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## An Interview with Chancellor Kumble R. Subbaswamy

Noy Holland

*University of Massachusetts Amherst*

Jane Feinsod

*University of Massachusetts Amherst*

Kumble R. Subbaswamy

*University of Massachusetts Amherst*

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UMass Amherst's Net Zero Project

# An Interview with Chancellor Kumble R. Subbaswamy

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*in conversation with Professor Noy Holland and Paperbark Poetry Lead Jane Feinsod. This interview has been edited for length and clarity.*

**Noy Holland:** You're a physicist by training. What sparked your interest in sustainability and the planet's health?

**Chancellor Kumble R. Subbaswamy:** Energy is central to physics, so it's only natural that I pay attention to energy. I started teaching in the 70s. Because this was the Carter era, all the attention was on running out of fossil fuel, on the price of gasoline and the shortage of gasoline, and predictions about when we would run out of petroleum and so on. I was teaching a class called "Physics of Energy," in which we talked at length about greenhouse gas emissions and global warming.

**NH:** And that's when the science was emerging.

**KRS:** Right. In the 70s, only a few people were sounding an alarm bell. That was

the beginning. As I have gotten into administration, more and more attention has been paid to how serious these issues are, with all the work being done by the IPCC, the COP conferences, and so on. But even now, it's not being taken seriously enough, particularly given the extreme weather and climate events that we're beginning to see. How quickly will we reach a point of no return? Urgency has emerged much more with the success of modeling, because there are really complex models taking into account what will happen to the ocean, what happens to the Arctic, and how mitigation measures might have an impact.

**Jane Feinsod:** On the topic of mitigation, you announced the UMass Carbon Zero project on Earth Day in 2022, making the ambitious commitment to power the 1500 acre

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campus with 100% renewable energy by approximately 2032. That's more than 15 years ahead of Massachusetts' commitment to reach net zero by 2050. What were the precipitating events or considerations that motivated you to move our campus to net zero on a faster timeline?

**KRS:** The starting point, as you say, both in terms of Massachusetts and internationally, goes back to the 1.5 degree Celsius increase limit to warming that emerged from the Paris Accord. We've already reached around 1.2 degrees of warming, and that's concerning. There comes a point when you have to stop talking about the crisis and start actually doing something about it with the mitigation steps we have available. If you look at all the pronouncements coming out from either the federal government or the state government, there are no plans behind mitigation. 2050 is an arbitrary date. There's no scientific or engineering basis for saying, "We will do it by 2050." Here on campus, the Student Government Association President asked me, "Why so slow, 2050? Can't we do this in five years?" I said, "You know, you make a good point."

And so we undertook this really serious study involving engineering consultants in this region, our own engineering faculty and students, and a task force. Sure enough, they came back and

said, "Five years is impossible. Ten is possible if, you know, everything falls into place."

If Massachusetts is to reach its 2050 goals, the ascent has to begin somewhere. And with a complex campus like this, where buildings range from 100 years old to modern buildings we're currently building, it's a great opportunity as a living laboratory—the term that we use in this context—to learn all that there is to learn about what would it take to go to carbon zero, in heating and cooling our campus buildings. And because we are responsible for about 20% of the carbon emissions for all state-owned buildings, we are a big piece of the carbon footprint of the Commonwealth. For the entire Commonwealth, both private and public, to get to that 2050 goal, there are a lot of steps in between. You can't come to 2049 and say: All right, in one year, we're getting to carbon zero. We need to set some aggressive goals, learn what it takes, and then start implementing.

**NH:** I'm sure it's enormously challenging. I do see that Amherst College has moved the timeline for reaching carbon zero up to 2030.

**KRS:** Yes, as did Smith. I believe the task for smaller campuses and especially the private ones is a lot simpler, because their buildings are either modern enough, or they've been

kept up and modernized. But again, we're responsible for the largest carbon footprint of state-owned properties in the Commonwealth, so I think it's a moral imperative that we be the leaders and show the way.

**JF:** What are the greatest obstacles to the achievement of carbon zero?

**KRS:** Money. Which really amounts to willpower. This is where I want to dwell a little bit because I think it's time we make this explicit. If I had started out by saying it'll cost a billion dollars and we're going to do this by 2032, people would not have listened. I'm making up the number, but it's probably not too far off. So we kind of deliberately have everyone buy-in first, and then say it's an imperative, and then say, okay, how do we get there?

**JF:** In talking about macro and micro levels, COP 27 is going to convene next month in Egypt, marking 27 years of international efforts to address the climate crisis. Carbon emissions continue to rise throughout the world. So with COP 27 in mind, what gives you hope, personally?

**KRS:** Oh, boy. I mean, I'll be very candid and say I'm not particularly hopeful. In regards to COP 27, countries will never unilaterally agree to raising taxes. I mean, we've tried carbon tax, tax and trade—and trade that I don't like,

but at least tax has to be there. What gives me pause is that there's really no conversation about this in the US. Other countries are being more realistic about plans for carbon zero. It's easy to declare that we will do it. But there is really no macro economic, or technology-based plan behind it.

**NH:** I'd like to move to our question about climate fatalism, as we're discussing not being particularly hopeful. What are your thoughts about climate fatalism? I think my students struggle with that and I find myself struggling with it as well.

**KRS:** I grew up in a religion and culture that is often fatalistic. But I mean, I think to really be fatalistic about existential issues is a total cop out, especially if we believe we owe the next generation living conditions that are actually similar to ours. Again, we have the technology and we can mitigate. It's in our hands.

**NH:** I think it's something of a privilege, too, to say, "Oh, we're doomed, and so we might as well not even try." You wouldn't say that if your children were suffering, if you saw your children suffering, if it were immediate.

**KRS:** Yes, that's true. To some extent, honestly, it is grappling with the question What does it take? that made me recognize the magnitude of the

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problem. And that's why I think it's really important for communities to really start doing. Stop talking. We need to start doing something about it.

**NH:** What progress has been made so far to bring our campus to carbon zero?

**KRS:** We have three carbon zero buildings already on campus: the new police station; Crotty Hall, where the economics department is currently; and we did a geothermal conversion of the International Programs Office. The new computer science building and the new engineering building will be carbon zero. We've made that commitment and agreed to spend the premium of going down that route, rather than join them to the steam tunnels and the chilled water tunnels. We've also been digging geothermal test wells. The first district we want to tackle includes Southwest and the Commonwealth Honors College complex, so the hope is to have a hundred wells or so in the Boyden field. The field will continue to be usable, of course. We're going to learn a lot when we do that, and then the lessons from that can help in other energy districts of campus. Frankly, this is where the money part comes in. We're talking big numbers. Everyone, everyone from the government to the general public needs to understand that getting to carbon zero will require a lot of upfront expenditure. I don't think that politicians and decision-

makers have thought deeply enough about this. For a state agency like ours, there are only two sources from which money can come. Either you get it from the government or you get it from the students. It's unethical for something of this magnitude to come off the backs of students. The cost of education is high enough as it is. Private philanthropy, I mean the really mega philanthropists, can certainly help. But state and federal governments have an obligation to save the planet—I mean, that is lesson number one.

**JF:** Are you concerned about a loss of momentum following your departure from the university?

**KRS:** No, I don't think so. Again, this is not my initiative. This is something we all share as citizens, inhabitants of the planet. Faculty, staff, students, local legislators, local community, they're all committed to making it happen. We have a campus-wide commitment. We already have a blueprint: this is not something we need to reinvent. Financing is ongoing. We have started discussions with legislators and others, asking, How do we get there? How do we make it happen? My hope is to create enough momentum. And when I leave, I fully expect that the incoming Chancellor will want to continue this initiative. Everyone around campus will tell them this is a priority.

**NH:** To what extent have youth activists from organizations like Sunrise and MassPIRG influenced the campus commitment to carbon zero?

**KRS:** Students keep asking the right questions, such as why 2050? Why not 2032? I'm a scientist. I can't just give empty answers. Students who are part of MassPIRG have done a lot to raise awareness. The Sunrise movement started out more on the divestment movement, and that was certainly a starting point. Students learned from that. But divestment is a tangential solution, not a high impact solution. The really big task is to actually stop burning fossil fuels. Our next step here is completely moving away from fossil fuels. The real saving is the saving of the planet. Natural gas, which we primarily use on campus, is cheap. Oil prices are manipulated, and so as long as that's the case, people will have this artificial sense of, "Oh, my God, we can't make this investment." But what's the true price of burning fossil fuels? It's climate devastation. And how do you put a price on that?

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*Read the full interview at:*

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