

Greening Asia

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Recorded on July 17, 2015

Greg Dalton: Would you want to breathe the air in Beijing or drink the water in Delhi? No, I wouldn't either. I'm Greg Dalton and I'm with you on that one. The astounding economic growth in Asia the past few decades has followed the western model: grow now, clean up later. There is no later for the million Chinese people who die prematurely each year from air pollution. But there's an upside for Asian investors and entrepreneurs. A new generation of companies in China and around Asia are realizing there's money to be made in cleaning up the air, water and land fouled by the mad dash to industrialize. Over the next hour, we will talk about the greening of Asia, what that means for Americans who like to breathe, drive cars and have a retirement account. We're pleased to have with us three guests. Mark Clifford is the executive director of Asia Business Council, a CEO group based in Hong Kong. He's author of *The Greening of Asia: The Business Case for Solving Asia's Environmental Emergency*. Stella Li is CEO of BYD Motors, the American subsidiary of China-based BYD, an automotive energy company with 150,000 employees. In case you're wondering, BYD stands for Build Your Dreams. Orville Schell is director of the Center on U.S.-China Relations at the Asia Society in New York and a former dean of the Graduate School of Journalism at UC Berkeley. Please welcome them to Climate One.

[Applause]

Thank you all for coming. Mark Clifford, let's begin with a very interesting character that you write about in your book. He studied physics in Australia and he thought about opening a Chinese restaurant but he did something else that had a profound impact about what we're talking about today.

Mark Clifford: Yeah, well thanks Greg and thanks everybody for coming out. Shi Zhengrong started a company called Suntech.

He went back to China, got some help from the local government to build a solar panel factory. And within a couple of years he listed on the New York Stock Exchange, become the biggest solar company in the world and completely changed the face of solar energy. He was one of many Chinese companies, but the biggest which basically brought down the price of solar from a luxury to almost a give-away commodity, solar prices have fallen 95% or more in the last decade or so and it was because of people like Shi Zhengrong. There wasn't a happy ending though because he went bust so it's, you know. The dynamic in China is unbelievable, Chinese manufacturers are changing the world in solar, in wind, in electric cars as Stella will tell us about. But, you know, there's some ups and some downs. It's an entrepreneurial and difficult business sometimes.

Greg Dalton: Orville Schell, the Asia society acknowledged Dr. Shi as climate hero. By some account China has invested 50 billion dollars in solar, I'm not sure what they have to show for it. What do you take from the Suntech story and the solar story in China?

Orville Schell: Well, I think the story of Shi Zhengrong and Suntech, I mean, in many ways it speaks I think of the immense dynamism in China but also the incredible instability. And that people of his intelligence, the size of his company come and go, you know, virtually overnight. And of course this can happen in any country, in business but I think that there's an object lesson here about how in a country that is sort of reinventing itself so profoundly, there is this tremendous market

instability in every realm of life.

Greg Dalton: Stella Li, by some accounts there's too many cars and too many car factories in China; could there be a car bubble in China? And could car overcapacity happen something in the car sector like it did in the solar sector?

Stella Li: Yeah, that's actually Suntech story for us is as a company, lessons learned. So there's a good - in the next ten years, China will be the biggest market for electric vehicle. So there's a lot of opportunity. But then for every people who want to participate, you don't over burn yourself. You need to like take the opportunity but at the same time the market is solid and the profitable products to satisfy the needs and also grow your company step by step. Don't let it bubble, don't let it over sell.

Greg Dalton: But your chairman has stated that BYD will be the world's biggest car producer by 2025. Is that kind of - is that ambition still in place or has that been modified?

Stella Li: Yeah. That's ambitious, but it's coming now. Because if we change the definition into the EV, actually today BYD just in June overtook the other competition become the biggest electric vehicle in the world. And then in the next five to ten years, BYD in the electric vehicle side I think we will still continue to play a very strong role. So because of the whole auto industry also is changing from the conventional car to the electric vehicle. So if by that definition, I believe BYD still have a big chance to be the world leader for EV.

Greg Dalton: And speaking of big ambitions, Orville Schell this summer the Chinese stock market has crashed, it's been a bubble, you've written about that. What lessons can be learned from the crash of the Chinese stock market this summer?

Orville Schell: Well, I think, you know, I should say I hope BYD succeeds because the more electric cars we have the better chances we have of overcoming climate change and many other problems. But I think the lessons of the stock market are really worth looking at because I think what we saw there was the collision between the two sort of different sides of China's modern personality. On the one side, the old system, Marxism, Leninism, centralized economy, command economy and the other side, is kind of very vibrant, market-oriented new economy that's sprung up. And these two things just came together like some extraordinary atomic collider when the bubble finally broke and the government could not resist doing what I think everybody who studies markets knows is a fatal move, to move in and intervene and try to profit up. So I think companies such as your own have the same kinds of dilemmas. On the one hand, there are all these kind of shadowy state controls and state-owned enterprises and things. On the other hand, you have these private companies that are trying to expand and operate according to these other principles and very easy to have a kind of a clash of sort of economic civilizations if you will.

Greg Dalton: Mark Clifford, does that raise questions about the legitimacy or the sort of credibility of the Chinese state?

Mark Clifford: Well, let's pull it back to some of the companies we were talking about, these industries. China invested \$90 billion last year. Chinese companies like BYD and solar companies, in clean tech issues, in clean tech investments. \$90 billion, that's almost as much as the U.S. and the E.U. put together.

So, you know, there are companies that are going to come and go, there are going to be crashes, there are going to be bubbles, but the point is, what is happening in China right now in the clean tech area, the environmental area, is real. So, you know, I am loath to predict the future of the

Chinese state, I'll leave that to Orville or others more suited than me.

[Laughs]

But you can look at the ugly side of it, you can look at the glass half empty or you can look at the glass half full. And I think when one looks at the track record of China since 1978 reforms began, it's extraordinary. And we can look at companies like Suntech which show the instability but we can look at companies like Goldwind which is now the world's second largest wind turbine maker, or companies like BYD. And yes there is a very difficult interplay between state and private sector but what's going on China in the environmental area is real whether it's environmental policy or the clean tech companies.

Greg Dalton: And is climate and clean energy an existential top tier priority issue for the Chinese government, Orville Schell, or is it something that's lower down the ranks as it is in the United States? Many Americans don't consider environmentalism in the top five issues. Most American voters don't.

Orville Schell: Yeah, I mean what an enormous paradox it is, I mean, we come from a country America that we grew up and fancied ourselves as the rational, science-based - I remember when Europe was kind of the voodoo Catholic land of backwardness, well, it turns out that now we are steeped in our evangelical traditions. We have a tremendous amount of anti-scientific prejudice. Whereas China is ruled by technocrats, people who grew up in that world and there is much less sort of doubtful attitude about I think science and technology as the motor force of the future. So in this sense I think China does have an edge over an awful lot of aspects of American society which don't believe in climate change, don't believe in evolution, they don't believe in any of the modern affectations that we once thought were very American.

Greg Dalton: Interesting. Mark Clifford, you write in your book that there is "someone from the World Resources Institute who said that China missed the industrial revolution, they were late to the IT revolution and they want to lead in the clean energy revolution." Spin that out for us.

Mark Clifford: Well, especially since the financial crisis of 2008 which China rode out very successfully without even going below 8% growth, they have put a lot of money in the clean tech broadly defined and a large part of their stimulus program 2008 and beyond with things like high speed rail, cheap or perhaps underpriced capital for solar, wind, you know, very large scale support for electric vehicles. So China has got a lot of money and they're throwing it at clean tech because they see this and they see companies like BYD as an engine of growth for the future, very much to the quote that you mentioned. This is a growth area, it's jobs, it's money, it's leadership, it's global leadership. And I think we're seeing this in the policy area as well.

Greg Dalton: Stella Li, is the government throwing money at you?

Stella Li: Yeah, I just explained to like in our intern conversation, the only money we got is \$20 million, I mean for R&D projects it's small.

Greg Dalton: \$4 million not very much, okay.

Stella Li: Yeah, \$4 million is not too much. But that's the only money we got from the R&D project. But China did spend a lot, gave a lot of incentive for the electric vehicle and they gave a strong policy to building the charging station. So that's the - we're always joking, the US, talk a lot, but China talk less but they did a lot.

Greg Dalton: We call that walking the walk and talking the talk here, yeah.

Stella Li: So another difference I see that China has more different approach. The money go to like the public transportation more than private one. And then you will see the growth for EV, electric vehicle, in China is comparing the data with last year and the last two years, every year is by 300%. So maybe US did not feel the pressure, but in the next two years, you will see China will be global leader. Nobody can even close with them.

Greg Dalton: Orville Schell, there's been a staggering number of people, a couple of hundred million people who've moved into the middle class into China's cities out of poverty, another 300 million people behind them. How China urbanizes will have a big impact on the global economy, certainly the global climate. Tell us about how that's going to shape out and what's the role of the personal cars going to be in that.

Orville Schell: Well, you know, there is something about personal cars that's part of everybody's dream, American, Chinese, you name it. But it's also the curse of modern civilization. And I think as we talk about what China is doing and I agree with Mark and I think his book really amplifies very nicely at all of the things it's doing in the environmental field. We forget at our peril that the problem confronting China is staggering. Staggering. And they had several decades of really reckless development which did some destruction which is not going to be so easy to repair. For instance, you see various percentages of the land that has been polluted, that has been made toxic with polluted water; it's very high, 20%, 25%, 10%, different figures. That's going to take a long time to clean up. So these things do, we have to bear in mind this problem is enormous and a lot of people and tremendous amount of numbers on small amounts of arable land and limited amounts of resources.

What I really worry about though is not cleaning up water and air; we know how to do that. What I worry about is cleaning up carbon emissions and greenhouse gases. That is a staggering task which I don't think any country has a handle on it.

Greg Dalton: And let's cue a clip. We have a clip of someone who spoke here recently, speaking about her trip to China. This is U.S. EPA administrator Gina McCarthy who went to Beijing and she talked here at Climate One recently about going to the U.S. Embassy and they had pollution monitoring measurements and once they were giving numbers that were different than what the Chinese government said that the pollution was and then China was like, no don't release those numbers and then eventually these were U.S. companies that were doing the equipment to monitor pollution in Beijing and eventually I think that information got out because Beijing realized, hey we can't hide this. So we're going to show the video of U.S. EPA administrator Gina McCarthy talking about her trip to China and dealing with pollution in China.

Gina McCarthy: We spent a long time talking to them about you now know you have an air pollution problem. You've got to fix it. Would you mind thinking about that in concert with a carbon strategy? Because they go hand in hand.

Greg Dalton: So Orville Schell, I think I first heard this from you a couple of years ago when we talked, can China solve conventional pollution problems, smog in Beijing and solve climate at the same time? Or is there a way to do one and not the other?

Orville Schell: No I think they can. I think they are more inclined to solve the problem of air pollution, water pollution, conventional kinds of pollution because in an immediate way that is affecting people, people know it and they feel tremendous pressure to do that.

But I do think that in cleaning up air pollution there is an opportunity also through things like electric cars, wind power and all the conventional things you know about to mitigate greenhouse gas

emissions. So I think while they don't have as powerful an instinct because it's not as immediate a problem as these conventional kinds of pollution, I think they're certainly not against it and there is a great opportunity to do these things together.

Greg Dalton: They could, for example, just export coal to the west out in Xinjiang and ship the electricity in and basically do what America does put the pollution in the disempowered minority areas and solve that problem but not solve the climate problem.

Orville Schell: Well, they already have coal out in Xinjiang, they don't have to move it and there are not a lot of people out there, it's pretty good place to burn coal and get solar energy.

Greg Dalton: Stella Li, what do you think? Is China going to solve both or just solve the more conventional pollution problem that people see?

Stella Li: Yeah, I think the first answer should China have to solve that. If not, how does 1.3 billion people live? How about their future? There is not any other solution. So but now the difference is now China has money, China has resource. So when the pressure came and more people realize, they will find a solution. So I believe like even recently, BYD technology provider gave the evidence to the government and say we have the technology and I am here to support you generate clean energy. Get rid of all the coal generation, like use wind farm, use a solar farm to generate electricity and the use battery to store electricity so you can make it a wind farm, solar farm to be independent generation. And the second for transportation, electric vehicle, electric trucks, electric bus is reliable, it's working, the technology is ready. Change.

So now I feel it's in the stage in China to really move the whole country off all the kind of technology which produce a lot of pollution to the cleaner technology completely. So now China has a different mindset and then we have a resource, we have money and then we have people, we have a business opportunity.

Greg Dalton: Mark Clifford, Warren Buffet owns about 10% of BYD, what do you make of that?

Mark Clifford: Well, I am-

[Laughs]

Greg Dalton: I could ask Stella but I'm sure she's very pleased about it. Yeah, I want to hear from you.

Mark Clifford: Well, I think it's interesting because Buffet and Berkshire Hathaway have invested a lot in energy assets and I think they understand, actually BYD is way more than an electric vehicle company. It started out as a battery maker and they made batteries for mobile phones and lots and lots of products. And above all it's a storage company. If Stella and her boss Mr. Wang Chuan-fu can solve the storage problem, the battery problem, then we've gone a long way towards making things like solar and wind really part of the grid and we don't need to build as many coal-fired power plants. So I think again there are so many companies doing so many exciting things in China, you know, I'll let Warren Buffet try to pick the winners. But, you know, there are losers like Suntech, there are companies like BYD, there are hundreds if not thousands of companies spending this - and that was one year of \$90 billion invested in clean tech so some will work, some won't, the Chinese government is serious about it, Chinese companies see an opportunity. And we can talk about problems, I can spin a doomsday scenario, you know, long past the close of this program but there is a lot of good news coming out of China.

Greg Dalton: And Orville Schell one of the good news that came out was the U.S.-China pact last

year where President Obama the president of China basically changed the international geopolitics of climate and did a deal that the two biggest emitters, about half of the global missions come from those two countries, how did that - what's the significance of that deal?

Orville Schell: Well, I think it remains to be seen but it's potentially I think a real game changing moment because the U.S. and China are the really only two players that matter. If those two players don't cooperate on the climate change remedy front then we won't ever remedy. So I think we have a summit coming up in September, I think that U.S.-China relations of late have not been particularly good and I would say have every potentiality of getting worse. However, the bright spot is cooperation on climate change. And I think if we can elaborate out from that it has the chance of actually helping the global climate change problem as well as helping U.S.-China relations.

Greg Dalton: So on areas like territorial disputes in the South China Sea, cyber espionage, hacking into the U.S. Federal government those sorts of things there is tension, but on climate do you think there's alignment of U.S. and China interest because we're all - we got one planet and they're the two biggest polluters.

Orville Schell: I think more and more there is and it's voluntary, these aren't legally binding treaty obligations and that is what China has been asking for and that's where Copenhagen fell apart. So I think there actually is a possibility here for us to get together on this front and use that as a kind of an emblem of those areas where there is a common interest because there are so many other areas where there isn't.

Greg Dalton: And one characteristic is that because it's voluntary and nonbinding, the next U.S. president could come in and take a different course, whereas is it fair to say China might be more likely to stay the course once they've set it or not? Is that naïve?

Orville Schell: Well, I mean, all you have to do is just take a look in the Republican barrel at the, how many candidates, 16? And I can't think of well maybe one of them who really has a position on China. So this is really a crapshoot and I do think that's one of America's great problems as presidents come and go and policies come and go whereas China has a nice five-year plan. We used to laugh at five-year plans. Now, I think we have kind of a new respect for them.

Greg Dalton: We're talking about Greening Asia at Climate One, I'm Greg Dalton. My guests are Stella Li from BYD, the Chinese storage and energy company, Mark Clifford a reporter and author from Asia and Orville Schell head of the China studies program at the Asia Society.

I'd like to go to our lightning round where I ask a quick yes or no question to each of the guests. Beginning with Orville Schell, yes or no, the dive in China's stock market presents a buying opportunity. Americans should jump into the Chinese stock market. Yes or no?

[Laughs]

Orville Schell: Not so fast.

[Laughs]

Greg Dalton: Stella Li, Tesla stock is overvalued?

Stella Li: Yes.

[Laughs]

Greg Dalton: Shocking. Mark Clifford, you're in Hong Kong, it's one of the world's financial centers. Hong Kong is unprepared for the impact that severe weather will bring to its economy and financial market. Yes or no?

Mark Clifford: I think Hong Kong is prepared. Unusually, I do. Yeah.

Greg Dalton: Orville Schell, the politicization of climate in Washington DC gives China an edge in the clean tech race?

Orville Schell: Yes.

Greg Dalton: Stella Li, hydrogen is a promising fuel for powering personal mobility?

Stella Li: No.

[Laughs]

That's an easy no.

Greg Dalton: Mark Clifford, China's commercial espionage efforts target clean energy companies?

Mark Clifford: I don't know.

[Laughs]

Greg Dalton: I bet (inaudible 00:28:32).

Mark Clifford: But they have in the past. They certainly have.

Greg Dalton: Alright. How did they do? Let's give a round for our - thanks to our audience.

[Applause]

We haven't talked about India, Orville Schell. A lot of talk about the dragon and the elephant in Asia, how do you see that playing out in terms of clean energy, clean economy? How the U.S-China pact put a fair amount of pressure on President Modi but they haven't done as much on energy as China has.

Orville Schell: No, and I think, you know, India has not have the big run-up that period of kind of dirty development before you get to the green development. And the other thing to remember is India has a lot of really dirty coal. Cheap, easy and dirty. So I think India may have a very difficult time reaching this sort of initial phase of rapid development that we now see China sort of coming to the end of.

Greg Dalton: Mark Clifford, any green prospects coming out of India? I rode on a Reva electric car in Delhi a few years ago, pretty cool.

Mark Clifford: Well, to Orville's point, India has a different set of problems and because there's not enough electricity and it's intermittent, you can't count on it because water is scarce, green buildings are really phenomenal in India because they don't have the electricity, they don't have the resources, they have to use energy and resources more efficiently. They're investing a lot in solar and wind and of course Modi also wants to invest a lot in coal.

I'm hoping that they won't actually be able to come through on the latter and they will in fact come

through on the former, but I don't know, India has been a lot more talk than action. China tends to under promise and over deliver on pledges and I wouldn't say that's true of India. So it's hard to say.

Greg Dalton: Stella Li, do you worry about Reva or other electric car challengers coming out of India or do you think not much competition for BYD?

Stella Li: No. Because I believe India would be very challenged to really do the same like in China. Because to promote electric vehicle, you demand the government very strong and the Chinese government, the system, is best fit to implement this kind of new industry, new infrastructure. But like in India and even in the U.S., westernized government system will be very weak, have a lot of weakness to do that because the government has no power to push unlike the Chinese government. The mayor, the president, the government statement, do it tomorrow, everyone single one move, will happen.

Greg Dalton: Orville Schell, there sometimes a point of view in the United States that the Chinese central government snaps their finger and the country falls in line. In fact, Tom Friedman for the New York Times had a chapter in his book Hot, Flat and Crowded China for a day that said, oh if we could have the tools, if U.S. government could have the tools the Chinese government has, they could do some grand gestures. Is that really true? Is that really true that China has the centralized power?

Stella Li: (Laughs) Yes.

Orville Schell: I think it's true until it stops being true. And I think, you know, India's virtue is they can have the entire state of Gujarat blow up and the rest of India hardly trembles. If China had such a thing, it would have dire repercussions because it's much more brittle, more delicately balanced and it has a pretension to control things.

So this is a great strength as Stella has pointed out; it's also an enormous weakness because when push comes to shove and you can't control, the Indian model is much superior, it has a higher survival rate. So, you know, I think China has done some amazing things and its economic development is unparalleled in world history. But sometimes I worry that it's so tightly wound that when something breaks loose it can have kind of a very infectious effect on the system as a whole and it's a big danger.

Greg Dalton: Could unravel quickly. We had Hank Paulson here recently talking about China, former U.S. secretary of the treasury and talked about how some things, press freedoms, et cetera have gone backwards recently in China rather than forward. So liberalization isn't linear always moving forward kind of thing. Is that Orville?

Orville Schell: I think it's very true. I think President Xi is very concerned about maintaining stability and that means controlling things like the media, education, civil society and we just don't know how that will impact for instance in China's ability to be spontaneous, innovative and dynamic.

Greg Dalton: Mark Clifford, you write about some real success stories, innovation stories in your book. Manila Water was an interesting one because it provides water to residence in Manila and also a return to shareholders. Tell us about that one.

Mark Clifford: Well, Manila Water is a great success story it reflected the unfortunate fact that the Philippines government couldn't really supply water to the residents of a fast-growing capital city. And they gave two concessions out, one of them worked spectacularly well, one of them didn't. So just privatize it is no easy answer especially for something as sensitive as water. But Manila Water

was able to start a virtuous circle where a private company got the concession, invested a lot of money in effectively giving everyone water and then actually collecting money from the people who were taking the water. In the past, most of the water had leaked or had been stolen. And so these things can happen. The private sector can really solve problems and that's one of the points of my book, is that if government policies can work with private sectors and work with civil society, private businesses can often solve really granular problems like getting water to your house so when you turn on the tap water comes out. But tough, still tough.

Greg Dalton: Is that going to be the trend in Asia where everything is a product commercialize. A lot of people in the United States worry about the privatization of water being treated like a commodity and then profit motive getting in there, that's challenging to some Americans.

Mark Clifford: I think it's challenging to everyone and so in fact Manila Water in some ways has been a victim of its success because it's done so well for its shareholders that there's been a lot of political pushback. So I think especially when it comes to things like water, things that we have to have to survive, it's very difficult to have the private sector running things. But in some places, Cambodia is another example where the private water supply has been a phenomenal success. But these tend to be places where the government can't deliver the services. So it's not a panacea.

Greg Dalton: I've heard people say that those having for-profit water companies works when you have a strong government who can have good strong contracts and keep an eye on the companies where basically the companies aren't smarter and stronger than the government.

Mark Clifford: You need a good regulatory structure just as you have a regulatory structure here to make sure you have, you know, more less monopoly utilities that's changed, but you need a strong state, you need strong civil society. You have to have the press; you have to have environmental organizations. That's something India has and China doesn't. So I think it has to be a three-way kind of partnership.

Greg Dalton: Water is big concern in northern China, Orville Schell, moving those huge engineering projects to move water up north, the Himalayan glaciers are melting, they provide water to 1 billion people, how's that going to play out?

Orville Schell: Well, this is an enormous problem. As you know China is divided, the north is dry, the north China plain, the south is wet, south of the Yangtze.

So the largest engineering project in world history is the south-north water transfer project to bring water to the north China plain. There are many problems, a lot of the water is very polluted, it's very expensive and I think here actually there's a really interesting prospect for the state of California which is now having severe water problems to maybe collaborate with China to see how do we deal in this century with what is going to be the scarcity of all scarcities namely water as whether chip patterns change, as climate change increases, rivers change their flow patterns. And I think actually the federal government in Washington really can't do this as well as the state could do it. So I think these are the kinds of innovative areas that we have to start looking at where we see there is a common problem and there's much to be gained by finding a common solution.

Greg Dalton: Mark Clifford, Singapore has become something of a water innovator, they have invested a lot in water innovation, it's not a wet area. Tell us about Singapore's innovation in water.

Mark Clifford: Lee Kuan Yew who of course was a founding father of Singapore just passed away recently, was a young man when the Japanese invaded. And one of the reasons they were able to take supposedly impregnable Singapore was that they cut the water supply which was coming from

neighboring Malaysia. And when Lee Kuan Yew declared independence, put the document in the United Nations, he stapled the water treaty with Malaysia to the back because he knew that water was an existential threat and he and his countrymen have been working for the last 50 years to get water independence. They've pretty much done that with a combination of desalination, recycled sewage water, collecting every drop that falls. They're on their own and like Israel they know that they can't survive without water. Unfortunately big countries like China and the U.S. tend to sort of think there's lots of water around and I think we have to have a more Singaporean kind of approach. The Chinese and often the U.S. think there's an engineering solution to every problem.

And a lot of it is a very human issue of dealing with a real hard stop issue because when the water comes out, you know, it's finito, right? It doesn't really matter how much money you have if you don't have water.

Greg Dalton: Stella Li, is water a factor for BYD?

Stella Li: No, we mainly deal with air quality issue. Less experience of water.

Greg Dalton: So you're based in Los Angeles you're making buses, are we going to see more BYD buses, more BYD cars in America?

Stella Li: Yes, definitely. Actually, we're just growing our manufacturing in Lancaster, California expanding our bus manufacturing here and also introduce our electrical vehicle to the Uber service so in the next several years you will see our more like electric buses and also the electric trucks and also EV. And then maybe in several years you will see BYD car, consumer car.

Greg Dalton: And the pattern has been for Asian car companies, Japanese, Korean, et cetera to start with kind of the low cheap ones and then go to the higher-end, are you selling cheap bad ones, are you going to sell good ones?

[Laughs]

Stella Li: We sell good. So we sell good one but then we sell like no more people affordable green energy. So our approach is we'll be different.

Greg Dalton: So that's a little dig at Tesla. So Tesla is the rich man's car, is that what you're saying?

Stella Li: They're toys, yeah.

[Laughs]

Greg Dalton: Toys for rich men.

Stella Li: Yes.

Greg Dalton: Okay. So are you going to make cars in the United States or are you going to import them?

Stella Li: Like when the volume or the market grow to the second level, we have to produce here. Within ten years like business plan in U.S. we do have plan to produce car here.

Greg Dalton: We're talking about greening Asia at Climate One. You just heard from Stella Li, the CEO of BYD motors, a Chinese car company based in Los Angeles, Orville Schell director of the

center on U.S.-China relations at the Asia Society, and we also have Mark Clifford executive director of the Asia Business Council and author of the new book *The Greening of Asia*. I'm Greg Dalton.

We'll be right back after this break

[Climate One Minute]

Announcer: And now, here's a Climate One Minute.

China has made progress towards clearing up its urban skies. But those changes come at a cost for some of its poorer citizens. Richard Martin is the author of *Coal Wars: The Future of Energy and the Fate of the Planet*. In researching his book, he found that even as large cities like Beijing shut down their coal plants, the environmental burden is being shifted to China's remote provinces.

Richard Martin: What China is doing - and this is a very mixed blessing - is shutting down those illicit, unlicensed mines that for years and years have been operated in the provinces. What that means, unfortunately, is they're concentrating the coal mining and these huge operations. And they're - as you alluded to earlier, they're building big power plants and cement plants and other industrial facilities that rely on coal right essentially at the mine mouth. They're undertaking the largest electricity transmission project in the history of the world to basically ship that electricity to the coast. They're shutting down the coal plants in Beijing and Shanghai, but essentially they're moving it to the interior which is not going to help the climate.

Announcer: That was author Richard Martin speaking at Climate One in April of 2015. Now, back to Greg Dalton and his guests at The Commonwealth Club.

[End Climate One Minute]

Greg Dalton: Orville Schell, climate will affect some of the most vulnerable people in Asia who contributed the least to Climate Change. How is that going to be dealt with in China and elsewhere dealing with these vulnerable populations were poor living close to nature close to the sea?

Orville Schell: Well, we just recently the Asia Society did a map of what things will look like when sea level rises if all of the ice melts on the planet and it's not a pretty picture. You lose a good chunk of China, all of Shanghai, the Yangtze Delta, et cetera, et cetera. So the stakes I think are very, very high and many people in the poorest countries will be affected both by rising sea level and also by diminished flows of rivers. As many of you know all of the great rivers of Asia rise in the Tibetan plateau and during certain critical seasons when the monsoon stops they're fed by glacial melt. You lose the glaciers; you have rivers that don't run all year round. And it was around exactly those rivers that all the great civilizations of Asia have arisen, from the Yellow River to the Yangtze to the Salween, the Mekong, the Irrawaddy, the Brahmaputra, you name it. So this is no kind of a small-scale problem. This is basic plumbing for billions of people. And it seems to me that we are just on the precipice of this problem running away so that we can't solve it. And this is why it's so important that the US and China if they do nothing else lean into this one.

Greg Dalton: Mark Clifford.

Mark Clifford: One thing you didn't mention is more frequent and more severe storms.

Orville Schell: Or less storms.

Mark Clifford: Well or less, but place like Myanmar had a storm, a killer storm in May 2008, it killed 138,000 people, right? And, you know, it made the news in the U.S. but 138,000 people - you

asked if Hong Kong was ready, Hong Kong has the engineering, it has the buildings but when you're living on the Burmese delta in a killer storm comes in you are wiped out.

And I went to visit one of the villages that the Asia Business Council was involved with rebuilding one of the schools and it took me a minute to realize why seventh grade class was learning about what my interpreter described as the weather changing. It's like oh yeah the weather changing that is a matter of life and death for people in Bangladesh, Burma, the Philippines they are literally on the front lines of climate change. And this is one of the great moral challenges of our time as well and we forget that, that it is the people who are the poorest who did the least to cause this problem who are the most vulnerable.

Greg Dalton: What gives you hope?

Mark Clifford: I believe that human ingenuity and human spirit and after we've tried everything else we usually do the right thing, not always and I think unfortunately there will be many, many more climate casualties but I think that the U.S.-China agreement, China's recent pledges in the run-up to the Paris climate talks later this year, I feel that, you know, at least we're starting to slowly turn the ship. I mean, it wasn't until 2007 that China even talked about these issues and now it's become a major focus of Chinese policy. We have a president now who believes this is a serious issue, who believes in science so, you know, these are the two countries that are going to make it happen. I think our private sector, our governments and at least in the U.S. civil society will really make a difference.

Greg Dalton: Orville Schell, one area we haven't really touched on, food security. Obviously water and food are very connected; you mentioned briefly China has a very small amount of arable land. How is the food situation going to play out in China given this changing climate and uncertainty about the weather hitting food production?

Orville Schell: Well, I think it's going to be very difficult. When you have such concentrations of population on places like the North China plain and diminished rainfall and rapidly falling water tables and if you drive across the North China plain you pass river after river after river bridges with freeways, nice bridges and nothing, no water. In fact, they're so dry that people have started to farm in the riverbed. So you see this and this is within my lifetime, within your lifetime. These are radical changes that have been brought about by, we don't really quite know what but we know they have happened. So I think technology is on our side if we can mobilize it, politics I don't know, I mean politics is a strange animal and different in every country. But if we can't get politics aligned with technology, we're going to be in for a world of hurt.

Greg Dalton: One big change on the global stage right now is this potential deal with Iran which could be kind of like a Nixon to China opening kind of moment between the U.S. and Iran. It also could bring Iranian oil onto the global markets, Orville Schell, which could make oil cheaper, which could make it easier to keep mainlining this stuff.

Orville Schell: Yeah, well, you know, every reaction has an equal and opposite reaction and there are pluses and minuses to the Iran deal. But one thing I would say if we can untie the knot that existed between the U.S. and Iran, we ought to be able to untie the knots that exist between the U.S. and China and that is going to be infinitely of more consequence than the Iran deal.

Greg Dalton: Mark Clifford, energy, security and independence.

Mark Clifford: I think what's interesting is the price of oil has collapsed. It's fallen by more than half and yet solar installations, wind installation, clean tech investment worldwide is skyrocketing.

Oil is mostly used for transportation now it's not used for making electricity, the Chinese use coal for electricity and coal is the problem. China burns almost half of the world's coal, China and the US as you said are responsible for almost half the world's greenhouse gas emissions. We've got to focus on coal. Oil price is falling; oil's used for transportation, we're going to keep using it for plastics, but coal is the problem not oil.

Greg Dalton: Mark Clifford is the executive director of Asia Business Council, and author of the new book, *The Greening of Asia*. We also have today here at Climate One Orville Schell director of the U.S.-China Relations at the Asia Society and Stella Li from BYD Motors. I'm Greg Dalton.

Let's go to our audience questions, welcome.

Male Participant: Alright. Great panel. Thank you very much. Can you talk about the role of nuclear power in Asia and whether nuclear would be a solution for the climate problem in Asia?

Greg Dalton: Mark Clifford.

Mark Clifford: I'll take that. China has the world's most aggressive nuclear program. They're going to basically be about the size of the French nuclear industry by 2020. It's barely a drop in the bucket; it goes from 3% to 5% or 6% of China's power needs. In France, the same amount of nuclear produces about 80% of the need. So, yeah, I'm sort of in the all of the above camp. I'd like to see more nuclear power. I think Japan should figure out a way to get some of its nukes back on. But there is a lot of public opposition in China as well as in other places. It's a lot harder since Fukushima to build nuclear power plants. Taiwan built one and decided not to turn it on, that may or may not have been a mistake but unfortunately it's not really a solution. I think we need to focus a lot more in things like energy efficiency which won't require these huge and, you know, politically difficult central power plants.

Greg Dalton: Orville Schell, any thoughts on nuclear power? It certainly depends a lot on the - people worry about safety, I think China have, you know, we've seen some bridge collapses, some high speed rail collapsed in China. We worry about what's going on at the nuclear plants?

Orville Schell: Well, I mean nuclear power is a god send if you worry about carbon emissions. It's exactly the opposite when they blow up, as we saw in Fukushima. I think that I would be very circumspect particularly in the case of China where things, sometimes construction techniques or not quite up to standards and management sometimes isn't up to standards. I mean it's no joke to have a nuclear power plant that goes awry. I think there's much greater opportunity to use renewables like wind and solar. The big problem as Stella has pointed out is storage.

If we solve the storage problem and batteries are not the, a really efficient way to store unless they get much more efficient, then we really have a solution. Until that, we're stuck with these episodic forms of energy that sun comes out in the day, the wind blows when it blows. And what do you do the other times, well, this is the challenge we're confronting right now.

Greg Dalton: Stella Li, that is the Holy Grail, if you really crack storage you're going to be very wealthy and successful. But is the price of storage coming down? A lot of people think it's been frustrating how slow the price of storage has dropped.

Stella Li: Yeah, the storage prices coming down. Recently, I just made some calculation. If we based on 20 years lifetime and then the kind of storage we can put to less than 7 cents per kilowatt hour. So that is, I think is the singular price as a solar, yeah, average, is affordable solution already. So, I give you another data. Like, our chairman Mr. Wan just make a calculation. If we cover 4% of the

global desert with the solar then all this solar produce enough electricity for all the, like for our earth to use. So it means that nuclear just would be a small part of the solution but in the end, the major part would be one farm and the solar panel. Especially BYD has the private company demonstrate the technology is here, the solution is here. Now is the next step is how we can really make this change through the policy maker to the like the utility company to really change the whole industry.

Greg Dalton: Let's go to our next audience question. Welcome.

Female Participant: Thank you. I'm curious to bring this from a national level to a personal level. So, I hear about people complaining about the air. My parents live in Cetron so every time I hear about them talking about the air quality's so bad, they live in the suburb but they go into the city to work.

I hear a lot about these complaints but not enough on their side of doing something. They always complain about air quality being bad and factories and everything else. And it seemed to be a problem always on a national level instead of awareness level on an individual level. So, curious to hear when you guys visit the country, what are people there actually talking about on an individual level and if anyone is actually doing anything about it other than just complaining about what the government is doing.

Greg Dalton: Who'd like to tackle that? Mark Clifford.

Mark Clifford: I think look, it's a serious issue for people like your parents and everybody who lives in Chinese cities. Many of you are familiar with a fantastic documentary that a CCTV a former journalist Chai Jing did earlier this year, Under the Dome. Downloaded 200 million, we've seen 300 million times in a couple of weeks talking about these issues. And I think Chai Jing does a great job of pointing out - individual awareness is wonderful but what really matters is structural changes. And, one of my worries is that the Chinese state, the government and its policy making apparatus has been captured by special interest. It happens in China just as it does in many countries. And the energy complex, the energy companies in China are very powerful and yet they're not free, they're not free to set realistic prices. So pricing for electricity and everything else is really cheap and it's cheap because they keep burning coal. And until you change this at a national level and until you start using steel factories and cement factories more efficiently, until you start really upgrading these things and really caring about energy efficiency and emissions and you penalize people and you fire them from their jobs at the local level when they break these laws, you're not going to have change.

So, everybody is aware of the problem but I think it's really difficult for people to do anything about it and that's why you need policy change and that's why you need fundamental change throughout down to the local level.

Greg Dalton: Orville Schell, there are fair number of environmental protests in China, people venting; having any impact?

Orville Schell: Well I think this is where China is somewhat challenged. The way in which the environmental movements have worked in the West which isn't the only way is that they have formed in civil society outside of government. And governments have been pushed, and then people in government who wanted to do something about the environmental problems were supported by sort of civil society working in a kind of synergistic way.

China has a very ambivalent attitude. It's the Chinese communist party towards civil society

organizations. It tolerates them and wants them in certain ways but it does not appreciate their independence. And the fact that they don't know when to stop; in the party's view when to stop. That means they can be a threat as they are in every country. So it doesn't have that particular feedback loop working well. Nor does it have it in the media because the media is controlled. And if the media can't be criticizing a government's environmental policies, it may be a longer time before there's a remedy.

Greg Dalton: One example is a person named Ma Jun who has a website that's sort of names and shames some of the polluters. He hasn't been tossed in jail, has he had any impact, either of you know?

Mark Clifford: I think he has. But I think it's also true that the focus in China tends to be overwhelmingly on foreign companies. And it's easier to go after foreign companies and that's a start. But Chai Jing in his documentary started going after the Chinese companies. And I think to Orville's point, she was supported, there are very reformist elements within the Chinese government, she got a lot of help. But then it was shut down after two weeks it was, you know, it's a very, very difficult tension.

Greg Dalton: Let's go to our next audience question. Welcome.

Male Participant: Great. Great panel. My question has to do with China and I was interested to know what the panel believes in terms of whether or not the Chinese government would ever take its foot off the economic accelerator to reduce environmental pollution. And more specifically as you know we had double digit growth rate in China, GDP growth rate, up until the last few years and we know that the growth rate is equivalent to so much coal burning and pollution. So I was just curious to know whether you believe that the Chinese government would ever alter its growth rate to reduce pollution.

Greg Dalton: Orville Schell.

Orville Schell: I think that's very unlikely and I think one can understand why. They have an awful lot of very poor people. And this is precisely the tension which exists in all of the global sort of international climate change negotiations that they say the west went through other developed countries their growth spurt, they put all the carbon up there, it's still up there and now it's China's turn; why shouldn't they get to do the same thing? Well, we can answer that but there's certain logic to it. So I think this is why China has demanded that the developed countries make \$100 billion fund available to help the developing countries diminish their greenhouse gas emissions.

So the developing countries have not been so willing to do that. So we're in a bit of a standoff here but I don't think you're going to see Beijing anytime soon saying "oh well let's just go with 3% growth rate we don't want to pollute the atmosphere with too much CO2." It's not going to happen, and it won't happen in India.

Greg Dalton: And it won't happen in California or the United States either.

Orville Schell: No, probably not but the promise is of course you keep your growth rates going by developing green energy solutions and that's the promise and whether we'll deliver on it is another question.

Mark Clifford: This is a very scary time for China right now because as you know the economy has decelerated fairly sharply. In fact China burned less coal last year than the year before and it's the first time that's happened since reform started. So the economy is already slowing. Ideally, China

would push through many reforms and whether it's in the clean tech area or it's in reforming the service sector or breaking up some of the energy monopolies - but if you're already worried about an economic slowdown it, you know, it's that much tougher to reform.

Greg Dalton: Well, even California's main climate law was passed during good times it's tough to make these changes when the economy is soft, it's better to make them when times are good. Let's have our next question.

Female Participant: Hi. So tonight we talked a lot about the energy challenge and specifically China but what I'm interested in asking is what do you see is the future role and growth potential of biotech and specifically China in playing a role in making the environment better but also what do you see are some previous success stories and future directions for this industry.

Greg Dalton: Mark Clifford.

Mark Clifford: Well, I think it's interesting, a very interesting question. China's got some great companies. Companies like BGI which used to be known as Beijing Genomics Institute which has got some of the most extensive gene sequencing investments in the world and it's a big - it's a priority of the Chinese government to help deal with some of the - especially some of the food problems but also some of the looming health care issues. So I think it'll be interesting. Orville in a way implicitly touched on this to see how innovative China can be in this area because it's a country that's run by engineers and I think they think that there are scientific and engineering problems to everything and certainly biotech is an area where they're putting a lot of money and they have some fantastic brains and you have some of the best educated people in the world, educated in China, many educated in the west who are now coming back to China to be able to paint on a very, very big canvas. There's nowhere like it in the world in terms of the investments that are going on. I'm not enough of an expert to say if it's more "advanced" than what the U.S. is doing but you have some really smart people with a lot of capital to play with.

Greg Dalton: Mark Clifford, you write in your book about forest and the importance of forest, Indonesia, other places in Asia, protecting forest is one of the best things that can be done, most cost-effective things that can be done for addressing climate change. Tell us how that's going in Asia.

Mark Clifford: Not very well now that you ask.

[Laughs]

But I think this is an area where this audience and listeners can really play a role because what China does with solar or wind or water is pretty much up to China to figure out. When it comes to forest, it's consumers and above all consumers in rich countries who can help drive change. The threat of boycotts for companies like Nestlé, Unilever, Procter & Gamble, any fast-moving consumer goods companies by Western consumers has a very, very powerful effect.

The reputational damage that these companies face if they are involved with deforestation is huge. And we're starting, it's still early days but we're starting to see some of those companies try to reach all the way down in their supply chain to make sure that every shred of wood or paper that they get comes from sustainable forestry practices. And it's happening now, two-thirds of the world's palm oil goes to India and China. So I'd like to see in India, if Indian and Chinese consumers don't eventually get on the, you know, the bandwagon that change is not going to be as thoroughgoing as we'd like. But just in the last five years or so we've seen really big announcements by major consumer goods companies. But unfortunately, at the local level the Indonesian government, for example, which is

the most, you know, most important in this regard in Asia it doesn't have the capacity to manage these things. So here's an example where you really need the private sector working with civil society and media, NGOs, to really push that change and hold companies' feet to the fire and those companies have to hold everybody down to the smallest, you know, palm holder.

Greg Dalton: And palm oil is in everything in the grocery store. So is there such a thing as sustainable palm oil or is that greenwashing?

Mark Clifford: I think there is sustainable palm oil. Palm is a miracle product. Orville point about you're going to tell somebody is poor that they can't have some calories? Palm produces eight times the calorie per hectare, per acre than soy does. And we think soy is pretty good. We need palm for a fast-growing world. It's possible to grow palm on land that's already degraded just as, you know, we grow soy, we grow rice, I mean, agriculture, you know, it's monoculture, it's not great but it can be done in a sustainable way. What we can't keep doing is logging virgin forest in Indonesia for timber and paper and Kleenex and then putting palm oil on it. That's what's got to stop.

Greg Dalton: We have to end there. Our thanks to Stella Li CEO of BYD Motors based in Los Angeles, Orville Schell director of the Center for U.S.-China relations at the Asia Society and Mark Clifford author of the new book *The Greening of Asia*. I'm Greg Dalton. I'd like to thank our audience here and online and on air for joining us here at Climate One today. You can listen to a podcast of this and other Climate One conversations by going to climateone.org. Thank you all for coming.

[Applause]