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MANAGEMENT DISCUSSION SECTION

Operator: Welcome to Johnson Controls Third Quarter 2022 Earnings Call. Your lines have been placed on listen-only until the question-and-answer session. [Operator Instructions] This conference is being recorded. [Operator Instructions]

I will turn the call over to Michael Gates, Senior Director, Investor Relations.

Michael Gates

Senior Director - Investor Relations, Johnson Controls International Plc

Good morning, and thank you for joining our conference call to discuss Johnson Controls third quarter fiscal 2022 results. The press release and all related tables issued earlier this morning as well as the conference call slide presentation can be found on the Investor Relations portion of our website at johnsoncontrols.com.

Joining me on the call today are Johnson Controls Chairman and Chief Executive Officer, George Oliver; and our Chief Financial Officer, Olivier Leonetti.

As a reminder before we begin, during the course of today's call, we'll be providing certain forward-looking information. We ask that you review today's press release and read through the forward-looking cautionary informational statements that we've included there. In addition, we will use certain non-GAAP measures in our

discussions, and we ask that you read through the sections of our press release that address the use of these items.

In discussing our results during the call, references are made to adjusted earnings per share, EBITA and EBIT, excluding restructuring as well as other special items. These metrics, together with organic sales and free cash flow, are non-GAAP measures and are reconciled in the schedules attached to our press release and in the appendix to the presentation posted on our website. Additionally, all comparisons to the prior year are on a continuing ops basis.

With that, I will turn the call over to George.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

Thanks, Mike, and good morning, everyone. Thank you for joining us on the call today. Let's begin with Slide 3. As we closed out the third quarter, we continued our pace of delivering solid topline growth, supported by a resilient backlog and strong order pipeline. Reported sales for the quarter increased 4% to \$6.6 billion compared to the prior year and grew 8% organically, in line with our expectations for the quarter. The overall demand backdrop remains robust with total field orders up 11% organically year-over-year and 29% on a two-year stack, as our record backlog continues to grow, increasing 13% organically year-over-year.

The third quarter was an inflection point, and our teams have done an excellent job of executing, both from a sales perspective and operationally, despite the challenging macro environment we have faced throughout the fiscal year. While supply chain disruptions have reduced the speed at which we can convert our substantial backlog, primarily in our longer cycle North America Solutions business, our enhanced focus on supply chain management is beginning to produce results.

Our teams have done a great job working with suppliers to mitigate the impact of supply chain headwinds by securing critical materials and managing sites to improve production and facility utilization. I remain confident in the fundamentals we are building for fiscal 2023 and beyond.

Given our prudent approach to managing operations and advancements across key growth vectors, I believe we are positioned to withstand these fluctuating headwinds and simultaneously deliver on our long-term targets. Our focus on strong business fundamentals and meeting customer demand for smart, healthy and connected buildings across the most mission-critical vertical markets remain our top priorities.

We've also taken great strides to deliver on our strategic initiatives over the quarter and remain on track to achieve our goal of reaching \$230 million in productivity savings, realizing \$170 million in cost savings year-to-date. We are also utilizing additional levers through functionalization, simplification, and our ERP rollout to further drive our productivity efforts.

In addition to the margin benefits from our cost optimization efforts, we are seeing improvements in price/cost, which inflected positive for the first time this year. We expect additional cost absorption to be realized in our field project backlog, which consists of higher book margin to be converted in the quarters to come.

As we accelerate our growth strategy, we are confident in our ability to achieve our strategic vision of becoming the smart building solutions leader. Through our digital transformation efforts, we reached significant milestones during the quarter and year-to-date, further advancing our OpenBlue platform, executing on our commitment of investing in best-in-class technologies, and fostering technology partnerships.

Our efforts further strengthen our ability to capitalize on the vast and emerging secular trends across our installed base, as we look to lead the way in fostering clean energy usage and healthy indoor air environments for our customers and transform our service value proposition.

M&A remains another key strategic priority to further our growth objectives, with several actionable opportunities in the pipeline that will allow us to support technological advancements and synergies across our portfolio.

From a capital allocation standpoint, we have deployed over \$2 billion in capital year-to-date, including over \$1.4 billion in share repurchases and nearly \$700 million in cash dividends. Our execution this quarter defines our meaningful approach to reaching our strategic objectives of commercial excellence through enhanced digital capabilities and supply chain management, all while continuously improving the diversity of our organization.

We are committed to strengthening our leadership across our organization with recent appointments of Rodney Clark, as VP and Chief Commercial Officer; Anu Rathninde, as VP and President of Asia Pacific; and Susan Huppertz, who assumed the role of Chief Supply Chain Officer. We pride ourselves on fostering a high-performance culture and having the teams in place to drive continued innovation to address today's challenges while leading the way for the future of our industry.

While there is still a long way to go until supply chain disruptions normalize, we have seen encouraging signs of operational improvement, helping to stabilize supply chain related challenges, as we realize the benefits of our management and contingency programs implemented throughout the year.

Now turning to Slide 4, we continue to lead the industry in connectivity with OpenBlue and have built upon significant milestones to solve the dynamic needs of our customers. Through our fully integrated digital platform providing the latest cybersecurity, AI enablement and digital twin capabilities, OpenBlue remains a step ahead of the competition.

Last quarter, we launched the OpenBlue Gateway, which was a critical step in accelerating the connectivity of our equipment and a key enabler of our ability to deliver enhanced digital service offerings. To date, we have over 8,400 connected chillers through OpenBlue, representing an 86% increase year-over-year.

The launch of our connected control platform, which represents the first integration of OpenBlue with our legacy Metasys platform, is also off to a great start.

As mentioned last quarter, we view this as a significantly disruptive solution that will allow us to intelligently automate buildings to get to the next level of optimization for our customers' indoor air quality, energy efficiency and carbon reduction needs, as well as transform our service value proposition.

In addition, we look forward to providing customers with added flexibility of data integration with OpenBlue multi-cloud capabilities. This technology gives customers the ability to seamlessly integrate hosted data from various outlets, while ensuring a high availability of data and insights for our customers.

Lastly, on the M&A front, we announced another exciting technology acquisition with Tempered Networks, similar to the FogHorn acquisition announced in Q1. This transaction leverages best-in-class technology to further enhance the OpenBlue technology stack. Tempered's industry-leading edge security focused and proprietary air wall technology will be seamlessly embedded into OpenBlue Bridge to create a zero trust security pipeline that enhances the trust and connectivity of our growing network.

This purpose-built system greatly simplifies the implementation of zero trust cybersecure networks, including connected equipment, which are already resonating strongly with our customers. This is critical as we think about our strategy for AI-enabled edge devices and the importance of data security for our customers, and we are excited to welcome the Tempered team to Johnson Controls.

Next, moving to Slide 5, our differentiated best-in-class digital services, while still in the early stages, are maturing and delivering results as we start to capitalize on the flexibility and solutions offered to our direct channel customers. Core services benefited during the quarter with orders and revenues up over 7% and 8% year-over-year and 20% and 19%, respectively, on a two-year stack. Our overall service attach rate increased another 70 basis points in the quarter, bringing us closer to our target on a run rate basis.

Moving along to Slide 6, turning to our growth vectors. With climate change continuing to pose an imminent risk, decarbonization is an increasingly significant goal nationally and globally, both in the public and private sectors. At Johnson Controls, we drive our business forward by recognizing there is a role for us to play in global decarbonisation, and have taken great strides in growing our best-in-class partnership ecosystem to address our customers' commitment towards net zero.

Through our collaboration with Forrester, we have commissioned our proprietary sustainability maturity assessment tool, helping customers deliver on their net zero goals. We have strengthened our partnership with Accenture, which together will deliver two new Johnson Controls OpenBlue innovation centers, helping further the development of AI-enabled building control system products and services to accelerate our development and deployment of a full portfolio of digital solutions.

Year-to-date, our sustainability infrastructure business has booked over \$595 million in orders, and we remain on track to deliver over \$1 billion of orders for fiscal year 2022, representing a 15% increase year-over-year. In addition, our \$7.2 billion pipeline remains healthy with over 200 active opportunities, consisting of large multinational customers spanning across numerous end markets from hospitality, health care, beverage and industrial.

Turning to Slide 7, shifting to Healthy Buildings, the market opportunity remains strong with global government support for indoor air quality investments on the rise. We remain uniquely positioned to capture this trend and help customers manage challenges through our OpenBlue indoor air quality as a service. This turnkey offering has continued to gain traction, providing customers with a long-term proactive approach to meet the ever-changing health and safety compliance standards, while leveraging our advanced OpenBlue technology stack to optimize costs and increase productivity.

Notably, during the quarter, we delivered strong results. Year-to-date, Healthy Buildings orders have increased 27% year-over-year. Our Healthy Buildings pipeline represents over \$1.3 billion and has grown 33% year-over-year.

And finally, on slide 8, we continue to demonstrate our leadership in sustainability data privacy and diversity, and we are honored to be recognized for our efforts. Most notably, we would like to recognize our own Chief Human Resources Officer, Marlon Sullivan, who was recently named as one of 2022's Most Influential Black Executives in the Corporate World.

To close out my prepared remarks, I am confident about what the future holds and how our team is positioned to lead the way towards a more sustainable future for our customers and communities. We have made great

progress across our key growth vectors and have managed to navigate a difficult macro environment while executing our strategic initiatives. Despite the temporary headwinds, our path forward remains bright, and we are in a perfect position to execute on our resilient backlog demand through 2023 and beyond.

With that, I'm going to turn the call over to Olivier to walk you through the financial details in the quarter and update you on our outlook. Olivier?

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

Thanks, George, and good morning, everyone. Let me start with the summary on slide 9. Sales in the quarter were up 8% organically, at the midpoint of our original guidance for high single digit growth, with price contributing nearly 8 points, in line with what we originally anticipated. We saw strong performance across our shorter-cycle Global Products portfolio up 9%. Our longer-cycle field businesses also performed well, up 7%, with solid growth in both service and installed.

Segment EBITA declined 3% with margins down 110 basis points to 15.1%. Favorable price cost and the benefit of our ongoing SG&A and COGS programs were offset by 104 basis points margin headwind from lower volumes and supply chain-related challenges.

EPS of \$0.85 increased 3% year-over-year, benefiting from positive price/cost as well as lower share count, and absorbed a \$0.03 FX headwind versus our guide assumptions. Free cash flow was down in the quarter, as we continued to manage supply chain disruptions in order to meet customer demands.

Turning to our EPS bridge on slide 10, overall, operations contributed \$0.02 versus the prior year, including a \$0.07 benefit from our COGS and SG&A productivity programs, which helped to offset lower volumes and supply chain challenges. Underlying segment earnings were a net \$0.05 headwind year-over-year.

Please turn to slide 11. Orders for our field businesses increased 11% in aggregate with continued momentum on a two-year stack basis. Service orders were led by high teens growth in our shorter-term transactional business. Install orders increased low double digits in the quarter, primarily driven by demand for applied HVAC and control systems.

Field backlog grew 13% to \$11.1 billion, a \$1.3 billion increase versus the prior year and up \$174 million sequentially. In our project-based field business, we continue to build our backlog with higher margin work. As supply chain disruptions subside, and our mix becomes more favorable, we expect margin accretion in the quarter to come. Lastly, our Global Products backlog grew by more than 50% to \$2.2 billion and continues to show strength.

Let's discuss our segment results in more detail on slide 12 and 13. Sales in North America were up 10% organically with broad-based growth across the portfolio, led primarily by strength in our Applied business, up low double digits. Fire & Security grew high single digits. Our Sustainability Infrastructure business grew low double digits with strong growth of about 25% on a two-year stack basis. Orders were up 15% with high teens growth in applied, driven by continued equipment demand in the data center and health care verticals. Fire & Security orders were up mid-single digits and backlog ended the quarter at \$7.2 billion, up 17% year-over-year.

Segment margin decreased 400 basis points to 10.7%, a direct result of headwinds from projects booked prior to acceleration of cost 12 to 18 months ago, as well as the pace and mix of backlog conversion and lower absorption

due to supply chain constraints. Overall, supply chain was a \$45 million headwind in the quarter, and we expect this to improve as we head into Q4.

EMEALA, we saw continued strength in the Fire & Security business, which grew at a high single digit rate in Q3. Industrial Refrigeration declined mid-single digits driven by supply chain delays and customer site readiness, but was offset by high single digit growth in our HVAC business, specifically in the UK&I region. Orders were up 8%, led by mid-teens growth in our Fire & Security platform. Backlog was up 10% to \$2.2 billion. Underlying margin performance driven by positive price/cost and the benefit of cost savings, offset by lower volumes.

Sales in Asia Pacific declined 1%, a direct result of multiple lockdowns in China. Overall, China declined 7%, and the rest of Asia increased 6%, with growth primarily in Industrial Refrigeration. Orders increased 2% with continued strength in Applied, driven primarily by continued momentum within the industrial vertical in China, with a continued pipeline of infrastructure investment across key verticals like data centers, semiconductor, petrochemical and health care. Backlog of \$1.7 billion was up 1% year-over-year.

The 90 basis point increase in margin was primarily the result of positive price/cost and the benefit of cost savings, which more than offset lower volumes from the COVID lockdowns. Sales in our shorter-cycle Global Products increased 9% in Q3, benefiting from strong price realization of 11%. Volumes declined by 2% due to supply chain headwinds and COVID lockdowns in China.

Commercial HVAC product sales were up high single digits in aggregate, with strength in light commercial driven by more than 15% growth in North America and low double digit growth in VRF. Applied HVAC sales were up 8%, driven by strong growth in Europe and APAC. Global Residential HVAC sales were up 9% in aggregate. North America resi HVAC was up 22%, benefiting from both higher growth in our equipment and parts business and strong price realization.

Outside of North America, our resi HVAC business grew mid-single digits, led by strong double digit growth in Europe, driven by strong demand for our Hitachi residential heat pumps. APAC Resi HVAC sales grew low single digits led by strong growth in India. Fire & Security products grew high single digits in aggregate, led by our specialty products in Europe and North America, up 27% and 18%, respectively.

Although not recorded in our official filled order backlog, Global Products orders were up mid-single digits organically and our third-party backlog exceeded \$2 billion.

EBITA margins expanded 110 basis points to 22.2% as the benefit of productivity actions and favorable mix more than offset headwinds from supply chain disruptions.

Turning to our balance sheet and cash flow on Slide 14, we ended Q3 with \$1.5 billion in available cash and net debt at 2.2 times, still at the lower end of our target range of 2 to 2.5 times. As I previously mentioned, free cash flow was impacted by supply chain disruptions. To meet our customer demand, we are carrying higher inventory levels, and as supply chain normalizes, we expect gradual recovery of trade working capital. We repurchased another 7 million shares for approximately \$400 million in the third quarter, bringing us to \$1.4 billion for the year.

Now, let's discuss our refined guidance on Slide 15. Underlying demand trends across most of our businesses continue to grow, and I'm encouraged by the pace of all the growth we have seen year-to-date. We are on pace to meet our commitments despite continued pressure from FX. We are refining our full-year adjusted EPS range to \$2.98 to \$3.02, absorbing \$0.06 of FX headwinds. EPS growth of 12% to 14% is expected year-over-year.

On the top line, we expect to grow 8% to 9% organically. Price is expected to contribute seven points, in line with our prior expectations, fully offsetting additional inflation. For the full year, we still expect to be slightly positive on price/cost.

Segment margin is now expected to come minus 10 to minus 20 basis points, reflecting pressure related to additional price on the top line with minimum margin contribution, and the mix impact associated with the supply chain disruptions in North America. These factors account for nearly a 150 basis points headwind versus the prior year.

Full year free cash flow conversion is now expected to be 80%, as the inventory built in the first half combined with slower backlog conversion, create nearly a \$200 million headwind to our prior guidance. Due to the actions taken to mitigate the supply chain impacts, we are not anticipating the typical seasonal inventory drawdown.

Turning to Q4, EPS is expected to be in the range of \$0.96 to \$1.00, which assumes organic revenue growth of 9% to 10% and a segment margin improvement of 40 to 60 basis points, offsetting \$0.03 FX headwind. While near-term supply chain disruptions still impact backlog conversion rates, we continue to meet our commitments in a challenging environment. We have seen positive improvements in our run rate, cost optimization efforts, and price/cost headwinds. Looking forward, we are confident in our ability to convert our backlog in 2023 and realize sequential margin recovery as we move towards long-term targets.

With that, operator, please open up the lines for questions.

QUESTION AND ANSWER SECTION

Operator: Thank you. [Operator Instructions] Our first question today comes from Gautam Khanna with Cowen. Your line is now open.

Gautam Khanna

Analyst, Cowen and Company

Q

Yes, I had two questions. First, if you could talk about the NCI variance that you described in the guidance? And secondly, if you could just opine on fiscal 2023. Last quarter, you mentioned you might catch up that which was lost this year next year. Do you still feel confident of that? Because when we look at street numbers, we're looking for 20% plus earnings growth. I just wanted to get your view on that. Thank you.

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

A

Gautam, good morning. I hope you're well. Thank you for your questions. I will take the first one and George will take the second one. In terms of NCI, if you look at particularly the segment EBITA margin in the quarter where we had a slight miss, this is mainly due to the underperformance of our joint venture with Hitachi. And this is particularly due to the slowdown we have experienced in Japan residential, and we're catching up this miss in NCI, and we are largely planning that to be the case in Q4 as well.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

So, Gautam, as it relates to 2023, I'd say we are continuing to look at the potential headwinds and signs of a recessionary environment. What is really positive is our order velocity doesn't indicate this, and our order book margin profile continues to strengthen and materialize as we plan for 2023.

If you look at our backlog, we've got a strong, resilient backlog of \$13 billion. That's made up of over \$11 billion in the field and over \$2 billion in Global Products. And as Olivier talked about, as we've been booking projects over the last year, obviously, we've taken into account a much higher level of inflation that's booked into those projects as well as have accreted the margins that we've booked. And so on a go-forward basis as we've inflected here in third quarter, we've got a very attractive margin rate that's going to play out as we go forward.

And so, then the other opportunity that we have, as we talked about last quarter, is that we ramped up in the third quarter. So, we have a seasonal pickup from second to third, and I'm very pleased with the progress we made in supporting that volume increase in third quarter. Now, we didn't do a lot of recovery because we were in a step up because of the seasonality.

Now going forward, with all the work that we've done with our suppliers, we've got line of sight to materials that will sustain this level of output in fourth quarter and continue as we look at Q1 and Q2. So, it's going to be important that we continue to improve the turn times in our project-based business, which we're focused on doing, as well as then the higher margin projects ultimately playing out through the course of the year.

And then in addition, I would say what we feel really good about is the progress of our services with the digital services that we're offering and how that's resonating with our customers, and now being able to take our installed base and layer on a whole new level of services with OpenBlue. That's really starting to take hold.

And then I think if we do get into a recessionary period, with the secular trends that we see in our space, are very attractive, especially now with some of the regulations and legislation coming through requiring reduction in energy demand and requiring heat pumps and the like.

And so, we're fully aware of the risks. I think we've been building a pipeline, a very strong pipeline that's going to be playing through here very well in 2023, and we'll have a playbook – we'll make sure that our playbook is ready, so as we – if we were to go into a downturn, we would be able to navigate it similar to what we did during the pandemic. So, we're focused on what we can control. Certainly, we're excited about how we're executing our strategy, and certainly, we'll give you more update as we go through Q4 and lay out 2023.

Operator: Thank you. Our next question comes from Steve Tusa with JPMorgan. Your line is now open.

C. Stephen Tusa

Analyst, JPMorgan Securities LLC

Hi, good morning. Sorry, I hopped on late. I missed some of the intro, but have you guys addressed what – from a cash and an earnings perspective, what maybe could be considered pushed into next year. Is there any change in the messaging that what you're missing this year is not necessarily lost, that that's kind of pushed forward?

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

Steve, we have not covered that. Good morning. From a free cash flow standpoint, what we're experiencing today is an increased level of inventory, resulting from the actions we have taken to manage our supply chain disruptions and meet our customer demands. That's largely an industry trend.

Steve, if you look at the KPI for cash conversion cycle, we're improving DSO four days better year-on-year, improving DPO eight – seven days favorable year-on-year. And the drag we have in free cash flow at the moment is due to inventory seven days up in DIO year-on-year.

We expect, as a result, the free cash flow conversion for the year to be about 80%; we had a guide of about 90% if you remember, Steve. And to your point, no change in the fundamentals. This inventory will go down, mainly based upon what George just said, and we are totally convinced that we will be able to go back to the 100% free cash flow target we have committed to you and our investors.

C. Stephen Tusa

Analyst, JPMorgan Securities LLC

Q

Yeah, and I guess just following up on the earnings front on that side. You had mentioned last quarter, I think, that you'd see – usually, you go down seasonally 4Q to 1Q – but you should see kind of an above seasonal performance given this is supply constraint related. And you're talking about having visibility to a consistent level of supply. I don't know whether you mean that in a seasonal sense or not. But like, is the run rate heading into next year still expected to be better than seasonal as these revenues and earnings and cash push forward? I guess more on a revenue and earnings perspective, you kind of answered the cash question, I guess.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

Steve, I just addressed that with Gautam as it relates to 2023. What we've been working on is, we had a challenge going into third quarter to ramp up our supply chain to be able to achieve from a full log standpoint, the typical step up. I'm very pleased with the progress we made in being able to do that, supporting the third quarter.

Now as we go forward, we've been working on a forward-looking basis to maintain the component supply, so that we can remain at this elevated level of output through Q4 as well as we position for the first half of next year. Typically, we go down. We typically go down in the first and second quarter because of the seasonality and then begin to pick up again.

And so as we said last time and it still holds true today, that we're working to sustain this elevated level of output, begin to accelerate the turn of the projects that we have in backlog, and be able to have in the first half, be significant relative to a growth standpoint because of the price that's in the backlog that's going to turn and then the ability to be able to turn our projects faster to be able to get through that backlog.

C. Stephen Tusa

Analyst, JPMorgan Securities LLC

Q

Right, so above seasonal in the first half, I guess, is the simple question? Do you expect it to be above seasonal in the first half?

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

It'll be – from historical, we will be – yes, from what we've seen historically, we will be above that rate in the first half.

C. Stephen Tusa

Analyst, JPMorgan Securities LLC

Q

Okay, great. Thank you.

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

A

Steve, if you look at the – yeah, if you look at the backlog today, that's record high for the two businesses we have. In our field business, backlog is at about \$11 billion, up 13% year-on-year. And in our Global Products shorter-cycle, the backlog is up 50% at more than \$2 billion. So as George indicated, as supply chain gets better, that should flow through in the first half of the year.

C. Stephen Tusa

Analyst, JPMorgan Securities LLC

Q

Great. Thanks.

Operator: Our next question comes from Jeff Sprague with Vertical Research. Your line is now open.

Jeffrey Todd Sprague

Analyst, Vertical Research Partners LLC

Q

Thank you. Good morning. Just back on supply chain, but maybe just a kind of different wrinkle. Also been a fair amount of issues just on job sites, right, construction crews, that sort of thing. So even though your confidence level is going up on kind of inbound materials – it sounds like – into your factories, just wonder if you could kind of address that other side of the equation? What's outside of your control and the confidence to kind of step up to this higher revenue rate in the fourth quarter as a function of that?

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

Yeah, so it's a – great questions, Jeff. When you look at where we've had the biggest impact is in our North America business, and it's really the convergence of three supply chains. So it's not only what our customers are doing, what we supply to our North America business, especially around building management controls, and then ultimately, what we buy from other OEs that contribute to the project-based business we built. And so, all three have been challenged.

What we've seen in the third quarter, we have significantly improved our turn of our building management systems and the digital content that we provide to our North America business. We're continuing to work with the other OEs and seeing improvements in their deliveries as well as the line of sight to sustain those deliveries going forward.

And then I think as labor begins to subside, the labor pressures that everyone has had to deal with during this cycle, I think are beginning to subside. So, that I think, would impact the broader customer – the ability for the customer now to execute more on plan relative to the projects that are being completed.

So, I think those are the three elements that drive our success. We see a net result in the quarter was about \$45 million in lower absorption in North America. That will continue to improve as we go through Q4, that will be reduced. And then on a go-forward basis, as I said, we're going to get back. We've got projects, on average, we're turning – it's really about two months, it's taken two months longer, that we're going to start to see that turn reduced and getting back to where we've been historically.

And so it's hard to say precisely what it's going to be, Jeff, but I have confidence, working across all of those factors, that things are improving and we're going to be able to turn faster. We're going to be able to get additional volumes through here, especially as we look at the first half of 2023, and that should play out pretty well for us.

Jeffrey Todd Sprague*Analyst, Vertical Research Partners LLC*

Q

Great. And then maybe as a follow-up, a lot of that is embedded into the margin question. I guess the other key part of the margin question is this dynamic of what's working through the backlog, right, and kind of price catching up given the natural lag in some of your businesses. We obviously see your margin forecast here for the quarter. In aggregate, I just wonder if you could give us a little sense of how we think about the regions, in particular North America, in Q4 from a margin rate basis?

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

So Jeff, if you look at our margin today, we believe – we see Q3 as being an inflection point. We were positive in price/cost for the first time in the year, by \$20 million. We expect to be \$30 million positive in price/cost in Q4 and positive in price/cost for the year. We haven't communicated that in our prepared remarks, but we're observing today that our booked margin for orders are 4 points of our billed margin in Q3, and that is going to flow to the P&L as we realize our backlog.

And as we have just said, as George indicated, the turnaround of the backlog is improving by about two months. That's starting to be the expectation. So, you have higher backlog at higher margin turning faster. So, we believe that margin going forward is going to be a tailwind for our business.

Going back quickly to our North America, which has been most impacted by those supply chain challenges, you see, again, Q3 was an inflection point. We are anticipating an increase of margin in North America Q3 over Q4, to be about close to 4.5 points and the business margin in North America clearly turning around, Jeff.

Jeffrey Todd Sprague*Analyst, Vertical Research Partners LLC*

Q

Great. Thank you.

Operator: Our next question comes from Julian Mitchell with Barclays. Your line is now open.

Julian Mitchell*Analyst, Barclays Capital, Inc.*

Q

Hi, good morning. Just wanted to kind of circle back to the fourth quarter sort of margin construct. So in Q3, you had 8% organic growth and the margin down 110 bps. Q4, you're saying sort of 9%, 10% organic growth, the margin up 50 bps. So, just trying to ask you to unpack perhaps that swing in a little bit more detail. I think one element is, there was no volume growth in Q3, and maybe you're assuming 2 or 3 points of volume growth in Q4. Price/cost, I think, was – or supply chain and labor was a 60 bps headwind in Q3. I'm not sure if that is a tailwind in Q4. Maybe just help us understand some of those moving pieces that's driving the margin there to turn around.

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

So, you have a mix going on now in the margin equation. If you go back to our field business, we priced jobs at the start of the inflationary period. We didn't anticipate in the job we priced, obviously, this inflation, and we quickly adjusted this. Now, you start to see this higher margin backlog in the field business to go through the P&L. That's mainly why we expect to be – we were price/cost positive in Q3 and that will accelerate in Q4 and going forward.

The best example, I will say, Julian, is the statistics I quoted for North America, where you see a significant increase in margin sequentially, so about 4.5 points Q4 over Q3 in segment EBITDA margin. And you see it also in the delta between booked margin and also billed margin as well. So, one being higher than the other by 4 points.

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Let me just add, Julian, too. The other is the mix. As we got behind on our building management system, the electronic systems that go into our solution set, certainly that has a big impact because there's a multiple there as it gets installed and then serviced within our business.

And so, we saw accelerating recovery during the third quarter. We just had a very strong July with our electronic building management systems, and that drives significant revenue as well as, from a mix standpoint, getting back to where we were historically with that content. So, that's another contributor.

In addition to what Olivier said about the pricing, just to understand this pricing dynamic in our field-based business. Up until – it was over a year ago – when we were going to be in a inflationary period, but not the hyperinflation that we experienced. And we've been working to claw back on those contracts, obviously, the additional cost, but it's difficult to get it fully recovered.

We've been booking the last year at a much higher level of cost with a much higher level of anticipated inflation, and then above and beyond that, booking very attractive margins in this environment because of the demand. And so, what you're seeing and what Olivier said, is seeing the mix now of those projects beginning to come through with the higher mix of content that is helping the margin rate.

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

Julian, one statistic. Pricing in the field business in aggregate in the P&L, three points in Q1. In Q4, we expect it to be about seven points, just to complement the analytics we have been talking about.

Operator: Thank you. Our next question comes from Josh Pokrzywinski with Morgan Stanley. Your line is now open.

Joshua C. Pokrzywinski*Analyst, Morgan Stanley & Co. LLC*

Q

Hi, good morning guys.

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

Good morning.

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Good morning.

Joshua C. Pokrzywinski*Analyst, Morgan Stanley & Co. LLC*

Q

George, wonder if we could start off on EMEA Fire & Security. It looks like EMEA orders have held in pretty well. Probably, some of that price you just noted, that the price uptick has been pretty good. But it doesn't seem to really match maybe some of the like, energy retrofit or energy scarcity teams that might be holding up demand elsewhere in Europe. What are you guys seeing on that? And there – have there been any whispers of the market of a slowdown?

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Yeah, so when we look at – and you really have to look at Fire & Security more broadly and not necessarily by domain. We've been incorporating this into more of our building systems offering, so not just Fire & Security, but other offerings. Certainly, the domain itself is very attractive because of the service that we spin out. And then we're going back after the installed base as part of our services to be able to upgrade and then with connectivity be able to perform more services.

So, what you're seeing is that playing out. So we're creating demand with the installed base, we're upgrading, we're connecting. And then ultimately, we're capitalizing on what there is for new projects that are coming through the market. And so, I think you're seeing an output of that and I think the team is executing very well.

The other thing, Josh, is that we have been constrained in the semiconductor with the semiconductor materials. And our teams have done a really nice job working with all of our semiconductor manufacturers, with line of sight now to run rates that are much higher than what we were achieving. And so our ability to be able to then sell and convert, especially on some of the shorter cycle projects, has been a real advantage for us. And so, I think it's a combination of those elements. And we saw Fire & Security in total actually very attractive across the board with the work that we're doing not only in the product level, but also the solution set. And then more importantly, the way that we're executing on the installed base with service.

Joshua C. Pokrzywinski*Analyst, Morgan Stanley & Co. LLC*

Q

: Got it, that's helpful. And then just on pricing, we covered a lot of ground in terms of catching up on inflation, but I'm sort of wondering what it looks like on the other end. So the field business, more like bid jobs rather than list pricing, I guess. Is there a point at which it becomes harder to hold up price with some of the inputs maybe being dis-inflationary or deflationary, like some of the raw mats? Like how do you guys go about maintaining the price on some of those bid jobs down the line?

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Yeah, so the core to what we're doing is creating increased value. And so, when you look at the solutions that we're providing, we're leveraging OpenBlue, we're really differentiating the type of solutions that we serve to the most attractive verticals. And as a result of that, we've been getting high demand and putting high-quality backlog into – high-quality projects into our backlog.

And so when you look historically, our backlog is pretty sticky because they're all typically funded and ultimately, started in – and no matter if we get into a recessionary period, that price holds up relative to how we execute on the projects. And so, I think it's this focus on our strategy, on the value proposition, on the returns that we're getting with the additional content that we're putting into the solution set and then ultimately, building an installed base that enables us to go back and not only have that installed base connected, but then build a suite of solutions or services – digital services – that we apply to that installed base on a go-forward basis, which makes it really sticky.

So, those are the fundamentals of how we're booking. And I would tell you, we've been extremely disciplined. When this all accelerated – it was over a year ago last summer when the view that inflation wasn't going to be transitory and there was really going to be a significant ramp up – I can assure you that on a go-forward basis, we were booking that into the baseline.

Now obviously, what you saw in third quarter was the inflection point of the older projects prior to that coming through in the third quarter. But as you go forward, you'll have a higher mix of these newer projects that ultimately are fully costed and then they're tied to a higher value proposition, that ultimately is a key element of the overall pricing.

Joshua C. Pokrzywinski

Analyst, Morgan Stanley & Co. LLC

Q

Got it, that's helpful. Best of luck, guys.

Operator: Our next question comes from Joe Ritchie with Goldman Sachs. Your line is now open.

Joe Ritchie

Analyst, Goldman Sachs & Co. LLC

Q

Thanks. Good morning, guys, and appreciate all the details.

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

A

Good morning, Joe.

Joe Ritchie

Analyst, Goldman Sachs & Co. LLC

Q

Yes, so maybe I do want to start on the – just to make sure I understand the supply chain and what's embedded in the guidance for 4Q. I mean, is there still an impact from supply chain embedded in your guidance? And then also just on the EMEALA margins, I may have missed this, very helpful commentary on North America, but what's the expected EMEALA margin in 4Q?

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

I'll take the first on the supply chain, and then I'll ask Olivier to comment on the EMEALA margins. What I said was, we've seen a noticeable improvement in our supply chain, and we knew from second quarter to third quarter, there was going to be a big sequential ramp because of our normal seasonality, and we weren't going to be able to recover significantly in that quarter.

But on a go-forward basis, we're building resiliency in working with our suppliers for the supplier materials to be able to sustain that level of production on a go-forward basis. And I'd say, overall, we made good progress. And then what I would say is that we're getting much better visibility on a go-forward basis. So, when we look at run rates – any one of our domains or any one of our – whether it's HVAC domains or Fire & Security, we have a pretty good line of sight now to the critical materials on a run rate basis that sustains our volumes.

If you look at our volumes, at least in Global Products, both the internal and external volume that we have, we're at an elevated level. So, we're going to continue at the level we're at or maybe a little bit better sequentially into Q4. And our goal is to continue to sustain the supply chain as we set up for the first half of next year. So, that's the plan. And some of that now Olivier can talk about the margin structure and how that ultimately comes through, especially, I think the question was around EMEALA.

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

Yeah, so two comments. One, on the supply chain, just to give you a number, Joe, we still have planning for some disruption. About half of what we had in Q3, if you want to give a – to use a number – the disruption is expected to be a headwind of about \$35 million in Q4 due to supply chain.

In terms of EMEALA, largely what played out in EMEALA in Q3 is what we have discussed for North America. If you were to look at Q4, we expect EMEALA margin to be flat year-on-year, very similar trend to what we're expecting for North America where the margin should be directionally flat year-on-year as well.

Joe Ritchie*Analyst, Goldman Sachs & Co. LLC*

Q

That's super helpful. Thank you both.

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

Okay.

Operator: Our next question comes from Scott Davis with Melius Research. Your line is now open.

Scott Reed Davis*Analyst, Melius Research LLC*

Q

: Hey, good morning, everybody. Can you hear me okay?

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Hey, Scott. Yes.

Scott Reed Davis*Analyst, Melius Research LLC*

Q

George, can you talk about the Healthy Buildings orders? Are these competitively bid out? Are they – just a little bit of color on kind of the profitability and what you expect out of these?

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Yeah, so what I would say, Scott, this is really playing out to our strengths, and it's been really attractive. I think from the start, we sized it to be \$10 billion or \$15 billion with a double digit CAGR. That's playing out over the last two years at or maybe even above that. It's been buoyed by the US relief and stimulus funding. There's other global government programs that are focused on IAQ. And a lot of this is actually converging with the focus on sustainability. So when you look at our year-to-date orders, we're up over \$400 million in 2022, up 27%, and that was over a strong year last year, and that's continuing.

We see the budgeting that our customers have relative to doing these upgrades. And so the pipeline right now is about \$1.3 billion on a go-forward basis. And I think what differentiates us, Scott, to your question is, the OpenBlue indoor air quality as a service, where it isn't just one domain, it's our ability to be able to take the combination of what we do with our equipment, with the digital aspect of the building, that ultimately delivers the outcome at the highest level relative to what we deliver. And therefore, you get, obviously, the returns for – very attractive returns.

And I think what we've been doing here is patenting the optimization solutions that we're developing and enabling our customers, which takes into account not just the Healthy Buildings aspect, but also balancing that with the energy costs that are incurred to be able to elevate the indoor air quality, and actually not just use additional energy, actually consume – conserve energy – while you're delivering a higher outcome for the customer.

And so, we're continuing to advance our portfolio. I think over the last two years, we've had 25 products – new products, new solutions launched – supporting this effort. And I think we feel very good about the continued growth rate and the margin profile that we're getting on these solutions that we're serving our customers with.

Scott Reed Davis*Analyst, Melius Research LLC*

Q

Yeah, that's really helpful, George. And then separately, if I look at Slide 4, and you talk about total chiller connections, 8,400, and then growth in chiller connections 86%, and then revenue from connected devices up 8%. How are those connected? Meaning, would we expect a rising revenue growth rate going forward as those short connections start to generate revenues for you? Or – I'm just trying to kind of reconcile how those numbers match up.

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

A

Yeah, so we're – what I would say, we're – I'm very pleased with the progress we're making with services in general. And it's really the services flywheel, where we went back and have assessed our entire installed base. We looked at what we were doing today with more of our mechanical services. And then what we did over the last – it's really been the last year, going back to mine that installed base and getting – going back and getting that older equipment connected, ultimately providing offerings for, once you get the connection, the use of the data and ultimately developing additional data services that optimizes the use of the chiller.

And so, it's been not only with the existing contracts, getting them all connected as part of our existing contract, and then being able to take the new services and add on to that, so you get more revenue per customer, but it's also been mining the installed base to be able to pick up some of that installed base that whatever reason we hadn't been serving.

And so we're up – the enabler of that, Scott, is OpenBlue. So, we launched a very efficient gateway with OpenBlue that allows us to have very – it's very efficient in how we can go back and connect it and get the immediate use of the data. And that, as a result, has accelerated our ability to connect. We're up to over 8,400, up 86% year-on-year, and that's only going to accelerate on a go-forward basis. And so, it's helping our attach rate.

And so, when you go in and whether it's a new piece of equipment or an existing PSA, you go in – with that attachment – our renewals are much higher, as well as when you put out a new piece of equipment, it enables us to be able to manage that equipment through warranty much more efficiently. And it makes it more sticky to that go forward, getting the service on a go-forward basis.

Those two combined and then with some added services we've launched, OpenBlue Chiller, Vibrational Analysis, Energy Advisory, there's a lot of other added capabilities that once you get that connection, there's a lot more value that can be created in how you serve that installed base. So, those are the elements that come together, but we're very encouraged with the progress we've made to date.

Scott Reed Davis

Analyst, Melius Research LLC

Q

Okay. That's really helpful to hear that. Thank you, George. Good luck to you guys.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

Thanks, Scott.

Operator: Our next question comes from Nigel Coe with Wolfe Research. Your line is now open.

Nigel Coe

Analyst, Wolfe Research LLC

Q

Thanks. Good morning everyone. A couple of a ground here. Hi, good morning. I just wanted to go back to these 4Q margins. And Olivier, I think you pointed to 11% margins in EMEALA and 15% plus in North America. When we look at that sequential improvement, you talked about the 4 points better booked backlog versus what's being billed today, and you've also talked about supply chain improvements. So I'm just wondering, when we go from 3Q to 4Q in those two segments, how much of it is getting that better price backlog out versus supply chain improvements?

And then maybe just on this 4 points of improved margin, what is the cost assumption you're making there? Are we using current costs? Are we assuming some inflation metric on future costs?

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

A

So, many questions here, Nigel. In the improvement in the margin in Q4, it's mainly due to now us realizing our billing orders which were booked about nine, 12 months ago at our lower level of inflation. And the improvement you see now in the P&L is largely due to the realization of those orders at high margin, less to the improvement in the turn rate of the backlog. The turning of the backlog is starting, but it's going to be mainly pronounced next year. That's the assumption.

In terms of cost, we are assuming today in our cost, future inflation – so future inflation in high single digits. And the orders we have been realizing, and you saw that the order flow for our business was very strong, the order flow is actually based upon business won with this high single digit inflation, Nigel.

Nigel Coe

Analyst, Wolfe Research LLC

Q

Okay. No, since I asked about five questions there, you actually answered it very efficiently, so thanks for that. And then, maybe talk about the international residential business. It's obviously a bit of a black box for many of us. Maybe just address kind of how you – maybe, George, how you're viewing some of the major territories as we go into 2023, China, Japan? And then maybe just address the European heat pump opportunity and how well positioned Hitachi is for that?

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

Yeah, so if you look at our JCH business, obviously, we have a strong presence in Japan and Taiwan. Taiwan has been performing very well. Japan has been a little bit softer as it relates to the residential offering. But the rest of the world, where we've been expanding our footprint and working to gain share, we've actually been doing very well.

India has come back from where they were pretty much – pretty soft during the whole COVID cycle – that's coming back. We're seeing nice growth in Europe because of the offering and the strong heat pump portfolio that we have within the JCH portfolio. We're seeing nice pickup in Europe. And we continue to work to expand our presence here in North America. But overall, I mean, even though we have high growth, it's to a small base.

So overall, we've been, from a reinvestment standpoint, we've had high reinvestment. We've got a lot of new products, new heat pumps that are coming into the market, and we feel very good about it on a go-forward basis.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

And what was the second part, Nigel?

Nigel Coe

Analyst, Wolfe Research LLC

Q

It's about the European heat pump opportunity. I think you addressed that, sort of, within there.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

A

Well, what I would say on that, because I think it is important there, when you look at what's happening in Europe, the decarbonizing trend is underpinned by the solid strategy with the green deal, which is to get to net zero by 2050. And then it's underpinned by EU-level legislation, which is climate [ph] law (59:14), energy efficiency directive as well as energy performance of buildings.

And so, then you see what happened with this RePowerEU directive, which is to create independence from Russian fossil fuels by, I think, it's by 2027. This is going to require new public buildings must be zero emission by 2027. The worst performing buildings, 15% of the stock have to be upgraded, and then there's going to be an obligation to get an energy performance certificate. So when you play that out, Nigel, given our offering across our entire HVAC portfolio, it does play to our strengths with what we've been doing to get to low GWP, at the same

time, reducing the energy consumed for the applications that we bring into that market. And so, we feel very good about that.

Nigel Coe

Analyst, Wolfe Research LLC

That's great.

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

And an additional statistic, Nigel. In terms of heat pump revenue through the portfolio, not only in resi, in Q3, it was close to \$1 billion for the quarter only.

Nigel Coe

Analyst, Wolfe Research LLC

And that's across the whole portfolio?

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

It is, indeed.

Nigel Coe

Analyst, Wolfe Research LLC

Great. Thanks, Olivier.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

We'll take one more question.

Operator: Our final question comes from Deane Dray with RBC Capital Markets. Your line is now open.

Deane Dray

Analyst, RBC Capital Markets LLC

Thank you. Good morning, everyone.

George R. Oliver

Chairman & Chief Executive Officer, Johnson Controls International Plc

Good morning, Deane.

Olivier Leonetti

Chief Financial Officer & Executive Vice President, Johnson Controls International Plc

Good morning.

Deane Dray

Analyst, RBC Capital Markets LLC

Just start off with a clarification on sizing the impact of the supply chain disruptions. You said \$45 million this quarter, improving to a \$35 million impact in the fourth quarter. Just want to make sure I understand what you're including in that. When you initially said it, it sounded like it was from lower absorption in the factory, but are you including all the other related inefficiencies, freight expediting, component shortages, where you got project insulation gets delayed, change orders, all that field service disruption. Is that included in this \$45 million improving to \$35 million?

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

So, let me clarify. \$65 million is the level of disruption in Q3. We expect it to be half of that in Q4. So give or take, \$35 million. And you're right, this is an all-inclusive number – absorption and other disruptions to our business, indeed – so it's an all-in number.

Deane Dray*Analyst, RBC Capital Markets LLC*

Q

All right. That's really helpful. And then just last one, and maybe this is from prior scar tissue. And every time I hear about ERP rollouts, that makes me really nervous. So Olivier, just what modules are you on? Typically, the P&L receivable modules are the ones that have the biggest installation risk, but where does that rollout stand?

Olivier Leonetti*Chief Financial Officer & Executive Vice President, Johnson Controls International Plc*

A

So, we are two years in to a five years project, so we can speak with confidence about where we are now. Usually, when you have an issue, this is at the start. And so far, we have been really meeting our milestones. We're going to launch for our field business, one only ERP on Oracle Cloud. And for our global business, mainly having manufacturing part of it, we will use SAP. And we are very pleased with the way our teams have executed and with the benefit that we will have across the organization from a productivity but also topline impact. No question about this, Deane.

Deane Dray*Analyst, RBC Capital Markets LLC*

Q

That's good to hear. Thank you.

George R. Oliver*Chairman & Chief Executive Officer, Johnson Controls International Plc*

Thanks, Deane. And why don't I take a minute here to wrap up. I want to thank everyone for joining our call today. While 2022 was a headwind and the fundamentals of our business have never been better, as we've been working through this, we continue to see strong order momentum, continued service performance, and a record backlog with much higher book margins.

We've made significant progress with our operational initiatives in the cost reduction measures and are in an optimal position going forward to now capitalize on the strong demand that we continue to see, while leveraging our disruptive digital platform.

I can say I'm very confident in our outlook, and as we close out the fiscal year and look to drive significant value for our shareholders, customers and communities heading into 2023, and I do look forward to speaking with many of you soon over the next few days.

So, operator, that concludes our call today.

Operator: That concludes today's conference. Thank you all for participating. You may disconnect at this time.

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