're as excited as we are. I think we've just got a really great opportunity in front of us here. We've got a great team coming together as well.

And I'd like to wrap up on a thread that you've been hearing throughout the presentation, which is on Digital. We think Digital is a critical component really of tying together the capabilities of digital health.

So, look, the first piece is you heard the term Edison. What is Edison? Really, it's a data aggregation platform that integrates artificial intelligence. And these are really the 4 things that it does. It's what's called a data fabric platform. Some of you might think of it as kind of an operating layer but allows us to connect once fundamentally into the customers' backbone of their data. Two, it's an artificial intelligence, machine learning engine that has an orchestrator tool that enables you to implement different algorithms and such around it.

Three, it's a development platform. So, for our engineers, not just in our digital group but in all the businesses to develop applications that work on it, and we're creating this as an ecosystem that emerging companies and partners can develop on. We want to create a marketplace of multi-vendor applications. And ultimately then, it's an enterprise data optimizer about how you bring the data together, how do you present these disparate data in different ways.

And so, look, the platform is designed to be hybrid deployed, could be in the cloud, it could be at your data farm. We're working through what's right for a customer. And we're focused on it being a SaaS model that we can deliver this as a services-based capability. And multi-vendor, that's critical. Most of our customers' ecosystems aren't 100% GE or 100% anyone else, and so how do you bring a solution that deals with that heterogeneity that they have in their installed base.

So that's the vision. So enough on vision. Let's talk about 2 products that we're actually shipping today. So, the first one here is a product in our MRI business called AIR Recon DL. And so, what Air Recon DL does was really not thought possible just a few years ago. We can take an older MRI scanner and with Air Recon DL and the Edison algorithms bring image quality up to state-of-the-art today and, at the same time, be able to make that magnet 50% faster, be able to put that many more patients through it. So, there's a great example of productivity as well as better clinical outcome.

And so, look, this was thought to be not even possible just a few years ago. And I think if you look up here in these images, this is what's called a coronal shot. This is someone's head with kind of a cut through this way. And the doctors look at the detail on these edges here. You can see with your eye just the difference in the image quality. So, this is kind of before/after, same magnet, only adding the Edison AI algorithm on it. And that's an image that's improved that way that can be faster.

Typically, in MRI, you had to choose one, do I want better image quality, or do I want better speed? And now this paradigm shift that we have with artificial intelligence changed all that. So, our magnets that have this, it's a significant difference.

You can see on some of the numbers here. We've scanned over 1 million patients on it, 600 sites around the world. We got lots more room to grow it. But I think it's a good example here of how we can change paradigms relative to this data platform. And so, I've had a great opportunity to talk to a lot of customers, some that have been our friends over the years, some not so much. And I've had folks say, hey, look, I've used some other folks' image quality, and you guys were maybe not my top pick. And with AIR Recon DL, I got to tell you, Pete, in neuro and the body, you guys have surpassed them.

And that's what we're looking at, what can we do to change the game? For those of you who might have heard of the Radiological Society of North America, big imaging show, this was one of the inventions that was viewed as one of the more innovative in '21. So, there's an example of Edison AI algorithm on a device.

So, let's talk a little bit more bigger picture. So how are we using it more broadly? You heard Marty from HCA talk about the Command Center and Catherine's presentation. And so currently, we have over 300 of these around the world and growing and evolving at different stages and sides. But what basically the Command Center is, it's a data aggregation engine. That's the part of Edison that's used to bring all these disparate sets of data together in actionable tiles or actionable views so that not retrospective analysis, you come in today, 5 nurses didn't show up and 10 more people came to the ED. What are you going to do about it?

So let me now have you hear from some of our customers that actually have it implemented.

(presentation)

Peter J. Arduini ***GE Healthcare - CEO***

So I'd like to thank all of our customers that contributed here. But you can see just the power of being able to have this capability to bring together data formats and structures in this way at an enterprise level, at a clinical level and even at a device. And so, we're super excited about this opportunity. We're still early in the journey with lots of directions to go. I'll emphasize again, as I mentioned earlier, our digital solutions business, including the Command Center software, our software advanced apps, that's about a $1 billion business today. And we expect that to grow double digits in the future, particularly with the enablement of the Edison platform.

And so, I'll wrap up here just quickly by saying, look, we're really excited about the opportunity we have in front of us. It's a fabulous franchise that touches so many lives in a positive way that we're all humbled by the opportunity to be able to take this out as a separate company. We've got a great strong franchise. Hopefully, you got a better feel for the depth and the layers that are -- that exist relative to the touch with customer.

We're driving performance with lean. It's real. The focus on safety, safety for our employees, patients, the quality, which is so critical in our world, delivery and getting it where -- and cost with these markets around the world that have so many different cost requirements.

And third is this focus on spin, both bottom and top line, the opportunity for tuck-ins, we're just super excited about that and think we've got a great opportunity in front of us.

So with that, thanks for your attention. Steve, let's take some questions.

QUESTIONS AND ANSWERS

Steven Eric Winoker ***General Electric Company - VP of IR***

Thanks, Pete. So, we have time for a few questions. I want to let everybody know on the webcast as well that given travel difficulties yesterday, as I mentioned in my e-mail this morning, I'll do my best to get to some of the e-mail questions, but we're going to give priority to those in the room.

So, with that, first question to Deane and Julian.

Deane Michael Dray ***RBC Capital Markets, Research Division - MD of Multi-Industry & Electrical Equipment & Analyst***

It's Deane Dray with RBC. Pete, I appreciate all the color this morning. A couple of questions. I'm not sure you have a specific number, but how much of software, just in terms of the value you bring today, how much is software, either stand-alone like Edison or embedded within the equipment, is in the business today?

And then a second question, I don't know if it's for you or for Helmut. But the -- when I see a big number like $1 billion in R&D, how is that measured? What constitutes success? And is any of that customer-funded?

Peter J. Arduini ***GE Healthcare - CEO***

Yes, I'll touch on both of those. Look, so for the first part, that $1 billion is primarily versions of digital or software. It's some version of a codified product, what's in there. And again, it could be running on a scanner that's a software application or it could be an application at the executive suite. What our opportunity is to move more of that towards a SaaS model, which is we have parts of it, some of that will come. And so that recurring revenue growth is a part of that. And it's a part of the enablement engine on Edison.

On your second one, it's a great question on R&D. Look, we've funded the business, my observation is at a quite healthy level particularly the last couple of years. And there's been a focus really in our metrics, specifically around vitality. And we've measured that as the percentage of revenues that are coming from new products we introduced in the last year. At least in Healthcare, that's our metric, and that runs around 30%.

But part of what we're looking at is, again, not necessarily the percentage of growth of R&D but the returns on it and where we're putting our bet. And you can imagine on that portfolio, there's some stuff that can grow really well at 3% of sales and other stuff needs to be 10%. The real goal is how do we optimize in that area. And we're starting and having more and more, I would say, formal tough rack and stack discussions, right? This money to Tom versus the money to Roland, where is the best place to put it to the highest return? And that's really what we're all about, how do we get the best return out of it.

Steven Eric Winoker ***General Electric Company - VP of IR***

Julian?

Julian C.H. Mitchell ***Barclays Bank PLC, Research Division - Research Analyst***

Julian Mitchell at Barclays. Maybe 2 questions. One is just around pricing in the long term. There's often the perception that imaging in particular has quite tough pricing dynamics. So maybe help us understand kind of segment-wide at Healthcare what the pricing looks like sort of right now and medium term.

And then secondly, the spin is coming up quite soon. The financial numbers for 2023 that were laid out were sort of ex, I think, stand-up costs and the sort of central cost allocation. So I wondered if you could give us any color around how large those will be in 2023 just to make sure there's no kind of shock when that initial guidance for next year is provided.

Peter J. Arduini ***GE Healthcare - CEO***

Yes. I think on the last one, I think that's probably something we're going to give more clarity on a little bit later in the year as we think about what stand-up is and that overall cost. I mean we're still early innings on that work on our '23 departure.

But I would say back on the price question, look, this business and the industry has typically been down a couple of points every year, is what that's played out relative to -- and that's not that uncommon from other areas within med tech. What we've been doing is taking a look at areas where you can change the game relative to value for the customer and not doing cost-plus pricing but value.

So just take my AIR Recon DL example. If I can increase your throughput by 50%, you're down 15%, 20% in resources to run your scans. Would you pay more of a premium price for that product? Answer is yes. And so, we're going product by product through our business and taking a look at what we can do to be able to get more value and balance that, obviously, with our customers' needs, which are tough as well.

I would say the other aspect is the more we move closer and connect a diagnostic and therapeutic to drive a better outcome so that you can get productivity but also better outcome, you typically can get more value from that.

And so, case in point, the Ultrasound business, the BK product that's used in interventional has a higher growth profile and also has a higher margin profile. And so, we're looking across our whole portfolio, and we've been taking price where it makes sense and being smart about thinking strategically going forward how we change that.

The last point would be, obviously, with Edison, the more we can have digital integration, not only are the margins on software more than equipment, but that linkage to create value is really what we're looking for.

Steven Eric Winoker ***General Electric Company - VP of IR***

So we have -- I have an e-mail question in from Jeff Sprague, and this question is on the financial side. Why is Healthcare profit potentially down in '23 $3 billion to $4 billion versus the $3.1 billion to $3.3 billion this year?

Peter J. Arduini ***GE Healthcare - CEO***

Well, I mean, look, I think we're coming out of COVID still. I think as you all know, it's great that we're maskless now. But if we just remember back a few months, there was a lot of pressure in the beginning of the year, which actually had our recoveries which are more back-end loaded. I think that's some of it. And then obviously, some of the material pressure that's out there. So, we've been heavily focused on the future of how inflation looks within the business. Teams did a great job, before I got here getting ahead of this on looking at reengineering opportunities, over 5,000 components we started on, I think, back in 2020, early 2020. And so, with that, being able to create dual source and opportunities to do that. But it's a combination of that ramp-up and then offsetting that. And then our third lever, which we feel pretty good about, is being able to get a little bit of price here in '22 to offset some of that.

Steven Eric Winoker ***General Electric Company - VP of IR***

Thanks, Pete. We'll take a quick question from Joshua Pokrzywinski.

Joshua Charles Pokrzywinski ***Morgan Stanley, Research Division - Equity Analyst***

Pete, just to kind of tie in to what Julian was asking around pricing power, obviously, your healthcare customers have a lot of balls up in the air right now. How much of the portfolio would you say is something that they can look at as being sort of a purchase that has a return that lowers their operating cost, has some sort of patient outcome versus something more tied to like budget or capacity growth? Sort of gets to your point of like what's helping them versus what's just kind of more [iron sitting around], like what do you think that mix is today in the portfolio? And what do you think that mix could look like in a few years as you guys ramp up some of these investments?

Peter J. Arduini ***GE Healthcare - CEO***

Yes, it's a good question. And I don't know if I have a specific percentage for you, but I would say just even take the imaging world, in many cases, a CT or an MR is kind of the core manufacturing equipment in a hospital, right? If you don't -- if your imaging equipment is down, there isn't a lot you can do. So, it is a big productivity enabler.

And we've seen, actually during COVID, changes. So, meaning that we used to do this with you, but because we don't want to really interact with a COVID patient right away, we don't know. Let's actually move you to a higher sophisticated imaging piece of equipment like a CT scanner and actually get most of those answers.

And so, we think that a higher percentage of our portfolio hits in that range. I would say the thing that keeps making it more value is it's not just device by device, it's how does this device that you capture that image lead into this therapeutic planning, lead into this kind of outcome? And the more that's connected, we can create more value, we can ask for more price because we're going to deliver more value for the customer.

Steven Eric Winoker ***General Electric Company - VP of IR***

Thanks. Thanks, Pete. Thanks, everybody. Larry, if you have any comments.

PRESENTATION

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Thank you.

Peter J. Arduini ***GE Healthcare - CEO***

Thank you.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Team, thank you. Very well done. Yes, I would just very quickly, before we transition over to Scott, we talked at the outset about the customer. Obviously, the customer takes many forms in healthcare. But I hope you saw the thread, whether it's HCA, right, the neurosurgeon, let alone Pete's comments about safety and patient safety, particularly at the outset, and that's running strongly across this business. And I think I'm well convinced and Pete's done a very nice job reinforcing this on a daily basis. When we talk about profitable growth, there's a lot that goes into this. But that focus on the customer in all forms really is going to be, I think, the key ingredient to seeing a step-up in growth -- organic growth in this business.

So with that, we're going to transition. And Scott Strazik, who runs Renewable Energy and Power, is going to take you through the update on that business along with this team, who I see gathering.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Thanks, Larry. We're going to spend the next 50 minutes or so having a conversation on the incredible opportunity we have in front of us as we integrate the Power, Renewable, and Digital businesses together into one company, well positioned to lead in the energy transition with our customers and for our shareholders.

A few macro themes on the first page. The world is going to electrify. Whether it be automobiles, home heating, demand for electricity is going to grow by 50% over the next 2 decades. But what that really does is pushes the challenge and opportunity to the power sector that today generates 13 of the 34 man-made gigatons of carbon to simultaneously decarbonize. Those 2 macro themes, the electrification of the world with the need to decarbonize the power sector are at the heart of the energy trilemma that this company intends to lead on, both in protecting for the reliability of the existing system while simultaneously decarbonizing it and providing economic solutions the world can afford.

If we shift to the next page on key business themes. The Power businesses are on track. This is a set of businesses that are going to generate substantial cash flow for this company for a long time.

The Renewables businesses are in a different place. This is a self-help story with a set of businesses that we know the playbook to run and to fix in markets that really matter. And as we do those 2 things, continue to drive the accelerated improvement in Power, fix the Renewables businesses, we will have the capacity to invest with conviction in these businesses for the long term to lead in the energy transition.

If we shift from here, as much as our leadership team is focused on leading in the future, we have an incredible foundation to build upon today. 1/3 of the world's electricity has powered our equipment today. 52,000 wind turbines, 7,000 gas turbines, over $100 billion in backlog, very solid baseline to build from, but we also know that every day and every year, we just need to build upon that.

So if you look at the next page, 2021 was another one of those years in which we have appreciation for the confidence the customers have given us, pride to what our teams in the field have done as we had a number of significant wins, whether it be the growth of our Haliade-X offshore wind turbine backlog to having our aeroderivative book and gas orders growth almost 5x relative to the prior 2 years, to significant strategic wins. Our HA portfolio hit 1 million operating hours last year, to our Opus One acquisition in Grid Software, to strategic wins like with Ontario Power Generation launching our small modular reactor in Canada, another technology we're incredibly excited about.

If we shift from here, I wanted to take a minute and just frame up these businesses as I think about them in the context of the energy transition today. And that really starts with conventional power, gas, steam, nuclear, hydro. These technologies today generate 85% of the world's electricity, more humble growth but clear businesses that are going to generate substantial cash flow for us for a very long time.

Wind. The world is going to add 1,000 gigawatts of wind capacity in the next decade, more than doubling the wind in the world today. We are very well positioned in both onshore and offshore to play a leadership role in both segments.

Electrification. In this case, we're talking about Power Conversion, Grid Solutions, our Digital businesses that integrate together the growth in renewables and the reliability of conventional power.

If we shift to the long-term view of the financial construct of the combined businesses together, Renewables and Power, we see top line growth low single digits, in line with electricity generation growth, a view over the long term that these businesses should be capable of generating high single-digit margins. But before we get to that, we look at 2024 in a marker of getting to mid-single-digit margins with the foundation being gas -- GE Power delivering high single-digit margins in '23 and the road map we'll walk through on the subsequent pages of Renewables improving this year on a pathway to profitability by '24, all while simultaneously generating 80% to 90% free cash flow investing in decarbonization and growth.

Power financials. And I want to just take a step back and triangulate to what Larry framed up in the beginning with the Russia dynamic representing about less than 2% of revenue at a company level. In our Power financials, Russia represents somewhere between 3% and 4% of our revenue. A lot of dynamic items we're working our way through right now, frankly, much more focused on our 5,000 employees in or around the area and something we're going to stay close to as we continue to understand what we can and what we can't do in fulfillment but wanted to frame up that 3% to 4% of revenue as it relates to Russia.

As we think about these businesses, there is a lot to like today with the GE Power businesses. If we go about it one by one: Gas Power. This is a business very well positioned to grow earnings and cash flow in '22 and delivered double-digit margins in '23 on the strength of the services book and continued Aero growth.

Steam. This is a business on the other side of working down our new unit coal backlog and completing our transaction with EDF that we like. It's a much smaller business. It will be a $1 billion business.

Services. That by the time we get to 2024, there's no reason why it isn't yielding double-digit margins.

Power Conversion. This is a business this year that's going to generate high single-digit revenue growth, mid-single-digit margins.

And our Nuclear Fuels business, the smallest of the 4 businesses, services business. But also, one that we're excited about with the small modular reactor and what that can represent for the future.

So, you put these businesses together, top line growth, low single digits, growing cash flow -- earnings and cash flow in '22, with a clear pathway to high single-digit margins in '23 and high single-digit free cash flow yield.

If you shift to Gas Power, this is a business that has improved its earnings over the last 3 years by $2 billion and its cash flow by almost $4 billion. But in that period of time, our revenue has been coming down each of the last 3 years as we've been remixing from a backlog with more complex projects to a backlog more heavily weighted in equipment-only book. This year is an inflection point in that regard. We feel like from '22 onwards, we can modestly grow the Gas Power business with the key dynamics being what you can see on the page.

It starts with the installed base. The reality is our gas turbine installed base is twice as large as the next closest peer. The chart represents our gas turbine utilization nominally growing over the last 18 months but also growing relative to gas electricity generation growth in the industry at large.

In the middle, one of the key enablers being our HA growth, this is an area of under appreciation for how important this part of this business is for the long term. We have 65 H's running today. We'll have approximately 100 by the end of the year and into early next year. This is a part of the business that in 2020 generated $300 million of services collections. But by mid-decade, that number will be $1 billion.

Aeroderivatives. It is hard to talk about the gas business today without talking about how important and strategic the Aeroderivative book is for us. This technology often in, call it, 75 to 150-megawatt blocks of power is the perfect complement to the renewables growth, fast ramping, capable of enabling even faster renewables integration as that perfect complement. The last 2 years, we've been shipping approximately 20 units. You can see in the chart that that's going to grow to north of 40 units, both this year, next year, with high confidence that, that will continue for years to come.

If we go to the next page, there's a lot of exciting things to see in Greenville in our visits during the course of the day. But if there's one thing I don't want you to miss, it's the live outage demonstration that we're doing on site. This is -- if I just take a step back and think about where we've been with Gas Power in the last 3 years, the first 18 months, '19, first half of '20, very foundational work, SQDC, structural cost, getting the foundation in place. By the summer of '20, we were starting to really lean into Hoshin breakthroughs, how do we really change the profitability curve of this business. And as a leadership team, we took a step back and said nothing will transform this business more. And if we could reduce our outage cycle time by 30% to 50%, that is our most intimate customer touch every day is our outages.

So we've been at it, working this, putting the operators at the center of how we achieve a 30% to 50% reduction in our outage cycle time. Some of that has been what could be perceived as simple solutions like keeping common core crews together for an entire outage season. Other things have been more sophisticated, and you'll see that today in the demonstration, where we've changed the crating and the boxing of our parts so that we've eliminated the laydown area. And it's set up now that it goes right from the truck to the turbine platform, to inserting different levels of technology for our operators to go from years in which they had 50-page manuals to operate the outages to iPads with visuals that are communicative and iterative with the operator over time to make it easier for them.

Huge opportunity for us, started last fall, 10 outages, 30% reduction in cycle time on the 10 outages we did last fall. We're going to do north of 100 outages this year and an incredible opportunity to transform this business, both leveraging lean in the field but also the principles of being able to nurture and take a step back and drive breakthroughs that over the long term impact the customer and the profit curve of this business.

So, with that, I'm going to share a video on live outage and then have Martin O'Neill, our Gas Power Strategy Leader, come up and talk about our pathway to decarbonize gas.

(presentation)

Martin O'Neill ***GE Gas Power - Head of Strategy***

Thanks very much, Scott. I just want to say hello to everyone, first of all.

I want to really talk about the importance of gas turbines in the energy transition and, in fact, as a destination technology. Through pre and post combustion, we need to decarbonize gas turbine assets for our customers. They're going to be a fundamental part of the energy landscape on the other side of the transition. In this decade of action, we're going to see more coal to gas switching. That's decarbonization in real terms. And we're going to see aeroderivative technologies being added to grids globally so that they can support the more accelerated and rapid addition of renewables technologies. Gas turbines operate in sync with transmission and distribution networks, they're the connective tissue that hold together grids and grid stability and resilience. And we really need to spend some more time on that narrative, understanding the interplay there with synchronous rotating assets and the massive installed base of gas turbines that we've built up over decades, 7,000 operating assets.

So how do we decarbonize? If we switch to the first slide, when Secretary Granholm was with us in our GE Research facility in Niskayuna, we showed this slide. And basically, when we think about post-combustion carbon capture and sequestration, the U.S. offers massive opportunity, 50 pipelines already existing, 4,500 miles of CO2 removal infrastructure. Here's where the strength of a large installed base plays to developing and scaling a carbon capture and sequestration market, whether IEA and the IPCC both agree that CCS technologies are going to account for at least 15% of all carbon removals in all net zero trajectories by 2050.

Hard-to-abate sectors like steel, like aluminum, like coal, like chemicals are going to need carbon capture and sequestration. And that means that this technology is going to scale, and it's going to be more economically viable to deploy on our gas turbine installed base so that we can harvest those characteristics that I talked about earlier.

We're investing here. We're doing real research work here. And we're winning FEED studies, front-end engineering design contracts on both sides of the Atlantic as we seed and scale this technology with new partnerships that we're building. We're very excited about this space, and we think that this is certainly an area that deserves much more debate.

If we think about precombustion then, on the next slide we move to a world of developing hydrogen economy and low carbon intensity fuels. The good news here again is the installed base is key. You have to decarbonize that installed base. It's the fundamental linchpin of operating grids globally. We've got 8 million hours operating with low carbon intensity fuels already in more than 100 machines around the world. We were doing hydrogen work with the DOE as far back as 2002. We've got embedded capability in our H-class turbines and our aeroderivatives, and we're going to continue to develop that.

We are going to decarbonize either through pre or post combustion for our customers. With an installed base that large, we have to lead in this space, and we will. And when you decarbonize gas turbine power generation, it is the relevant destination technology on the other side of the energy transition.

So thank you very much. Scott, I'll hand back to you.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Thank you, Martin. Now we're going to shift to a discussion on Renewables. And at the start, I wanted to just talk about some recent customer touch points in the market.

Two weeks ago, I was in Copenhagen with 2 of our largest offshore wind customers. Very hard to spend a couple of days there with them as they outline the map in the North Sea and the number of 10-gigawatt offshore farms they plan on building over the next decade and not have conviction that our offshore wind business is going to play a very important role in the energy transition.

Or 2 weeks before that, sitting with some of our largest U.S. developers in understanding the pipeline of zero-carbon PPAs they have in line primarily in the West Coast technology companies that create real demand and opportunity for our Onshore Wind business.

To sitting down with National Grid in the U.K. and looking at the map of massive grid infrastructure investments they have to make to modernize their grid for a massively changing power gen system.

We play in markets that matter, but simultaneously, we need to run these businesses better, and that starts with prioritization. We have teams that have a passion for the technology, for their customers, for their markets they play in.

We've got to focus better. We have businesses that are primarily equipment-based businesses that we need to size structurally for that reality. We have to underwrite to allow our teams to execute right the first time in the field. In all of those realities, both the market opportunity and those self-help dynamics are what drive the areas of focus on the right-hand side of the page. But rather than hit them 1 by 1 now, we're going to really go through those themes over the course of the subsequent pages. But what I want to really emphasize is, as you look at those key areas of focus, those are exactly the things we've been focused on in turning around Gas Power in the last 3 years. This is stuff we know how to do. This is stuff within our control, and that's exactly what we are going to do.

So, if we shift to the next page, it is hard to frame up the Renewables financials without starting by acknowledging in the last 3 years, the financial results of these businesses have been unacceptable, but also fixable. Unacceptable, but fixable.

And if you go through them 1 by 1 and start with Onshore Wind, the largest of the Renewables businesses. This is a business that's going to be down to unprofitable in '22 on a much smaller North America wind business. But when you look at the Onshore Wind business and project into '23, I see a clear business that will improve earnings in the international book by a couple of hundred million dollars by simply underwriting the book better, smarter pricing, simplification that's long underway that gives me high confidence that will happen in '23.

I see a business with structural cost with a couple of hundred million dollars of opportunities from '22 into '23 as we simplify the organization and position it for today's reality. And as we do those things and as the North America market normalizes, more likely into '23, with orders and liquidation of revenue into '24, there's no reason this business is in low single digits in '23 and then back in the mid-single digits in '24 and beyond.

Offshore Wind, different dynamic. This is a business that's been in an investment cycle. $500 million of revenue last year that's growing to $3 billion of revenue between now and '24. And as we drive that volume ramp, this is a business that will go for unprofitable to profitable between now and '24.

Grid Solutions. This is the business where we'll see the biggest earnings improvement '21 to '22 as we've already taken a substantial amount of structural cost out of this business, over 3,000 heads, with a much better backlog that's starting to liquidate to income with a clear pathway to breakeven to profitable in '23.

So, you put these businesses together and you have low single-digit revenue growth in '22 to mid-single-digit growth in '23, earnings and cash flow that will improve modestly in '22, more meaningfully in '23, and the pathway back to profitability in '24. We have substantial work ahead of us in these businesses, but this is work worth doing in markets with technology that the world needs to succeed, with the team with a conviction that we know we can do this.

If we shift to Offshore Wind, I've got to tell you, it is impossible to climb to the top of our Haliade-X prototype in Rotterdam and not have an incredible appreciation for the scale of this technology and the impact it's going to have in the world. This is in a market that you can see on the page that's growing substantially, 50 gigawatts or thereabout today that's going to grow to north of 150 gigawatts between now and the middle of the second half of the decade that we're well positioned to capture our fair share.

With key areas of focus, it starts with certification of the Haliade-X wind turbine this year, a clear focus on product cost. We're going to continue to invest in technology. A perfect example of that is with the superconducting generator that we're working on in partnership with the Department of Energy that's going to lead to the elimination of rare earths in the generator, 2 to 3 megawatts of more output, a lighter generator with lower cost.

And we're going to do all of this while navigating a huge commercial pipeline. We have north of $100 billion of pipeline today, north of 100 gigawatts of opportunity that we're going to navigate for our customers and shareholders.

So, with that, I'd like to introduce Pat Byrne, our Head of Onshore Wind; and then Philippe Piron, our leader of Power Conversion and Grid Solutions. But as we bridge there, we're going to show our next video.

(presentation)

Patrick J. Byrne ***GE Renewable Energy - CEO of Onshore Wind***

We are super proud of the work done at Western Spirit and really excited about the future with Mike and his team. I'm going to focus on improving the profitability of the Onshore Wind business, but just a moment on the wind industry, the onshore wind marketplace.

We believe this will continue to be a very important part of the renewable energy generation. We believe there's a mid-decade 50-gigawatt market opportunity outside of China. About 75% of that 50 gigawatts is international, about 25% is in North America. And we believe both of those markets are growth opportunities for us and we're committed to winning.

But the starting point of those 2 businesses, those 2 markets are very different for our business. Our North America business, we are the clear market leader in North America. It's been a profitable business, is profitable, has been profitable. And we have a clear view of the recovery of the demand in the marketplace.

Between the utility RFPs and some of the carbon-free PPAs that Scott just mentioned in some mega projects, we see a clear pathway to a 12 gigawatt market. So that pipeline and then pricing, we've been able to achieve higher prices in the last 3 to 6 months. So, pricing, pipeline, and then product. This is one of the things I'm most excited about in North America, and Mike alluded to it here, which is the pipeline of new products we have underway to have the winning product for this marketplace. And this engineering team has just done an incredibly good job of preparing that for the ramp, for the rapid ramp we anticipate in the next couple of years and the level of qualification and engineering quality that's been put into this new product. So, in North America, the cornerstone of our equipment business, really good condition.

The international business is a profit turnaround story. And really, as Scott indicated, there's a playbook here that Gas Power utilized that is very much in play here. The first part is building better backlog. And so, one of the core things we're doing here is we're looking at all the countries we could compete in with wind, and we've down selected and focused into a strike zone. And this strike zone are countries where we believe we have a product fit, we have the right service team, project execution, logistics, manufacturing and supply chain to be able to build and sustain a competitive advantage and command price. And we've been doing that, building a better backlog recently.

Part of that -- as well as -- then the ability to get price. And again, a place we've been able to get double-digit price over the last 3 to 6 months. So as Scott indicated, this is worth a couple of hundred million dollars in sequential improvement just by building a better backlog.

The second one is executing better. We have a term called the factory in the field. And this is really looking at the deployment of these assets. We ship hundreds of these turbines every quarter into the international marketplaces and thinking about it that like a factory. The logistics, the delivery, the kitting, the standard work, the labor preparation, the site preparation, the simplifying and streamlining. This is the heart of lean applied to the factory in the field. Executing better will also be a substantial improvement to our sequential profitability.

And then the third aspect here is really lowering the fixed cost structure. There's a residual cost structure associated with our prior footprint. And what we're doing is we're lowering that cost structure as we've gone to a tighter focus on these strike zones.

So, this is really what we're in the middle of executing in the international turnaround. And I just could not be more proud of that team working on this together, a very important part of our onshore wind strategy.

The other business we've got is the Service business, a great business, a business that grows double digit. It's profitable. It has a contractual book, a transactional book, and a repower book. Repower is where we go into turbines that are 10 years old and we basically rebuild the turbine. We replace the parts, improve power output. And if you go back 10 years, there's a significant portion of turbines ready for repower. So again, a profitable business, a business we really like and an important part of our growth strategy going forward.

When you put these together, that's why we have confidence in low single-digit operating income, growing to mid-single digit after that, because of the -- what we're doing to execute on these 3 business models.

Moving then to the next slide. I just wanted to do just a run-through of one lean example. The lean transformation of the Onshore Wind business is a very large industrialization at global scale of a business that's both a project business and a product business.

And so, the highlight here is really the Cypress delivery. Cypress is our large wind turbine, and we've been able to reduce the cycle time of implementing that by 40%. This is really a result of being able to reduce the labor, focus on the execution. And if you scale that then across the whole operation, again, it's worth tens of millions of dollars of profit improvement year-over-year.

Before I completely lose my voice, I'm going to turn it over to Philippe now so he can take it from here on electrification. Excuse me.

Philippe Piron ***GE Power - CEO of Power Conversion and Grid Solutions***

Thanks, Pat. What is electrification? We refer to electrification as an overall process which substitutes technologies using fossil energy with technology that is powered by electricity.

As Scott said, our businesses play in a growing electrification paradigm despite their financial performance was not acceptable up to now. I joined recently GE to Power Conversion. But my past experience in submarine optical and hybrid powering networks make me confident and committed to recover much more acceptable performance for this segment, all of them benefiting from medium single-digit to high single-digit market growth.

From medium voltage to high voltage, from industrial applications to power utilities, these businesses serve the energy transition by providing the critical element of powering networks, through power conversion, transmission, protection and administration.

The grid is the core infrastructure to ensure a resilient and sustainable energy transition, by the quality of its nodes, by the flexibility and the density of its machine, the grid makes viable power infrastructure at any level, whether it is a national utility, an offshore platform, a steel plant or even a ship.

Let's have a look to the first 3 segments on the left side of this page. Power Conversion, Medium Voltage decab solution to energy efficiency, electrification, microgrids, like the full electric energy management system we delivered to the U.K. Queen Elizabeth aircraft carrier or to some energy plants, like Blackmill.

Grid Integrated Solutions based on HVDC for long-distance transmission, like Sofia, connecting the world's largest wind farm in North Sea as well as AC local around networks like the Empire Wind offshore substation in New York city, power transmission, high-voltage, switch gear breaker, transformer, all of them are key to replace, to reinforce, to enlarge existing grid and future microgrids.

On the right, we find our high-growth Grid automation and Grid Software businesses, which provide digital solutions to help operators to better monitor, control, protect and supervise their grid assets, supplying relays, gateways, optical communication system, grid orchestration software, different elements, which are totally key to this activity.

We are playing within all these 5 segments with a material market presence to address the growing worldwide need for electrification. What can we do to be more successful in this enterprise? We need to continue running a 2-phased approach across our portfolio: One, driving profitable growth with a particular focus on Power Conversion, Grid automation and Software; two, while fixing our legacy projects and completing our turnaround like in Power Transmission with our Transformer product line.

As you can see on the left, in Power Conversion we reached an inflection point in 2021. We refocused our core activities, our mission-critical application for marine, oil and gas and industry. We rightsized our industrial footprint and streamlined our production fixed costs and SG&A. We introduced lean management practices at all levels of the company. These turnaround actions have helped Power Conversion in its journey to profitable growth, developing NPI in high power density propulsion, decarbonized high-speed compression system and future breakthrough investment in microgrids. This experience should apply to grid integrated solution and power transmission, which are still in the course of their recovery trajectory.

Of course, we improved somewhat our operational performance there, but it is still not enough, and we need to go faster. Therefore, we run the same play as we did in Power Conversion: Refocusing on most attractive and accessible market segments, applying a decentralized organizational model closer to the customer and to the field, pursuing lean management effort all across the company. We will continue to reduce our capacity and structural cost on some specific product lines and regions, more to go after to reach this acceptable profitability over time.

Finally, if we look to our Grid Automation and Software businesses, they are very exciting, high growth and solid profitable businesses for the future. And with some tangible progress in 2021, we are positioned here to grow faster than the market, enlarging our customer base, leveraging our more baseload businesses and with opportunities for inorganic investment like Opus One.

Our ambition, my ambition is definitely to develop our electrification asset for more and faster profitable growth. Thank you.

I think to Scott?

(presentation)

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Okay. I'd like to introduce Ramesh Singaram, our GE Asia leader and also Gas Power Asia leader; Heather Chalmers, our GE Canada leader. And I appreciate you both being up with me for a few minutes.

We wanted to bring together the discussion today on 2 very different markets. Our Asia market in which we have substantial electricity growth that's going to happen over the next few years -- next few decades, frankly, and the technologies that play in there, and compare it to a market with more humble growth in Canada that's much further along in its decarbonization journey, almost 80% zero carbon today power generation, but another market in which we have incredible opportunities to lead and have an impact.

So, with that, Ramesh, I'm going to hand it off to you to give a little bit of perspective on what's happening in Asia today.

Ramesh Singaram ***GE Gas Power - CEO of GE Asia & GE Gas Power Asia***

Scott. First of all, thank you for the opportunity on the spotlight on Asia. 2/3 of the population lives here. And when you look at the growth of energy demand is expected to double by 2050, and that's important to me. And part of that is because it helps industrialize the economies, grow the middle income that creates new opportunities in each of these countries and simultaneously also decarbonize for a better quality of life in places that matter.

On that sense, gas has a very prominent role for us in the region as well. I wanted to connect back to what Martin said, gas being a destination technology. We see this materializing here in the region with 20 LNG facilities that's coming online by 2025. So, from that perspective, gas has a big role for us.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Ramesh, you spent a couple of weeks in quarantine to be able to serve our Taiwanese customers late in the fall. Can you give a little bit of context on Taiwan?

Ramesh Singaram ***GE Gas Power - CEO of GE Asia & GE Gas Power Asia***

I'm going to do that back again in April, right? And part of that is this is what we do. We have to stay close to the customers, stay close to the market and our teams because we want to get a feel of what they see.

Taiwan is important for us from that perspective. We are currently building out 14 HA gas turbines that will add 10 gigawatts of capacity by 2025. Taiwan also has about 11 more gigawatts of capacity that they'll be adding at the later half of this decade as well. So extremely important.

In addition to that, Taiwan is also going to be adding 15 gigawatts of offshore wind over the next 10 years. So, from a perspective from that standpoint, the role of gas is actually replacing nuclear to be more baseloaded machines and at the same time, also positioning us to support the growth of renewables. So very exciting.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Taiwan, huge opportunity, nuclear to gas transition, very different dynamic for you in South Asia, Southeast Asia.

Ramesh Singaram ***GE Gas Power - CEO of GE Asia & GE Gas Power Asia***

Mr. Aziz just brought a perspective around what's driving the growth. Middle class growth is driving 6% to 8% of electricity growth in the region as well. And we see Bangladesh, we see Malaysia, we see Thailand, we see Indonesia as well. There, we're actually, in the next 12 months to 24 months, we're actually commissioning and putting back about 8 HA gas turbines. These HA gas turbines in the 50-hertz cycle provide 600 to 800-megawatt block size, high-density power, which is a lot of the region needs in this perspective.

I also have to point out, single out, Vietnam. Vietnam is very exciting. We just got our first HA gas turbines in Vietnam. But I wanted to point out a perspective that Vietnam, 3 years, 4 years ago, for a country that had planned 25 gigawatts on coal, that all is going to move to gas. So from a perspective, different roles gas is playing, but a very important one.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

I appreciate the perspective, Ramesh, and the leadership.

Heather, Canada is in a very different place, but also a very strategic and important place for us. Can you give a little bit of context for Canada?

Heather Chalmers ***General Electric Company - CEO of GE Canada***

Sure. Happy to. As you mentioned, we're facing very different dynamics. Over 80% of our power generation today is from carbon-free sources, the majority of which is hydroelectricity. We're also a major exporter of oil and gas and electricity. So, our challenge is solving for that last mile of decarbonization while also remaining globally competitive.

So, in that regard, we see Canada has an opportunity to be a first leader in a couple of technologies, one of which you mentioned earlier, small modular reactors and happy to -- you said it, that Ontario Power Generation has chosen the BWRX-300 as their technology of choice. And we see a path to over 2 gigawatts in the short term.

The second technology is carbon capture and building on Martin's comments, the federal government has put in place things like the carbon tax going to $170 a ton by 2030. We've got 5-year emission reductions targets as well as favorable geology, all of which set the stage for growth in that sector.

And I think I shared last week, I had the opportunity to do a roadshow across Western Canada and visit a number of carbon capture plants. And if I wasn't excited before, I certainly am right now. So, a lot of potential in Canada.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

No question. And we're just as excited about nuclear and small modular reactor. I'd love for you to just take a second and give context on the OPG selection and the drivers there.

Heather Chalmers ***General Electric Company - CEO of GE Canada***

Happy to. And I would be remiss if I didn't just mention Canada's strong legacy in nuclear. In fact, I'm from Pickering, which is right near one of Ontario Power Generation's, nuclear plants. And in fact, it was my first university job. And I share that because Canadians are comfortable with it, and we're good at it, and we want to build on that history.

In terms of why OPG chose the SMR. We talk about small, we talk about size, and we talk about simple. The reality is a lot of legacy nuclear projects have been one of a kind. They've been complex, and that's led to cost and project overruns. The small modular reactor is modular, and it allows us to standardize and replicate and, over time, drive down cost productivity.

The other aspect is its size. It's a terrific complement to nuclear blocks. And the third comment I would make is around the nuclear fuel supply chain. It's the only one that builds on an existing supply chain. And stating the obvious that's become of incredible importance of late. The Canada's opportunity, you talked about OPG. We're also anxiously awaiting Saskatchewan SaskPower's technical choice. And then we have tech selects in the U.S. as well as Europe that we're focused on. So just a really great opportunity.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

No question. And the OPG selections, the first 300-megawatt block, Heather mentioned it, we see 2.4 gigawatts, if not more, in Canada and many other markets to follow.

Ramesh, if we go back to you, what would inhibit the growth from taking place as it should here?

Ramesh Singaram ***GE Gas Power - CEO of GE Asia & GE Gas Power Asia***

I think the biggest open switch for us, Scott, is the shift away from coal and the target that's been designated to us to achieve climate change. Despite all the actions taking place with the retirement of coal the piece on Renewable growth and also the strategic deployment of precombustion post-combustion, the countries are not moving fast enough. In my mind, what lingers is that how do we solve for an ecosystem that mandates the balance to achieve the energy dilemma, trilemma, right? So that's really the key piece.

I take a lot of comfort from the fact that what's happening in Canada, being an incubation of new technologies and how the Power businesses are coming together to support Canada and hoping that a lot of the references that we can build from here can be applied back in the region as well. So, I'm pretty optimistic in that sense, so I'm pretty excited as well.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

As am I, Ramesh.

Heather, same question. What would really hold Canada back?

Heather Chalmers ***General Electric Company - CEO of GE Canada***

My answer to that would be grid modernization. As a country, we spend a lot of time on zero carbon technologies. But in the absence of a connected and modernized grid, it's going to challenge our energy transition acceleration. And the other thing I do want to build on Ramesh's comments. There is no other company in country that can take a system level view and offer their portfolio of technologies to governments, to utilities, to customers like we can. And the reality is that, that path to net zero is going to look very different, whether you're in Ontario, whether you're in Quebec or Alberta, not unlike a number of countries around the world.

And it really is -- it's an honor and a privilege to be able to work with those key customers as they navigate their path to net zero. So, thank you for letting me tell the Canadian story.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

I appreciate you both joining me, so thanks for your leadership, okay?

Heather Chalmers ***General Electric Company - CEO of GE Canada***

Thank you.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Thank you both. As we -- I'm going to go to a wrap here quickly and just reinforce a couple of key messages, macro themes. The world is going to electrify with a need to simultaneously decarbonize. Those 2 macro themes are ones that position this company to lead for a very long time. Our Power businesses are in very good shape to generate a substantial amount of cash flow for a long time. We've got a self-help story in front of us with Renewables, but it's one that we know how to execute. As we do, this is a company that's going to have substantial capacity and conviction to lead in the energy transition going forward.

So with that, Steve, it would be great if you come up and join me.

QUESTIONS AND ANSWERS

Steven Eric Winoker ***General Electric Company - VP of IR***

Thanks. Thanks, Scott. Everybody who's done the EPG thing remembers the sitting in the corner and the this and that as we go. So if you see me standing that's why, right?

Let's start. Steve Tusa.

Charles Stephen Tusa ***JPMorgan Chase & Co, Research Division - MD***

Thanks for all the info. And Steve, I appreciate the Q&A by segment. That's very helpful. So, I appreciate it.

Scott, Siemens has talked about guarantees in their business. These are operating guarantees. Can you talk about what you guys have and maybe the magnitude of those? Should we assume that given your installed base there comparable or maybe even bigger than what Siemens talks about?

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

Yes, I don't know if the right proxy is the existing installed base for the guarantee, Steve, to be honest. I think it's more in relation to the guarantees attached with newbuild more frequently than the actual installed base, in which different subsegments of our business require a different level of commitment to get the jobs done. Certainly, historically, in our gas business; as you look at a backlog 3.5 years ago when I took on the gas business that was 2/3 complex projects, 1/3 equipment only, the amount of guarantees we had in the backlog were larger because you needed to provide more balance sheet support for more complex projects. As it shifted to more of an equipment-only model, you need substantially less.

When you look at our Renewables business today, Offshore Wind, Rrid Solutions, HVDC lines, these are billion-dollar projects that can take 3 to 5 years in which they often require some level of financial support. And that's a big contributor to how we think about the underwriting of the deals and which ones are going to make sense and which ones justify that balance sheet capacity over time based on both the economics of the equipment deal on day 1, but also the aftermarket economics that can make sense that we'll think through.

So that's something that we will continue to look at a portfolio level as we look at power generation, and the Renewables businesses, but it's much more aligned with a newbuild dynamic that is a big part of our underwriting of every individual deal.

Steven Eric Winoker ***General Electric Company - VP of IR***

John Walsh.

John Fred Walsh ***Crédit Suisse AG, Research Division - Director***

Questions around battery storage technology. You talked about aero derivatives to kind of help stabilize the grid. Just curious where you see battery playing, and if that's something you need the technology or you can partner with someone.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

I think we clearly want to be a system integrator where it makes sense. And to the extent batteries and storage play a role in that, we talk a little bit about hybrid solutions, and that's something that we're looking at. And where that makes sense, especially wanting to be a leader in this space, we will integrate more pieces of the technology.

I don't see batteries being something that we will be an OEM of per se or a manufacturer of in anything we contemplate. But a partnership model there could make a lot of sense.

But again, the solution sets are very different. Those batteries are 4 to 8 hours, right, as you think about the duration. A lot of the aero derivative applications where we're seeing a lot of that growth is longer-duration needs, longer peaks, days versus hours, seasonal versus hours. Where in places like Germany, places like Ireland, as the renewable integration or realization rate is getting to 20%, 30%, 40% of the power generation mix, is needed for those periods of the year where they're talking about days of ramping versus hours of ramping.

Steven Eric Winoker ***General Electric Company - VP of IR***

Markus Mittermaier.

Markus M. H. Mittermaier ***UBS Investment Bank, Research Division - Head & US Equity Research Analyst of Americas Electrical Equipment and Multi Industry Research***

Markus Mittermaier, UBS. Scott, one question. You said execute right, the first time in the field is critical. In the context of the Haliade, what processes do you have in place that ensures that and then more broadly, maybe bringing it back to the margin, how should we then think about this? Because if you have the Gas Power playbook, right, we're obviously tremendously successful, now talking about double-digit margins in '24, a few people would have thought that. How do I think about that in the context of Offshore? Given that in the Power side, you have 70% services; and I think if I'm right, on the Renewable side, you have currently 15% services. So how does that interplay work between selecting the right projects and then making actually money off the equipment? At the beginning, I suspect.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

No question, Markus. I appreciate the question. And I think even the link between offshore and gas and making that analogy is most tight when I look at the Offshore Wind business in Renewables and Gas, where the similarities, the potential similarities over time with those business models and a healthier aftermarket on the back side with Offshore.

What I would tell you on the testing of the preparation, having just been at the prototype, we've got 28 months of operating the Haliade-X today. The team did a substantial, what I'd call red team, blue team exercise with our Global Research Center in Niskayuna to really challenge the art of the possible with this machine. This is not a product that we've rushed to the market. This is a product that when I look at our $7 billion backlog today, with most projects, we have healthy flow today, and we're underwritten with that.

So, with the significance of what we were doing, I look at this backlog and feel like we're well positioned to execute on what we have. It margins in an OEM landscape that gives a lot more confidence based on the technology moat of Offshore Wind and the competitive landscape that this is a business in the context of Renewables that can definitely justify higher margins and ultimately, has an even more -- higher realization rate or higher capacity factor that ultimately will generate higher services margins over time, too.

So, I -- it's one of the things I'd love for the room to take away from today's discussion, which is I have a lot of enthusiasm and conviction for what the Offshore Wind business can be for us.

Steven Eric Winoker ***General Electric Company - VP of IR***

So I think we have time for maybe 1 more live question, and then I've got an e-mail from Scott Davis. Let's start, Nigel, why don't you take the last live one?

Nigel Edward Coe ***Wolfe Research, LLC - MD & Senior Research Analyst***

Yes, just a follow-on with the Offshore. I mean, this is a very long duration backlog. The supply chain conditions have changed radically in the last couple of years. So, what actions can you take to protect the profitability of that backlog?

And then maybe just address the changes to the underwriting process for international Onshore and also Grid because the backlog there seems to be low quality.

Scott L. Strazik ***General Electric Company - CEO of GE's Global Energy Business Portfolio***

You bet. I'd start with Offshore the $6 billion to $7 billion backlog today, just for context, liquidates to a large extent between now and, let's say, the beginning of '26, okay, on what we've got on book today.

I've got 2.5 months of looking at deals with the team on a go-forward basis. All of these deals we're looking at today have very healthy escalation protection on a go-forward basis to protect for the inflation risk. We've got an evolving, growing, maturing supply chain strategy on how we manage the buy.

But I would tell you, generally, my experience in Renewables relative to Gas Power is there's maturation for the whole industry, frankly, there on how we think about the buy and hedging and protection. It's an opportunity over the medium term, but is earlier in its maturation process.

I mean, one of the more motivating days I've had in the year was when we had 17 of our largest wind suppliers join me for 2 days at our Global Research Center and just collectively talk about how we improve the profitability of the industry. And each CEO came in with their recommendations for us and them to lift all boats in an industry that, frankly, has to ultimately become more profitable. So, there's a lot of plays and a lot of opportunities out there for wind that give me confidence there's a better day coming.

Now very quickly on the international Onshore Wind. Pat hit on this, but I would just emphasize it. We need to have conviction on what markets we can make money in both an equipment in day 1, but also where there can be scale on day 2 to have services scale. Ramesh mentioned Taiwan. We have 17 H's in gas in Taiwan. Every incremental H in Taiwan is worth a lot more to me than an H in a country where I have no flags planted because I already have the infrastructure. So, the profitability on the back end of those incremental H's is exponentially more than the new H in a new country.

I'm not sure the international Onshore Wind team has had conviction on that scale concept and has been very focused on growth and planting flags, but we're focused going forward on profitable flags where we can have scale and execute on day 1 and do the same on day 2 in the services market. Similar themes with Grid. Okay?

Steven Eric Winoker ***General Electric Company - VP of IR***

Scott, thanks. Sorry. I'm going to say the other Scott Davis. Couldn't get to your question now, send me one for Aviation, we'll get to this one later. We're out of time.

Larry, any comments before we go to a very short break for everybody?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

I'm sure Scott Davis appreciates being referred to as the other Scott. I mean that in the best way possible.

Scott, team, thank you. I hope you come away with a strong view that this team is fundamentally committed to both missions. The energy transition, solving for the so-called trilemma, which is very real and delivering better financial performance going forward.

We're going to take a break here, we're going to take 10, and we'll come back and kick it off with Aviation. Thank you.

(Break)

PRESENTATION

Steven Eric Winoker ***General Electric Company - VP of IR***

Hey, everybody. I just want to make sure everybody comes and takes their seats. We have a lot to get through, and the longer you take, the shorter the next break time is going to be. So -- and this is Aviation. So please come down, take your seats, and we'll get going with John Slattery as soon as you sit down.

John Stephen Slattery ***GE Aviation - CEO***

Good morning, everybody. My colleagues and I are more than delighted to be with you, particularly in person. We've got a great story to tell you. So for those of you that are joining us online and virtually, thank you for sticking with us.

I'm going to bring you through some of the opportunities over the course of the next 50 minutes, both as we ramp up on our Original Equipment side, and Cathy is going to give you a lot more details on that. But in parallel, as we ramp up on our Services side, and Russell will talk about that.

And we're going to talk about the amazing work we're doing on inventing the future of flight. But very much at Aviation, we are here to serve our customers. I thought it would be a lovely way for us to start today by listening to 2 of our very important partners around the world. So, roll the videos, please.

(presentation)

John Stephen Slattery ***GE Aviation - CEO***

Partnerships are very important in our business, partnering with companies and people like FedEx and AerCap, Aengus Kelly, Fred Smith, is integral to our success. It's our honor to serve them.

Okay. There are basically 3 key themes that are going through the fabric of the course of the next 45 minutes or so. Firstly, we have a robust portfolio, 3 very distinct businesses. On our Commercial business, our Military business and our Systems business. But right across the 3 businesses, growth is robust. A little later, I'll bring you through the fundamentals of what's driving that growth.

And secondly, as you've heard, one of the common themes across all of the presentations today is our commitment across the company and absolutely in Aviation to lean. Dedicating ourselves to that pursuit of continuous improvement is embedded now today in everything that we do and in how we execute our business. Larry mentioned it, Scott mentioned it. Pete mentioned it: Safety, quality, delivery and cost. In that order, in that hierarchy, that's how we run our business today.

And for me, Lean is not just about improving our productivity and our financial results, which, of course, it will do, and it does do. But lean is also about transforming the working environment for our colleagues and making it more fulfilling for our colleagues every single day.

This morning and later on for those of you that are going to go on the tour, you're going to see plenty of opportunities where lean is actually making an impact. It's ringing the cash register, make it more productive, but you'll also see it's making the environment more respectful to each of our employees.

And finally, we're committed to inventing the future of flight. We believe with the incumbency that we have in the marketplace, that responsibility sits heavy on our shoulders. We're going to spend a lot of time bringing you through and Mohamed will shortly tell you around how we're addressing the dominant theme over the course of the next number of decades in our business, which is decarbonization.

There's a wall of numbers here. I'm not going to bring you through each one of them. Although pretty much through the whole presentation, we will touch on pretty much every one of the numbers here. But the one that really catches my breadth, if you look on the left-hand side of the screen, every 2 seconds, an aircraft powered by GE or CFM takes off somewhere in the world, 3 out of 4 aircraft powered by GE or CFM.

That's just an amazing franchise that we have today. A franchise we're looking to continue to grow as we go forward. And those 66,000 engines that represent those every 2 second departures, that's what feeds our services business that Russell will talk about a little bit later.

If you look on the right-hand side of the slide, the financial robustness of this franchise, even in the year that we exited COVID, quite significant financial results for the company. I want to tell you, we'll give you more details shortly, but I do believe that our margins and cash will continue to grow now as we exit out of the recovery phase of this pandemic.

And since I was with everybody virtually last year, we haven't been sitting on our heels. We've been working hard in the marketplace and supporting our airframe or partners winning deals. We partnered of course with Boeing on the launch of the 777X freighter with Qatar Airways, very excited about that.

We've worked with Airbus and with Boeing in winning multiple marquee deals right around the world for the LEAP-1A and the LEAP-1B. Today, in fact, the backlog on the LEAP is over 9,700 units. Tony is going to talk a little bit about our Military business in a while. One of the marquee moments for the Military team throughout the course of the last year, was that win with Boeing on the FX -- the F-15EX, $1.6 billion. It really was a highlight for the military team last year.

But in the aggregate, when we look at the backlog of GE Aviation today for the first time in the company's history, it now exceeds $300 billion and growing. I won't steal Mohamed's thunder, as he comes up a little later and talks about the future of flight. So, the only thing I'll say here is, from my seat, I'm very excited about the opportunity to partner with some of the finest industrial air framers and other engine manufacturers in the world. Our partner at Safran, of course, with RISE, Airbus, Boeing, NASA the FAA and indeed others.

I expect GE Aviation to play a leading role in our mission to decarbonize the future of flight. And indeed, our partners and our customers expect us to do that. From my seat, I will be very focused on the R&D that we're doing and the capital allocation that we're doing to ensure that it's bringing value to the shareholders.

Let's talk about the wallet of opportunity that sits in front of each of the P&Ls. We hunt in a market or a series of markets that aggregates to $70 billion a year, and that number is growing on an annual basis. But look at the commercial propulsion side of the business there on the left. Look at the win rates, $14.4 billion out of a $40 billion annual hunt, but also look at the percentage of that business that's driving our services revenue.

And look at the growth rate. Our win rates really are world class. I believe that's a direct reflection of customers' belief in our technologies as we deliver them, but also our ability to service our engines after entry into service.

And I can attest to that firsthand. My former life as an airframer, and indeed before that, as an engine and aircraft lessor. I think that services issue right across each of our verticals proves to be a very useful balancer across our portfolio and allows us to not have the vagrancies of just the OE business cyclically.

The fundamentals, though, that drive our business, if you think about the Commercial Aviation business, that relationship between passenger demand or indeed freight, which is just a significant part of our business. And GDP has been proven over the course of the last 30, 40 years.

Right now, it's anywhere between a factor of 1.5 and 2x. So, as you think about where GDP is going to be over the balance of the decade, that's why you can see our confidence on those mid -- at least mid-single digit growth rates are going to be and high single digit perhaps.

And our military customers, perhaps today more than ever. They want to modernize their fleets and they want to do it at pace, not just here in the United States, but with our allies around the world.

And on our third business, and I'll talk more about systems in a moment. But when we think about electrification, when you think about advanced avionics, autonomous travel that you're hearing so much about, I think we have plenty of opportunities uniquely placed to grow in our systems business over the course of the balance of this decade.

That all being said, my priority and the priority of my team is to deliver on the ramp. The ramp not only on the Original Equipment side to support Boeing and Airbus and indeed our airline customers around the world, but also the ramp on the Services side of the business. And I'm confident we can execute that ramp, principally by deploying lean right across the organization.

Our lean journey now is really starting to accelerate. We're seeing lasting improvements on yield, lead time, inventory and on-time delivery to customers. We still have work to do, of course. You're going to hear a lot more examples of lean and the transformation from my team, as they come up and they present throughout the course of the next 40 minutes or so.

And for those of you that are here, hope you can visit the Aviation Airfoils Facility, Tim will show you the amazing ringing of the cash register that he's achieving today. One example, reducing lead times from 35 days down to 10 days on the CFM HPT blades, the largest part of our business. And separately, we're embracing lean not just on the shop. We talked a lot about that over the course of the morning already. But we're embracing lean functionally in everything that we do, whether it's the CFO's office, improving the on-time delivery of the financials and leaning those out, making them more efficient, or whether it's in our Services business, just improving the forecasting that Russell can talk about later on. So lean is in every part of our business, not just on the shop floor.

As I think about the 3 verticals, they're going to talk about on our Commercial business, narrowbody, widebody and regional jets. Well, we're actually the only engine manufacturer that's in each 1 of these 3 verticals today, providing dedicated engines. So we have a dedicated resource base of engines of over 44,000 engines just in our Commercial business.

It's those engines, again, that are feeding this business. We've had a track record of backing the winning airframe platforms over the years. And the testament to that, the materialization of that is we're winning more than the competition in the marketplace. But look at the growth lines that's projected across each of the businesses. By far, of course, the narrowbodies and widebodies, the largest, mid-single digits growth over the course of the balance of the decade. Great top line momentum for our business.

Now let's move to talk about the forecast and where we see the business going forward. But before I talk about forecasts, I'm mindful of the geopolitical tensions that are in the world today, particularly, of course, as Larry mentioned at the outside of the presentation, the terrible situation in Ukraine.

We are seeing fallout in oil prices. We're seeing some fallout on commodity prices over the course of the last week. And then separately from that, as I think about our forecasting, China continues to have a 0 COVID policy. So, we're probably going to see a lot of peaks and troughs just over the course of the next 6 months in China as things stabilize there.

Notwithstanding that, as I talk to the airline customers around the world, we're seeing continued improvement from those 2019 levels and a recovery to flight on the departure levels. Today already, we're almost at 80% of those pre-COVID levels. We continue with conviction and a lot of proof points to support it. But the narrowbody departure that will get back to those 2019 levels first quarter of 2023, and the wide-bodies that are servicing that long-haul international travel just 1 year later, first quarter of 2024. So, no change on our forecast.

And of course, those departures, they're leading indicators of shop visit demand. So today, I can tell you, and Russell will give you a little more detail on this, but we expect our shop visit revenue growth this year to grow by 25%. That's 5 points up from the direction we gave at the start of the year. Again, Russell will give you a little more detail on that when he comes on stage.

Now one of the jewels in the crown, our Systems business. This is a super attractive business, and it complements the core of GE Aviation. So, you can see 4 diversified specialized, and in each case, profitable businesses and somewhat equally balance between our Military and our Civil platforms. And a $1.6 billion revenue, of course, it's smaller than the other 2 verticals that we have in Aviation. But it's also a business that's going to experience high single-digit CAGR over the course of the next number of years. And again, that common theme of look at the percentage of its revenue that's coming from services.

As you think about power management, electrification, advanced avionics around automated travel, these are all themes that are embedded right across those 4 verticals in our Systems business. I believe it's a real jewel in the crown of GE Aviation. Perhaps we haven't spoken about enough over the years, but I'm sure that will change in the years ahead. I'd now like to invite the CEO of Edison Works, Tony Mathis, up to the stage who'll talk about our Military business. Tony?

Tony Mathis ***GE Aviation - CEO of GE Edison Works***

Great. Thanks, John. Good morning. So now let's talk about our exciting Military business. Look, given that defense budgets continue to grow around the world, given our position both within the U.S. and with our international partners, we really do believe that we're going to have to play a critical role given that we power so many important platforms around the world.

And as a result, we continue to see strong demand, both in our core products and we see tremendous opportunity, as it relates to our advanced technology, especially for advanced fighters and helicopters. And I'll try to take you through that over the next few minutes. So relative to the core business, as John mentioned earlier, we recently won the $1.6 billion sole-source in the power F-15s in the United States Air Force.

This is the first time we ever powered F-15s in the United States Air Force, a big deal for this business. But even prior to that, the Air Force has already selected us to power their next-generation advanced trainer, the T-7A and that builds on 7 decades of power and trainers in the Air Force. So, 2 tremendous opportunities for the business.

Now internationally, we continue to be the engine of choice, as it relates to indigenous trainers and fighters around the world. And you can see this continue with our selection here in both Korea and India, a big deal for this business.

So that's the core business. Now as we look forward, in terms of next generation for helicopters. Our T901 next-generation helicopter engine has already been selected to reengine all 3,000 Apache and Black Hawk helicopters in the United States Army.

And the first development engine will run before the end of this month. That's a big deal for this business. Now when we think about combat, this is the biggest opportunity ahead of us in this business, and that is that we are so encouraged by the performance of the most advanced jet engine we've ever developed in the military business, and that's the XA100. Let me tell you a little bit about the engine.

So, the engine is sized to as a direct drop-in replacement for the current engine on F-35. But it brings 25% better fuel burn, 10% to 20% more thrust and twice the cooling capacity of the current engine, all huge incremental capabilities for the airplane. And our engine is not a paper engine. We've run 2 prototype engines at our facility in Evendale, and we're currently getting ready to run the engine at the Air Force's facility here shortly.

Now we continue to get strong support and interest from both the Pentagon and from Capitol Hill given the tremendous incremental capability that, that engine brings to the F-35.

Now having said that, we -- just like I started, we continue to see very strong demand in the Military business. The path to those opportunities though is all about execution. And our entire team is focused on improving delivery through lean, and we are seeing real sustainable results. And there's nowhere that this is more important than our facility in Lynn. For those of you who do not know, Lynn is where our military manufacturing is centered.

And there, we are systematically working through all the top parts that are driving 75% of the delinquency. And I'll give you a great example, the T700 midframe. The T700 midframe is the pacing part for T700 deliveries. We did a Kaizen event last month, and we've realized a 40% improvement in first-time yield on the midframe.

Now look, I spent a lot of time in Lynn and I am confident in our commitment to accelerate our delivery throughout the remainder of the year. And all this work, we believe, positions us well to deliver on the high single-digit growth that we're projecting out through 2025.

So, with that, let me turn it back over to John.

John Stephen Slattery ***GE Aviation - CEO***

Thanks, Tony. So take a look at the financials. I'll start with revenue. Top line, we expect to see significant growth this year and next. In fact, we expect revenue to grow by more than 20% this year and again next year. This growth is driven by our services recovery, plus, of course, the LEAP ramp recovery. Remember, we delivered 845 LEAPs last year. We expect to deliver and target to deliver 2,000 LEAPs next year. And also, recovery in Tony's business on the deliveries. All of those give us a significant lift this year and next year.

That growth, we expect to get back to 2019 revenue levels by 2023 or very quickly thereafter. If I think about profit, well, this year is a significant steppingstone to that $6 billion target number with the high teens margins that my team and I expect to achieve next year.

We have clear and clean lines of sight with action plans associated with it to that $6 billion next year, again, driven by growth but also in parallel cost productivity. This year, margins, mid-teens; next year margins into the high teens. As we think about cash, key focus for the organization is improving those inventory turns right across the business, not only this year, but next year. And I believe there's a lot more we can do on that front.

So, cash this year will be slightly down relative to last year, but that's principally driven by $1 billion of headwind on the AD&A, those allowance payments that we pay out to customers. If it wasn't for that, we would have been positive sequentially this year over last year. But I expect cash next year to be ahead of the 2019 levels.

And we remain confident of those conversion rates of at least 90% in the years ahead. So, in summary, as I look through the financials of the business, I would say the franchise is very strong. We continue to be on track to get back to those pre-COVID margin levels and then to grow from there. So let me go on the record by saying that 20%, that's discussed regularly in the market, that's not a cap for us or a target.

We have plans to get there, and I would like to grow thereafter. But first and foremost, the objective of GE Aviation is to transition ourselves to get back to that 20% target level. I'd now like to invite on stage a real superstar in our team, the CEO of our Engine Programs, Kathy Mackenzie. Kathy?

Kathy MacKenzie ***GE Aviation - CEO of Commercial Engines***

Thank you, John, thank you. Coming out of COVID, our growth is exciting. An integral part of our growth is our 50-year partnership with Safran on the CFM program. So please join me. We have invited Olivia Andries, the CEO of Safran, to share a few words.

Olivier Andries ***Safran SA - CEO & Director***

CFM International is a unique partnership that has been created nearly 50 years ago between GE and Safran. Together, we brought market at the time, a disruptive engine, the CFM56 that has become the most popular commercial engine in the world. And we have repeated history more recently with the LEAP engine that has been the fastest selling engine ever.

One of my first action, as a newly appointed CEO of Safran, was to announce together with my partner John Slattery, the extension of our partnership up to 2050. In the short term, we are focusing on executing the ramp-up, the new ramp-up of the LEAP on a trajectory to deliver more than 2,000 engines by 2023. On the long-term future, we have decided to launch a revolutionary engine technology program, RISE with the aim to bring to market a disruptive engine by 2035, which would bring 20% fuel burn efficiency versus the latest generation engine and compatible with 100% sustainable fuel. We have achieved a formidable journey together with CFM in the last 50 years. And our common vision for the future to pioneer sustainable aviation demonstrates the great strength of our partnership. Thank you.

Kathy MacKenzie ***GE Aviation - CEO of Commercial Engines***

We are so proud of the partnership we have had with Safran. The history on the CFM, the current product with LEAP and then our future and our focus on sustainable flight, we couldn't be more aligned. We have a robust installed base across all segments. Together, GE and our joint venture partners, we power 3/4 of every departure.

In the last decade, we have made significant investments in our technology and product introductions to renew this fleet. This will ensure we sustain this position for decades to come. Our technology and product introduction builds upon each other. This creates confidence in our customers that as the products come into service, they have the durability and the reliability that they expect.

We are the only company that at scale has introduced this degree of fuel burn reduction across the industry. This creates significant value and operational efficiency for our customers, and it gets them closer to sustainable flight. Not only are we proud of the fuel burn improvement and the reliability that we brought to the industry, but the incremental revenue-generating capability is significant.

48 out of 50 of the 787 longest flights are powered by GEnx. Azores Airlines flies a LEAP powered A320neo on a 10-hour flight from Lisbon to Bogota. This is an incredible amount of value that we've created for our customers. Their words and their actions are reflected across the industry. When I visit customers, they refer to the LEAP as the workhorse of their operation. You may not know this, but the GEnx utilization is higher today than it was pre-COVID.

We are honored in the win rates that our customers reward us with. We have nearly a 60% win rate on the neo and nearly a 70% win rate on the 787. But we're not standing still. With this fleet renewal, we're still looking to the future. We are excited about the technologies that we're working on. Mohamed is going to talk about them in a few minutes, but we will deliver another significant reduction in fuel burn with our next programs.

And we're going to focus on 3 areas with our CFM partner on the RISE program, with our partnership with Airbus on the hydrogen program and on hybrid electric. We are again experiencing an unprecedented ramp in LEAP production. But we're here ready to support. We're aligned with the airframers and what we need to produce through 2023, and we're solidifying what we need to do for 2024. The hard capacity, it's in place. It was there before COVID and the MAX ground. And now what we're really focused on is yield, producibility, bringing back our skilled labor post-COVID and solidifying our supply base.

We're working with our suppliers in 3 areas: ERP connectivity, for more visibility into WIP and their commitments, which leads us to better problem solving at the right parts, at the right suppliers with Kaizen events with our suppliers. And we're also focusing on investing in future capacity planning. We're confident that with these actions and our renewed focus on lean that we will meet our commitments to the customers, and we will generate the 20% OE growth this year. We're also preparing for the GE9X ramp.

The GE9X won't have a significant impact on our financial performance until that program goes into service. We are making progress on the LEAP breakeven by 2025. This year, we expect to have about a 3-point margin pressure due to the LEAP program. But as we approach breakeven, that will improve. The LEAP has been in service for 6 years now. And COVID aside, we were beating our learning curve.

During the production slowdown of the last 20 months, we focused on yield and losses of key parts. You'll see some of those here in Greenville. We have taken 40% of the cost of the LEAP out of the LEAP engine since 2016. And with ongoing actions, we will breakeven by 2025. So, we're here to execute. We will deliver a revenue growth and this is a great time to be part of this industry. So now I'd like to hand it over to my partner, Russell Stokes, who leads Commercial Services.

Russell T. Stokes ***GE Aviation - CEO Commercial Services***

Thank you, Kathy. So, Kathy's team gives birth to these wonderful assets, and we get to take care of them over their entire life cycle. So, let's jump right into Services. For Aviation Services, we see 2022 shop visits up 25%. That's really tied to the ongoing recovery of the market and the continued confidence we're hearing from our customers on wanting to ready their fleets to be able to capture the growth going forward through the decade.

It is a large, young fleet; a very, very impressive fleet, with assets like CFM56 and G90 as well as more mature assets like our CF6 and CF34, which continue to see real activity. As you can see from the screen, narrowbody is the largest segment. CFM56 will continue to grow through the end of the decade.

And we will see LEAP contribute more growth as we bring LEAP forward based on everything you heard Kathy talk about and what John talked about on those great win rates, and we'll see that continue and contribute more growth to services by the middle of the decade.

We participate in a unique open network with GE and other providers. This means that we all compete and invest to be able to win shop visits in the right to be able to support GE and CFM customers. That's good because it means that we are innovating and coming up with new ways of creating solutions for those customers, giving them greater flexibility and greater choice of where they want their assets served.

Now you heard a reference earlier to during the downturn, we wanted to make sure that we made the most of the opportunity. We wanted to control the things within our control, and we did that by embracing lean. We focused each and every day on how to drive greater capacity and capability and make sure that we had better performance on the other side of the pandemic, stronger coming out the other side than we went in.

As an example, we transitioned 550 repairs from dedicated component repair sites sometimes completely across the globe from the overall centers that need those components in order to be able to reduce overall turnaround time and be able to use logistic time and logistics costs. One of the sites that was most impressive over the course of the last couple of years has been our site in SOMA, Brazil, a team that has been a great deal given COVID and most recently, the floods in Petropolis. And I can really think of no better way to explain to you what our teams are trying to accomplish in our MRO shops across the globe, then I let you hear from our teams in SOMA. Can you please roll the video?

(presentation)

Russell T. Stokes ***GE Aviation - CEO Commercial Services***

I love that video for a number of reasons. It speaks to why this is so important to us. Ways of driving real opportunity to create new sources of productivity, but more importantly, as you heard, an opportunity to look at how we can better service and take care of our customers. It's a demonstration of how the teams are absolutely embracing the concept of continuous improvement. And it also demonstrates, especially when you hear someone say, when I need energy, I go to Kaizen.

It demonstrates just how much -- these teams are thinking about lean not as an initiative, but as a movement. Now why is that important? Because we have a lot of opportunity in front of us. We think about CFM56, 19,000 engines in our installed fleet, 50% of them have not even seen shop visit one.

Another quarter have only seen its first shop visit. Now when you think about that shop visit one, we talk about because that is where we go into the hot section of the engine. And so, you tend to see greater content in shop visit one than you might see in subsequent engines. We do work with our customers, however, based on their operating parameters, their fleet strategies to understand how best to give them the work scope flexibility that they may need and want. And I'll talk about that more in a moment.

In the center of the screen is GE90. GE90 is 40% of services revenues and is a very important part of our overall widebody and total G90 is a portion of that, 40% of our revenues in a very key part of our overall franchise. You can see from the bars down below, given the size of the engine, you tend to have higher content dollar per shop visit type work scopes.

Given this design, we tend to go into the hot section at every shop visit. And shop visit 2, we could see additional module work, which can increase some of the scope as you're seeing there in some of the bars. So, I mentioned work scope flexibility. What that comes down to is trying to make sure that we have the right material strategies to meet the performance criteria customers are looking for and deliver it at the right cost of ownership as well.

We've played in the used serviceable material market for over 20 years. We're actually the largest used serviceable material provider. We also do a great deal of industrializing repairs. We have 13,000 repairs in our catalog today, and we add an additional 500 new repairs each and every year. As I said, it's all about making sure that we're creating the flexibility that our customers need in order to make sure that we keep those assets fine and also making sure that they make money.

Now this is where this gets for me, really exciting. Because as you think about the video you saw a SOMA and this discussion around lean. You heard the reference to when you're trying to understand the process, we go out to the value stream. All right. Once I have a value stream, I make those improvements. You heard him talk about that through Kaizen, iterative Kaizens over and over and over again, looking at just how much better can I make the process tomorrow than it was the day before.

Once I do that, then I along the way, I'm creating what you might for some of you that are real lean practitioners in a room, we start to talk about standard work. What are the things I want to do consistently to make sure that I can continue to see that process perform as much as possible it is optimal. Well, once I have standards, I basically have created a set of rules around how I want that process to work.

What we're realizing is once I have those rules, I can actually begin to teach a machine how to be able to process those rules on their own, except criteria, reject criteria, how to be able to process parts in different ways. And then we unlock the power and potential of AI and automation in the Aviation Services space.

And you can see that on the first example, where we're doing AI white-light based inspections on CFM56 blades, 80% reduction in turnaround time, 90% reduction in human intervention or in the center, where we're looking at getting away from our existing well procedures to be able to go to additive for blade tip repairs, seeing a 50% reduction in cycle time.

Now while both of these are exciting, it will increase the velocity of the engine through to shop and get it back on a wing faster. We also are focusing on working with customers on keeping the wing on the engine in the first place. And so, we're doing more on wing interventions like this 360 Foam Wash. 10,000 applications will be done by 2025.

Once again, all about faster cycle time, making sure that, that asset stays with our customers as much as possible, so they're making money. And so, in closing, we see for Services revenues up 25% -- greater than 25% in '22 with continued growth in '23. That will be tied to volume as the key driver. We'll continue to see price consistent with our previous practices. And then we'll also see continued content growth, as you see those engines move through their life cycle and we see the recovery of that widebody fleet.

And lastly, I continue to be excited about the improvements we're making in order to help our customers and thus creating and being able to support the demand for the maintenance of these wonderful assets that you heard me reference, Kathy getting the opportunity to below. And so, with that, you're also getting a chance to see and hopefully take away the power and the potential of the combination of lean and technology. And speaking of technology, I can't think of any other better person to bring up right now than our technology leader, our VP of Engineering, Mohamed Ali.

Mohamed Ali ***GE Aviation - VP of Engineering***

Thank you, Russell. Good morning. It's humbling that my name was mentioned multiple times, and I'm proud here to stand in front of you to talk and represent the GE Aviation engineering team and the technologies for which we stand at GE Aviation. There is not a single story that talks about our soul and our DNA at GE Aviation than the one I'm going to tell you, and I'm about to tell you right now. Not a single one.

That story is the one that actually sold me to join GE Aviation to begin with. And it is the story that we tell whenever anybody is actually on the fence about joining GE Aviation. And after we tell it, they join and they are excited about that. Back in the 1990s, GE Aviation engineers thought about making composite fan blades to replace metallic ones. Makes a ton of sense.

Composites density is half to 1/3 the metallic ones. Also, the fan module is actually the heaviest module in the entire engine makes a ton of sense. Many in the industry said there is no way GE Aviation will certify a plastic fan blade. We failed twice. We got it done because we have the conviction and the grit and because the laws of physics says it can be done. Today, we have 100 -- more than 100 million flight hours with composite fan blades, chances are you flew on them, with 0 failures.

And that invention that happened on GE90 is now the father of all of our modern platforms on GEnx and on our CFM LEAP, and it saves hundreds and thousands of pounds, and you can easily do the math for what that means for an operator for fuel burn and for their economics.

But the story doesn't end there. The one I lived personally through is ceramics. Engines like to run hotter at a higher temperature, sort of like your high-performance cars that I'm sure many of you have those cars. They run more efficiently when that happens. Metals, they have a limit because they melt. And the idea that we came up with is we are going to use ceramics because they have a higher durability for high temperature and they are lighter weights.

And again, many have said this cannot happen. We master that technology on CFM LEAP. Today, it's flying with a ceramic part, and then we evolve that into GE9X that most of its hot section is made out of ceramic components, and it gives a 10-point advantage in fuel burn.

Third, when I go to the right-hand side, and I'm going to talk about that picture for a second. Many times, as an engineer, we come up with a design that very fuel-efficient, very lightweight, but cannot be manufactured. And you leave money on the table that way. We invented additive manufacturing technology in the aviation sector.

This part that you're looking at is actually a collection of 40 parts all made together with no welding and in 1 manufacturing step. And you can think how that simplifies the supply chain. This is our DNA. This is our soul. This is why we are today the only company together with our partner in CFM with a composite fan blade, with ceramic parts flying and with additive parts that you are flying on.

We take that now to the next chapter in our technologies. And we are excited about building our arsenal of technologies for the future with sustainability as our north star. And we are a big player in the industry, and we take that responsibility very seriously. And we're building an arsenal of technologies that will enable us to reduce fuel burn by more than 20% fuel burn, any fuels. And also reduce emissions all the way up to eliminating CO2 emissions.

First, hybrid electric. Let me start with this one. Anybody can do a motor -- a hybrid electric motor or an electric motor and test it on the ground. Anybody can fly perhaps even up to 10,000 feet. Above 10,000 feet, high-voltage electric machines behave very differently.

Right now, as I speak standing in front of you, we are testing in collaboration with NASA at the NASA facility, a megawatt electric motor in a 40,000 feet environment, 4-0 and we believe we have the technology to enable that, and we're excited about the partnership that we announced earlier this year with NASA and with Boeing to fly demo, a full hybrid electric airplane by the middle of this decade.

Second, hydrogen. Two weeks ago, we announced our partnership with Airbus to collaborate on a hydrogen aircraft and an engine that's also going to be test and will have a flight demo by the middle of this decade, which this will enable complete elimination of CO2 emissions.

Third, adaptive cycles. We are collaborating with the U.S. Air Force. And we are -- we have successfully tested an engine that has what we call an adaptive cycle. An adaptive cycle means the engine actually changes its geometry depending on which part of the mission it is in to maximize the fuel burn advantage for that mission.

And we are going to be taking all of these technologies and putting them in what we call the RISE demo, where RISE stands for Revolutionary Innovations for Sustainable Engines. And that then is going to happen by the middle of this decade. It's integrated into a modern open fan architecture that together will be sustainable aviation fuel ready. It will be hydrogen capable and it will have more than 20% fuel burn advantage over today's engine with all of these technologies together.

And we'll test that and do a fly demo on that also by the middle of this decade. This is us. This is what we stand for. And we do this with scale and with a state-of-the-art capability. That fan that you see in the bottom right, today we are designing that using supercomputing capabilities and we are one of the top users of super computational power in this nation and perhaps in the world. This is our DNA, and that's how we are inventing the future of sustainable flight. And with that, I hand it to John.

John Stephen Slattery ***GE Aviation - CEO***

I think that deserves a round of applause, actually. Well, it's -- you draw the short straw when you come up after Mohamed, let me tell you. So let me say in closing, I hope you can see from what we presented to you over the course of the last 50, 55 minutes, we have a unique franchise here at GE Aviation. And I think we're very well placed to address the cycle of opportunities that's immediately ahead of us.

Our talent is world-class. They're equally inspired to serve our customers every day in their operations as they are, and I hope you just saw it to invent the future of flight. I think our platforms and our penetration with the air framers around the world and picking the very best platforms is unique. We sit today with a roster of the finest operators around the world.

And that's been built up over many, many decades. Secondly, I hope you can see our commitment to lean is uniform and deeply embedded across the organization. It's in our DNA. And honestly, given the size of our organization and the complexity of what we do, there simply isn't another way to run a business of our size.

I'm excited about lean for 2 principal reasons. Number one, of course, it will improve our organization and therefore, bring incremental value to the shareholders. But in addition to that and in equal measure, it will help us create an organization where the very best talent in the world will want to work at. And finally, let me say in closing. Our franchise really has benefited enormously from those that have gone before us, the decisions that they made on partnerships, the decisions they made on technologies.

My commitment to my team and to our shareholders is that robust rigor of strategic planning, decision-making and capital allocation will remain embedded in our organization. And it's our commitment as we go to the market every day to win, to win for the benefit of our employees, the benefit of our customers and the benefit of our shareholders. Thank you very much. Steve?

QUESTIONS AND ANSWERS

Steven Eric Winoker ***General Electric Company - VP of IR***

Great. Thanks, John. Thanks, team. So to go to Q&A. Why don't we start with Andy Kaplowitz.

Unidentified Analyst

So you mentioned at the beginning of your presentation to think about R&D and CapEx. And so, Mohamed just talked about breakthrough technology. So maybe you can give us more color into the shapes of those curves as you go forward? And then over the shorter term, you talked about sort of your margin targets, obviously, supply is of concern. So, when you think about sort of making your margin targets over the next couple of years, how much does that have to settle down in areas like forgings, castings.

John Stephen Slattery ***GE Aviation - CEO***

Okay. There's a few verticals to the question. As I think about R&D for us, we're committed. In fact, when I joined General Electric, Larry was the first guy to say to me, we're committed to investing in the best technologies for the long term of this franchise. Last year, $1.8 billion, previous year not similar number. If you think about the guardrails, our R&D budget, not only today, but through the balance of the decade, it's sort of between that 6% and 8% of revenue. So you can think about it that way. Somewhat of an equal space between company-funded and customer funded. There are some oscillations in that as we go through the decade. But that level of funding is sort of the guardrails that we think about when we think about the scope of opportunities that Mohamed and Kathy are bringing to the market.

As we think about the supply chain, there are longer lead times on the forgings and castings as you mentioned. That's fully baked into that ramp as we spoke out. Kathy mentioned that 845 units last year to 2,000 units just in the LEAP alone next year. We've baked in and we reverse engineered those longer lead times. We're also working with -- I didn't mention it in my presentation, but we're deploying lean very much into our organization to improve hiring and onboarding, getting better talent, getting them onboard quicker.

As we look through the supply chain, we're sharing those benefits with our suppliers. So, I think we're in good shape on the supply chain. Certainly, there are issues. There's always going to be issues. But in the main, we're confident, we're there to support the airframers on the ramp-up and Russell's customers on the service side.

Steven Eric Winoker ***General Electric Company - VP of IR***

Great. Let's go to Nicole and then Cliff.

Nicole Sheree DeBlase ***Deutsche Bank AG, Research Division - Director & Lead Analyst***

Maybe just a shorter-term question. How do you guys think about any risk to what you've set forth for 2022 based on what's going on with airline freight prices as well as titanium supply. And what have you baked in for Military in 2022? I didn't see that in the slides.

John Stephen Slattery ***GE Aviation - CEO***

So as I think about titanium specifically, we source about 1% of our titanium from Russia. We made that decision many, many years ago. So, I think we're good on that front. I think we only have actually 2 parts that we source that have titanium from Russia. And for those 2 parts, we have over a year supply on the shelf. So, I think we're good on that front.

And I think the guidance that Tony gave on the growth, certainly over the next number of years from his business is high single digits. Of course, we're expecting to get a lift this year. Very focused on, Tony, on that output from Lynn in particular. Second half of this year, we're hoping to get back on to purchase orders. It's now more important than ever to deliver for our customers. But certainly, over the next few years we're looking at a high single-digit top line growth on the military side.

Steven Eric Winoker ***General Electric Company - VP of IR***

Cliff?

Clifford F. Ransom ***Ransom Research, Inc. - Founder and President***

Cliff Ransom, Ransom Research. John, you had an unusual condition in lean conversion, transformation of GE. We talked to Power this morning earlier where they had to learn it. In many cases, my sense is having looked at, I don't know, 1,000 lean conversions. It gets complicated when you have to convert from a base of fake lean. To what extent was the belief that Aviation was doing lean, but it really was, I will call it an inadequate lean. Was that a special case? Did you have to come at it a different way or perhaps that probably was a transition they had to make before you arrived. But what did you -- am I -- how far off base am I or is this a real thing.

John Stephen Slattery ***GE Aviation - CEO***

I'm looking directly at Larry. You weren't far off base. Humbly, we're still in the early innings of lean. You're going to see here at Greenville, if you get the opportunity to visit with Tim. We, opportunities around our footprint where we're getting good; very, very few places where we're great. I think the first step in lean is the humility to recognize that.

We have a lot of work to do. But I tried to embed it throughout the presentation, it's in absolutely everything we do today. And with that, the flywheel gets better, we visit the site. Every one of my leadership team goes to Kaizens every year. In fact, just a number of months ago, I was with Tony and indeed Larry doing separate Kaizens at our Lynn facility for a full week. And it's only by going to Gemba, going where the work is done, doing the Kaizen for the full week, not an in and out, but doing it for the full week. But that magic, that ultimately starts to happen. You recognize this rings the cash register as our Head of Lean, Betsy Bingham, would say, "we want to make impact, you're not here for anything other than to make impact and improve the working lives of our employees." That cultural shift is running in parallel with getting better productivity for the shareholders. So I would say we're still early innings, but we're profoundly committed to it. There is no other way to run a company of our size and complexity than the principles of lean.

Steven Eric Winoker ***General Electric Company - VP of IR***

John, we have a number of e-mails as well. I'm going to just take one and then we'll go back to the audience, Brendan to you after this question, which is about retirements. This one is from the buyside. And basically, just asking if you can give your view of retirements, any change in the current environment and how to think about that for your business?

John Stephen Slattery ***GE Aviation - CEO***

It's a short answer. We really haven't seen retirements pick up this year, last year or indeed the previous year. The last thing airlines want to, by the way, you separate retirements from tear downs. We're really not seeing a lot of aircraft being torn down. Aircraft being parked for a period of time, you'll see that in every cycle. But an aircraft getting torn down, which is really where I think the questioner is going, we really haven't seen it.

The option value goes away once you take an aircraft apart. As we think about that compound annual growth rate, that relation between GDP and the demand for passenger travel being 1.5 to 2x, airlines are going to be very, very slow to tear down those aircraft. And that's why Russell is not seeing a real wave of used serviceable material coming to the market. The demand continues to be robust.

Steven Eric Winoker ***General Electric Company - VP of IR***

That's helpful. Brendan?

Brendan John Luecke ***Sanford C. Bernstein & Co., LLC., Research Division - Research Analyst***

A quick follow-up on the Russia situation. As you look, say, upstream to the air framers or military customers, do you see any revenue risk as they may struggle to secure inputs? And again, this kind of circles back to titanium.

John Stephen Slattery ***GE Aviation - CEO***

Yes. Look, I won't speak for the airframers, I'll let them speak for themselves. I think Larry gave some guidance at the top of the house. Our revenue is about 1% from Russia. We've derisory exposure, if you think about it that way to titanium it's 1% or a little less. And even with that, at the full year of that inventory on the shelves. So -- but I'll let the airframers talk about. It's about 2%, 2.5% of the installed base, if I add Russia and Ukraine.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. We are out of time. Unfortunately, we'll get to another set after Larry and Carolina. So, Larry, any comments you want to make?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

John, thank you. Well done. Well done, team. Thank you. I don't think anybody came here unaware that this business is poised, right, both with respect to the post-COVID recovery in terms of departures and flight hours and in Hopefully, you caught Russell's increase in his outlook for 2022. By the same token, we know our major airframe or customers are also poised to continue over the next several years to ramp production. But what I hope you come away with and again, anxious for you to visit with Tim later is the breadth and the depth of the strength of this business. particularly in the underlying capabilities that are critical for what lies ahead, right? Whether it was Kaizen experience, in SOMA where everything that you heard from Mohamed there at the end. I mean that is a broad array of capability to this business and this business uniquely has. So, I think we're well positioned to serve and to deliver in the years ahead. So, with that, we're going to put on the presentations with our financials and Carolina Dybeck Happe, our CFO, is going to come up and take you through that.

Carolina Dybeck Happe ***General Electric Company - CFO***

Thank you, Larry. So usually, when you have this slot, you have to say, and the last thing that stands between you and lunch, but it's actually even worse because I'm the last thing that stands between you and really going to Gemba and I know that's why you're really here. But with that, let me talk to the financials.

So, you've heard through the whole morning about our leaders talking to GE and the GE transformation. And it is an ambitious journey we're on, both operationally and financially, and we are really positioned to create value. I also wanted to add what we are doing in finance to enable this transformation.

And there are a couple of foundational improvements needed to do what we want to do. The first one really has to do with structural improvements. And it's about providing the right detailed set of financials, but also at the right level. We're talking about 30 P&Ls and also with the right frequency, not quarterly, not even monthly, but sometimes even weekly.

And of course, that helps the business to take decisions, the right decisions with speed. The other part is on the balance sheet and significantly strengthening our balance sheet. We've talked about the significant debt reduction, but also improving linearity and, of course, generating much higher levels of free cash flow.

With that as a base, we are now focused going forward on the following, as you can see on the slide, starting obviously with revenue growth. It's about services, it's about new products, it's also about commercial underwriting and having the discipline there. And that top line growth is really what fuels our next priority and that's profitability. So, you add that top line growth, that profitable growth. You add to that, but the work we're doing on productivity, selectivity as well as restructuring and you take all of that profit and you get to our next priority, which is growing free cash flow.

So, the profit, and on top of that, the working capital management that you've heard me talk about before and I will talk about today as well, really drives the growth in cash flow. And finally, what are we going to do with the money? How are we going to strategically be deploying capital, both organically and inorganically. So altogether, we're a stronger company, and we are enabling all the businesses to drive growth strategies.

The next slide, speaking of progress. So here you see our path to profit improvement in 2022. And it's an improvement of $2 billion. We have a clear path, primarily with things under our control. It starts with that high single-digit growth. And remember, 2/3 of that is already in our backlog. You add to that the productivity and the restructuring we do, and you get to that number.

Aviation recovery is a key driver here. But we know and expect the shop visits to grow. We talked about more than 25% of growth there, and therefore, the services. And that's supported by the departure trends. And on top of that, we expect all the businesses to grow. And this is, of course, really important if we look at the environment that we are in now. It is an inflationary environment. We see that on the direct material, labor, logistics, inflation everywhere. And that's why the next part is so important. The work we do to keep price/cost to only a slight negative in the year.

And it really starts with pricing discipline across the portfolio as well as working with our suppliers to rightsize our cost size. You've heard a lot of examples of that today. Pat, before he lost his voice, he was talking about how he's implementing pricing in Onshore Wind and how he expects to see that improve through the year, but also how they are working on cost actions to improve.

We talk about growth. One of the best ways to grow is, of course, innovation. So, we're not taking the pedal off the gas when it comes to investing in R&D, and you'll see that here as well. How do we fund that? Well, we are looking at taking out 3% of gross cost out benefits, and that really helps us to fund the investments. So altogether, the work we're doing across the company to improve volume and productivity more than offset the headwinds that you see from mix, from inflation and that investment in growth.

Speaking of growth, next slide is really a deep dive into our top line and our top line growth. And that top line really starts with the strong order growth that we saw in 2021, and all the businesses have solid plans to grow in 2022. And what's important from this slide is we've separated services from equipment, and you can see that we expect services to grow even faster than equipment. And of course, as we grow our installed base, we're also growing the penetration with services. And with services comes, obviously, margins.

You heard the businesses talk to in the day today about the growth drivers and they talked a lot in detail about that, so I'll just mention the big pieces. Aviation, we're talking about market recovery, ramps both in Commercial and in Military. Healthcare, we're talking about strong backlog, global markets, strong demand and the supply chain countermeasures the teams are doing to get more products out. Renewables, offshore ramp and in Power really transactional services growth.

So overall, despite the supply chain constraints we see, we're confident in our ability to deliver our top line high single-digit growth, 2/3 of that is already in the backlog, and we have better manufacturing capabilities through the lean efforts, and we have improving market fundamentals.

From top line to bottom line and really the cost out work we're doing to expand our margins, obviously. So think about this as we're managing a total cost pool of about $67 billion, as you can see on the slide. And about 40% of that is direct material, a little less than 40% is labor and overhead and the last 20% is SG&A and R&D.

So, we are focused on, in total, driving about 3% gross cost out annually. That is the equivalent of $2 billion. We expect to do that through productivity via lean, but also restructuring and the sorting actions that we've talked about. If we do them piece by piece, starting with direct material. So clearly, a lot going on here. Dual sourcing, we talked about purchase orders with daily management, best cost country and a lot of other actions. We're also, I would say, renewing our focus on value analysis and value engineering. And think about that, that's really a win-win. It's a better product for the customer at a lower cost for us.

And productivity then. So, on productivity, you really have to use lean to get the productivity. And I think all of the businesses gave you different examples here. But it's really about applying the standard work, doing the kaizens. We've talked about how we reduce both manufacturing, but also outage cycle times. You heard about Gas outages and you also heard about Aviation repair examples. And it was actually here in an ops review for -- well, not that long ago, when the Gas team took us through how they got to those really strong results. And they talked about how they standardize crews, optimize material flow and also digitizing part of the front end of that. And they reduced the cycle time with 30%. As Scott talked about how that's now expanding not only through North America, but also to other regions. Another exciting example that you will see also here in Greenville is how the team has applied lean to rationalize the factory space and improving output.

Improving quality and reliability is also a key priority for us. And it's really about the systemic root cause analysis and problem solving. And here, again, we're improving the customer experience as well as reducing our cost. And finally, we continue to operate our functions and processes with discipline and see the benefits from restructuring investments. I would say that this framework is what gives us the confidence in achieving the 2022 and 2023 margin expansions.

So how do we turn the profit into cash? This the 2022 walk. The key point is the strong 2021 results really sets us up well to deliver the 2022 numbers of between $5.5 billion and $6.5 billion. What's important, though, is that this is mainly driven by improvement in earnings. And then we have working capital improvements on top of that.

And on top of that, we also prioritize investments, as you can see, CapEx growing. You heard from the CEOs today, 3 out of the 4 businesses expect to deliver higher free cash flow in 2022. And the fourth one, Aviation is only due to timing of AD&A that, that isn't growing. If you exclude that, everybody is growing. So bigger picture, expect free cash flow to grow year-over-year in 2022, but with the recap increasingly looking towards earnings. And that's also what supports our confidence in getting to the $7 billion or more -- well, more than $7 billion in 2023 of free cash flow.

So, I talked about profit and cash. I have to talk about working capital as well, because working capital is still a focus area for us. You have seen overall that we have made progress in the last couple of years, but you can also see that there is a lot more that we can do. So, I'm really going to focus on 2 areas only: on receivables and on inventory.

And these are really 2 areas where if you look at the opportunities that we have and what we can do by scaling in here, we expect to see really good results in over the next couple of years. If you take receivables to start with, in 2022, we do expect it to be used because of the high single-digit growth, but less so because of the work we're doing to improve the DSO. And 1 day of DSO equals $300 million. And last year, we took out 12 days, so certainly worth it. And one of the -- I would say, one of the people -- one of the teams helping us to get there was the Healthcare team that presented earlier today. So not only did they work on standardizing their terms, improving billing and collections, they also aligned compensation to collections, that worked wonders.

Inventory, the other big one. Here, we expect it to be a source in 2022, and we are deploying lean to improve turns here. Just as a reminder, each turn is worth about $4 billion of cash flow. And with what we see and what we believe we can do over the next couple of years, we have an opportunity to improve 1 to 2 turns. And it really sort of starts with what you've heard today about lead times, looking at lead times end-to-end. And as we continue to mature, I would say, drive more and more pull system to really optimize inventory levels.

On the other accounts, progress in contract assets, we expect it to be sourced because utilization is growing faster than servicing. So, stepping back, we have many levers to pull here. We'll continue to work to reduce working capital at the same time as we continue to grow.

The next slide takes us further out into the future, 2023. But this slide really starts with a clear and the achievable path that we have to deliver meaningful profit improvement in 2022. And I really think that you have that and your anchor there, and you've heard all of the businesses go through all the actions that they have and it's sort of more of that, that gets us then to the $10 billion in 2023. It builds on the progress and the levers and the visibility that we have across the businesses.

You've heard -- I can see where you are, Pete, Scott, and John, talk about their clear growth strategies and their conviction in how they execute against those plans. And a lot of that is because a lot of those actions are within their control.

The largest driver also for 2023 is Aviation, but we do expect Services to continue to grow. And therefore, well, the shop visits are therefore, also the services, narrowbody and widebody. On top of that, add the military growth and the work the team are doing to take cost out to optimize and grow the OMX.

I would say in the other businesses, it's also more of the same, continue the journey that we talked about through 2022. Healthcare, we see growth supported by the new products in Digital as well as the strong market demand and add on top of that, the productivity to improve our mix.

Power, mainly a service story, but we'll have more HA turbines online and will increase not only the installed base, but also the installed base service coverage. And we'll continue to take cost out, as Philippe talked about in Gas and Steam. Onshore Wind and Renewables, we expect Onshore Wind to be profitable in a smaller and profitable U.S. market with services continuing to grow on a larger installed base.

Add to that, the selectivity in international as well as Grid focusing on automation and cost out. Offshore Wind, really ramping and maturing on the cost curve. So, in short, we saw meaningful progress in 2021 and that gives us confidence in 2022 and 2023. Some improvements are market related, but much more is in our control. And that's where we expect to deliver on our strong backlog, grow volumes, drive productivity and lean across the businesses and improve profitability.

On this slide, I think you recognize the $10 billion of profit that you saw from the last slide. And now how do you get from profit to cash. Well, I'll start by saying, this work is pretty easy nowadays. You take out about $1 billion of interest, your tax effect at low to mid-20s, and that gets you to profit level. What is important on top of that is that we expect depreciation and amortization to continue to be larger than CapEx. But there's a nuance within that because we continue to grow and invest in growth in CapEx. So, if you look at only CapEx and depreciation, we would expect them to probably be in part, but there's about $1 billion of amortization in the numbers as well, and that's a noncash cost that we obviously has a long tail on. So that's going to help on the cash flow side.

For 2023, we expect to have negative trade working capital, but we will get help from progress and from collections in the rising market. AD&A for 2023 still expected to be an outflow, but in the end, that will, of course, depend on aircraft deliveries. So bottom line, earnings will drive an even greater portion of the free cash flow growth. And given the amortization dynamics and the working capital opportunities, we believe that cash conversion will be more than 100% for a number of years.

So, what you should take away is we expect the cash flow to be more than $7 billion in 2023, and that is an achievable step-up and is primarily driven by the work we're doing both operationally and structurally to improve the company.

So, what are we going to do with all that money? Well, let's turn to capital allocation. As we have shown you, we've made substantial progress in strengthening our balance sheet and improving cash flow. And this has really created significant opportunities for us, and the optionality is there. We have significant sources available. We talk about growing our operating free cash flow $6 billion this year, more than $7 billion next year. We had $16 billion of cash at hand at year-end. We have the AerCap and Baker stakes of about $12 billion. And going forward, we have the ability to get to less than 1x leverage.

What we do will depend on the range of opportunities that we have. So, we're positioned really well to create 3 global investment-grade, industry-leading companies, and now we shift capital allocation towards growth. We talk about organic investments like in R&D and in CapEx, we talk about operating model, I would say, optimization through restructuring, but also inorganic opportunities. And you saw us acquire BK, you saw us sell a part to EDF. And we also acquired Opus One, which is almost more of a technology investment. And earlier this week, our Board also authorized up to $3 billion share repurchase as a potential capital allocation alternative.

I would say, importantly, as we're playing more offense and invest in growth, this is really what positions us to best create 3 stand-alone businesses. But in the meantime, we are focused on profitable growth and significant cash flow generation and to build optionality and create shareholder value over the long-term.

So, to close, we're focused on profitable growth, really all the way from underwriting discipline to execution. We expect to deliver nearly $2 billion of profit this year with a credible path to $10 billion next year. We will continue to grow free cash flow, mainly for profit, but also managing working capital efficiently. And we're going to use that cash to drive disciplined capital allocation.

All of this is supported by the culture of continuous improvement that we've built into our processes, but also into the DNA of these future stand-alone companies.

And with that, I'll get back to you, Larry.

Steven Eric Winoker ***General Electric Company - VP of IR***

We're actually going to go straight to Q&A right now, and then we'll go to Larry at the end. So, let's get into it. There's no shortage of questions. Thanks, Carolina, for you and for Larry. And I'm sure we do have a lot in the audience, but let me -- because I keep promising, let me actually take one of the e-mailed questions. This is from Andrew Obin, okay? So, who did try valiantly to make it here, okay? So, I will give him that.

On the buybacks, maybe starting with you, Carolina, and then Larry, and then actions ahead of the spins; on buybacks, with a $3 billion share repurchase authorization, what's the framework for balancing buybacks versus the commitments on debt reduction?

Carolina Dybeck Happe ***General Electric Company - CFO***

I would just start by saying, of course, job one is to create 3 leading companies, and all of them would be investment grade. But as you can see from my presentation, there's a bit more room there, and it's -- that's what we're really talking about, how we optimize for all those 3 companies long term from a shareholder perspective. And we talked about organic as well as inorganic investments. And I would say with having everything on the table, of course, also shareholder returns are part of that.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Yes. No, I think that's exactly right, Steve. We've -- I think we shared with a number of you when we were in Miami a couple of weeks ago, the Board is really just beginning to lay out the framework by which we're going to allocate this capital, whether it was AerCap, whether it was BK, we certainly got a few reps in last year. Again, as Carolina suggests, very focused on returns, but we're balancing not only that important financial metric, but the overarching priority, making sure we send all 3 of the businesses out with IG ratings.

And in doing so, we want to make sure that they're set up for success strategically. So, there are a host of things that are on the table here. And we want to make sure we give the Board all the ample support and space to work through those opportunities, those priorities to take the right decisions at the right time. The buyback that the Board actioned on Sunday was really to set up the authorization to be clear, was really to set up, again, that option amongst many. We didn't have the authorization in place, and we needed to do that.

Steven Eric Winoker ***General Electric Company - VP of IR***

Then Larry, his follow-up is really on that point. Should investors expect to either be heads down on the spin-off planning work over the next 24 months? Or is there still an active pipeline of acquisitions and divestitures that are actionable?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

We really like what we did last summer with BK. You heard us talk about Opus One. There are broad dimensions of this, but they're also management routines that are being developed, and we are just now sitting down, I think, every Monday morning, Pete's nodding or Monday afternoon, making sure we're going through with each of the businesses where those opportunities are. So, we're heads down running the businesses along the lines of what we just walked you through in the course of nearly 4 hours, but we are mindful that we have earned the right to redeploy capital.

Again, IG for all 3 is the overarching priority, but we're going to continue to look at opportunities. And I would love a year from now, wherever we hopefully reconvene this session to have a few more BK-like opportunities to talk about, not only in terms of their strategic fit, but the return profiles and what they're doing for us day in, day out for customers.

Steven Eric Winoker ***General Electric Company - VP of IR***

Great. Let's see some hands. You're right next to Nigel, we'll go there and then Josh, Julian, Steve?

Nigel Edward Coe ***Wolfe Research, LLC - MD & Senior Research Analyst***

So Larry, I just want to pick up on that last point. A little bit surprised that the Board didn't prioritize dividend over the buyback just given the importance of the dividend to a lot of GE shareholders. So maybe just talk about how you do the dividends going forward from here? And maybe Carolina, maybe just to clarify, that impact of the LEAP ramp, is that 300 basis points in both '22 and '23? Or was that 200 basis points over that time period?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Nigel, I would not read into the authorization over the course of the weekend as a decision. I think of it, frankly, more is a little bit of housekeeping, a little bit of a technicality to make sure that we could be in the market with the authorization if and when we decide to do so. We don't really need an authorization to take the next step were we to move on the dividend. So buybacks, dividends, acquisitions, some of the legacy issues out there, they're all on the table with respect to how do we best deploy the capital we know is headed our way in the next several years.

Carolina Dybeck Happe ***General Electric Company - CFO***

Yes, and it's over the time period.

Steven Eric Winoker ***General Electric Company - VP of IR***

I think I promised, looking at you in the back. Sorry, I got to go to Joe. I don't think we've had a Joe Ritchie question yet. All the way in the back, right, there you go.

Joseph Alfred Ritchie ***Goldman Sachs Group, Inc., Research Division - VP & Lead Multi-Industry Analyst***

Yes, I'm in the rafters here, thanks, Steve. So, one of the things I did want to try to bridge was the Aviation margins. So going from mid-teens to high teens next year, and so you gave us some good color today on the LEAP, back of the envelope math, maybe it's costing you about $1 million a year-or-so. But your starting point this year should be about mid-teens given all the CMR charges that you took last year. So, I'm trying to just understand is there just an air of conservatism in the numbers for this year? How do we expect to see that ramp into next year in that $2 billion EBIT bridge that you're trying to get to in Aviation next year?

Carolina Dybeck Happe ***General Electric Company - CFO***

Conservatism? I would say, balanced approach. Well, so basically, from '22 to '23 in Aviation, so we expect to continue to grow significantly. You saw John show more than 20% growth next year as well. So of course, you get just the sheer volume growth. And a big part of that is in services. Yes, you will have -- part of that is also mix from LEAP. But just the combination of the strong volume growth, there's actually a dynamic also within shop visits, sort of having more wide-body shop visits, meaning you did see that on slides before as well. So, you have even more revenue per shop visit. So, we do expect the combination of that as well as the work we're doing on sourcing and on productivity as a combination then to get to the higher margin.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. Josh?

Joshua Charles Pokrzywinski ***Morgan Stanley, Research Division - Equity Analyst***

So Larry, with a lot of these kind of larger conglomerate breakups, the first thing that the new management team comes in and says, we were underinvested in and here all the opportunities we have. But we heard a lot today about the investment taking place kind of in each line of business, all for different reasons. Understanding that there will be independent and can go and say whatever they want here over the next couple of years, do you anticipate that they're at kind of the run rate levels of investment today? So, when they're liberated, kind of stay at that level versus needing to come back and say, there's more to do.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

I've never used the C word, and these businesses are already liberated. So, you take your own measure, Josh. I think all of these CEOs, myself included, and the teams would love to reinvest more, right? And that's why we talk -- one of the reasons we talk so much about lean, right? Being able, day in, day out, to bring down labor, material overhead costs, to make sure our G&A is being deployed smartly just gives us more opportunity, right? To make more bets in Mohamad's shop, to give Catherine more opportunity to hire sellers in North America. So, I don't -- I think -- I never look at a business or any of these 3 businesses with a static model in mind.

We want to continue to drive the top line, we want to continue to grind cost out and make sure we're redeploying, right, in the right areas. We talked about selectivity, we've talked about returns in ways that continue to evolve the businesses to lead in the 3 spaces where we intend to lead for another century. Well, I hope that helps.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. So let's take Julian and I've got -- I finally have that promise, Scott David's question, then we'll go to Steve Tusa.

Julian C.H. Mitchell ***Barclays Bank PLC, Research Division - Research Analyst***

Maybe a quick question just around the leverage specifically. You've talked about investment grade and the options on the balance sheet usage. Should we think that sort of 1.5x type leverage on net debt EBITDA is the rough ballpark looking at other sort of industrial investment-grade companies out there?

And then secondly, maybe more for Larry, just around Renewables. There's been a lot of issues for many years. Maybe talk about the line of sight on that breakeven outlook in 2 years in terms of how much is kind of better backlog? And how much may be fixed cost reduction you need in terms of the facility count, the headcount, how much work there is still needed?

Carolina Dybeck Happe ***General Electric Company - CFO***

So let me start with the leverage question then. With the decision that we made and that you're all very aware of separating into 3 strong companies, you really have to look at it company by company. So all of them will be investment grade. And just because of sort of the, I would say, the type of the business and the system that it's working in, energy, by definition, will be the one carries the list, then you have Healthcare of course, has great opportunities in growing organically and inorganically, which can then take more, but we need to make sure that we set Pete and his friends up for a joyful journey over a long period of time.

And then finally, just by math, Aviation is our largest business and largest profit pool, and therefore, can take the highest amount of debt in absolute. So, we're going to be solving for all 3 companies, and we're going to do that before the first spin.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Julian, with respect to Renewables, I would argue that we've made a lot of progress the last few years, but you really need to look at each of the businesses in isolation to perhaps appreciate that. However, a couple of us were talking last night, the reality is, the print is not pretty. It won't be again this year. It will be better next year, but as Scott, I think, suggested, it's not where we want it to be, largely on the back of the U.S. onshore market being depressed at the moment in anticipation of the renewal of PTC in some form, right? If we didn't have that dynamic, we would not be talking, I think, as much as we have about the international on wind challenges that we do. Not that we've been hiding them, but they're not as relevant, they're not as material.

Similarly, you look at what Philippe walked through with respect to Grid, that business has come a long way, mindful that they're working off some legacy obligations that are that were taken when I had a different job, so they go back. But I hope everybody not only saw the improvement in Grid to date, but really took to heart what Philippe shared with respect to Power Conversion. There's a reason we've got Philippe and Nate and company looking after both of those businesses. The read across from the skills and the progress they've made at PC are directly relevant to Grid. So we're going to fix the international Onshore Wind business. I think Pat and Scott laid that out well.

I think Scott and Philippe know exactly what we're going to do to continue to drive the opportunity at Grid, both top and bottom line. I think we are optimistic that the U.S. market will come back with respect to Onshore. And while Offshore is an investment over the next several years, I think Scott made a full throated and appropriately so case for that business being a real contributor, as we think about leading the energy transition over time.

So, we've got work to do, but there are things we didn't really talk about. Philippe touched on Grid Automation. We could have spent 10 minutes on that, right? That's a really hot area where it's a shorter-cycle business. We've got volume. Heather, I thought commented well on the grid modernization need. We can not only get volume there. I think we're doing some good work with respect to visibility, win rate and price. So, there are things that we can do beyond just working off some of the legacy projects and dealing with some of the structural cost that can give us the confidence. But all of that said, just to come back to what Scott framed, we need a little bit of time, right? So, we've made progress, a little tougher right now between the PTC challenge and some of the inflationary pressures there, but we'll get it done.

Steven Eric Winoker ***General Electric Company - VP of IR***

We have -- the clock is running, so Steve Tusa, quick question.

Charles Stephen Tusa ***JPMorgan Chase & Co, Research Division - MD***

You had talked recently at a conference about kind of the seasonality of the earnings. Can you just maybe discuss a little bit around cash flow? Second quarter and third quarter usually pretty even from a cash flow perspective, but with AD&A timing, should we expect third quarter to be a little bit down from second quarter, just to kind of position the year?

And then also on the balance sheet, and kind of a question on derivatives, what are the $60 billion of remaining derivatives after you've taken down, whatever you took down with the GECAS proceeds?

Carolina Dybeck Happe ***General Electric Company - CFO***

Do you want me to start? So, I'll start then with the seasonality. I think it's really, really important. I talked about what we expect to grow profit-wise this year at $2 billion. And why are we confident with that, with the seasonality that we are seeing and that we have shared. So basically, it's sort of business by business.

In Aviation, we expect sort of the return to flight to go through the year. So that's why you see that back-end loaded. In Healthcare, we've talked about how we expect the supply chain situation ease in the second half. So that's why we would have more volume and therefore profit in the second half. And when it comes to both Renewables and Power, a lot of that work is in the backlog. So, because of when our customers want that to be delivered, that's mainly in the second half of the year, that's also why that's going to have the second half sort of heavy. And the seasonality is something that is, I want to say, typical for us. We saw it in '19, and we also saw it, so pre-COVID as well as last year.

And when it comes to cash flow, yes, we also have a seasonality, was sort of really weak starting point of the year. And that's why we also talked about that the second half of 2022 would have more than 100% of the cash that we expect to generate. Second and third quarter, I wouldn't say that they're that even third is better than the second usually for us.

And the last one was on derivatives, yes. So, with the closure of Capital and the massive reduction of debt, of course, the derivative situation goes down to a much, much lower level. And what we have now is much more in line with what an industrial company would have basically to hedge FX mainly.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. All right. I've got a question from Cliff -- sorry, not from Cliff, from Scott Davis, but I saw your hand up Cliff, hold on. Should we expect some actions with long-term care before the spins? I'd imagine the opportunity to exit is better today than it has been in a while.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

I would agree with the premise on the back end of that, but we'll see with respect to the question itself.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. Thank you. Cliff. We've got a mic coming. Sorry, hold on.

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

There's only one Cliff.

Steven Eric Winoker ***General Electric Company - VP of IR***

That's right. Cliff Ransom, Ransom Research, go ahead.

Clifford F. Ransom ***Ransom Research, Inc. - Founder and President***

For better or for worse, probably the worse. Everybody in this room has been bored stiff with me talking about the progress of lean at GE that we haven't really seen it yet. You've disclosed detail today that we haven't been able to see to the extent. We've been blinded by what's going on in the facilities and in the offices by COVID. But I'm struck by 2 things. In the SQDC equation, in my book, there's another metric, and that's employee engagement. I really think the cost is about #7, but I think we would all agree that S, Q and D need to be up in the front. Why have we not heard about employee engagement?

And then perhaps a related issue is when you've been talking today constantly about cost out, cost out cost out. Is that really the long-term metric? Are there other things that lean can do for you, particularly in the transactional world in marketing and R&D, et cetera?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Cliff, as you know well, lean is everything properly deployed. We talk about costs because there are some folks who didn't think we made much money or could generate much cash. And I think what we've been able to demonstrate and will, over time, is that we're going to deploy lean broadly and aggressively in order to do that so that we can deliver for our customers and deliver for our investors. Cost is important from an operational perspective, in my view, and you'll see this on the QDIP boards, on the visual management boards, in the cells. Important part of the mindset here is every minute, every hour, every shift matters, from a safety, from a quality, from a delivery from a cost perspective. And if we build up from there, right? And move away from, let's hustle, we got 72 hours before the quarter closes.

We really, to use Josh's words, liberate, I think, this organization to realize its full potential. But I hope you saw through the course of the day, Scott talking about Hoshin Kanri, our breakthrough management system, teeing up live outage and then taking standard work, taking technology into a critical part of his service infrastructure. I wish we'd had Kevin O'Neil come up from our PDX business within Healthcare.

Kevin's got a lot of growth opportunities that he's implementing that really are a different manifestation of lean, both commercially and product-wise. So, forgive me for giving what may be an ambiguous answer, but it is fundamentally everything when you lead and when you manage in this fashion. You'll get a little bit of taste again, on the 2 tours, you make your own judgments. But it's everywhere.

Steven Eric Winoker ***General Electric Company - VP of IR***

Okay. I've been given the green light for one last question, Markus.

Markus M. H. Mittermaier ***UBS Investment Bank, Research Division - Head & US Equity Research Analyst of Americas Electrical Equipment and Multi Industry Research***

Maybe one last one on Aviation. Thanks much for quantifying the mix headwind from the LEAP. How should we think about that as that improves to '25? The 9x obviously starts to ramp, obviously, smaller volume, but larger engines, so if you think about that headwind coming up, is that similar magnitude, larger or smaller, how would you kind of gauge that?

Carolina Dybeck Happe ***General Electric Company - CFO***

So what we talked about today was about LEAP, and Cathy talked about how we expect LEAP to improve on the cost curve and basically to be breakeven by 2025. To your point, we also have the GE 9X that will ramp. I would say not -- we don't expect it to have the same impact just because of the sheer volume, if you compare a narrow-body with widebodies. And on top of that, as we have services continuing to grow and on top of the work that Larry just mentioned on the lean and productivity because that never ends, by the way, that continues year-over-year. That's how we expect to grow the margin. And therefore, also, John talked about how we would expect it to go. We wouldn't stop at 20.

Steven Eric Winoker ***General Electric Company - VP of IR***

Final comments?

H. Lawrence Culp ***General Electric Company - Chairman & CEO***

Well, I know we're tight on time. So, I will be brief. First of all, Steve and your team, thank you. A lot went into this. We won't be together as a group again, but thank you for making this happen. Now you got to feed everybody and get them on the bus.

Just very briefly, I really hope that, if anything, you walk away with 3 core ideas. One, as Pete, I think, started out, these are outstanding businesses. All 3 of them with leadership positions in markets that matter. Two, we're running these businesses better today, and we're not done. There's a lot more to come. There's a lot more that we can do, and we will do that. And you'll see that play out in a host of ways. This is my final point.

You've seen us repair the balance sheet. You've seen us demonstrate better free cash generation. We're going to pivot here to more profitable growth, which was always the aim. We'll do that first organically. We'll supplement that inorganically, all with a strong and disciplined returns mindset. And we think that's going to be a winner all the way around. For you, as investors, but also for our customers and for our team. We really do appreciate you coming. Be safe when you're in the facilities. SQDC does start with S, and we really appreciate the investment of time that you made today and for many of you, the investment of capital that you've entrusted in us. We won't let you down. Thank you.

Steven Eric Winoker ***General Electric Company - VP of IR***

So with that, we're going to end the webcast, and I'm going to talk logistics for a minute. We are going to have just less than 10 minutes of a break, so move quickly in terms of snacks and food. After that, on your name tags, which you have, there's a color, a circle and a number. The color indicates if you're either in the blue group or the green group. The number is the bus to get on. If you're confused, look at the number, go to the bus with the number, you'll be good. We'll take care of it from there, okay? But just move quickly because there's a lot to see and be safe. And no camera, no pictures in the plants, please, competitive, et cetera. So, I know we have some fans of that, but just try to restrain yourself on that front. Thank you all for coming.