Webinar

Global Sustainability Outlook 2026: APAC Region

Date: February 26, 2026

00:00:03 --> 00:00:07: For people who just join online, thank you for joining
00:00:07 --> 00:00:11: us and good morning, afternoon wherever, wherever you are.
00:00:12 --> 00:00:15: We might have people continue to join as I know
00:00:15 --> 00:00:18: it's a lunchtime for for many of you.
00:00:18 --> 00:00:18: So appreciate it.
00:00:18 --> 00:00:22: But in the meantime, we will get started with the
00:00:22 --> 00:00:25: intro and then other people feel free to join.
00:00:25 --> 00:00:27: So welcome everyone officially.
00:00:27 --> 00:00:31: Thank you for joining this webinar to hear about the
00:00:31 --> 00:00:36: newest ULI thought leadership piece, which is our 6th annual
00:00:36 --> 00:00:39: Global Sustainability Outlook for 2026.
00:00:39 --> 00:00:43: We're really happy to be bringing together industry leaders on
00:00:44 --> 00:00:48: key topics surrounding sustainability and their business case for the
00:00:48 --> 00:00:50: real estate industry.
00:00:50 --> 00:00:54: Let me quickly pull up a deck here.
00:00:56 --> 00:00:57: All right.
00:01:00 --> 00:01:00: Yeah.
00:01:00 --> 00:01:05: So just bit of quick intro, quick self intro.
00:01:06 --> 00:01:07: Hi, I'm Jenny.
00:01:07 --> 00:01:12: I am the Director for Sustainability for EOLA Asia Pacific.
00:01:12 --> 00:01:14: I will be your host today.
00:01:14 --> 00:01:17: And really at EOLA, our role here is to build
00:01:17 --> 00:01:21: a platform as the regional connector of knowledge of our
00:01:21 --> 00:01:25: vast membership network experts and also be kind of an
00:01:25 --> 00:01:31: orchestrator of industry initiatives and partnerships with part of industry
00:01:31 --> 00:01:33: as well as other organizations.
00:01:34 --> 00:01:36: So really happy to have everyone here and joining us
00:01:36 --> 00:01:37: online.
00:01:37 --> 00:01:40: Before we jump into our topic today, just a few

00:01:40 --> 00:01:42: quick housekeeping notes.
00:01:42 --> 00:01:46: This webinar will be recorded and uploaded to the ULI
00:01:46 --> 00:01:50: Knowledge Finder, which will be available to all of our
00:01:50 --> 00:01:52: global network member network.
00:01:53 --> 00:01:57: And we will be using AQ and a box for
00:01:57 --> 00:01:58: the Q&A process.
00:01:58 --> 00:02:03: So during anytime during the webinar, if you have questions
00:02:03 --> 00:02:07: for panelists, please feel free to use the Q&A box
00:02:07 --> 00:02:10: and our panel will try to address some of it
00:02:10 --> 00:02:13: either along the chats or toward the end when we
00:02:14 --> 00:02:15: have AQ and a session.
00:02:16 --> 00:02:20: And so I want to share a little bit about
00:02:20 --> 00:02:25: the process of So each year the global sustainably outlook
00:02:25 --> 00:02:31: is informed by interviewing member experts around the world.
00:02:31 --> 00:02:35: So we do this through doing focus group with three
00:02:35 --> 00:02:38: of our regional sustainability product Council.
00:02:38 --> 00:02:40: So in APAC, we have the Net 0 Council, in
00:02:40 --> 00:02:43: Europe, we have the Europe Sustainability Council and the US
00:02:43 --> 00:02:46: we also have the Sustainable Development Council.
00:02:46 --> 00:02:50: And this year we've added something new, which is we've
00:02:50 --> 00:02:55: also included District Council and local council sustainable committees so
00:02:55 --> 00:02:59: that we can get a more holistic and ground level
00:02:59 --> 00:03:02: picture of what's ahead in 2026 from practitioners.
00:03:04 --> 00:03:08: And these discussions are really central around the key theme
00:03:08 --> 00:03:12: of asking our member network what sustainably topics and issues
00:03:12 --> 00:03:15: are on the rise for them, why do they matter,
00:03:15 --> 00:03:19: and what actions should the industry pursue moving forward.
00:03:20 --> 00:03:23: And then the team will basically synthesize all of these
00:03:23 --> 00:03:27: conversations into top five issues each year to look out
00:03:27 --> 00:03:28: for in the upcoming year.
00:03:29 --> 00:03:33: So what we'll do is we'll share in the chat
00:03:34 --> 00:03:35: the two links.
00:03:35 --> 00:03:38: One is the link to this year's article.
00:03:38 --> 00:03:41: So the five topics that I'll briefly go over for
00:03:41 --> 00:03:42: 2026.
00:03:42 --> 00:03:46: And we've also done something try something new this year
00:03:46 --> 00:03:49: as we have another article that looks at the the
00:03:49 --> 00:03:52: sustainably outlook report for the past five years to kind

00:03:52 --> 00:03:55: of look at how our focus have been shifting and
00:03:55 --> 00:03:57: refine over the past five years.
00:03:58 --> 00:04:01: So that's also an interesting kind of pre read to
00:04:01 --> 00:04:04: this year's article to give you a bit of context.
00:04:06 --> 00:04:09: So as I mentioned, this is our 6th edition of
00:04:09 --> 00:04:11: this global sustainably outlook.
00:04:12 --> 00:04:17: So this research started as a full report to highlight
00:04:17 --> 00:04:20: and the five trends for each year.
00:04:20 --> 00:04:24: And then we realized that actually the the summary article
00:04:24 --> 00:04:27: that we put out were much more popular and digestible
00:04:27 --> 00:04:28: for people.
00:04:28 --> 00:04:33: So starting last year, we've pivoted to a article format
00:04:33 --> 00:04:37: to give people a really snappy shot of the keep
00:04:37 --> 00:04:40: top things to keep in mind.
00:04:40 --> 00:04:43: So that's also what we've done for this year.
00:04:44 --> 00:04:50: And here is a quick overview of this year's theme.
00:04:51 --> 00:04:54: So quickly over go over these and then we'll get
00:04:54 --> 00:04:55: into our panel discussion.
00:04:55 --> 00:04:58: And these are not ranked in order per SE, but
00:04:58 --> 00:05:03: are instead more of interconnected themes that impact what industry
00:05:03 --> 00:05:05: stakeholders are choosing to act on.
00:05:06 --> 00:05:10: So the continuation to recognize the financial risk of inaction
00:05:10 --> 00:05:14: and business case for decarbonization is very much central and
00:05:14 --> 00:05:17: linked to the second one, which is more from the
00:05:17 --> 00:05:21: perspective of how we're doing this as an industry just
00:05:21 --> 00:05:26: by standardizing and integrating sustainably metrics into investment decisions into
00:05:26 --> 00:05:28: models and valuations.
00:05:28 --> 00:05:31: And then the Third Point also, you know, regarding a
00:05:31 --> 00:05:35: whole life cycle perspective and a shift towards scalable solutions
00:05:35 --> 00:05:39: is how we're thinking about accelerating our progress, our collective
00:05:39 --> 00:05:40: progress.
00:05:40 --> 00:05:42: And we'll also be diving deeper into this topic today
00:05:42 --> 00:05:43: with our panelists.
00:05:43 --> 00:05:46: Sharings from the practical experience.
00:05:46 --> 00:05:48: And you've probably been hearing a lot about AI.
00:05:48 --> 00:05:51: There's lots of other webinars on the rise of AI
00:05:51 --> 00:05:55: and how it's rewiring everything, how we're doing many things.

00:05:56 --> 00:05:59: So from a sustainability angle, it's both a tool to

00:05:59 --> 00:06:03: accelerate the discovery and implementation of our solutions as well

00:06:03 --> 00:06:05: as a resource challenge itself.

00:06:05 --> 00:06:08: So this is more about how we can best leverage

00:06:08 --> 00:06:12: technology to have a net positive outcome, balancing these sort

00:06:12 --> 00:06:15: of two sides on our resource utilization.

00:06:15 --> 00:06:19: And last but not least, escalating physical climate risk.

00:06:19 --> 00:06:23: I think it's very much a current, not a future

00:06:23 --> 00:06:23: risk.

00:06:23 --> 00:06:27: So now the focus is much more on operationalizing our

00:06:27 --> 00:06:30: preparedness at both the asset level as well as the

00:06:30 --> 00:06:33: kind of market and neighborhood level.

00:06:33 --> 00:06:35: So that's these are some of the topics that are

00:06:35 --> 00:06:37: rising to the top of the agenda as well.

00:06:38 --> 00:06:42: So today we are very happy to have our cross

00:06:42 --> 00:06:44: region expert panel.

00:06:45 --> 00:06:49: So we have Edward joining us from Singapore Building Construction

00:06:49 --> 00:06:54: Authority and then May joining us from Salzer Brothers, Han

00:06:54 --> 00:06:58: joining us from Keppel, who's based in Singapore and Paul

00:06:58 --> 00:07:01: is our moderator joining us from Italia 10.

00:07:01 --> 00:07:04: So without further ado, I'm gonna hand it over to

00:07:04 --> 00:07:05: Paul.

00:07:07 --> 00:07:09: Thanks so much, Jenny, and good day, everybody.

00:07:10 --> 00:07:12: It's really a pleasure to be here with this extraordinary

00:07:12 --> 00:07:12: panel.

00:07:12 --> 00:07:16: We've got lots of insights to share about the 2026

00:07:16 --> 00:07:17: global sustainability outlook.

00:07:19 --> 00:07:22: We're going to ask talk through the four of the

00:07:22 --> 00:07:24: five themes as a group.

00:07:25 --> 00:07:28: And while we're talking, if anything pops to mind, please

00:07:28 --> 00:07:29: post questions.

00:07:29 --> 00:07:31: We'll be reviewing them as you post them and we'll

00:07:31 --> 00:07:32: weave them into the discussion.

00:07:32 --> 00:07:34: And then we'll catch the rest of your questions or

00:07:34 --> 00:07:36: as many of them as we can at the end.

00:07:37 --> 00:07:40: So starting with the first point, a very timely 1.

00:07:42 --> 00:07:46: Clearly, momentum in the property industry has shifted from why

00:07:46 --> 00:07:49: are we going to be sustainable to how are we

00:07:49 --> 00:07:50: going to be more sustainable?

00:07:50 --> 00:07:52: And critically, how does this add value to my assets
00:07:53 --> 00:07:53: and My Portfolio?
00:07:54 --> 00:07:57: I'm really keen to hear from our panelists.
00:07:57 --> 00:08:01: How is this drive towards decarbonization and greater sustainability now
00:08:01 --> 00:08:05: shaping your business cases for investment both in existing assets
00:08:05 --> 00:08:07: and the development of new assets?
00:08:08 --> 00:08:09: And let's hear first from May.
00:08:11 --> 00:08:15: Well, we're actually seeing a lot of through climate reporting,
00:08:15 --> 00:08:19: there's a convergence of people seeing the value impact of
00:08:19 --> 00:08:19: doing nothing.
00:08:20 --> 00:08:23: And that actually is quite scary because obviously our insurance
00:08:23 --> 00:08:27: has premiums have gone through the roof and everyone's experiencing
00:08:27 --> 00:08:27: that.
00:08:27 --> 00:08:30: And there's no seem to be no end insight.
00:08:30 --> 00:08:35: But when you've done the climate reporting, you've actually understood
00:08:35 --> 00:08:37: now what they see that we haven't seen before.
00:08:38 --> 00:08:42: And so when people talk about stranded buildings, it's not
00:08:42 --> 00:08:47: necessarily stranded in that way, but it's just that the
00:08:47 --> 00:08:51: additional capital to try to fix your buildings and be
00:08:51 --> 00:08:55: the onslaught of what next is far scarier than actually
00:08:55 --> 00:08:57: the decarbonisation track.
00:08:57 --> 00:09:02: So whilst it's, you know, necessary to reallocate cafes, you
00:09:02 --> 00:09:05: just have to take a long term thinking and that's
00:09:05 --> 00:09:07: that actually has been amazing.
00:09:07 --> 00:09:09: They be able to have that foresight.
00:09:11 --> 00:09:11: Terrific.
00:09:11 --> 00:09:14: So the shift from short term to long term kind
00:09:14 --> 00:09:17: of appreciation of values clearly something I hear from my
00:09:17 --> 00:09:18: clients.
00:09:18 --> 00:09:21: And Han, in your quick couple, how are you building
00:09:21 --> 00:09:27: decarbonization considerations and sustainability into the everyday business case work
00:09:27 --> 00:09:29: that you do when considering investments?
00:09:30 --> 00:09:30: Yeah.
00:09:31 --> 00:09:33: So thanks for the introduction.
00:09:33 --> 00:09:36: To expand a bit of my role, I am the
00:09:36 --> 00:09:40: Director of Sustainability and ESG strategy for capital in our
00:09:40 --> 00:09:44: fund management and investment business.

00:09:44 --> 00:09:48: And what we therefore do is to look at different
00:09:48 --> 00:09:53: types of portfolios across real estate, infrastructure and data centers
00:09:53 --> 00:09:57: and connectivity types of some assets and look at, you
00:09:57 --> 00:10:01: know, the best ways of actually deriving value.
00:10:02 --> 00:10:06: And that leads us to the conversation on sustainability because
00:10:06 --> 00:10:09: once you decarbonize, there's going to be a lot of
00:10:09 --> 00:10:12: value to be had from sustainability and there's going to
00:10:13 --> 00:10:15: be a lot of value to be had as well
00:10:15 --> 00:10:19: from, well, things like putting in, in your underwriting your
00:10:19 --> 00:10:20: climate value at risk.
00:10:20 --> 00:10:24: Things like putting in sufficient investments to protect your asset
00:10:25 --> 00:10:28: against climate change or the threats of climate change, for
00:10:28 --> 00:10:29: instance.
00:10:29 --> 00:10:33: But also putting in these types of solutions and technologies
00:10:33 --> 00:10:37: that will decarbonize your asset over time, especially in its
00:10:38 --> 00:10:38: operations.
00:10:39 --> 00:10:43: So as the asset starts to save more energy throughout
00:10:43 --> 00:10:47: its operations, it will also start to improve its asset
00:10:48 --> 00:10:51: value as a function of the percentage of or rather
00:10:51 --> 00:10:55: the dollar savings divided by the cap rate.
00:10:55 --> 00:10:59: So if your asset, for instance, saves $1 million per
00:10:59 --> 00:11:02: year, and if a cap rate of your built asset
00:11:02 --> 00:11:06: or your real asset is 4%, that's 100, divide by
00:11:06 --> 00:11:11: 4 and that's a 25,000,000 value appreciation year on year.
00:11:11 --> 00:11:13: And so that is significant when you talk about it
00:11:13 --> 00:11:16: in these terms, rather than, you know, what the payback's
00:11:16 --> 00:11:19: gonna be or rather than just what the payback's gonna
00:11:19 --> 00:11:20: be and so on.
00:11:20 --> 00:11:24: And we're seeing the cost curves really come down as
00:11:24 --> 00:11:28: a result of the lower costs of technology and production
00:11:28 --> 00:11:31: due to a huge proliferation of these types of energy
00:11:31 --> 00:11:35: savings technologies, especially coming out of North Asia.
00:11:36 --> 00:11:39: So I think what we're therefore seeing is a Nexus
00:11:40 --> 00:11:43: of the availability of such solutions at a fairly relatively
00:11:43 --> 00:11:47: low price point compared to say 10-15 years ago.
00:11:47 --> 00:11:51: And the conversation and the narrative has also shifted towards
00:11:51 --> 00:11:54: what sort of asset value you would get as a
00:11:54 --> 00:11:58: result of going green as a result of decarbonization, right?
00:11:58 --> 00:12:02: So when all this is therefore underwritten, including things

like
00:12:02 --> 00:12:06: the savings of shadow carbon, shadow carbon or embodied carbon,
00:12:06 --> 00:12:09: including things like what sort of returns due to a
00:12:09 --> 00:12:14: sustainable solutions specifically, right, that becomes part of the investment
00:12:14 --> 00:12:17: thesis and that immediately becomes measurable, right?
00:12:17 --> 00:12:20: So we're seeing an industry sort of shift towards that,
00:12:21 --> 00:12:21: right?
00:12:21 --> 00:12:24: There are still gaps, certainly, right?
00:12:24 --> 00:12:28: The gaps are such that you still cannot evaluate how
00:12:28 --> 00:12:31: much your embodied carbon savings will lead to in terms
00:12:31 --> 00:12:36: of investment value as opposed to operational carbon, for instance.
00:12:36 --> 00:12:40: And the other gaps also include the relatively short fund
00:12:40 --> 00:12:43: cycles and the short life cycles of funds compared to
00:12:43 --> 00:12:46: the actual life cycles of buildings.
00:12:46 --> 00:12:48: So that's another gap to bridge.
00:12:50 --> 00:12:53: It sounds like it's fair to say both for you
00:12:53 --> 00:12:57: Han and you may sustainability is gone for being a
00:12:57 --> 00:13:01: check box kind of suddenly done criteria in business cases
00:13:01 --> 00:13:05: to being quite a complex and multi criteria assessment in
00:13:05 --> 00:13:06: your business cases.
00:13:06 --> 00:13:09: And then you, as you said, not just the the
00:13:09 --> 00:13:11: forms, but the the thesis for investment.
00:13:12 --> 00:13:13: That's right, yeah.
00:13:13 --> 00:13:16: Yeah, it's about true value now that can be calculated.
00:13:18 --> 00:13:18: Right.
00:13:18 --> 00:13:20: And it's gone from being not just a cost but
00:13:20 --> 00:13:23: to to value, which is a huge conceptual shift, which
00:13:23 --> 00:13:24: is really terrific.
00:13:24 --> 00:13:26: And it's great to see that's not just happening in
00:13:26 --> 00:13:29: our region, but globally, as this points out.
00:13:29 --> 00:13:32: I think just the complexity of this is a nice
00:13:32 --> 00:13:36: segue to the next headline from the global sustainability outlook,
00:13:37 --> 00:13:40: which is the challenge we're all facing of how we
00:13:40 --> 00:13:44: standardize our descriptions of sustainability and the way we integrate
00:13:44 --> 00:13:46: them into our business models.
00:13:46 --> 00:13:48: We now care so much about so many different things.
00:13:50 --> 00:13:52: This has become quite a big task to the point
00:13:52 --> 00:13:54: that I was just in in a kind of strategy

00:13:54 --> 00:13:57: session yesterday for Australian sustainability leaders.
00:13:57 --> 00:14:00: And the discussion around how difficult it is to align
00:14:00 --> 00:14:03: the boundaries around scope 3 reporting what a very technical
00:14:03 --> 00:14:06: subject, you know, was causing, you know, mountains of work
00:14:06 --> 00:14:10: for the sustainability managers, the investment managers, the investor relation
00:14:10 --> 00:14:11: folks.
00:14:11 --> 00:14:14: So, you know, we know that that there are many
00:14:14 --> 00:14:17: challenges that are coming as we as we try to
00:14:17 --> 00:14:20: standardize how we work through business models here.
00:14:21 --> 00:14:23: You know, what do you each think?
00:14:23 --> 00:14:25: And then we'll start with Han and then go to
00:14:25 --> 00:14:28: May and then Edward, what do you think are our
00:14:28 --> 00:14:31: biggest challenges or the the biggest needs to standardize our
00:14:31 --> 00:14:34: way of grappling with sustainability in our business models?
00:14:35 --> 00:14:37: If you could pick a thing to just get everybody
00:14:37 --> 00:14:39: to agree under the standards Han for you, what would
00:14:39 --> 00:14:40: that be?
00:14:41 --> 00:14:45: Yeah, I think the standardization of, you know, things like
00:14:45 --> 00:14:48: building ratings and so on are is going to continue
00:14:48 --> 00:14:51: to become or to be challenging because of the, you
00:14:51 --> 00:14:55: know, vastly deferring climates that we all live in.
00:14:55 --> 00:14:59: So what is a green building in Singapore for instance,
00:14:59 --> 00:15:03: is measured against the average or the nominal building here
00:15:03 --> 00:15:06: in Singapore as opposed to a building in the temperate
00:15:06 --> 00:15:11: climates which would experience a very different heat profile, a
00:15:11 --> 00:15:13: very different a cooling load profile.
00:15:14 --> 00:15:18: And what we therefore see is the the optimization of
00:15:18 --> 00:15:22: an asset relative to its market or relative relative to
00:15:22 --> 00:15:26: its climate as opposed to what is universally and absolutely
00:15:26 --> 00:15:26: green.
00:15:27 --> 00:15:30: So standardization would would have to come with these types
00:15:30 --> 00:15:31: of considerations.
00:15:32 --> 00:15:36: And also similarly, because we're all across different geographies, at
00:15:36 --> 00:15:40: least in the entire ULI population, what we'll also see
00:15:40 --> 00:15:44: is a variation across what is value at risk due
00:15:44 --> 00:15:46: to both physical and transition risks.
00:15:46 --> 00:15:50: For example, because we're all at, you know, different levels

00:15:50 --> 00:15:52: of exposure to climate risks.

00:15:53 --> 00:15:56: We're also at different levels of adoption of many of

00:15:56 --> 00:16:00: these strategies, which also puts us at different different rankings

00:16:00 --> 00:16:04: at different rates of adopting transition risk mitigation measures or

00:16:04 --> 00:16:05: adaptation measures.

00:16:06 --> 00:16:08: And so that's going to be 1 huge challenge.

00:16:08 --> 00:16:11: But I think as long as we're cognizant of the

00:16:11 --> 00:16:16: presence of these different diversities, the way forward really is

00:16:16 --> 00:16:20: to identify a horizontals where we can learn from each

00:16:20 --> 00:16:21: different market.

00:16:21 --> 00:16:24: And we can then price to May's point earlier as

00:16:24 --> 00:16:28: well where we can then price what is true sustainably,

00:16:28 --> 00:16:31: what is green state, what's true greenness, right?

00:16:31 --> 00:16:33: And therefore, how do you, how do you price and

00:16:33 --> 00:16:36: insure against these types of things when it comes to

00:16:36 --> 00:16:40: underwriting and investments, when it comes to a valuation of

00:16:40 --> 00:16:43: assets and ultimately also when it comes to operational efficiencies

00:16:43 --> 00:16:45: and running these assets?

00:16:46 --> 00:16:46: Terrific.

00:16:46 --> 00:16:50: And thank you for being so hopeful and optimistic about

00:16:51 --> 00:16:54: the challenge of hurting a lot of rating cats and

00:16:54 --> 00:16:57: measurement cats in the same direction.

00:16:58 --> 00:17:01: May what would be your request for the thing we

00:17:01 --> 00:17:03: can all do to come to agreement about a way

00:17:04 --> 00:17:07: to put sustainability into our business models?

00:17:09 --> 00:17:13: I think if you think, look at how everyone's converging

00:17:13 --> 00:17:17: in a real estate form, Grays, it becomes actually quite

00:17:17 --> 00:17:21: has actually dictated what is green in the space and

00:17:21 --> 00:17:25: and they're now moving into data centers, which actually then

00:17:25 --> 00:17:28: completes the full spectrum of buildings.

00:17:28 --> 00:17:32: And I actually think it's actually heralded as the champion

00:17:32 --> 00:17:36: for real estate because it's the one common language that

00:17:36 --> 00:17:39: we need to gauge across and then allows us to

00:17:39 --> 00:17:42: share the data in the most respective way.

00:17:42 --> 00:17:46: And sometimes and they're willing to actually do something.

00:17:47 --> 00:17:52: It's interesting the way they operate because it's always continuous

00:17:52 --> 00:17:56: improvement so that your benchmark gains 100 and the

easier
00:17:56 --> 00:17:58: questions drops out every year.
00:17:58 --> 00:18:01: And so therefore you're always chasing your own tail.
00:18:01 --> 00:18:04: So it means that you're always vigilant and I'm hungry
00:18:05 --> 00:18:06: to to make change.
00:18:06 --> 00:18:08: So you're not ever even if you get the same
00:18:08 --> 00:18:11: score last year, it would have meant that you've jumped
00:18:11 --> 00:18:14: to significant hurdles to get the same score.
00:18:14 --> 00:18:18: It's frustrating it that way, but but I think that
00:18:18 --> 00:18:23: actually then speaks to what's coming next because they've always
00:18:23 --> 00:18:28: used industry participation to figure out where should we align
00:18:28 --> 00:18:32: ourselves and the, the scoring is usually two years ahead
00:18:32 --> 00:18:36: of policy because it's a voluntary system.
00:18:36 --> 00:18:40: And so you're keeping in touch with what's happening in
00:18:40 --> 00:18:44: the world they're talking about now, the natural systems and
00:18:44 --> 00:18:48: that component and allows the industry to award the leaders,
00:18:48 --> 00:18:51: create a pathway so that the middle of the pack
00:18:51 --> 00:18:56: lifts up the game because the leaders have actually stumbled
00:18:56 --> 00:18:59: through the the top end and then enables us to
00:18:59 --> 00:19:02: understand, OK, so the rest of us, how do we
00:19:02 --> 00:19:02: do it?
00:19:02 --> 00:19:03: Well, that's OK.
00:19:03 --> 00:19:08: Grayson has already have 1000 cohorts paving that way for
00:19:08 --> 00:19:09: you.
00:19:09 --> 00:19:12: And so if you're softening the landing for the stragglers
00:19:12 --> 00:19:15: come through, they'll say, OK, you just knew this, this
00:19:15 --> 00:19:17: and this, you'd skip all the learnings.
00:19:17 --> 00:19:23: And I think that in itself creates that consistency.
00:19:23 --> 00:19:24: I would say it crossed out industry and I think
00:19:25 --> 00:19:25: that's important.
00:19:27 --> 00:19:29: I couldn't agree more, May, and thanks so much for
00:19:29 --> 00:19:32: shouting out Chris for the good work they've been doing
00:19:32 --> 00:19:34: to get us all to talk about sustainability.
00:19:34 --> 00:19:37: In a similar fashion, we see that European taxonomy for
00:19:37 --> 00:19:39: green buildings doing similar work.
00:19:41 --> 00:19:44: Edward, you've been waiting very patiently and you've got a
00:19:44 --> 00:19:47: unique perspective on all of this from your work with
00:19:47 --> 00:19:51: the Building Construction Authority where you both set the regulation,
00:19:51 --> 00:19:54: but then you also set the kind of the incentive
00:19:54 --> 00:19:56: frameworks and the kind of the the the above and

00:19:56 --> 00:19:59: beyond frameworks through the the green mark system.

00:20:00 --> 00:20:04: How do you see your organization and the other industry

00:20:04 --> 00:20:07: kind of fault leadership organizations like the BCA?

00:20:07 --> 00:20:11: How do you see your kind of your immediate contributions

00:20:11 --> 00:20:15: to further standardizing especially the the way we measure sustainability

00:20:15 --> 00:20:18: and we standardize it for business cases?

00:20:19 --> 00:20:20: Yeah, thanks, Paul.

00:20:20 --> 00:20:24: So fully agree with what Han and Maid have said.

00:20:24 --> 00:20:28: Actually, if you think about it, I think the strong

00:20:28 --> 00:20:32: partnership between businesses and policy makers are really critical.

00:20:33 --> 00:20:36: I think in Singapore's context, Han can feel free to

00:20:36 --> 00:20:37: add on as well.

00:20:37 --> 00:20:41: For the past 20 years, we have been closely partnering

00:20:41 --> 00:20:46: with industry stakeholders, the likes of Singapore Green Building Council.

00:20:46 --> 00:20:49: I think we Co create what we call Singapore Green

00:20:49 --> 00:20:50: Building Master Plans.

00:20:51 --> 00:20:54: So we have the latest editions of the master plans.

00:20:54 --> 00:20:59: Basically it essentially developed the ecosystem of green building in

00:21:00 --> 00:21:07: Singapore starting from standards, green building rating systems, industry capabilities,

00:21:07 --> 00:21:07: research.

00:21:08 --> 00:21:10: I think we also have policies in terms of carrot

00:21:10 --> 00:21:11: and sticks.

00:21:12 --> 00:21:15: Over the years we have rolled out incentives in terms

00:21:15 --> 00:21:19: of green mark incentive schemes for new buildings, for existing

00:21:19 --> 00:21:22: buildings as well as sticks in terms of regulations.

00:21:22 --> 00:21:26: I think back in 2:08 we introduced the code on

00:21:26 --> 00:21:32: environmental sustainability where we mandate new buildings of a certain

00:21:32 --> 00:21:36: size minimum of 2000 square meter and above to be

00:21:36 --> 00:21:41: green and then then we define what is green buildings.

00:21:41 --> 00:21:46: So essentially it's green mark satisfied minimally and it it

00:21:46 --> 00:21:50: can go even beyond what we call super low energy

00:21:50 --> 00:21:51: buildings today.

00:21:52 --> 00:21:56: So I think my take away is really one strong

00:21:56 --> 00:22:03: partnership with industry businesses, NGOs like ULIW, GB, CS, GB

00:22:03 --> 00:22:05: CI think is really critical.

00:22:06 --> 00:22:08: It has to be both bottoms up and top down

00:22:08 --> 00:22:09: as well.
00:22:09 --> 00:22:12: Then the second point is really the backing of the
00:22:12 --> 00:22:13: policy makers.
00:22:13 --> 00:22:14: I think it's very important.
00:22:15 --> 00:22:19: That's how you can move some of the regulations.
00:22:19 --> 00:22:22: In fact last year we just passed the regulations on
00:22:22 --> 00:22:25: mandatory energy improvement in buildings.
00:22:25 --> 00:22:30: So essentially that keep building owners like Khan and other
00:22:30 --> 00:22:33: developers on their toes for existing buildings.
00:22:34 --> 00:22:37: So I think over the years together with businesses, we
00:22:37 --> 00:22:41: have been also collecting some of the energy consumption data.
00:22:42 --> 00:22:43: So this is really a ground up.
00:22:45 --> 00:22:49: So I think the second point is basically we need
00:22:49 --> 00:22:52: the support of industry practitioners.
00:22:53 --> 00:22:57: I think the experts, industry experts are really critical as
00:22:57 --> 00:22:59: we build up the data.
00:22:59 --> 00:23:03: I think that's one important factor that we we realized
00:23:03 --> 00:23:05: over the past 20 years.
00:23:05 --> 00:23:08: Without the data, we can't really move any of the
00:23:08 --> 00:23:10: legislation or regulations.
00:23:10 --> 00:23:13: We need to to be informed by the data and
00:23:13 --> 00:23:16: then we need to make sense of it.
00:23:16 --> 00:23:18: And then we we analyse and we Co create the
00:23:18 --> 00:23:20: policies together with industry.
00:23:20 --> 00:23:25: So All in all, I think we have this target
00:23:25 --> 00:23:28: what we call 808080 in 20-30.
00:23:28 --> 00:23:31: So basically we want to have 80% of buildings to
00:23:31 --> 00:23:35: be green in 20 thirty, 80% of new developments to
00:23:35 --> 00:23:39: be super low energy buildings from 20-30 and also 80%
00:23:39 --> 00:23:43: of energy efficiency improvement from the 2005 level.
00:23:43 --> 00:23:47: That's where we started the green mark in Singapore by
00:23:47 --> 00:23:47: 20-30.
00:23:48 --> 00:23:51: So and just to share even the last last month
00:23:52 --> 00:23:57: our minister have also launched a publications on build environment
00:23:57 --> 00:24:00: decarbonization technology road map.
00:24:01 --> 00:24:06: So it's essentially encapsulate all the thinking.
00:24:06 --> 00:24:09: I think we have done a lot of round tables,
00:24:09 --> 00:24:13: series of discussions with industries and how to capture the
00:24:13 --> 00:24:17: next pound of technologies over the next 10 to 15
00:24:17 --> 00:24:18: years.

00:24:18 --> 00:24:22: I think so far for Singapore, we have achieved 72%
00:24:22 --> 00:24:24: of energy efficiency.
00:24:24 --> 00:24:26: That's the best in class green buildings to date.
00:24:27 --> 00:24:29: But really we want to push even further.
00:24:29 --> 00:24:33: As you know, we are targeting towards net zero in
00:24:33 --> 00:24:33: 2050.
00:24:33 --> 00:24:34: Yeah.
00:24:34 --> 00:24:38: So I think these two essence, I mean these two
00:24:38 --> 00:24:43: challenge that we turn into opportunities are very critical.
00:24:43 --> 00:24:46: One is strong partnership, second is data.
00:24:46 --> 00:24:47: Yeah, thanks.
00:24:48 --> 00:24:48: Terrific.
00:24:48 --> 00:24:49: Thanks, Edward.
00:24:49 --> 00:24:52: And I just want to reflect that the work you've
00:24:52 --> 00:24:55: been doing to create the decarbonization road map sets the
00:24:55 --> 00:24:58: stage for the methods that then build in the business
00:24:58 --> 00:25:01: cases that we then, you know, can work out all
00:25:01 --> 00:25:04: the details of how we measure stuff and report stuff
00:25:04 --> 00:25:05: and calculate value of stuff.
00:25:05 --> 00:25:09: So having that early sense of where things are going
00:25:09 --> 00:25:10: is so valuable to all of us.
00:25:11 --> 00:25:12: Thank you for the work you're doing there.
00:25:14 --> 00:25:17: It also, so it's a point, it's a good segue
00:25:17 --> 00:25:20: into the third headline of a third big deal from
00:25:20 --> 00:25:24: the global sustaining builder outlook, which is how we are
00:25:24 --> 00:25:29: all shifting to whole of life, life cycle decarbonization, not
00:25:29 --> 00:25:32: just the kind of operational but whole of life.
00:25:32 --> 00:25:35: And also how we're doing this beyond the scale of
00:25:35 --> 00:25:37: a chiller or a building, but how we're doing this
00:25:37 --> 00:25:38: across portfolios.
00:25:39 --> 00:25:42: And it was interesting that in our kind of discussion
00:25:42 --> 00:25:46: for this session, several of us in different ways came
00:25:46 --> 00:25:49: to want to talk about the opportunity of kind of
00:25:49 --> 00:25:54: operating our built environment and our buildings in ways that
00:25:54 --> 00:25:57: we can take better advantage of hour by hour kind
00:25:57 --> 00:26:02: of grid carbon intensities, energy carbon intensities that we can
00:26:02 --> 00:26:06: immediately reduce our our operational carbon intensity.
00:26:06 --> 00:26:07: So this is a new idea for some parts of
00:26:08 --> 00:26:10: the world, although it's been going on for a while
00:26:10 --> 00:26:12: in California and other areas.
00:26:12 --> 00:26:15: So since everyone is really keen to talk about this

00:26:15 --> 00:26:17: as a big, big shift, I want to start out
00:26:17 --> 00:26:20: with you may tell us why you and Sultan brothers
00:26:20 --> 00:26:24: are excited about kind of smart buildings and real time
00:26:24 --> 00:26:25: decarbonization.
00:26:27 --> 00:26:31: Oh, we're actually, I mean, if you look at the
00:26:31 --> 00:26:37: way that the grid's decarbonizing to date, solar and wind
00:26:37 --> 00:26:41: and now far cheaper to operate and then coal and
00:26:41 --> 00:26:42: gas.
00:26:42 --> 00:26:46: So globally everyone's found the secret sauce.
00:26:46 --> 00:26:49: It doesn't matter whether you're a cold climate or not
00:26:49 --> 00:26:51: or you, you will use a mixture of those two.
00:26:51 --> 00:26:57: Now those two technologies though, you're exposed to weather patterns
00:26:57 --> 00:27:01: as we get towards, I would say the greenhouse gas
00:27:01 --> 00:27:06: effect and you know, as we converge towards 2?? things,
00:27:06 --> 00:27:11: weather patterns will be much more diverse and the stability
00:27:11 --> 00:27:14: of the grid, it becomes a challenge.
00:27:14 --> 00:27:18: So we got to actually use our buildings where the
00:27:18 --> 00:27:23: buildings represent 30%, sometimes 40% of all the energy source.
00:27:23 --> 00:27:25: We've got to used it smartly.
00:27:25 --> 00:27:28: So we're going to have to be a very good
00:27:28 --> 00:27:29: interactive building.
00:27:29 --> 00:27:32: So we got to have to match the load and
00:27:32 --> 00:27:34: by doing that we're rewarded.
00:27:34 --> 00:27:37: So we're talking about a lot of companies now have
00:27:37 --> 00:27:40: something called power purchase agreement.
00:27:40 --> 00:27:44: They there is a mixture of wind and solar and
00:27:44 --> 00:27:47: wind, wind and solar is at the cheapest is where
00:27:47 --> 00:27:49: we want our energy to run.
00:27:49 --> 00:27:52: Now obviously buildings run because people are in it.
00:27:52 --> 00:27:55: We're using it 9:00 to 5:00 or in or in
00:27:55 --> 00:27:58: a hotel in a different 24/7, a different way.
00:27:58 --> 00:28:01: So we can't expect people to change the way they
00:28:01 --> 00:28:01: use energy.
00:28:01 --> 00:28:04: So we're going to really then work towards OK, we're
00:28:04 --> 00:28:07: going to be rewarded by cheap energy.
00:28:07 --> 00:28:10: How can we put in new technologies to capture ways
00:28:11 --> 00:28:15: to shift that load towards that kind to match what's
00:28:15 --> 00:28:16: out in the grid?
00:28:16 --> 00:28:20: And so we're, we're looking at thermal storage, which is,
00:28:20 --> 00:28:24: although it can be quite a new challenge, it's not

00:28:24 --> 00:28:27: as an old problem, but these days we've got much
00:28:27 --> 00:28:31: more stability and also battery storage has become very, very
00:28:31 --> 00:28:33: cheap in Australia.
00:28:33 --> 00:28:36: So with those two technologies, we're actually being able to
00:28:36 --> 00:28:39: kind of really enjoy the cheap power.
00:28:39 --> 00:28:42: So in Australia we now have so much solar we're
00:28:43 --> 00:28:44: giving it away for free.
00:28:44 --> 00:28:48: So somewhere between the hours of 11 to maybe like
00:28:48 --> 00:28:53: 2 or maybe 10 to, to one, we're actually challenging
00:28:53 --> 00:28:56: the grid to give power to everyone.
00:28:56 --> 00:28:59: Now it's only available to residential, which is a fair
00:29:00 --> 00:29:03: component, but it's not long before we have so much
00:29:03 --> 00:29:05: solar that it will be free.
00:29:05 --> 00:29:08: So we, so as a building owner, we must look
00:29:08 --> 00:29:12: ahead and actually try some of these technologies because we
00:29:13 --> 00:29:15: want to move with the transition.
00:29:15 --> 00:29:18: We want to actually allow our buildings to be able
00:29:18 --> 00:29:22: to save the transition, save all that energy and the
00:29:22 --> 00:29:25: use it later when it's energy is going to be
00:29:25 --> 00:29:26: extremely expensive.
00:29:27 --> 00:29:28: So it's really exciting.
00:29:28 --> 00:29:31: And a very quick follow up May in your properties,
00:29:31 --> 00:29:35: are you already installing chilled water tanks or hot water
00:29:35 --> 00:29:35: tanks?
00:29:35 --> 00:29:37: Are you installing electrical batteries?
00:29:37 --> 00:29:38: Are you preparing We're.
00:29:39 --> 00:29:42: We're lucky in a hotel there's always hot water tanks
00:29:42 --> 00:29:42: already.
00:29:43 --> 00:29:47: So there's a level of hot water tanks available.
00:29:47 --> 00:29:50: It's a matter of actually putting a smart controller on
00:29:50 --> 00:29:54: top and generating that at the time that is required.
00:29:54 --> 00:29:55: So it's not.
00:29:55 --> 00:29:58: So we're not really doing a huge amount in that
00:29:58 --> 00:30:03: way because hotels have always traditionally have huge amount of
00:30:03 --> 00:30:07: water tanks because Australia's always had issues with not water
00:30:07 --> 00:30:09: reliability, but pressure reliability.
00:30:09 --> 00:30:13: So most of the hotels remnant of the the issue
00:30:13 --> 00:30:18: that was prevailed in the 80s already have huge storage
00:30:18 --> 00:30:20: tanks sitting on the roof.

00:30:21 --> 00:30:23: And then they they're just re changing the way that
00:30:23 --> 00:30:25: you would use the controls and storage.
00:30:25 --> 00:30:28: And then they are having that ability to kind of
00:30:28 --> 00:30:31: then use that and having a smart control to then
00:30:31 --> 00:30:33: say, when is the best time Do we do this?
00:30:33 --> 00:30:34: Now?
00:30:34 --> 00:30:37: Of course we have to put in new technologies like
00:30:37 --> 00:30:40: heat pumps that are electrified version of it to really
00:30:40 --> 00:30:42: capture that component.
00:30:42 --> 00:30:45: But it's a small investment compared to, you know, compared
00:30:46 --> 00:30:48: for all the gains that you would get.
00:30:49 --> 00:30:52: Yeah, I love that you're taking advantage of under underused
00:30:52 --> 00:30:55: resources and underused kind of assets in your properties to
00:30:55 --> 00:30:56: drive energy storage.
00:30:56 --> 00:30:57: It's very clever.
00:30:57 --> 00:31:00: Hahn at Keppel How are you grappling with smart grids
00:31:00 --> 00:31:03: and real time decarbonization, and what sort of value are
00:31:04 --> 00:31:04: you pursuing?
00:31:05 --> 00:31:08: Yeah, I think with smart grids, a lot of it
00:31:08 --> 00:31:10: is infrastructural in nature.
00:31:10 --> 00:31:14: So you kind of have to have the operating municipality
00:31:14 --> 00:31:19: or the operating country even adopt these types of policies.
00:31:19 --> 00:31:22: But by and large in Singapore, we do sort of,
00:31:22 --> 00:31:26: you know, with any renewables, some of it that is
00:31:26 --> 00:31:30: unconsumed can actually go back to the grid.
00:31:30 --> 00:31:34: We're still in the process of establishing a more robust
00:31:34 --> 00:31:37: sort of grid sharing type of ecosystem, which will I
00:31:38 --> 00:31:41: would say shave off some of the peaks and troughs
00:31:41 --> 00:31:45: and and allow for a more constant throughput of renewable
00:31:45 --> 00:31:45: energy.
00:31:45 --> 00:31:49: And I think that's something hopefully that within the next
00:31:49 --> 00:31:53: 10-15 years, we can look forward to including the possibilities
00:31:53 --> 00:31:57: and the potential of battery of building energy storage systems
00:31:57 --> 00:32:01: via batteries, especially for things like EV charging and so
00:32:01 --> 00:32:02: on, right.
00:32:02 --> 00:32:05: So once that's, I would say set up or once
00:32:05 --> 00:32:09: that's institutionalized, then we'll be able to work that together
00:32:09 --> 00:32:13: with the current decarbonization systems that we do have in
00:32:13 --> 00:32:18: our buildings, which includes, you know, much more energy efficient
00:32:18 --> 00:32:19: equipment, for instance.
00:32:20 --> 00:32:24: But also the ability to manage the intelligence of these

00:32:24 --> 00:32:30: buildings through new technologies, which includes like with everything these

00:32:30 --> 00:32:35: days, artificial intelligence that's therefore able to trend and detect

00:32:36 --> 00:32:41: potential failures, trend and detect potential downtimes and be able

00:32:41 --> 00:32:45: to either preempt or manage these ahead of the event,

00:32:45 --> 00:32:48: right ahead of actual failures happening.

00:32:48 --> 00:32:52: So a combination of all these things that is adequately

00:32:52 --> 00:32:57: managed, adequately or efficiently operated as well as appropriately priced

00:32:57 --> 00:33:01: right would lead us towards, I'll say a better and

00:33:01 --> 00:33:05: then and a bigger journey towards decarbonization for our assets

00:33:05 --> 00:33:06: in the future.

00:33:07 --> 00:33:08: Terrific.

00:33:08 --> 00:33:11: And Edward at BCA, do you see a role in

00:33:11 --> 00:33:16: research and regulation and and reward systems around smart grids

00:33:17 --> 00:33:21: and a more nimble with energy purchase so that it

00:33:21 --> 00:33:24: tracks with lower carbon intensity power?

00:33:25 --> 00:33:27: Yes, certainly, Paul.

00:33:27 --> 00:33:31: So as what Han has mentioned, in Singapore actually like

00:33:31 --> 00:33:36: for example, renewables, you can already send the excess renewables,

00:33:36 --> 00:33:38: excess energy to the grid.

00:33:38 --> 00:33:42: So I think what in terms of research, what we

00:33:42 --> 00:33:44: are trying to do at 2 fronts, 1 is at

00:33:44 --> 00:33:46: the district level.

00:33:46 --> 00:33:50: I think there are test bed pilots ongoing at the

00:33:50 --> 00:33:56: district level, for example, Drong Lake District, Drong Innovation District

00:33:56 --> 00:34:00: where I think at the district level some of this

00:34:00 --> 00:34:03: peak energy or what you call it peak shave, it

00:34:03 --> 00:34:05: can be done even better.

00:34:06 --> 00:34:09: So there has been some pilots as well in in

00:34:09 --> 00:34:14: fact involving capital together with JDCI think they signed an

00:34:15 --> 00:34:17: MOU last year on smart micro grids.

00:34:19 --> 00:34:23: So I think certainly from from the policy maker perspective

00:34:23 --> 00:34:28: in terms of research, we continue to help through the

00:34:28 --> 00:34:30: grants through funding platforms.

00:34:30 --> 00:34:33: But I think that is as what may have also

00:34:33 --> 00:34:37: mentioned, there's a lot of benefits in in doing so.

00:34:37 --> 00:34:41: And then we continue to look out for solutions that
00:34:41 --> 00:34:44: has been done as well overseas, including Australia.
00:34:45 --> 00:34:47: I think there's a lot to be learnt.
00:34:47 --> 00:34:48: We are quite nimble.
00:34:50 --> 00:34:54: I think the micro grids, smart grids solutions will certainly
00:34:54 --> 00:34:58: be the next bound and how at the national level
00:34:58 --> 00:35:01: we can reduce carbon emissions further.
00:35:01 --> 00:35:05: But it's not easy at the building level.
00:35:05 --> 00:35:06: From BCH's perspective.
00:35:06 --> 00:35:10: From green mark, I think we continue to equip the
00:35:10 --> 00:35:13: buildings through the green mark scheme.
00:35:14 --> 00:35:17: That's why we have what we call it intelligence batch
00:35:17 --> 00:35:21: so that the buildings at the building level minimally it
00:35:21 --> 00:35:25: is future ready to be connected for that eventuality micro
00:35:25 --> 00:35:26: grids, smart grids.
00:35:27 --> 00:35:30: So yeah, I think we are fully supportive and it's
00:35:30 --> 00:35:34: I think it's it's more or less at Test building
00:35:34 --> 00:35:34: stage.
00:35:34 --> 00:35:38: Hopefully it is something that we can scale up further.
00:35:38 --> 00:35:39: Yeah, thanks.
00:35:41 --> 00:35:42: Thanks Edward.
00:35:42 --> 00:35:45: And I'll just observe quickly that here in Australia where
00:35:45 --> 00:35:48: we use a system called neighbors to assess the operational
00:35:48 --> 00:35:51: energy of buildings and they smiling because she has to
00:35:51 --> 00:35:53: do with this stuff all the time.
00:35:54 --> 00:35:57: The measured operational energy of buildings which is converted on
00:35:58 --> 00:36:01: an annual basis, an annual average basis to building emissions
00:36:01 --> 00:36:02: intensity.
00:36:02 --> 00:36:06: The scheme as it's currently rated actually works against real
00:36:06 --> 00:36:10: time kind of grid decarbonization, smart grid stuff, because it
00:36:10 --> 00:36:14: always uses a little bit more energy to save energy,
00:36:14 --> 00:36:16: so there's a bit in storage.
00:36:16 --> 00:36:20: So even if you're building through, saving energy substantially reduces
00:36:20 --> 00:36:23: its annual emissions profile on an hour by hour basis.
00:36:23 --> 00:36:26: Look at it at on average, use more energy, therefore
00:36:26 --> 00:36:27: use more carbon.
00:36:27 --> 00:36:31: So the way we measure carbon intensity is in the
00:36:31 --> 00:36:36: process of being reviewed and updated to acknowledge the good
00:36:36 --> 00:36:40: work that buildings can do to save energy, to store

00:36:40 --> 00:36:43: energy, to deploy it right time.

00:36:44 --> 00:36:48: So just these these systems, especially the complex robust ones,

00:36:48 --> 00:36:51: take time to adjust to emerging practices.

00:36:53 --> 00:36:55: We've got some questions coming in, which is terrific.

00:36:55 --> 00:36:56: Thanks, Hannah, for your questions.

00:36:56 --> 00:36:57: Thanks, John, for yours.

00:36:57 --> 00:36:58: We'll turn to those in a few minutes.

00:36:58 --> 00:37:01: I encourage the rest of you to submit questions as

00:37:01 --> 00:37:02: well.

00:37:02 --> 00:37:04: One more for our panel before we pick up a

00:37:04 --> 00:37:06: couple of questions from the audience.

00:37:08 --> 00:37:11: Just thinking about we, we've been talking quite specifically about

00:37:11 --> 00:37:13: a kind of series of technologies.

00:37:14 --> 00:37:19: What other technologies or development practices or building operational practices

00:37:19 --> 00:37:23: do you all see as driving really substantial and meaningful

00:37:23 --> 00:37:28: decarbonization in our property, building our properties, in our portfolios?

00:37:28 --> 00:37:30: And let's start with you, Edward, you're at the cutting

00:37:30 --> 00:37:31: edge of this.

00:37:31 --> 00:37:33: What is going to really decarbonize our build environment?

00:37:34 --> 00:37:35: Yeah, thanks, Bon.

00:37:36 --> 00:37:41: So based on what we gathered from Green Mark projects,

00:37:41 --> 00:37:44: I think we have a lot more super low energy

00:37:44 --> 00:37:45: buildings.

00:37:45 --> 00:37:49: What we define as super low energy is basically when

00:37:49 --> 00:37:53: you achieve 60% energy efficiency improvement over the 2005 levels.

00:37:54 --> 00:37:58: So when we started the SLE program back 5-6 years

00:37:58 --> 00:38:02: ago, it was only a few and there was only

00:38:02 --> 00:38:04: institutional buildings.

00:38:04 --> 00:38:09: I think there are more and more our technologies on

00:38:09 --> 00:38:13: board and we have close to 200 SLE buildings today,

00:38:14 --> 00:38:21: so encompassing commercial, residential, non residential, industrial building.

00:38:21 --> 00:38:23: So I think this is really encouraging.

00:38:23 --> 00:38:26: So the next part of technology if you ask me

00:38:26 --> 00:38:29: is really about alternative cooling technologies.

00:38:30 --> 00:38:33: So if you think about it in at least minimally

00:38:33 --> 00:38:37: in our context we need cooling and we have a

00:38:37 --> 00:38:40: hot and humid climate and I think the need for

00:38:40 --> 00:38:43: energy for cooling is really very high.
00:38:44 --> 00:38:48: So what is needed is really how we can get
00:38:48 --> 00:38:54: out of ourselves from the dependency on on ACMV systems.
00:38:55 --> 00:38:57: So I think that's that's really critical.
00:38:57 --> 00:39:00: And if you think about it in our context, we
00:39:00 --> 00:39:05: have very high rise buildings, both residential and non residential.
00:39:05 --> 00:39:08: So if I ask the likes of Athelia Tans, Urbana
00:39:08 --> 00:39:12: Jerong, I think it's very challenging to to achieve 80%
00:39:13 --> 00:39:15: energy efficiency improvement.
00:39:15 --> 00:39:19: So knowing that, I think what we can do is
00:39:19 --> 00:39:24: really back-to-back to basics and how architects, building designers design
00:39:25 --> 00:39:26: the buildings.
00:39:26 --> 00:39:30: So I think that's very important, how we can harness
00:39:30 --> 00:39:35: more natural ventilation in our buildings, how we can put
00:39:35 --> 00:39:38: hybrid cooling seamlessly into buildings.
00:39:38 --> 00:39:42: Because if you think about it as building occupants, there's
00:39:42 --> 00:39:46: a lot of transitional spaces in our buildings and like
00:39:46 --> 00:39:51: atrium, live lobbies, even toilets, people are not working there
00:39:51 --> 00:39:51: 24/7.
00:39:52 --> 00:39:55: So there's a lot of excess energy that we can
00:39:55 --> 00:39:57: cut through our building design.
00:39:58 --> 00:40:00: So I think from this perspective.
00:40:01 --> 00:40:04: We came out with GBIC challenge, what we call Green
00:40:04 --> 00:40:06: green building innovation Challenge.
00:40:07 --> 00:40:12: And I think last year we call for challenge call
00:40:12 --> 00:40:17: for projects came on board and it, it basically studied
00:40:17 --> 00:40:24: all the various building topologies from hotel, commercial, office topologies
00:40:24 --> 00:40:29: and then residential mixed development as well.
00:40:29 --> 00:40:32: So a mix of retail and as well as commercial.
00:40:32 --> 00:40:35: So I think that the the study finding is, is
00:40:35 --> 00:40:37: very interesting.
00:40:38 --> 00:40:40: OK, So the outcome will be released in a in
00:40:40 --> 00:40:43: a couple of months when we have the International Build
00:40:43 --> 00:40:44: Environment Week.
00:40:45 --> 00:40:46: So stay tuned.
00:40:48 --> 00:40:52: One of the findings really suggests that back to basics
00:40:52 --> 00:40:56: in terms of building design is very important how we
00:40:56 --> 00:40:59: can harness natural ventilation.
00:40:59 --> 00:41:03: I think what you call mixed mode ventilation as well,
00:41:03 --> 00:41:07: how we can activate cooling system in a smart way,

00:41:07 --> 00:41:11: not not just fully on throughout the day for example.
00:41:12 --> 00:41:15: So some of this alternative cooling technologies is is quite
00:41:15 --> 00:41:16: new.
00:41:16 --> 00:41:18: I think we are trying to promote it in both
00:41:18 --> 00:41:21: public sector and private sector buildings.
00:41:21 --> 00:41:23: We have more and more buildings coming on board.
00:41:23 --> 00:41:26: We are collecting data and I think this could be
00:41:26 --> 00:41:30: the next bound minimally for for temperate countries, I mean,
00:41:30 --> 00:41:34: minimally for hot and humid countries like us, but perhaps
00:41:34 --> 00:41:37: in other temperate countries there could be other solutions as
00:41:37 --> 00:41:38: well.
00:41:38 --> 00:41:39: Yeah, maybe I'll stop here.
00:41:39 --> 00:41:39: Thanks.
00:41:40 --> 00:41:43: Right, that's exciting and I'm excited to read the well,
00:41:43 --> 00:41:45: all the secrets that are going to be devolved.
00:41:45 --> 00:41:49: I released the reported and not Harnick Keppel.
00:41:49 --> 00:41:53: Where are you investing your time and effort in practices
00:41:53 --> 00:41:58: and emerging technologies to decarbonize us, whether it's construction, embodied
00:41:58 --> 00:42:00: or operational, the full realm of carbon?
00:42:01 --> 00:42:02: Yeah.
00:42:02 --> 00:42:06: So across our assets, we do work quite closely with
00:42:06 --> 00:42:10: some of the institutional agencies including BCA and well agencies
00:42:10 --> 00:42:15: that encourage the proliferation of these startup types of companies
00:42:15 --> 00:42:20: in Singapore as well in sourcing for the appropriate types
00:42:20 --> 00:42:25: of technologies for decarbonization as well As for operational efficiency,
00:42:25 --> 00:42:27: usually both, right.
00:42:27 --> 00:42:30: So when it comes to materials, for instance, we're in,
00:42:30 --> 00:42:32: we'd like to preserve some embodied carbon.
00:42:32 --> 00:42:36: Further, these are where low, low embodied carbon types of
00:42:36 --> 00:42:39: materials can certainly come in, whether it's concrete, steel, glass
00:42:39 --> 00:42:43: or any mode of interior finishing or interior materials, right?
00:42:43 --> 00:42:47: So having what we would define as low embodied carbon
00:42:47 --> 00:42:52: types of materials will be the start of that conversation.
00:42:52 --> 00:42:56: And that is if we're doing any mode of renovation
00:42:56 --> 00:42:58: or rebuild at all.
00:42:58 --> 00:43:01: But prior to that conversation, it would be an active
00:43:01 --> 00:43:05: decision to retrofit an existing asset as much as possible
00:43:05 --> 00:43:09: simply to strategically enhance its life cycle and therefore

preserve

00:43:09 --> 00:43:12: to some extent the embodied carbon that's already there, right.

00:43:12 --> 00:43:16: So you can't necessarily save every building, but for what

00:43:16 --> 00:43:20: you can, you could actually preserve all the years of

00:43:20 --> 00:43:24: embodied carbon that came before that and how it was

00:43:24 --> 00:43:26: put together in the 1st place.

00:43:26 --> 00:43:30: And making that sort of conscious decision instead of demolishing

00:43:30 --> 00:43:33: and rebuilding it does save us a significant amount of

00:43:33 --> 00:43:34: embodied carbon.

00:43:34 --> 00:43:37: So once we get past that stage, it would be

00:43:37 --> 00:43:40: about implementing a, a well curated, a set of solutions

00:43:40 --> 00:43:42: that actually work well with one another.

00:43:42 --> 00:43:46: So these could be anything from, well, cooling to lighting

00:43:46 --> 00:43:52: optimization types of technologies to ventilation technologies to building controls,

00:43:52 --> 00:43:53: right?

00:43:53 --> 00:43:55: So it's a combination of what's out there in the

00:43:55 --> 00:43:58: market, what is already, you know, household name in the

00:43:58 --> 00:44:01: market, plus any of these new types of technologies that

00:44:01 --> 00:44:02: might come up, right?

00:44:02 --> 00:44:05: So these would include sensing technologies.

00:44:05 --> 00:44:10: These would also include a mixed mode ventilation technologies that

00:44:10 --> 00:44:14: Edwards touched upon earlier and ultimately in building management and

00:44:14 --> 00:44:15: automation.

00:44:16 --> 00:44:18: So it's not just the absolute performance of the building

00:44:18 --> 00:44:20: that we need to look at, it's also about how

00:44:20 --> 00:44:21: the building is being used.

00:44:22 --> 00:44:25: So there's a lot of interplay between the optimization of

00:44:25 --> 00:44:29: space, like for instance, in a in an open office,

00:44:29 --> 00:44:32: in an open hot desk office, how would that differ

00:44:32 --> 00:44:35: in terms of its consumption profile to a fixed desk

00:44:35 --> 00:44:36: office?

00:44:36 --> 00:44:38: So we study these types of differences.

00:44:38 --> 00:44:41: We study heat maps as to where people tend to

00:44:41 --> 00:44:45: congregate in an open office type of environment, for instance,

00:44:45 --> 00:44:48: where people tend to congregate in a cool living type

00:44:48 --> 00:44:49: of asset, for instance.

00:44:49 --> 00:44:54: And then we optimize the technologies behind that

accordingly, be
00:44:54 --> 00:44:57: it in terms of the purging of still air or
00:44:57 --> 00:45:00: the redistribution of fresher and cooler air.
00:45:01 --> 00:45:06: So once all these things are basically responsive based on
00:45:06 --> 00:45:10: demand, right, we also see peaks being shaved.
00:45:10 --> 00:45:13: We also see, you know, incremental savings to be had
00:45:13 --> 00:45:16: and you shouldn't sort of just ignore some of these
00:45:16 --> 00:45:19: savings even though there's, you know, two 3% or 5%
00:45:19 --> 00:45:22: because once you add it all up together, they could
00:45:22 --> 00:45:27: contribute significantly to the overall decarbonization journey and therefore the
00:45:27 --> 00:45:30: savings per year and therefore the valuation of the building
00:45:31 --> 00:45:32: per annum, for instance, right.
00:45:32 --> 00:45:35: So it's it's sort of snowballs to something that's a
00:45:36 --> 00:45:36: lot bigger.
00:45:37 --> 00:45:39: Yeah, that's a lot of insights on what you said,
00:45:39 --> 00:45:41: Hon, not the least of which is we've got to
00:45:41 --> 00:45:42: tackle this on many fronts.
00:45:42 --> 00:45:43: There's no silver bullet.
00:45:44 --> 00:45:47: The other issue that your comment raises for me, it's
00:45:47 --> 00:45:50: aside is there's an interesting point where I think an
00:45:50 --> 00:45:54: interesting discussion that we need to have about how much
00:45:54 --> 00:45:58: the office experience or the residential experience matters versus the
00:45:58 --> 00:46:01: energy we save by optimizing performance to spring every last
00:46:01 --> 00:46:03: walk out of operations.
00:46:03 --> 00:46:05: There are a few buildings in the world that are
00:46:05 --> 00:46:08: open plan, but you're only allowed to sit in the
00:46:08 --> 00:46:10: open plan areas that have been open so that they
00:46:10 --> 00:46:12: can try and keep as much of the building shut
00:46:12 --> 00:46:13: down as possible.
00:46:13 --> 00:46:15: Now that's cool from a standpoint of reducing energy use,
00:46:15 --> 00:46:17: but you know, it's a little bit Big Brother, you
00:46:17 --> 00:46:18: get to the office, you want to go to that
00:46:19 --> 00:46:20: nice sunny corner and the you're not, you know, there's
00:46:21 --> 00:46:23: no lights on, there's no security, there's nothing there because
00:46:23 --> 00:46:24: that part of the building is not opened up.
00:46:24 --> 00:46:27: That sort of defeats the purpose of going into work
00:46:27 --> 00:46:28: and doing your thing.
00:46:28 --> 00:46:29: So is that right?
00:46:29 --> 00:46:31: You know, are those lots worth it?

00:46:32 --> 00:46:33: Maybe they are.

00:46:33 --> 00:46:36: And that's where there's a kind of the, the possibilities

00:46:36 --> 00:46:39: of highly automated controls for a bump up against the

00:46:39 --> 00:46:42: needs of us as people in our workplaces and our

00:46:42 --> 00:46:43: homes and our our things.

00:46:45 --> 00:46:48: May your thoughts on on the kind of the a

00:46:48 --> 00:46:53: practice or a technology that's going to meaningfully decarbonize, you

00:46:53 --> 00:46:57: know your portfolio at Salter Brothers or broader property portfolios.

00:46:59 --> 00:47:03: I'm keeping an eye on three things, the technology one

00:47:03 --> 00:47:06: of them, the first one is a water source heat

00:47:06 --> 00:47:11: pump chiller because ultimately you, you all, everyone needs cooling,

00:47:11 --> 00:47:15: but you know, you also provides free heating.

00:47:15 --> 00:47:18: So in most countries, particularly in a moderate country like

00:47:19 --> 00:47:22: Australia or it doesn't matter, not necessarily Australia, but if

00:47:23 --> 00:47:26: you're a hot country like Singapore, but you've got hotels

00:47:26 --> 00:47:29: with a swimming pool or anything with a heat source,

00:47:29 --> 00:47:33: it's actually quite good technology to kind of have free

00:47:33 --> 00:47:35: heating as a, as a by product of cooling.

00:47:36 --> 00:47:42: So that's actually #1 #2 is people counting occupancy senses.

00:47:42 --> 00:47:45: So traditionally we've always said if you improve outside there

00:47:46 --> 00:47:49: and Green Star makes everyone happy, it therefore gives you

00:47:49 --> 00:47:52: green points because you know, you're my more.

00:47:52 --> 00:47:56: What's happened is with the Evan and Covic, we're not

00:47:56 --> 00:47:59: actually using our office the way we're used to.

00:48:00 --> 00:48:01: There's a lot more people working from home.

00:48:01 --> 00:48:04: So in itself we still run the building as we

00:48:04 --> 00:48:08: would be in a full tenancy because that's how we've

00:48:08 --> 00:48:09: always done it.

00:48:09 --> 00:48:12: But now we're working from home or in a large

00:48:12 --> 00:48:15: office environment with meeting rooms.

00:48:15 --> 00:48:20: The people counting occupancy sensor can really significantly reduce the

00:48:20 --> 00:48:23: outside air and at a temperature like 28?? in Singapore

00:48:23 --> 00:48:27: and humidity, which is the challenge that creates extra energy

00:48:27 --> 00:48:30: to try to reduce that that to a comfortable level

00:48:30 --> 00:48:33: because you still not only do you have to deal

00:48:33 --> 00:48:36: with the humidity, but also the sensible load.

00:48:36 --> 00:48:40: So in a people counting scenario, it's very simple technology,
00:48:40 --> 00:48:44: you're not changing too much, but one sensor makes such
00:48:44 --> 00:48:45: a huge difference.
00:48:45 --> 00:48:46: So that's number two.
00:48:46 --> 00:48:50: And then of course, the AI native language and its
00:48:50 --> 00:48:54: ability to capture data across multiple facets.
00:48:54 --> 00:48:58: Right now we run silos, electrical system talks to itself,
00:48:58 --> 00:49:00: a high track system is run by BMS, the list
00:49:00 --> 00:49:04: system has on BMS management system and then the grid
00:49:04 --> 00:49:05: doesn't talk to anybody.
00:49:06 --> 00:49:09: Now in an AI world, we would pick that all
00:49:09 --> 00:49:13: up together and the AI can decide which is the
00:49:13 --> 00:49:17: priority because we cannot as a human person can't understand.
00:49:17 --> 00:49:19: There's too many inputs all at once.
00:49:19 --> 00:49:22: You know, if I want to do the man management,
00:49:22 --> 00:49:24: which I try to do manually in the ICC, I
00:49:25 --> 00:49:27: can only watch 2 screens at once.
00:49:27 --> 00:49:30: So I can know maybe one floor, 2 floors I
00:49:30 --> 00:49:33: can watch in terms of what the energy is going.
00:49:33 --> 00:49:36: I can't watch all 20 floors and figure out at
00:49:36 --> 00:49:38: which point I need to stop my energy savings measure
00:49:38 --> 00:49:40: and then turn it back on.
00:49:40 --> 00:49:42: So I can't capture that.
00:49:42 --> 00:49:45: And I feel that with the way AI is scaling
00:49:45 --> 00:49:49: so fast and I'm seeing some really, really amazing AI
00:49:49 --> 00:49:52: products out there, I think that's going to be the
00:49:52 --> 00:49:56: next crystal ball for us that we're really going to
00:49:56 --> 00:50:00: see a huge emerging field coming through that picks up
00:50:00 --> 00:50:04: all those, all those vertical layers and bring it all
00:50:04 --> 00:50:05: together.
00:50:07 --> 00:50:09: Yeah, and maybe it's not even AI.
00:50:09 --> 00:50:11: It could just be thoughtful algorithms.
00:50:12 --> 00:50:15: Whatever works, you know, we just, we needed the data
00:50:15 --> 00:50:17: and we need the data to talk to each other.
00:50:17 --> 00:50:17: That's it.
00:50:17 --> 00:50:17: That's right.
00:50:18 --> 00:50:19: Bringing computational power to bear.
00:50:19 --> 00:50:20: I fully agree.
00:50:21 --> 00:50:24: Now we've got said lots of good questions to come
00:50:24 --> 00:50:24: in.
00:50:24 --> 00:50:27: A special shout out to Helena Chu in Singapore who's

00:50:27 --> 00:50:28: been firing off lots of great ones.

00:50:30 --> 00:50:33: And Helena asks a question here about how do we

00:50:33 --> 00:50:39: basically rigorously and appropriately account for business case for the

00:50:39 --> 00:50:43: cost of climate inaction and how do we build that

00:50:43 --> 00:50:45: into our business cases.

00:50:46 --> 00:50:49: And I wanted to hear again from from each, especially

00:50:49 --> 00:50:53: from home and from May, how are your business cases?

00:50:53 --> 00:50:55: How are your businesses and your work?

00:50:55 --> 00:50:58: How are you valuing resilience?

00:50:58 --> 00:51:00: How are you valuing adaptation?

00:51:00 --> 00:51:02: Are you building in cost of inaction?

00:51:03 --> 00:51:06: Are you building in some cost to advocate for more

00:51:06 --> 00:51:07: action by everyone else?

00:51:07 --> 00:51:08: To.

00:51:08 --> 00:51:11: Protect the value of your assets and your businesses like

00:51:11 --> 00:51:15: the As the world changes and gets weirder and Otter

00:51:15 --> 00:51:19: and more complicated, how is resilience shaping like hard nosed

00:51:19 --> 00:51:20: business decisions?

00:51:21 --> 00:51:23: Yeah, maybe I'll, I'll start.

00:51:23 --> 00:51:27: And I think we've gone from running businesses sustainably to

00:51:27 --> 00:51:31: running a sustainable business because ultimately you can't escape from

00:51:31 --> 00:51:35: the fact that, you know, global warming is really happening.

00:51:35 --> 00:51:37: I mean, every summer is a good reminder of that.

00:51:37 --> 00:51:39: It just keeps getting hotter and hotter.

00:51:39 --> 00:51:42: Either that or tolerance is getting lower and lower, which

00:51:42 --> 00:51:42: is unlikely.

00:51:42 --> 00:51:46: So definitely the plan is getting hotter and I think

00:51:46 --> 00:51:50: businesses would be unwise to not factor any of these

00:51:50 --> 00:51:54: types of costs in mitigation or in at least adapting

00:51:54 --> 00:51:57: to these changes as part of their modus operandi.

00:51:58 --> 00:52:01: And certainly I think for investments this takes the form

00:52:01 --> 00:52:02: of a couple of things.

00:52:02 --> 00:52:07: One is factoring in sufficient expenditure for these measures and

00:52:07 --> 00:52:12: also determining what is the value at risk rate should

00:52:12 --> 00:52:17: Touchwood any sort of calamity that's climate related happen.

00:52:17 --> 00:52:19: And so all this has been talked about in some

00:52:19 --> 00:52:21: ways earlier on in the past hour.

00:52:22 --> 00:52:24: What I also want to talk about is the allocation
00:52:24 --> 00:52:25: of capital.
00:52:25 --> 00:52:28: So to chance first question as well.
00:52:28 --> 00:52:31: I think her question is around how do you justify
00:52:31 --> 00:52:34: for you know the original CapEx or what used to
00:52:34 --> 00:52:37: be called the green premium simply because you know you
00:52:37 --> 00:52:41: can sort of counter that argument with somewhat of increased
00:52:41 --> 00:52:42: building valuation.
00:52:42 --> 00:52:45: And the fact is that is a great question because
00:52:45 --> 00:52:47: it is something that we look at both in terms
00:52:47 --> 00:52:50: of strategy as well as accounting right from the very
00:52:50 --> 00:52:53: beginning of underwriting in any given asset.
00:52:53 --> 00:52:56: Because if you look at factoring in CapEx, which is
00:52:56 --> 00:52:59: part of the building cost, that immediately pumps up the
00:52:59 --> 00:53:03: cost of the building, whether or not it's for material,
00:53:03 --> 00:53:06: for amenities or in this case for sustainability.
00:53:07 --> 00:53:10: And the moment that's sort of bumped up, it makes
00:53:10 --> 00:53:13: your investment returns or your return on equity or return
00:53:14 --> 00:53:17: of investment or even your IRR that impacts that figure,
00:53:17 --> 00:53:18: right?
00:53:18 --> 00:53:20: And it's a shift in the spreadsheet because if that
00:53:20 --> 00:53:23: figure goes up, you know, inversely, the returns figure comes
00:53:23 --> 00:53:26: down and then it just doesn't pass that gateway that
00:53:26 --> 00:53:28: needs to be passed in order for investment to go
00:53:28 --> 00:53:29: ahead, right?
00:53:29 --> 00:53:32: So what then needs to be done is to look
00:53:32 --> 00:53:35: at how we can break down the cost of such
00:53:35 --> 00:53:35: CapEx.
00:53:35 --> 00:53:39: Of course, I talked earlier about the cost curves coming
00:53:39 --> 00:53:43: down, right, for building technologies and for decarbonization technologies.
00:53:43 --> 00:53:45: But as much as that is true, it still comes
00:53:45 --> 00:53:45: at a cost.
00:53:46 --> 00:53:49: So how then do you sort of place that into
00:53:50 --> 00:53:54: a more gradual, consistent and well more sustainable in that
00:53:54 --> 00:53:58: sense of the word, sort of expenditure that is then
00:53:58 --> 00:54:02: distributed over its life cycle or at least the asset
00:54:02 --> 00:54:07: or the fund life cycle across its operational expenditure, right.
00:54:07 --> 00:54:10: So factoring in these types of things and, and also
00:54:10 --> 00:54:14: employing, you know, sustainability as a service type of products
00:54:14 --> 00:54:18: and types of services will actually distribute the cost over

00:54:18 --> 00:54:19: time.
00:54:19 --> 00:54:22: And if the cost is distributed over time, all the
00:54:22 --> 00:54:25: more the pressure to gain these savings to supersede or
00:54:26 --> 00:54:29: too far offset these costs will then come in right.
00:54:29 --> 00:54:32: So it's in some ways positive pressure that will lead
00:54:32 --> 00:54:35: you to be even more clever and be even more
00:54:35 --> 00:54:39: strategic about putting in the right source of solutions plus
00:54:39 --> 00:54:42: the right types of accounting models for the asset, right.
00:54:43 --> 00:54:45: I don't know if that's left enough time for anyone
00:54:45 --> 00:54:47: else, but that's that's really how we're looking at it.
00:54:47 --> 00:54:49: It's different on a case by case basis.
00:54:49 --> 00:54:51: It's different depending on the cost of technology and it's
00:54:51 --> 00:54:54: certainly different for different geographies that we operate in.
00:54:54 --> 00:54:55: Yeah.
00:54:55 --> 00:54:57: And and I think fundamentally it shares the responsibility of
00:54:57 --> 00:54:58: responding.
00:54:58 --> 00:55:01: So it's not just one thing, it's many things over
00:55:01 --> 00:55:02: many realms over time.
00:55:03 --> 00:55:05: And my quick one, how are you?
00:55:05 --> 00:55:05: Yeah.
00:55:05 --> 00:55:06: OK.
00:55:06 --> 00:55:09: So just just something like, I mean Hans talked quite
00:55:10 --> 00:55:12: a lot about understanding that pathway.
00:55:12 --> 00:55:15: I think the challenge a lot of this is actually
00:55:15 --> 00:55:17: a lot of the value at risk component is really
00:55:17 --> 00:55:19: done through insurance and insurance.
00:55:19 --> 00:55:23: So not necessarily want to share the data with you
00:55:23 --> 00:55:27: because they, they hold all the cards, but what we're
00:55:27 --> 00:55:30: seeing at least is that you have to have one
00:55:30 --> 00:55:33: foot in each camp because you have to focus.
00:55:33 --> 00:55:36: What can you do operationally that that reduces your risk
00:55:37 --> 00:55:38: in, in the climate context?
00:55:38 --> 00:55:42: And then also you have to then accept that they
00:55:42 --> 00:55:45: will be, is it better to look at avoidance and
00:55:45 --> 00:55:50: actually just, you know, create systems like, but you know,
00:55:50 --> 00:55:54: like ground, ground tanks for storm water drainage to make
00:55:54 --> 00:55:57: sure you never flood or, or is it best to
00:55:58 --> 00:56:01: kind of look at your increase in insurance premium?
00:56:01 --> 00:56:03: But you it's not an isolation.
00:56:03 --> 00:56:06: I think the major component is that you have to
00:56:06 --> 00:56:11: bear some responsibility into the loss of your day-to-day

business.

00:56:11 --> 00:56:14: And then from there, you have to actually look at

00:56:14 --> 00:56:18: what level of CapEx you need to introduce because obviously

00:56:18 --> 00:56:20: this is new signs for everybody.

00:56:20 --> 00:56:22: No one's got the money for resilience.

00:56:22 --> 00:56:25: People just need to kind of have to weigh the

00:56:25 --> 00:56:28: cost of, OK, if I'm going to be an operational

00:56:28 --> 00:56:32: out for a day, that's $1,000,000, OK, find $1,000,000 because

00:56:32 --> 00:56:34: insurance only start on day 2.

00:56:35 --> 00:56:37: You're absorbing $1,000,000 then.

00:56:37 --> 00:56:40: OK, then if I hit that once or once every

00:56:40 --> 00:56:44: five years, then maybe, you know, I'm going to have

00:56:44 --> 00:56:48: to divert 200 every year just to avoid that or

00:56:48 --> 00:56:51: I can actually put in a 500 half a mil

00:56:51 --> 00:56:51: system.

00:56:51 --> 00:56:55: So those are the kind of characteristics that we're working

00:56:55 --> 00:56:55: towards.

00:56:55 --> 00:56:58: But like I said, the data is sporadic.

00:56:58 --> 00:57:01: You're just going to have to do it and then

00:57:01 --> 00:57:05: as more data comes around you just have to complete

00:57:05 --> 00:57:08: and re evaluate your position on this.

00:57:10 --> 00:57:14: Edward, quick comment on where BCA is going with resilience.

00:57:14 --> 00:57:19: How are you encouraging property owners to operationalize resilience and

00:57:19 --> 00:57:20: adaptation?

00:57:21 --> 00:57:21: Yeah, thanks both.

00:57:21 --> 00:57:25: So fully agree with what Han and May have said.

00:57:25 --> 00:57:30: In fact, we took resilience quite seriously early on when

00:57:30 --> 00:57:35: we developed the Green Mark back in 2020-2021, hence the

00:57:35 --> 00:57:38: the last version on Green Mark 2021.

00:57:38 --> 00:57:41: We already have a resilience batch section in in Green

00:57:41 --> 00:57:46: Mark alongside other badges like whole life, carbon intelligence, maintainability,

00:57:46 --> 00:57:47: health and well-being.

00:57:48 --> 00:57:51: So resilience I think is is very important especially for

00:57:51 --> 00:57:52: Singapore.

00:57:53 --> 00:57:57: Low lying lands more and we are prone to higher

00:57:58 --> 00:58:02: rainfall intensity, higher temperatures.

00:58:02 --> 00:58:06: I think eventually it will affect buildings and building occupants.

00:58:06 --> 00:58:11: So we need to adjust on how the building operates.
00:58:11 --> 00:58:14: I think back during COVID, together with the Ministry of
00:58:14 --> 00:58:17: Health, we even issue guidance how the building need to
00:58:18 --> 00:58:18: operate.
00:58:18 --> 00:58:22: As what also made may have said, there has to
00:58:22 --> 00:58:25: be a balance between the energy and the indoor air
00:58:26 --> 00:58:26: quality.
00:58:27 --> 00:58:31: So yeah, in terms of resilience section and green Mark,
00:58:31 --> 00:58:33: we are doing a refresh.
00:58:33 --> 00:58:38: Ultimately it's basically to keep pace with what the financial
00:58:38 --> 00:58:44: institutions, bank corporate businesses like capital will need to incorporate
00:58:44 --> 00:58:47: eventually in their disclosures.
00:58:47 --> 00:58:50: And, and, and as part of the green financing, we
00:58:50 --> 00:58:53: even heard from the banks that they started to take
00:58:53 --> 00:58:57: in climate risks and resilience as very important in in
00:58:57 --> 00:58:59: the checklist for the investors.
00:58:59 --> 00:59:04: So I think it's going to be quite mainstream perhaps
00:59:04 --> 00:59:06: in, in, in the near future.
00:59:06 --> 00:59:09: And I think from the green building rating system perspective,
00:59:09 --> 00:59:12: at least for green Mark, we need to be quite
00:59:12 --> 00:59:12: future ready.
00:59:12 --> 00:59:14: We need to cater for that.
00:59:14 --> 00:59:17: Hence we are doing a refresh to update some of
00:59:17 --> 00:59:19: these requirements as well.
00:59:19 --> 00:59:19: Yeah.
00:59:20 --> 00:59:20: Terrific.
00:59:20 --> 00:59:22: Well, we've reached the end of our hour.
00:59:22 --> 00:59:25: Thanks so much, Edward, Hahn and Mei, for all of
00:59:25 --> 00:59:28: your insights about the challenges of sustainability ahead of us
00:59:28 --> 00:59:29: in 2026 and beyond.
00:59:30 --> 00:59:32: And back to you, Jenny, to wrap us up.
00:59:33 --> 00:59:35: Yes, big round of Cynthia.
00:59:35 --> 00:59:38: Thank you to all the speakers and also for those
00:59:38 --> 00:59:41: online for joining us today and answering, asking you questions.
00:59:41 --> 00:59:44: And we look forward to continuing these conversations to continue
00:59:44 --> 00:59:46: to highlight the business case for sustainability.
00:59:47 --> 00:59:49: And we've put the resources that are mentioned today into
00:59:50 --> 00:59:50: the chat.
00:59:50 --> 00:59:53: So that includes the article for this year on the

00:59:53 --> 00:59:56: trends that we've been discussing as well as we can

00:59:56 --> 00:59:59: see how these trends have changed over the last five

00:59:59 --> 01:00:01: years as the world has changed.

01:00:01 --> 01:00:06: And also the technology decarp map that Edward has mentioned

01:00:06 --> 01:00:09: that that was just put out last month.

01:00:09 --> 01:00:12: So with that, everyone hopefully have a lovely rest of

01:00:12 --> 01:00:13: your day and thank you for joining us.

01:00:15 --> 01:00:16: Thank you.

01:00:17 --> 01:00:17: Thank you.

01:00:17 --> 01:00:17: Thank.

01:00:18 --> 01:00:18: You.

01:00:19 --> 01:00:19: Thanks.
