

The Z3 Goal – Unattainable and Indispensible

Keynote Address

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I would like to begin by expressing my profound admiration to the organizers of this Forum, this Charrette, for what they have accomplished. What is happening here in Shenzhen this weekend reflects vision and execution of the highest quality. I stand in awe of what has been accomplished.

You see, when I evaluate an event such as this, I look at only three things. And I think I am not unusual in this respect.

I look at who is going to be speaking. And I look at what they are going to be discussing. And I look at how they are going to be discussing it. On all counts, Dean Geng and his colleagues have accomplished something extraordinary.

Who is here? Experts. True experts. People who have already proven themselves to have ability at the very highest level.

That is impressive. But what is even more impressive is that these experts have been drawn from three different domains of human activity. Here at this forum we have academic experts, government experts, and business experts. We have members of national academies of science, we have high government officials, and we have key leaders of major companies. From inside China and from outside.

And what will these remarkable individuals be discussing? They are here to discuss the greatest challenge humanity has ever confronted – the

challenge of sustainability in the age of global development. They are here to discuss how we will respond to climate change at the moment when the breakthrough successes of global development mean that our energy needs are increasing at an unprecedented rate.

And how will they be discussing this topic? It is here that I think we find the most exciting feature of this forum. The discussions this weekend will not be abstract. They will not be theoretical. They will not be about whether we need to act. They will not be about a potential trade-off between suffering through climate change and suffering through poverty.

Instead the discussions will be concrete. They will be specific. They will be about particular activities that we might undertake in response to this compelling dilemma. They will be about solutions.

That is why the conveners of this forum have called it a charrette. A charrette is a technique that brings stakeholders together, gives them a problem, and asks them to work together to design a solution.

Over the course of this weekend, you will be asked to collaborate in search of solutions in six different critical domains: Green Construction, Low-Energy Economy and Finance, Green Tech Enterprises, Energy Management, Climate Change and Management Strategies, and Green Campuses.

The conveners of the forum are committed to driving this activity towards a specific, pragmatic goal: a “Shenzhen low-carbon development roadmap,” “building on the low-carbon mindset” that was nurtured at this forum last year “to reach a zero-carbon goal, a ‘Green Z3’ environment.”

Dean Geng asked me to speak this morning, at the opening of this forum, to help provide a launch to the event. And I must confess it was a rather intimidating invitation. I am not a scientist, and I am not an environmental or energy policy scholar. And so it was not obvious to me that I could offer any words of value to such a distinguished group of experts.

I nevertheless agreed to speak with you today because I have so much admiration for the goal that has been set before you. And I hope that I

might be able to say a few, non-technical words about that goal that you might find of value as you undertake your work this weekend.

Let me repeat very clearly what that is. “A ‘Green Z3’ environment.” Zero Carbon Emissions. Zero Waste Water. Zero Pollution.

Last year we spoke at this forum about low carbon. About the importance of moving away from fossil fuels. Reducing consumption. Increasing efficiency. Developing alternative energy sources.

Low carbon is not easy. Low carbon is very difficult. It requires a genius for creative innovation. And it requires an enormous change of mindset.

But zero? And not just one zero. Three zeros? Z Cubed? Zero carbon? Zero waste water? Zero pollution?

Please permit me talk about each of these three zeros in turn.

First, carbon emissions. Carbon dioxide emissions drive global warming. Global warming has horrible environmental consequences. To stop global warming we need to stop emitting carbon dioxide. And most carbon dioxide that we produce today comes from our production of electric energy.

Waste water. People need clean water to live. 97% of the world’s water is unusable salt water, and the remaining 3% is barely enough to go around. If we find ways to re-use waste water, then we don’t need to dip into that scarce supply of fresh water. If we fail to re-use waste water for an application that could re-use it, then we are wasting some of that scarce 3%. And even worse, we are likely to be sending that waste water off to cesspools, and those cesspools often leak and contaminate ground water, reducing some of that scarce 3% even more.

Pollution. Some of the contaminants that we produce can be absorbed by the environment. Some can not. Some contaminants harm make people sick. Some contaminants wipe out species, reducing biodiversity. Some destroy the chemical balances within ecosystems that allow for the production of food and energy that humans need. Some contributes to climate change.

Surely it is good to reduce carbon emissions, to reduce waste water, to reduce pollution. But zero?

A little more than one year ago Bill Gates attracted a great deal of attention when he embraced the zero carbon emissions goal in a speech at the TED Conference. He put up a memorable slide with a picture of the earth and the number zero on it.

Some people criticized Gates for the number zero. Zero? That is impossible, they said. In the real world, we will never be completely rid of fossil fuel based energy. It will always be necessary in some situations. Moreover, putting up the number zero and making that your goal has two very damaging consequences. First, because it is unattainable, because it is futile, many people will give up. They won't do as much as they would do if they were given a more realistic goal. And second, the people who will stay committed will become crazy. They will be like religious zealots who are obsessed with one goal and don't think about the other damage that is done when you pursue only that goal.

And so I thought that I would tell you why I think there is value in an unattainable goal.

As many of you know, in addition to being a Beida faculty member, I am a member of the faculty of Cornell University. My father was a student at Cornell, I was a student at Cornell, my sons were students at Cornell, and it was my privilege to serve as Cornell's eleventh president.

When Ezra Cornell founded the university, he announced a goal. He said, "I would found an institution where an person can find instruction in any study." Any person. Any study.

If you think about it, you will say, "That is an unattainable goal. It is futile. No university can give instruction to every person. No university can teach everything."

And you would be right. But even so, by setting that as the university's goal, Ezra Cornell changed higher education. Cornell University taught men and women together, where other universities had thought that they had to be taught separately. Cornell University taught students

of all races together. Cornell University taught students of all religions together.

Cornell University also completely changed the conception of what subjects a university could teach. It taught theory and it also taught practice. It taught engineering. It taught agriculture. It taught hotel administration.

Before Ezra Cornell established that goal, people used to say, “You can’t do those things.” But by setting a goal that was unattainable, Ezra Cornell forced people to ask, “Why not?” “Why can’t you do those things?” And often asking that question was enough to make some new things possible.

I love unattainable goals. I sometimes say that an unattainable goal is the horizon. If you say, “I will walk to the horizon,” you have created an unattainable goal. You will never get there.

But if you set that as your goal and begin walking, you can cover a great distance. You can move. And if you don’t have that goal, if you don’t have a direction, you might find that you do not move at all.

And that is how I think about those three zeroes. Suppose they are unattainable. So what? The question is not whether we are falling short. The question is how far we are moving in the direction of those goals.

Let me go back to the zero carbon goal for one moment. Maybe there will always be some small bit of carbon dioxide produced. But surely we will reduce our overall levels of CO2 emissions much faster if we keep asking ourselves, “why not?” Why don’t we produce this next kilowatt of energy without producing any CO2?

I thought it was interesting that, in his speech last year, Bill Gates was not in fact saying that by 2050 he believes we will really produce zero CO2 emissions. If you listened closely, what he was saying, by 2050 we should be able to produce 80% of our energy with technologies that require zero CO2 – carbon sequestration, nuclear, wind, and solar were his technologies of choice.

So he could have said, instead of zero, “20%.” But if he had done that he would have missed the breakthrough moment. If he had said

20%, then people would not have focused their minds on the true zero-carbon possibilities. And it is there that we can find the potential for true breakthroughs, true miracles.

If we make the goal 20%, we will be much less likely to reach 20% than if we make the goal zero. If we make the goal 20%, we won't push ourselves to our limits. If instead we make the goal zero, we are more likely to succeed at least some of the time, and we are much more likely to produce a mixture that is close to that goal.

So let us embrace this Z-cubed goal. Let us make it the horizon that we are walking towards. Let us keep asking, "why not?" Let us keep putting more and more zero's.

Let us move ahead this weekend and produce a roadmap, here in Shenzhen, a roadmap that points to the horizon, a roadmap that can lead us to a world of zero carbon emissions, zero waste water, and zero pollution.