

NEXTERA ENERGY

Guest Speaker: Buck Martinez

So anyways, guys, thanks for the opportunity. You're lucky. Dr. Philippidis is an incredible guy, tremendous amount of knowledge, very well respected. So somehow you guys got him here from FIU, so you're very blessed. What I'm going to do today, I'm going to talk a lot about renewable energy, but we also want to talk a little bit about clean energy because at FPL we always differentiate between clean energy and renewable energy. And there's a lot of differences between the two, but there's also a lot of similarities between the two.

So what I wanted to do is just set the stage because some of you might not know who we are, or in essence, we have a parent company called NextEra. And that's interesting. We probably paid a consultant a lot of money for that, but that's the name they came up with.

Now this is a very interesting. Today the market was down 295 points. Anybody realize what was going on. I think your country had something to do with it. But basically what's happening, the market was down, but FPL was up. FPL was up. So in a very volatile market where they're looking at a lot of different stabilization issues with economies in Europe, FPL was up. So someone's liking that.

So our market cap today is over \$45 billion dollars, which is really cool because not too long ago it was like \$20 billion. And that basically tells you the investment community continues to like what we're doing. And that's really neat because when you look at some of these big companies, you don't typically look at an energy utility company in that mold, but it's pretty it's a pretty impressive list.

And when you look at the returns, we're doing pretty good. I remember a couple years ago our stock we probably like at \$60. So for those of you-- I know you're young, but for whose parents have invested in NextEra, you've done very well on top you have a dividend, so that's kind of neat twofer.

So basically this is where we're at today. We are now on the top 10 of all generation in the world. Pretty neat. And we've got over-- I think now we're over 40,000 megawatts. That's a big deal. That's a big number. And in the state of Florida, we're the largest utility here in the state of Florida. We've got over 24,000 megawatts here in the state, which represents about 5e% of all the customers here in Florida.

So these are the profiles, as you can see. What's really neat about that is 13,900 employees. It's good and it's bad, right? So in 1991 FPL had about so 1.8 million customers. Today we have close to 5 million customers. Back then we had a closer to 15,000 employees.

So now we've got two major companies-- a utility and a big energy company-- we have less employees than the utility had back in '91. So it's an amazing story on technology. Basically, we had power plants that had over a 1,000 megawatts that had over 100 people in those power plants. That was a normal way of life. Today we probably have about 24 to 25 employees in these power plants.

And some of these things when we talk-- when you hopefully ask me questions about what kind of maintenance is required on a solar plant, what kind of fuel, what kind of purchasing strategies-- there's a lot of differences between solar wind versus natural gas versus nuclear, which is uranium, right?

So these are the things that we've been doing. So we've been basically transforming ourselves from a utility into a major energy company. And by that I mean we were very traditional integrated utility. So you had generation, transmission, distribution. Today, we own over \$18 billion of wind generation in the United States. That's massive. That's enough to power the city of Chicago.

And then we've also expanded nuclear beyond Florida. We own nuclear plants in Seabrook, New Hampshire, in Wisconsin. And we also own a nuclear plant in Iowa. And then we've obviously expanded. Since 2003 we've really grown our marketing and trading group.

So now we're, in essence, in a commodities business. We buy and sell. We trade, obviously, natural gas. And there's a lot of money to be made there, and there's a lot of money to be lost there. So we have a very, very risk adverse portfolio, but typically we're trying to hedge our bet making sure that we have the best pricing that we possibly can.

At FPL, we're the largest purchaser and consumer of natural gas of any utility in the country. We buy over \$5 billion in consumer, \$5 billion of natural gas. So 74% more or less-- give or take-- of our portfolio in Florida is natural gas. And we'll talk a little bit about why that is.

But now I was telling your professor that yesterday we made a major announcement. So basically we had a major announcement yesterday that went out that said that we're going to be building three new big solar projects in the state of Florida. Really neat stuff. So 375 megawatt solar PV projects. And we'll talk about why PV versus concentrated.

And that was a big announcement as well as we're announcing we're going to be building another natural gas plant in 2000, but that will be totally installed on the ground by 2019. So basically huge investments. In the last few years, I personally was involved in three demolitions of oil fire plants, converting them to natural gas as well as solar.

And really exciting times, because today if you're a customer of FPL, you're paying less today on your bill than you were paying in 2001. Not too many industries can say that-- tuition, health care, hello? Food. You've had a skyrocketing price over the last 10 years. The cost today of your bill-- not yours, because you live outside of our service territory-- but if you're an FPL customer, you're paying less today on 1000 kilowatt hours than you were 10 years ago. That's pretty amazing.

So when you hear these debates on TV, and you hear all the-- I think it was even our president talked about the skyrocketing price of energy and yadda yadda, we're sitting there going, are you kidding? We're lower today than we were 10 years ago. When you hear the debates in Florida when

Governor Scott was running against Charlie Crist, Charlie Crist continued to say things like, oh, these power companies are out of control. They're skyrocketing bills, and your energy bills keep skyrocketing. And we're sitting there going, fact check. Not so. Not so at all. So it's pretty interesting stuff.

And then we have created a transmission company. We started a company called Lone Star Transmission. And part of that is, when you build so much wind, nobody wanted to build a transmission to get it to basically where the population hubs are. So we're building a lot a wind in Texas, but the utilities didn't want to build the wind to take it to the city.

So we, in essence, formed our own transmission company. And we felt pretty good about it because we felt pretty comfortable in the regulated space. So we know how to deal with the Public Service Commission, how to deal with FERC, how to deal with all those different regulatory bodies. And now we've taken it beyond that. And we are now a national company, and now we have a company called US Transmission. And we're building transmission all over the country.

And then we just announced that we're actually digging, drilling for gas in Oklahoma to be able to secure our gas supply here for the state of Florida. First time any utility has ever done that, so that's really neat.

And then we had a major announcement a few weeks ago. I don't know if anybody picked up on it, but we just announced we're buying the utility in Hawaii. So talk about coast to coast. So now you've got Florida and then you've got Hawaii.

But it was a fascinating purchase because, through 2000 era, we had attempted to merge with Entergy, a big utility out of Louisiana. We tried to merge with Constellation, which is a huge company in Baltimore, who has tremendous gas trading scenarios. And they failed. Not because we didn't want to, and not because they didn't want to, but things get in the way-- different regulatory scenarios.

This one in Hawaii-- the cost of electricity in Hawaii is about 29 and 1/2 cents a kilowatt hour. Do you guys know what you pay here?

Around 12.

Around 12? FPL is like-- on ours, it stores about 9, 9.3, 9.4. That's insane, right? That's a lot. So it gives us the opportunity-- we love solar. We're a big solar company, so it gives us the opportunity to basically help Hawaii electric be able to do a lot of solar and do it cheaper than what they currently pay for their grid, which is pretty unique.

Most of the time it's backwards. You say, well, solar is more expensive than the grid. In this case in Hawaii, you can probably build a lot of solar for half the price of what they're currently paying on their grid. So its going to fascinating to see how that works out.

So here's a massive amount of money. Since 2001 we've invested up to \$60 billion in upgrades. Try to finance that. For those of you who are finance majors, we have obviously a big financing opportunity. As far as organization goes, we have great people always looking for working with all kinds of relationships all over the world, different banks all over the world to try to finance and continue to finance these type of structures. And that's one of those concentrated solars that you see out there. It's probably SEGS, which is out in California.

I won't get too much into nuclear. This is something for you guys. Not the be recruiting, but obviously you always have the opportunity to take the brightest people like yourselves. So here, pretty neat. For eight years in a row, we've been the most admired company in the electric and gas for the utility sectors for Fortune Magazine, so that's pretty neat. To do it once is a lot. To do it twice is pretty significant. Eight times in a row is pretty cool.

So now the good news is, as an energy company, we take a lot of pride in our mission and our clean profile. We position ourselves always as a clean energy company, and these are pretty incredible numbers. So obviously having nuclear and having wind as the key components of NextEra's portfolio, you basically have a very low emission. And then converting from an oil based utility from the '60s, '70s, '80s to natural gas, solar, wind, and nuclear, obviously you're working very close to that.

So let's talk about FPL. This is our utility here. So we can see we're the third largest. Sometimes we dip into the second, but for the most part we're the third largest utility in the country.

And obviously part of that is the growth of Florida. Florida continues to grow. For a while there, we were kind of stagnant. And you guys are pretty young, but after the hurricanes hit in 2004 and 2005, a lot of people basically were terrified, and it kind of flat lined in Florida for a while. And what you had, all these weather forecasters basically gloom and doom. And we're going to have incredible hurricanes every year for the next 50 years, oh my god.

So a lot of people left the state. A lot of people that were in the service business left the state. So it was pretty interesting. And then you had, obviously, the economic issues that we had, whether you call it a recession or not, but you had some economic issues that affected growth. But now it's starting to pick up again in Florida. And after that storm in the Northeast you're going to see a lot more people moving down here.

What utility company [INAUDIBLE]?

California. So you've got a big utility in California. And then on any given day you've got Southern Company in Georgia or Consolidated in New York. It all depends because what's happened is some of these utilities have been merging in and out so on any given day it's fluctuating.

But when you look at the major hubs, Texas used to be one of the largest utilities, but they decentralized the energy sector in Texas so now you've got a bunch of different companies. And there's a huge auction going on in Texas for a company called Encore. So Encore owns a lot of the utility assets. And basically now they're going through-- it was in bankruptcy, and so now it's a bid system to try to see who wants to take those assets.

But we don't have time today. And if your professor wants to come back another day, we can talk about the differences between regulated and deregulated entities. So in the areas that they have actually deregulated-- the utility sectors-- you've seen a huge spike up in prices, which isn't normal necessarily for industries. But in the utility industry for some reason-- if you recall-- maybe don't recall-- Enron, but when Enron got into this business, it was a very manipulative way of doing business.

So what they did was they took the price of electricity up to \$999 a kilowatt in California. And the reason it's couldn't go to \$1000 was because back then it wasn't programmed to go to \$1000 on the IT systems. Think about that for a minute.

So basically you had all these people trying to get into the business, and the cost of electricity in California is very high. So for example, in Los Angeles today the cost of electricity is about 20.5 cents a kilowatt hour. Very high. So you've got to be careful. You've got to be careful what you do.

So this is our portfolio today. As you can see, we're very low on the solar radar. Now with the announcement yesterday, I think we're going to start to do more of that. Why is solar not more popular in Florida? I think obviously the big reason was the cost of electricity in Florida was very cheap.

So part of the issue there has been you had a regulatory body and a legislative body that was very opposed to increasing the rates for the people in Florida. So when you have a fixed income economy-- like in Florida we have a lot of senior citizens that are on fixed incomes-- it's very difficult. We pushed for legislation in solar four years in a row. Got shut down. And when you have low income lobby groups such as AARP, and when you have the NAACP, stuff like that is very difficult to get into.

But today solar is becoming so cheap that now you're going to start to see a huge uptick in solar. When we built one of our solar projects here in 2008, the cost of the cost of solar was \$6 a watt. So it's very expensive. And that's why people were paranoid. You know sticker shock? That's when we heard sticker shock. You're going to create sticker shock in the state of Florida.

And to a degree, they were probably right, but today you can build large scale utility solar for less than \$2. So it's been going in the right direction. Part of that is solar PV is a commodity. So when you the whole manufacturing sector took off, the Germans had gotten into the game first. The Chinese drove them out of business basically. So now there's no manufacturing in Germany. There was really no manufacturing in the US.

Today you're beginning to see a little bit of that. It started to uptick a little bit because of the solar tariff that they imposed on the Chinese panels. So there's been a big kind of a solar war going back and forth over the tariffs, which is about \$0.18 for panel pricing. It's pretty significant.

So panel pricing today, you're about \$0.70. It could be \$0.52 if the tariffs get addressed. And it looks like the resolution of that was going to be kind of a 50/50 split. So it's going to be about a \$0.09 delta on the tariffs, so you'll probably see panels about \$0.60 to \$0.61. So it's still significantly better than it was five years ago.

So the good news for us is we're doing really well. We're the lowest in Florida, about 25% below the national average. That's good, but it also had put a lot of pressure on us being able to do more solar, because people didn't want their rates going up.

The good news is that back in '01 we had a tremendous amount of oil in our portfolio. The good news for us today is we basically weaned off all foreign oil. It's a beautiful thing. So the natural gas that we are burning is all American made. It's all American natural gas. That means the money stays here, and it puts a lot of people to work here. So we're very proud of that.

We're continuing to invest. Part of that was smart meters. So in essence, our 4.7 million customers today now have smart meters. So kind of neat. And that's going to be-- the continued technology wave is the ability for people to understand and be able to communicate with their meter-- so your appliances, when you turn them off, when you turn them off, when you do your laundry, when you have your hot water system going, when you have your AC. Imagine, you can do that today all from your phone.

So you can really manage your energy portfolio. You couldn't do that before with a one way meter, and yet we still have to fight people that are very opposed to the smart meter. So it's a conspiracy. It's Big Brother. We're spying on them. And I was like, who wants to spy on somebody's energy consumption? But it is what it is.

So for the last few years, we had three large scale oil fire plants-- one in Cape Canaveral, one in Riviera beach on the east coast, and one in Port Everglades, Ft. Lauderdale, the airport. We did a demolition of all three of them. It was really cool. I got to do the demo.

And so basically the beauty of that is we were able to do the demolition on these projects but were able to save, in essence, a transmission system, the water, and the land. So we were able to put a new natural gas facility on each of these projects, eliminate all the oil, and then save a tremendous amount of money. Our customers on each of these plants, each of these \$1.2 billion investments, saves over \$500 million over the life of the asset. So it's phenomenal. It's a phenomenal deal.

The turbines that they used used to have a heat rate of about 10,000. Now it's about 6,350. So heat rate meaning, it's like going from an old Cadillac to a Fusion hybrid or a Prius hybrid. That's how efficient these new turbines are. It's amazing. So they use a lot less fuel, 33%.

And this is what a demolition looks like. I would have brought the video, but-- so it takes a year to plan and about 7.3 seconds to destroy. So you had all these different agencies. Imagine, you're dealing Homeland Security, you're dealing with the airport, you're dealing with cruise ships, you're dealing with FBI, Secret Service, CIA, National Guard, police, Sheriff's department. All these people have to be coordinated. And then you go boom and everything falls. And it's good. It's all good.

So solar. In 2008, they passed legislation in the state-- it was back and forth, back and forth-- where they allowed 110 megawatts to be built. At that time, solar wasn't really in. We went ahead-- it was a first come, first serve. We file for all three projects. You had to have the transmission. You had to secure the land, and you had to basically get your permitting done.

So we went ahead and did it. We filed for a one in DeSoto county, which is east of here. It's going across Highway 70. And that was a 25 megawatt project, which today seems fairly small. At that time, that was the largest PV project in the country. It was commissioned by President Obama so it would have to be a pretty big deal.

And then we did a public private partnership with NASA at the Kennedy Space Center. So what we did was a 10 megawatt facility on their property. We leased the land, and it was kind of neat because the way they did was, when we went to offer them the cash for the lease, they said we'd rather not have cash. And I was like, who doesn't want cash? And what happened was, because they're a federal entity, if you give the cash to the Kennedy Space Center at NASA, it goes directly to Washington.

So did the old barter system. It was kind of cool. So what we did is we took the net present value of what the lease was going to be, and then we took that amount, and we built them their own little one megawatt facility. It was kind of cool. And then we maintain it for them for 30 years.

And the reason for that for them was really neat because not only did they get their own little megawatt, they get two green credits because the federal government was giving two credits for one for federal installations. So we built that.

And then we built-- it was really a neat project. So at the Martin Plant, which in Indiantown-- small town-- we already had a big natural gas facility. So our engineers went to work, and they created what we called the first hybrid solar gas plant in the country-- actually in the world. It was really neat.

So we built a concentrated solar, connected it to one of our natural gas facilities, unit 8. Now think about that. So it's 500 acres of solar-- not these guys. I don't know if I have, but the ones you saw in

the front. So you basically have 500 acres of mirrors. That's a ton of mirrors. You can actually see it when you orbit the earth. You can actually see it. That's how big it is.

So it's got its pros and cons. So being intellectually honest, this was a first of its kind. So when PV-- when you have a lot of cloud cover that goes over a PV site, basically all the power goes down, here and then it puts a strain on your system.

Well, what happens when you have 500 acres and you have one big cloud, all that system basically shuts down. So now you basically have mirrors reflecting sunlight onto a tube. The tube has a synthetic fuel that goes through it.

How many of you guys cook? How many of you bake? So imagine if you were baking a cake and every five minutes you had to turn the oven off, turn the oven on, turn the oven off. So every time a cloud goes over-- so it's been challenging.

So part of the issue though too is that whenever we do maintenance on our gas plant, our unit 8 plant, it shuts down the solar project too, because it's got basically one steam cycle. So you guys were talking about cost. When we built the concentrated solar, believe it or not the cost of concentrated was actually cheaper than PV in '09. So we built the Martin Plant for about \$4.80 a watt, maybe \$4.90. DeSoto was \$6.00 a watt, which is PV. And in the last few years PV has just gone down precipitously, whereas concentrated solar has basically stayed flat because it's a niche market today.

Not everybody's building mirror factories, and not everybody's building these big scale projects. Now they're starting to build some of those in, I think, the Middle East. I think some of the climates in the Mediterranean, and then in California, Spain.

So it's just the cost of PV is so low. The Chinese have driven that market to such a low rate that it's tough to justify going to a Public Service Commission and say I want to build solar. And they say what kind of solar are you going to build, and you say, well, I want to build a concentrated solar. What's the cost? Well, I'll say it's \$4.00. What's the cost of PV? We'll say \$1.80. It's tough to justify.

And then on the concentrated PV, we were working with IBM four or five years ago. They had their research lab up in New York, and they were all excited about their 40% capacity factor, irradiance, and all that, but they're not even doing it today. So we actually have a 5-megawatt project called Numonyx out in California, which is a concentrated PV. So we're going to continue to assess different technologies.

So this is our profile for NextEra energy resources, our sister company. And as you can see, it doesn't take a rocket scientist, but-- if you do this, that's where the wind is in the United States. This is where the wind tunnels are. So you get a tremendous amount of wind all through Texas, Iowa, the Dakotas. We started with a lot a wind here in California, but this is where it's all at. So we've got a lot, a lot of wind turbines all over the central quarter of the United States.

And now, as you can see, we've got a lot of wind in Canada too. And now we're actually building a lot of solar in Canada also. And hopefully soon you'll be seeing a dot out here called Hawaii over here somewhere.

So this is our portfolio. As you can see, wind 56%, which is huge. That's just a huge number. I remember our first wind projects were tiny little projects, but now you can see this beast of a corridor right here. And then you've got some projects here on the east coast. And then our three nuclear plants as I mentioned. You have Seabrook, and then Wisconsin, and Iowa.

So as you can see, this has been the steady growth on the wind side, which is phenomenal growth. If you had that kind of a financial portfolio, you'd be doing pretty good. This is not financial. This is assets.

But if you look at the growth compound-- compound and rate, 17% per year. That's why I'm saying it's not just going out and building these things. You've got to finance them. Somebody's got to be willing to lend you money to be able to build these things.

And then you have to have a buyer for your energy. So obviously we were going wherever PPAs were. So when you had-- initially California was where all the action was because they started with a portfolio standard. So it meant that the utilities have to buy or build 20% of their capacity from some kind of renewable fuel.

And then some of the other states like New Jersey went into it. Now Carolinas are going into it. Texas went into it. So that's what was driving the market-- that the utilities were required to buy or build a lot of renewable energy. We don't have a portfolio standard here in Florida.

But this is the a portfolio here. So the next competitor is still about 50%, so it's pretty cool. And then there's a Spanish company, Iberdrola, which is big in the renewable energy portfolio. Huge. And they're buying a lot of assets here in the United States too.

We haven't done very well internationally. We actually built a big solar project in Spain. When we actually built a project, there was, in essence, a tariff that they would provide you that would make it worthwhile. And then as we were finishing the project, they decided to null and void the tariff. So that's the risk that you have going international all the time. They decide to change the rules on you after the game is over or when there's one out left in the last inning. So it was pretty brutal.

But then we also have gas assets as I mentioned to you. We announced that we're going to be building this big gas pipeline coming into Florida as you can see here. So today we're at the mercy of this. So most of the gas that is supplying the portfolio here in Florida was coming through the Gulf. So you got hurricane alley. Obviously it's a curtailment risk, and also you have one terrorist act in here and you're in trouble.

So basically what we decided to do was hedge our bet. We're coming in from the inside now. So we're coming in from inland, which will be pretty neat. Now I don't know where that originates. It could be up in the Marcellus Shale up here in Pennsylvania, but there's a lot of natural gas in this country. And as you can see, we've invested over a billion dollars in that.

I want to make sure I leave some time for questions. We're very involved in the community-- a lot of stuff in a community. But anyways, a lot of stuff going on in the energy sector. It used to be utilities were boring. Now I could tell you the energy sector is one of the most exciting sectors in America. There's a lot going on. Whether you like solar, whether you like wind, whether you like fracking, whether you hate fracking, whether you like nuclear or not, there's going to be a lot of activity.

People keep moving here, and there's a lot of plants that are being retired so it's spurring growth. And then obviously what you have is renewable energy actually becoming cost competitive. There is still going to be an issue with-- I don't want you guys to come out here thinking, oh my god, everything is going to be renewable, because it's not. There's still cloudy days, and there's still night time.

So part of the challenge for solar is how do you deal with a state like Florida that has a tremendous amount of cloud cover, a tremendous amount of rain, and it's an intermittent resource. And the other issue with Florida is that unfortunately there's not really a good wind profile here in Florida. When the wind blows, it usually blows very hard at one time, and that's not good. That's not good at all.

But what I will tell you-- at least on the east coast, there's a thing called the Gulf Stream. Rumor has it-- nobody's really-- but rumor has it that there's enough Gulf Stream currents to basically capture over 1,500 megawatts of ocean energy. That's huge.

Now the beauty of ocean currents is that they're not intermittent. So the wind blows, doesn't blow. Wind blows, doesn't blow. Solar shines, doesn't shine. The currents are going 24 hours a day. So it's almost like having a base load plant, like having a fossil or a nuclear plant. So that's very attractive for a utility that has to depend on baseload dispatching.

I can argue all day for solar energy, but when my dispatchers and the guys that run the system tell me can you guarantee me x amount of power 5 weeks from today or five months from today, I can't. I can't do it with solar. I can't do it with wind. The only way I can do it is with nuclear, gas. But if I had ocean, I might be able to do it. Questions? I know I threw a lot at you.

We'll thank you first.

Oh, my pleasure.

[APPLAUSE]