**Transmission Siting Issues**

AUDIENCE: Stanford University.

SUEDEEN KELLY: What I wanted to do today was take the opportunity to share with you what I've learned over the last six years at FERC about extending the grid. And what I'd really like to do is, rather than have it just be a lecture, is to have it be a conversation about, frankly, what the competing policies are about extending the grid and what the best solution to it might be if there is one.

And in Washington-- excuse me. I'm going to move this around a little bit. In Washington today, there's a lot of discussion about changing the traditional paradigm about surrounding the building of transmission. And when you think about the building of transmission, if you want to break it down, think about it in three steps.

If you're going to build transmission, what do you have to do? You have to plan it. You have to site it. And you have to pay for it and figure out who's going to pay what. They call it planning, siting, and cost allocation, or the three P's, planning, permitting, and paying for it. And that's how the discussion gets focused.

What we don't hear a lot about in Washington is about the proposed solutions, and what they would do, and why we would want them. So that's what I'd like to talk about with you. It's not part of the general discussion. So before we get to that, let's get a baseline. Traditionally, what is it that we've done with respect to transmission? How do we plan it, how do we site it, and how do we pay for it?

We plan it-- traditionally, the transmission owners, the utilities, traditionally plan it. And it's been a very focused effort by the utilities. And traditionally, the transmission was just built from the generating plant to bring it to load, usually, most of the time, not a very long distance.

In the west, it's been longer because of the big distances in the west, but around the country that's how it's worked. And then the siting. How is the siting done? In other words, who gives the transmission owner, the utility, the permission to put the line at any particular place?

Traditionally, it's the states. So if you have a line that goes from California, from LA to Palo Verde, it crosses two state lines. It crosses the state line into two states, the California Public Utility Commission approves the siting of the California part and the Arizona commission approves the siting of the Arizona part or not, as they may decide not to.

And how do you pay for transmission? What's the cost allocation? Traditionally, the rule is the beneficiary pays. Not only that, but the benefit of transmission was defined very narrowly. The benefit of transmission is to get an electron to the electricity customer.

That's the benefit. That's the traditional way. So if you put a transmission line in from Los Angeles Department of Water and Power to Palo Verde to get the nuclear generation from Palo Verde to Los Angeles, who pays for that line? The customers in LA DWP, because they get the electrons. OK. That's the traditional approach. It's changed a little bit in the last 15 years.

Planning. In the last 15 years, we've seen the rise of entities called independent system operators or regional transmission organizations. The California ISO is one of them. These entities have grown up since, I think-- well, Cal ISO is really the first one in the latter half of the 90s. These RTOs or ISOs do transmission planning in their regions.

Let's see how many we have of them in the country. We have seven, the California one-- in the rest of the West, we don't have another one. We have Texas. And that's an independent system. It's not interconnected with the rest of the grid. Texas, as you know, is very independent and exceedingly independent in their electricity.

In the eastern interconnect, we have the Midwest Independent System Operator. It's huge. It's most of the Midwest states over to Ohio. We also have the Southwest Power Pool, which is small. It's just to the north of Texas, Oklahoma, parts of Kansas, some Arkansas, Nebraska-- no, it doesn't even go into Nebraska.

And then we have what's called PJM. It's in the middle Atlantic states. It initially stood for Pennsylvania, New Jersey, and Maryland, but now it includes most of the middle Atlantic states. New York has one, and New England. So the only two parts of the country without ISOs or RTOs are the west outside of California and the Southeast.

These ISOs and RTOs plan transmission. So in the transmission planning, where there are ISOs, we've gone from having the individual utility planet to having the ISO planet. And then FERC, the agency that I came from, the Federal Energy Regulatory Commission-- FERC has jurisdiction to an extent over transmission.

And FERC, about two years ago, issued a policy that said that the utilities have to plan regionally. So those utilities outside of an ISO, all the utilities in the west outside of California and those in the Southeast that aren't part of ISOs, they have to plan regionally.

We left it broad. They've come in with their plans. So they now plan in conjunction with other utilities in a region. OK. So it's improved a little bit, transmission planning, in the last 15 years.

How about siting? No significant change in siting. Siting is still done by the states. One little exception, in 2005 Congress passed the Energy Policy Act and it gave a little bit of siting jurisdiction to the federal government. Took a little bit away from the states and gave it to the federal government, gave it to FERC.

And what that law says is that the Department of Energy shall establish national interest electricity corridors. Those corridors are supposed to be established by DOE in areas where there is congestion. Now today you might think, wait a minute, that's not the issue today.

The issue today is getting renewables to market, which is what we're going to get to. Why does this statue talk about congestion? Why doesn't it talk about getting renewables to market? Well, it's because in 2005 getting renewables to market wasn't a big deal in Washington policy circles. That's the one reason.

The real reason is because that particular provision was negotiated in 2002. And it was negotiated among Democrats and Republicans. And they pretty much got consensus on it. And so when it came time to pass the bill in 2005, because it didn't get out in 2002, it didn't get out of the Senate, they just left the provision where it was, because they had agreement.

So it's really dealing with yesterday's problem. But it's in the bill and it says in national interest corridors, if a state withholds approval for siting for more than a year, then FERC can come in and approve it. So there are only two corridors established by DOE in the country.

One of them is actually goes from LA over to Arizona, that's one, and the other is in the middle Atlantic states, Ohio, Pennsylvania, parts of Virginia, up into New York. So there's a limited inroad on state exclusive authority over siting that happened in 2005.

What about cost allocation? The rule is still beneficiary pays. But over the last 15 years there's been an expansion of the notion of what is a benefit from transmission. As I said, the traditional notion is it's the electron is the benefit and that's it. Well, in these areas that have ISOs, they've come to think about reliability, regional liability, as being a benefit.

If you build a transmission line, a big transmission line, a 345 kV transmission line in California from LA to the northern border, it's going to add a lot of reliability. And that reliability is benefiting everybody in California. That's the theory.

So the idea is for those reliability projects, maybe the cost should be-- or the idea is that the cost should be shared by others, not just the people in LA paying for the electrons, but the people in California should pay at least some share of those costs because it benefits them in terms of reliability.

How that sharing occurs is all over the map. In New England, the New Englanders, having worked together more or less since the late 1600s, are actually the best at sharing. And they share 100% of their-- some of you would disagree, huh? But they share 100% of all of the transmission that's sized at 115 kV and above. They share among each other.

In PJM, they share 100% of their big lines 500 kV and up. In the midwest, they share 20% of their 345 kV and above. In the Southwest Power Pool, they share 33%. I think it was originally proposed to be 33 and a third, but 33% of transmission lines 60 kV and above.

And actually California is pretty good. California shares 100% if it's greater than 200 kV. And Texas actually-- Texas is almost as good as New England. I don't recall them as quite as good sharers, because Texas is just one state.

And what we find is that it's easier in these one state ISOs, like the California ISO or the Texas ISO, for sharing to occur. There aren't multiple political jurisdictions and customers tend to look at themselves as similarly situated if they're in the same state. So Texas shares 100% of all their transmission.

All of these jurisdictions allow for merchant transmission, which is an-- I'm going to come back to it at the end, so I'd like to introduce the concept. Let me backup. Transmission is guaranteed a cost recovery. Transmission is treated like a monopoly.

They don't compete with each other. You have one transmission line. There's not usually room for two. Maybe in parts of California there's enough traffic to justify more than one. So the cost of transmission is mandated to go into your rates.

Merchant transmission is a little different. And merchant transmission typically have been transmission lines where one particular generator sees an opportunity to sell power from his own independent generator somewhere else where there's a real need for it.

And the generator will pay for the transmission line himself, because he figures that if he can reach that market, there's going to be enough profit in that market to enable him to sell his electricity at a profit including covering the cost of his generation. So you see a few merchant transmission lines.

For example, one is being built or was just built to take generation from Pennsylvania to New York over an RTO seam. And New York's a big market. And the generation being sited was particularly efficient and they saw the market in New York. So all of these jurisdictions allow for merchant transmission.

OK. Is this sharing a good thing? We're going to get into that, because there's a lot of emphasis on more sharing of costs of transmission. Is it a good thing? Yes and no. But it does have some unintended consequences. They're being discussed right now in New England.

For example, if you think of serving our energy needs as a mix of electrons, demand response, efficiency. Those are all different ways and different types of investments that we can make to serve our energy needs. If you socialize the cost of transmission across an area, you can unequal the comparative playing field.

For example, in Vermont right now, they're debating what should they do to meet their energy needs? Should they invest in efficiency? Should they invest in demand response, and/or should they build a new gas fired generator?

Well, when they think of the cost of gas fired generation, and the cost to get it to load, they don't have to think about the transmission costs. So when they do the comparison between efficiency and generation, the generation cost is artificially lowered, meaning that the efficiency-- if they're going to do a cost benefit analysis, the efficiency costs have to be even better for them to justify investing, because they have to spend their own money on efficiency whereas the rest of New England will help them with their transmission lines. OK.

So what's the problem with this? Why change this system? Why is Washington talking about changing the system? Two reasons. There are two current topics that lead people to believe that it should be changed. One is there is an interest in many parts of the country of upgrading transmission to a 765 kV overlay.

The idea is maybe analogous to the interstate highway system. Here's the argument. America needs a 765 kV overlay. It needs a superhighway that can get it across these RTO seams that will enable the efficient commerce in electricity. In other words, it will enable Midwest Winds to get to Boston.

It will enable cheap coal, if you like cheap coal. If you like cheap power, it will enable cheap coal to get to New York. It will improve reliability and make the United States a world class grid. That's one argument. There are a lot of adherents to that.

So what's wrong with the present system if you want to put a 765 kV overlay in the United States? The planning areas are too small. We want at least interconnect wide planning if not national planning, like for the interstate system.

The siting, having each state get involved, too many. Too many states, too many parochial interests. They aren't going to coalesce around a national goal.

The state of West Virginia is going to veto the putting of the transmission line from Ohio to New York because they don't see any benefit in it for them, which is probably true. There probably is not much benefit in it from them, at least the way it's traditionally been sited.

And cost allocation. How much is a 765 kV overlay going to cost? A heck of a lot. Who is going to pay for it? Who is going to get most of these electrons? The big cities, Chicago, New York LA, Arizona, Philadelphia. OK, let's have them pay for it. They don't want to pay for it.

OK. So maybe every customer in the United States should pay for it. If you add it on to their bill, it's only going to be a little bit. Nobody will ever notice. We'll get a 765 kV overlay. We should have better cost allocation rules. That's the argument.

OK. What's the other issue? Getting renewables to market. What's the assumption in getting renewables to market? The assumption in getting renewables to market is if we're going to capture renewables and send the electricity to load, it's going to have to be over long distances, and same problem as with the 765 kV overlay.

The transmission planning process is too small of an area. It should be, at a minimum, regional if not grid wise. The siting process. The states are going to be problems. They aren't going to get together on a national renewable to-market plan. And the cost allocation. Those transmission lines are going to be expensive.

Although California would like to see 33% renewables, if you try and tell the citizens of San Francisco that they have to pay for the entire line from Southern Canada to San Francisco for the good of cleaning up the environment, they are going to say, well, why doesn't the rest of the country help us out?

The environment is getting-- the carbon is being lessened and it's benefiting everybody. Why should we pay the whole thing? OK. Those are the arguments.

Let's look at where we are with renewables. You can see-- because that's the argument I really want to focus on. The 765 kV argument is in there, but the one that's capturing the attention of the policymakers and the legislators on Capitol Hill is the renewables argument. Where are we here here?

Here is US wind installation. You can see we've had significant growth in wind installation over the last, particularly, five years. Wind installation by state. Let's see where my little figures are. Texas is the leader. California is doing a good job. Iowa is a leader. Lots of wind in Iowa. New York has some.

As you can see, actually, most states have at least some wind today, except the Southeast. Photovoltaics, same kind of meteoric growth in photovoltaics grid connected.

But it's important to keep in mind that, even though we've seen significant renewable growth, we're still looking at renewables as a very small percentage of the electricity portfolio. Renewables are today 3% of our portfolio. Of that wind is almost half.

Wood, surprisingly, it's like who burns wood? Do they burn wood in California? No. And they burn wood in New England. And I'm from New Mexico. We don't have any trees, so the idea of burning wood is foreign to me. Biomass is pretty good and geothermal. But as you can see, it's still a very, very small percentage.

Where are the renewables? Here's the geothermal out here in the west, in major parts of the west in Nevada up into Idaho, Oregon. And a lot of those places are not where the people are, so if you're going to harvest those geothermal renewables, you're probably going to need transmission lines.

Solar. The best solar, not surprisingly, is in the Southwest. Of course there are a lot of people in the Southwest in Southern California, in Arizona, in Texas. But if you're going to take some of the solar to other parts of the country, you're going to need transmission.

Wind. The best wind is along the coast. Actually the most of the people are along the coast, but there's a heck of a lot of wind in the Rocky Mountain area. And those states would like to develop their wind.

Many of those states, North Dakota, South Dakota, Montana, Wyoming, Colorado, are woefully undeveloped economically and they would like to develop their renewables. But they don't have the people to use them, so there's a strong desire to take that wind and ship it to market over long transmission lines.

Michigan, probably the poster child for a poor economy right now, looks at the Great Lakes and the stupendous wind potential and is talking about doing wind in the Great Lakes and having that be part of their new economic engine along perhaps with electric cars and shipping that where? Well, probably out of Michigan. Maybe into Chicago, but they're looking to ship it to New York, Boston.

Historically-- I guess historically is a couple of years-- New England was opposed. The New England political structure was opposed to developing wind off the coast, particularly-- you probably read about Walter Cronkite-- no wind farms off of the Cape. No wind farms off of Nantucket. However, more recently given the recession, there is a big interest, a growing interest, in developing offshore wind off the east coast, particularly the North East coast. OK. Let's leave that.

OK. So what's happening? There are a number of bills in Congress that would respond to this concern about extending the grid. And I'm going to talk about three of them in particular. Senator Reid, who's the majority leader in the Senate, hails from Nevada, has a bill. Senator Bingaman, who's chair of the Senate Energy Committee, has a bill and that's been passed out of the Senate Energy Committee, so it's now on the calendar of the Senate.

And in Waxman-Markey, which is the bill in the House that deals with climate change, which was passed last year by the House, also has provisions that deal with transmission. So what would they do? What would they do with siting? Senator Reid's bill would--

I'm sorry. What would they do with planning? We have to do planning first. Senator Reid's bill and Senator Bingaman's bill would set up regional planning entities, but they're undefined. It doesn't say what they would be, but they would be set up by FERC.

So you can imagine that planning is very powerful. Whoever plans the grid gets to decide. They're the ones that get to decide what's going to be built. So who's going to plan it?

So there's a lot of jockeying for who would these-- would these regional entities be something newly created or would we take something that already exists and turn it into a regional entity? Would we take the California ISO and marry it with all the rest of the transmission owners in the west and come up with an entity, or would we create some new entity in the west that doesn't exist now, or would California plan its own and the rest of the west plan? OK.

In Waxman-Markey, they would also provide that FERC-- they don't even say regional entities. Waxman-Markey says FERC would establish planning entities. From time to time. I think maybe I should have stayed at FERC. It would give me a lot of power.

What about siting? So it looks like if we pass these bills, we're going to have a regional entity. Senator Bingaman's bill would provide for interconnection wide regional entity. So ideally, there would be one in the east, one in the west, and one in Texas.

What about siting? Senator Reid's bill would leave siting the way it is, but it would expand its authority to do backstopped siting in national interest corridors and it would allow FERC to site lines in the national interest corridors even over the objection of the states.

Senator Bingaman's bill would allow FERC-- the way it's written is that FERC could veto states' siting decisions. So it would allow the states to continue to go through the motions of siting transmission, but if they said no, then FERC would get to site it.

The Waxman-Markey bill does away with all the pretense and it says FERC sites it and the states are not involved. What about cost allocation? Senator Reid's bill says FERC gets to decide cost allocation and cost shall be allocated broadly. Period.

Senator Bingaman's bill said basically the same thing. But there was an amendment in committee sponsored by Senator Corker from Tennessee, as in the area where there are no renewables, and Senator Cantwell from the Northwest, as in we already have our renewables, as in we don't want to spend money for other people's transmission to get renewables.

They put an amendment in, and it went through committee, and it's in the bill, that says you cannot spread costs across states except by showing specific economic and grid reliability benefits, not just environmental benefits. So the notion that you would look at getting renewables to market as an environmental good, as an externality, as a benefit that benefits everybody in the United States, under this legislation, unless you can get a good legal interpretation, that's certainly not the intent of the Corker amendment.

In Waxman-Markey, it's silent on cost allocation. It doesn't address the issue. One of the interesting things in Waxman-Markey is that Waxman-Markey sets up planning principles for our new transmission build out unlike the other two that don't really have any principles. And FERC gets to do what FERC thinks it should do.

Under Waxman-Markey, it said that transmission should be for the deployment of renewables and other zero carbon and low carbon energy sources. That's the purpose of building transmission. That's what it says in Waxman-Markey. It also says it should also enhance reliability, reduce congestion, ensure cybersecurity, promote motherhood and apple pie, and be cost effective.

The other interesting little twist that happened to Waxman-Markey on the way to the vote was the transmission reform was limited to the western interconnect. Why, you might wonder. Does anybody know? Why did they, after working all this out and coming up with arguably a good plan, why in the end did they take the east out of it? Pardon?

The Southeast didn't like it because they don't think they have any renewables. And they don't want to pay for anybody else's lines. But it was the New England governors.

And what happened was, right in the beginning of the fall last year, the Midwest ISO here came up with a plan. And their plan was to build transmission lines from here, but guess what? It didn't stop in the Midwest.

Their plan was to come right over here, to go into New York, and to go up to Boston. And so the New England governors got together and said, wait a minute. The Midwest is going to preempt our wind development.

Well, we don't want no Midwest wind. We have our own wind. And our own wind doesn't need so much transmission, because it just has to get offshore to Boston. So you know what? We don't want any transmission reform, because if we have transmission reform today, tomorrow we have wind from North Dakota.

So politically what's going on? In Washington, the states are jockeying. And the real basis of their objection-- their most of their objection is couched in terms of states' rights. But the real objection is that they're worried that other states will preempt their renewable development.

Either it would prohibit them, like the governors in New England are worried that the Midwest will get a jump on them and corner the market with renewables from the Midwest and take away their market for developing their own renewables, or they are worried-- or they object because they don't have renewables to develop like in the Southeast and therefore they don't want to be any part of this plan. Thank you very much. Or they've already developed their renewables, like in the Northwest.

Bonneville is up in the Northwest and Bonneville is doing a very good job. Well, the Northwest looks at hydro as renewable. And they also have a lot of wind. And Bonneville in the Northwest is a federal power marketing agency with a pretty good budget and a good history of building transmission and getting wind on the wires.

And so the Northwest looks at it. We're solving our own renewable problem. And we can do it in our own budget. So why should we pay for California's? So they've already developed their renewables or their renewables are close by and they really don't think they're going to need long transmission lines to develop their renewables for themselves, so they don't want to pay for yours. So they're objecting to the siting provisions. They're direct objecting to the cost allocation provisions.

Let's talk about the cost allocation provisions. What do the cost allocation-- if you allocate costs broadly, because it's a good thing to do for the environment and everybody will end up paying just a little bit and it will solve all of our problems, what does that do?

It just changes things. I'm not saying that it's good or bad. But I think one thing that we've lost in the debate is if we broadly allocate the costs, it changes things. What does it change? It changes today's current cost advantage of developing close by renewables.

If it doesn't matter to the people of Los Angeles whether they put solar in the Mojave Desert-- now that probably would make a lot of sense from a transmission perspective, or some sense because the transmission is short. But maybe Senator Feinstein doesn't want to put solar in the Mojave Desert. And maybe you would prefer to bring in wind from British Columbia.

That's a lot more expensive to bring in wind from British Columbia. But if you're not paying for the transmission, what do you care? So it changes the decision making paradigm from what it is today.

The current incentive today is to develop the least cost renewable because the all in cost is going to be paid for by the user. If the all in cost is not paid for by the user, it changes the incentive to an extent. There's not such a drive to develop the least cost renewable. Is that a good thing or a bad thing? It's not necessarily good or bad, but it changes it.

What else does broad cost allocation do? If the cost of transmission isn't taken into account, then the decision of whether to do offshore wind, California, wind from Montana, wind from Wyoming, wind from Colorado, wind from New Mexico, wind from Canada, they're all equal, because the transmission costs are irrelevant. So OK. Well, what are you going to develop if they're all equal? How do you choose? Which one? Pardon.

AUDIENCE: Resource.

SUEDEEN KELLY: Resource. Best resource. Best resource. And is that a good decision? Is it good to have all your wind come from one wind location? So the wind dies down, no wind, whereas if you have it from multiple locations, and if it dies down in one place, it doesn't die down in another place, easier for the system to balance.

What if they're equally good? I don't know the answer, but who's going to decide? The transmission planner. He's going to decide. Who's the transmission planner going to get to be? Oh, FERC. I get to decide if I go back, if I were to go back. So is FERC going to decide? Is that who you want to decide?

Can you imagine the politics involved in this, because there is a lot of money. If you're going to build 6,000 megawatts of wind, can you imagine the competition that's going to go on here? There's a lot of money involved in developing 6,000 megawatts of wind.

So let's go back to who's going to plan transmission. Who's going to plan transmission? Is the California ISO going to plan transmission? Are the utilities going to get together as a group and plan transmission?

Are we going to have one planning entity in the West that FERC establishes or maybe we should have a West wide regional stakeholder process? That'll be great. That'll only take 25 years.

So if you do-- if you change-- once you change these solutions or these-- once you put forward a solution that solves some problems, you just have to think about the fact that it's going to present other ones. For me, although on the one hand broad cost allocation makes sense, on the other hand, it says to me there's going to be a lot of competition for development. And who's going to decide?

And are there going to be in-- if the utilities in the West get together and decide what transmission is going to be built, what are they going to decide and how are they going to decide? And is there going to be a conflict of interest, because they also build generation?

Well, what if they have options on land in Montana? Should they be allowed to do that? Maybe we don't care. Maybe we don't care where we get the land from. And if Southern California Edison or PG&E can make more money by developing their own land, fine.

AUDIENCE: Quick question. You talk about cost allocation and sharing, but on the technical level, how are the electrons going to be managed themselves or would they be managed by some FERC overlying authority?

SUEDEEN KELLY: Well, currently, if we don't change the law and we don't change the policy, then we'll just do it the way we do it today. And currently, the electrons are managed by the regional transmission entities. And so in California, for most of California, they're managed by the Cal ISO.

In the rest of the West where there isn't an ISO, each control area, which is about the size of a utility, maybe a couple of utilities sometimes will get together and create a control area, manages its own. So in the West you'll continue to have multiple stepwise management of transmission unless you build a DC line.

And that's the discussion to build the DC line. Anybody else have any questions or want to offer any opinions or? Yeah.

AUDIENCE: So if you build transmission infrastructure for renewables, how do you prevent some states from building coal plants competing with them?

SUEDEEN KELLY: You don't unless-- there are discussions in the West, in particular, in the states that are siting lines about having a state prohibition on hooking up a coal plant. And then there are some places that say, well, we don't like nuclear either. And we don't want you to hook up a nuclear plant. And we know it doesn't emit carbon, but we don't like them.

AUDIENCE: Crunch fundamentally, talking about then policy kind of change in terms of dispatch order, you're not going to do marketable [INAUDIBLE]. You're not going to do economic dispatch. You're going to have to change the policies governing resource dispatch. And you also are going to get into the [INAUDIBLE], the physics of the system. And, fundamentally, fine. You build these huge renewable sites and site transmission. Well, lo and behold, I suspect the planner can tell you you're going to need some sort of a fossil or nuclear or something that can support them to manage the system.

SUEDEEN KELLY: Unless you-- I think you're right. Unless you plan it really well, and-- who's the professor that I just met with? Atmosphere and energy?

AUDIENCE: Professor Jacobson.

SUEDEEN KELLY: Yes. Professor Jacobson would say, if you plan it really well, and if you plan it on a big enough scale like in the West, you could actually design-- in theory I guess, you could design a portfolio of renewable resources so that instead of developing 6,000 megawatts in Montana, you've built a line and you developed a lot of wind all the way down and solar. And you could plan it so that there would always be enough solar to back up, or there would always be enough renewables to back up the intermittency of the other renewables.

AUDIENCE: Over what time horizon did this professor suggest that you put this in place?

SUEDEEN KELLY: The other thing that's happening in Texas, for example, is they're backing up their intermittent in renewables with demand response programs. And right now, you can do an economic dispatch of generation with wind, because wind's a price taker at the moment. And so you can actually dispatch your renewable wind in the-- you would think that maybe you need an environmental dispatch.

And I think that, ultimately, you're right if you want to do an environmental dispatch. But right now actually wind being a price taker, it's working, at least in Texas where they're doing a pretty good job of it, I think, of dispatching their wind under an economic system. Yeah, good point.

AUDIENCE: How do you think about energy storage reducing the costs or needs of transmission?

SUEDEEN KELLY: Energy storage is fascinating and it's really at the cusp of all new policy issues, because energy storage has traditionally, if we talk about traditionally, at least at FERC, been treated as transmission. And there's some advantages to treating energy storage as transmission, because it goes into how we recover costs for transmission.

And transmission is part of the monopoly. And all of the costs are guaranteed recovery. But of course storage is also a generation. It also produces electricity. So there is some argument to be made that you should treat it as a generator. And there are those entities that want it to be treated as a generator.

Actually in PJM we have a market rule that allows storage to be treated as a generator to provide ancillary services. And frequently the price for ancillary services in the middle Atlantic is so high on a real time basis that, even though storage is expensive, it's making the market and it's getting a profit.

So there are some storage companies that would like stores to be treated as a generator, because they actually see that they could actually make more money. And then there are some entities that want it to be treated as both, so then they could capture both revenue streams. and then there's a-- not a bad gig if you can get it.

And then there is another school of thought that says, you know what, storage should be its own category. But of course if storage is its own category, that only begins to provide an answer to the question, OK, so how do you recover its costs? But it is a fascinating issue that's just starting to come up and starting to be resolved in those areas of the country that have bid based auction markets, at least to an extent. Yeah.

AUDIENCE: If you could design a supply portfolio like that, and sort of optimize for producers' transmission costs by uploading them to a supply portfolio, would that violate FERC order 888, or I forget which one it is which requires a sort of unbundling of generation and transmission?

SUEDEEN KELLY: No. No. Because it would really-- I see where your question is-- because really, when you talk about optimizing the supply, you're really only talking about the generation.

AUDIENCE: Right.

SUEDEEN KELLY: FERC [INAUDIBLE].

AUDIENCE: If a utility had transmission assets as well as diversion assets, wouldn't that be sort of [INAUDIBLE] to that in the transmission wind generation? [INAUDIBLE]

SUEDEEN KELLY: We wouldn't let them do it. Now maybe it could happen, but we wouldn't let them. I mean there would be a rule against it.

AUDIENCE: Right. So it can't happen.

SUEDEEN KELLY: It can't happen. I mean anybody can break the rule but, no, it can't happen. Yeah.

AUDIENCE: What would be your ideal federal transmission goals?

SUEDEEN KELLY: Well, I think it's-- OK. Here's some of the things that I draw from what I've seen happen nationally. If we could come up with a national policy, it would be helpful.

Right now we don't have a national policy. And we're talking about enacting transmission reform outside of a national policy. And so what are we planning for?

We don't have a national agreement on it. And that's why the states can have this productive debate, and discussion, and criticism. If we had a carbon-- if we price carbon, if we had a cap in trade, or some bill that actually priced carbon, and said our national policy is zero carbon or reduce carbon, it would go a long way to figuring out what we're planning for.

And at least we would be able to say, like it or not, this is our national policy. We're going to pay for it broadly. Or if we had a national renewable portfolio standard, so that would be helpful.

The first thing, I think, is you have to figure out what you're planning for. Now if we can't have a national policy, politically I don't know that we can plan nationally, because without a national policy these regional differences about what we're planning for are exceedingly significant. And I don't see us getting consensus.

You could give it to FERC, but I think it would be folly for FERC to attempt to come up with a national goal. What makes California happy is not going to make Georgia happy. And if the only authority is because FERC said so, I think it will be litigated till the cows come home and we won't move forward.

So if we can't have a national policy for purposes of planning, then I think we have to plan regionally. So that's on the planning aspect. On the siting aspect, what I think should be done, what I think would be the most productive, is for the regions to get together, once you have this region, to get together and say, what do you want to do? What's your plan? What does the West want?

Right now renewables is more than an electron issue. And it's more than an environmental issue. And it's more than a way of life and a green agenda issue. It's also a huge economic development issue. These states, particularly the ones on the western side of the Rockies, are competing as vigorously as they can with each other to develop their renewables.

This is like the new-- this is the new resource. This is the new oil or gas. And these are states, many of them with economic development challenges-- North Dakota, South Dakota, Montana, Idaho, Wyoming, northern Colorado, New Mexico-- they want economic development.

They all want to send their renewables to California. They would love it. They hope that California doesn't decide to develop any of theirs. And they hope that California is willing to pay for long transmission lines to the Rockies. And they all want to send it to California.

So I'm assuming California doesn't care where it comes from, particularly if you don't want to develop your own. So ideally, politically, if you could get those governors of those states to sit down and say, OK, work it out.

They do want to develop, so you're going to have-- there's going to be a response. They want to develop. But they all want a piece of the pie. But right now is the perfect time, because that's what we have, a big pie.

We haven't sent renewables to market yet. And we have this opportunity to plan for the next 30 years about which ones we will send. Well, if you could get all the states in the west to sit down and say, OK, we want to take a little bit of-- how about you take a little bit of our solar?

Well, OK, but you have to take some of our wind. Well, we want some of our geothermal. If you could get them all together and work it out, then frankly they'd also work out the siting of the transmission lines. And everybody would get something. And they'd work it out. So could you do that?

I think that the-- well, actually I should say that the Western Governors Association started this initiative two years ago called the Western Renewable Energy Zone Initiative. And it actually is an attempt to do this. But it doesn't have a lot of umph behind it, because it requires them to make a lot of-- it's time, isn't it?

It requires them to make a lot of choices. So I think that the way you get them to actually make the tough decisions and come to an agreement is you give FERC backstop siting authority and planning authority, and you say to the states in the region-- not the PUCs but the governors-- you say you have two years or whatever to come up with a plan of which renewables you're going to develop, where you're going to put your transmission lines, and how you're going to allocate the costs.

And you guys can do whatever you want, doesn't matter. We don't care. But if you can't agree, FERC will do it. I think they need something to come to the table. So sadly, I should stop.

AUDIENCE: Suedeen Kelly, I think one more question and then I think we need to wrap up.

SUEDEEN KELLY: OK.

AUDIENCE: So one last question. OK.

SUEDEEN KELLY: You pick.

No, you pick.

SUEDEEN KELLY: No, I get to pick. OK, how about back there in the gray shirt.

AUDIENCE: Me? Yeah. Go ahead. Considering the cost allocations, if and when do environmental litigation costs become enacted, who will pay for that? For instance, if you think of it in terms of native species affect on habitat mitigation, who will pay for that and what industry will mandate those mitigation costs, for sitings?

SUEDEEN KELLY: That's a big untested assumption that environmental mitigation costs will be put into it.

AUDIENCE: So how does-- another question would be how do environmental mitigation issues get put into place, like if a state does not site a high density or high--

SUEDEEN KELLY: The only way-- there is no legal way to get it put in there.

AUDIENCE: Because of environmental issues. Who puts their foot down?

SUEDEEN KELLY: There is no legal way to do it--

AUDIENCE: Really?

SUEDEEN KELLY: --unless the individual state decides to, but it could be negotiated. There's no prohibition against it, but if you have a transmission owner that doesn't want to pay the costs, they don't have to. I mean they have to pay the costs of eminent domain, but most likely the costs of eminent domain will not include the environmental mitigation costs. But if you could work it out, it would be fine.

AUDIENCE: OK, well thank you.

Thank you.

This was fascinating.

[APPLAUSE]

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