



# Powering the future: How AI can help accelerate the energy transition

KPMG ESG Voices podcast

## ESG Voices host

*Hello and welcome to another episode of ESG voices. This podcast series addresses the opportunities and challenges within ESG through interviews with ESG specialists from KPMG and beyond. Throughout this series, we will discuss a broad range of environmental, social and governance issues aiming to support governments, businesses and communities in creating an equitable and prosperous future.*

*In today's special COP30 edition, we turn the mic over to Mayra Santos, Communications Development Lead for ESG at KPMG in Brazil and KPMG One Americas, and host of the KPMG One Americas ESG Express Podcast series, who recently sat down with Mike Hayes, Climate Change and Decarbonization Leader and Global Head of Renewable Energy at KPMG international, for a discussion on how AI can be used to drive climate action and the energy transition. This is an area of focus for KPMG at COP30, so we're going to jump right in. Mayra, over to you.*

## Mayra Santos

Thank you. I'm pleased to be with you for these conversations on the main topics related to the ESG agenda, with a special focus on Latin America.

Now it's time to tackle a big topic Energy Transition. We are excited to welcome Mike Hayes. He's KPMG's Global Head of Decarbonization. With over 20 years of experience in renewable energy sector and the past six years dedicated to the climate agenda, Mike has been at the forefront of decarbonization solutions, climate risk, circular economy and energy transition strategies across industries. He's been guiding companies around the world in defining and achieving their net zero goals, and today is here to talk about a topic that KPMG will bring up for discussion at COP30, artificial intelligence is a positive catalyst for climate action and energy transition.

Hello, Mike. Welcome.

## Mike Hayes

Hi Mayra, delighted to be with you today.

## Mayra Santos

To start, let me ask you, how would you define the role of artificial intelligence in the energy transition?

## Mike Hayes

Well Mayra it's a very complex question because the rise and rise of AI and the use of data centres with their insatiable demand for energy, whether it's fossil fuels or renewables, is starting to have dramatic impacts on the energy transition. Before all of this, we were very challenged with the rate of progress on the energy transition. It was very clear that we were not scaling renewables in the way that we undertook at COP28 in Dubai, where there was an agreement that we would triple renewable energy capacity between then, 2023 and 2030. Along comes AI with this incredible demand for energy and what's actually happening is we do not have enough renewable energy sources to meet these AI demands with the results being that we're now using fossil fuels more and more to meet these demand, giving rise to a very significant increase in emissions. And some estimates believe that 40% of all global emissions by 2030 will come from AI related data centres and a variant called AI factories.

However, I take a much more positive view. I think this AI revolution is actually going to catalyze and accelerate the energy transition for the following reasons. The first reason is that governments around the world recognize that they're going to attract data centres that need to be able to provide the energy to do that. And the best way to do this and the cheapest way is through renewable energy and what's starting to happen is governments are starting to implement new policy changes, new investment around grid to accelerate renewables. That's just the beginning.

The second part of this is that we're now looking at some of the newer energy transition technologies. Nuclear energy, in particular small modular reactors, geothermal solutions and biomethane solutions are recently being adopted by the hyperscalers to meet this energy demand. And that's great because these were expensive energy transition technologies.

And the increase in demand is really helping to accelerate these new technologies, which for me is a big plus. And the third point, Mayra, is innovation.

What is actually started to happen is the requirements to meet, what I would call the green energy demands. It's so important that new innovations are happening all the time, particularly new forms of clean energy. And the other big issue that we have in the context of data centres is clean water for cooling. And there's some incredible innovations happening as well.

So I am really positive about where the energy transition can go. It's far from straightforward, but actually I think the narrative to say that AI is bad for the energy transition is not something that I can agree with.

### **Mayra Santos**

Can you explain why AI is such a positive factor for climate action?

### **Mike Hayes**

So this there's two legs to my argument. One are just articulated is that it can be a positive for the energy transition but even leaving that to one side, when I think about the challenges we have in climate, which are very much around emissions reductions, understanding and dealing with climate risk, managing this huge problem we have with nature and biodiversity loss, AI is actually emerging as a differentiator.

If I can begin first of all, focus maybe on the emissions part of this. This should not come as a surprise, as a surprise, because the fundamental point, about AI is that it's about optimization and efficiency. It's helping us to do more things quicker, better and more efficient. Now most people think about AI as a productivity and efficiency phenomenon and something that reduces cost, but here's the point — it's also reduce carbon because there's less activity involved. Carbon and carbon emissions is all about activities. And if I give you a couple of examples. Contrails from aviation is one of the biggest sources of emissions and through AI, working with simple things where we're rerouting, changing the transport routes of aircraft in a way that minimizes contrails and therefore reduces emissions. That's one example. I'll give you a second example. We're looking at how products can be redesigned using much more carbon friendly materials, and AI is helping to collect all of the data to do all of that... phenomenal. Transport optimization, lots of emissions are admitted, along transportation routes with shipping in particular. And now we're using AI to think about cleverer ways to optimize transportation. And the list goes on and on. And the reality is, we're only at the very beginning of understanding the power of AI to help us on the climate agenda with samples around emissions.

But I could equally talk all day about climate risk, and in particular, the way we're now using AI to help predict climate risk events. And that prediction is really important because it helps us to get ahead of those events, plan and adapt in a way that we were never able to do in the past. And I think what we're going to find is that AI will become the centerpiece of the climate agenda as we move forward over the coming years.

### **Mayra Santos**

Yes. And do you think this issue about the intersection of AI, energy transition and climate will feature as a hot topic for COP30?

### **Mike Hayes**

Well, here's the interesting thing. I have not seen this be featured as part of the official program from the COP30 presidency and clearly there are a lot of issues that the presidency has to deal with and I'm very much supportive of the of the COP30 agenda, I'm going to be there myself. But actually, I think this is a really important issue, which is why in KPMG, and particularly in my role for I head up our Global Climate business and I head up our COP30 presence, we're going to COP very much bringing this perspective. We're having a number of sessions on and we're producing a major report on this topic, really trying to bring home the message that AI is good for the energy transition, it is good for climate and what we're a COP, and I'm briefing all of our delegates we're going to spend as much time as we can presenting articulation of sharing views on this message to really get people to think of them differently about all of this.

And it's not just a KPMG perspective, the esteemed UN climate luminary Lord Stern, recently produced a report which I encourage anybody to read, where he very much took the second leg of my arguments, not so much the energy transition part and he produced the report, which was peer reviewed and very, very thoroughly researched to establish the monumental AI benefits on emissions reductions across just a handful of sectors. So we're not alone in this. And I'm very much hoping that the COP30 in Brazil, we can create much more momentum dialog and a much more positive narrative around this issue, because frankly, we need to stop this negative noise about AI, the climate agenda. We really need to be harnessing the power of AI to do some of the things that I'll be talking about, and much more besides.

### **Mayra Santos**

To learn more about this topic and this discussion that KPMG is bringing to COP I invite everybody who is listening here to follow us on our social networks, on our KPMG websites, because we are preparing a lot of material to enforce these discussions right and these conversations.

### **Host**

*Mayra, Mike, thank you for such a thought-provoking discussion. With AI evolving at a rapid speed, it's interesting to hear your perspectives on this topic.*

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