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Session III: Natural and Built Environment

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It's an absolute pleasure to be here today to talk about the natural and built environment and what we can do to unlock community participation to drive for more resilient and sustainable outcomes. I've really enjoyed listening to the conversations this morning, a mixture of inspiring, but some quite interesting information in there that I wasn't entirely aware of. But what I'm going to talk about today is a little bit more skewed toward the world that I'm familiar with — the world of infrastructure and the journey that we need to go on to transition our economy to net zero in this space. You'll also probably pick up on a slight bias towards engineering, which I'll admit now I'm proudly unapologetic about. One thing is clear. We all know that the action we take as a planet over the next decade will determine the world's climate for the next century.

How to decarbonise

Each of us in our own field and our own way needs to help to make sure the actions that we take are smart ones, not necessarily the easy ones. The health of our people, our communities, and our planet depend on us getting this right and leaning into the conversation with all stakeholders. In Australia, as in every country around the world, decarbonising our economy and creating a more resilient future for our natural and built environment to combat the negative impacts of climate change is a complex journey. We need to navigate away from how we operate today industrially to a different model, one focused on net zero emissions, sustainable solutions, and a more circular approach to the impact we have. That means questioning every aspect of our energy process, material and mobility decisions across every industry that we operate in. It's a monstrous task by any measure.

But before we can talk about action, before our communities can come together and strive for better outcomes, before we can begin beating on the drums of progress, we must first understand and address three significant challenges that I believe risk derailing all our efforts. It's these broad, overarching challenges that I wanted to touch on today to set the scene. This is where I spend a lot of my time advocating and driving for change.

Critical skills shortages

The first of these challenges is the critical skills shortages we're currently experiencing across industries key to the development of better outcomes for our natural and built environment. In 2021, Infrastructure Australia released a report on workforce and skills supply, which stated that by 2023 — that's next year — there would be a shortage of over a hundred thousand workers to deliver on the country's current infrastructure pipeline. Whilst this might

1 This is an edited version of a transcript of the presentation.

seem already dire, if you overlay that with some of the unknown pipelines of work required to transition the nation's economy to net zero, then these numbers spiral exponentially.

Then consider that specialist skills around STEM and engineering, in particular, the demand for the skills in this space is at an all-time high. STEM occupations are increasing twice as fast as non-STEM occupations, with projections show that they'll continue to grow by 13% p.a. over the next five years. Australia already has a critical engineering pipeline shortage, but we continue to see a general decline in participation by domestic students in engineering. Couple this with a sudden reduction in international students and skilled migration off the back of the COVID pandemic and you have what can only be described as a perfect storm. When it comes to the action required to create a more resilient and sustainable natural and built environment, even if we assume we had all the necessary technological solutions, all the required land space and an endless stream of funding and investment, at the current rate, Australia may still fall alarmingly short of the one essential ingredient to success. We simply might not have enough people to get the job done.

We have work to do, but, even if we acted immediately and prioritised all the various solutions which have been identified, it won't be enough. This skills gap is so large, we're still going to be tens of thousands of people short for many years to come. Which means we really have to look at the problem through another lens. This is a supply and demand issue. The solution can't just be increasing the supply, it's also got to be about reducing the demand.

Critical industries

That brings me to the second challenge, that key industries critical to reshaping our nation's natural and built environments — such as the construction industry — have traditionally been laggards when it comes to the uptake of technology and innovation. Now, the reasons for this are complex and many, but if we are to achieve the overarching goal of a more sustainable, natural, and built environment, then we must include the sustainability of these industries in the mix.

In the same way we are challenging what infrastructure we need to develop, we must at the same time challenge how this infrastructure is being developed. We must seek to deliver infrastructure in an environment that incentivises shared knowledge and innovation and drives improved efficiency and productivity as a default position. In my view, we are left with absolutely no choice. We must make these sectors more productive because we don't have enough people to push them forward otherwise. When businesses are capacity-constrained, then innovation suffers because the mindset that we likely fall back on will be that tried-and-tested is the safest option. I could stand here for the rest of the day really, and list the numerous initiatives that are being delivered to attempt to address the aforementioned challenges. I could discuss the numerous forums that I've been involved in around the STEM skills shortage and what short-, medium-, and long-term solutions can be implemented.

I could talk about the various conferences and workshops I've attended where we've debated issues around productivity, looking at what can be done around procurement,

risk allocation, scope setting, investment, et cetera. I could even talk about the immense passion that exists in each and every discussion I've had around creating space for more sustainable solutions to infrastructure. This is driven from a genuine belief that great infrastructure built around the needs of a community can provide for vastly improved environmental, social and economic outcomes for that community.

The big picture view

Now let me touch on the last challenge, and that is the big picture view. As we've already touched on and discussed today, short termism engendered by partisan politics has taken Australia to the point where I believe climate action has seemingly left government behind. It is business leaders rather than political leaders who are setting the pace on climate change policy and emissions reductions in our country.

In part this may be positive because it does represent an increasing appreciation for more than just the bottom line. But do we really want to count on individual entities to solve these most complex challenges whilst all individually keeping one eye on their own business model objectives? Our government must lead with a clear narrative on this topic.

Conclusion

These three challenges could derail our efforts to really turn the dial on how we as a country face into this narrow opportunity we have to do better. As we consider how great community participation might drive long-term policy development for the benefit of all Australians, we cannot lose sight of the big picture. And that we can't forget the human factor in all of this. We need to not only be smarter about the impact we have on the planet, but also the impact we have on each other. Put simply, we need to work smarter, not harder to create a more sustainable future. Thank you.

References

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