

An Interview with  
TERESA MOGENSEN

Conducted by Marta Monti  
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**Marta:** Today is February 15, 2016. I'm speaking today with Teresa Mogensen from Xcel Energy. We've got plenty to talk about. Could you start by telling me when you became involved in the CapX projects?

**Teresa:** Sure. I'm Teresa Mogensen, and I'm currently the Senior Vice President of Transmission for Xcel Energy, and my involvement with CapX directly started when I came to Xcel Energy in 2007. So I was not around at the very beginning, but previous to that I worked for American Transmission Company (ATC) in Wisconsin, so I was familiar with CapX2020. I had heard a lot of the original work, and of course I carried on from where the founders, if you will, started. Xcel Energy has always been a founder and supporter of CapX2020, but my involvement began in October of 2007. That when I came to Xcel, and I started to head up transmission in March of 2010.

**Marta:** I know a number of utilities were involved in some of the initial discussions even though ultimately they did not participate. Was ATC involved in any of those?

**Teresa:** For the most part, no, because most of the focus was away from ATC general area. More of the focus was up in Minnesota, primarily, and the direct surrounding states and areas.

**Marta:** Had cost allocation for the lines been decided by the time you got here?

**Teresa:** Yeah. Where things were at when I arrived, it was in the regulatory process by that point. So projects were moving through the various state regulatory processes, and all the [Project] Agreements were being hammered out, and all the things that needed to be filed to support the various projects--that was all going on at the time I arrived.

**Marta:** Alright, that helps orient me. So let's talk about permitting, because there are some unique things that the CapX group did, such as filing one certificate of need application for the 345 kV lines. Could you talk about how that was different from your experiences with other projects in the past?

**Teresa:** With the CapX2020 projects, it really was treated as a portfolio of projects from the beginning. That was probably the biggest difference between CapX2020...insofar as the regulatory strategy. A lot of the story and justification for the projects were similar. The case for all the projects...it was a collective group, and it was a collective array of entities supporting it, so why not try to be efficient with the permitting. Those were the decisions that were made, and how we proceeded at that point was to treat it as a consolidated portfolio.

**Marta:** It was easier in the sense that had you applied for each project individually there would have been overlap in the studies and justifications for the projects. Was there anything about the process that was more challenging than normal?

**Teresa:** I would say there was a challenge in that anytime you do something different than you've previously done, there are always of new challenges with that. We ran into some procedural or statutory interpretation type challenges of how to treat the portfolio versus a single individual project, but nothing that couldn't ultimately be worked through. The bottom line is that it was all transmission, we were following the processes that were set out, and we were trying to do things in a way that made sense and that was efficient versus doing business as usual.

That was the general approach, really, was how can we be most efficient with this, and most efficient with the resources, and do something in a way that makes sense? That's a philosophy that I have had, and Xcel has, and all the other entity have too--let's try and do what makes sense.

**Marta:** That brings us back to--and I'm sure you can speak to this even though you joined after the initial conversations--the initial coming together of the group and how each utility was able to align themselves around this common goal of addressing the entire regional system, not just piecemealing it. Why was that so important for this portfolio of projects?

**Teresa:** And you know, it wasn't only once that we had to do that, with those technical studies as more and more information became available and you move forward in time, that the projects we had come up with initially were still the right projects and still made the most sense.

It was important to do that and study them as a group, deal with them as a group, because we really had approached the whole basis of need as a collective. It was an area-focus, a regional focus. Not any single utility by itself. We found the needs that we see emerging, or that we have in front of us and that we see worsening as we model the future. We have needs for supporting the energy policy direction of our set of states. How do we incorporate renewable energy into the mix. We had local area reliability needs, we have community support needs....the full array of things, and the philosophy in general is to say "how do we get the most efficient mix of projects to meet the full array of needs in front of us versus one single one."

The other key piece of that is to look at all the different options and then select the projects that were the "no-regrets" projects. You've probably heard that from others, but that really is the philosophy because when you are articulating need for significant investment, you have to say that, okay, we don't know every possible nuance of the future, but we're taking our best analytical basis for this....looking at the needs, looking at possible different futures, and figuring out what facilities made the most sense to support those futures.

So the initial work was done, and it continued to be refreshed as we continued to move through time and as we moved through different regulatory processes, and it proved out that the choices that were made did continue to make sense as we went through time and as studies were expanded out beyond the CapX utilities and into the overall MISO environment as well. I think the work was very well done.

Part of the challenge of being a public utility is having to make choices, and trying to balance things and trying to see into the future. You can't always see perfectly, but that's part of our job...as a public utility that is our duty and responsibility to figure out what kind of infrastructure is needed to support whatever the array of needs that we're chartered to protect, and serve, and proceed with that in a way that is timely enough to get the infrastructure there when its needed. It's a tough job, and not everybody always agrees with the choices, but that's part of what our job is as utilities. It's to make those choices, put those proposals out there, justify them, then proceed to implement and run the system. So we're actually delivering what we anticipated delivering.

**Marta:** So Xcel serves 10 different states. You're used to navigating different state [Public Utility] Commissions. Did you encounter any challenges in the need process that varied from state to state? I know with routing, of course, there are challenges, but those are a bit different--like having a line exit one state in one place and have it start a different place in the next state over.

**Teresa:** I would have to say there are always challenges. There is never not challenge involved with need because not everybody is going to agree when you're in a multi-stakeholder process. But fundamentally all the parties that ultimately needed to agree and approve, which is the Commission's, MISO, etc, ultimately did get there and heard the voices of all the stakeholders, and weighed the different facets and ultimately agreed.

The approach of getting out and meeting with as many different stakeholders as possible in as many places as possible was part of our approach to hear and understand their perspectives. We want to present the case--because again this is coming from our duty as a public utility to assess the need, figure out a solution, and then ultimately get people to agree to that and take it through the permitting process--we don't want to have surprises, we don't want to suddenly surprise people with a project. We want to say here's why and all the different facets that are involved with the need argument, and then work that into the siting and routing considerations, and here is why we have proposed this set of projects.

But in general, you never have a project where everyone agrees. You just don't. It's just part of the nature of the business. Ultimately, what we are trying to work towards...we're not trying to work for absolutely everyone to be happy, because that is an impossible goal, but we are trying

to work towards consensus. Everybody at least seeing that while they personally may not like it for whatever reason, but they see the full picture and they see why the utilities are going in this direction, and accepting it. If we can get to that point, where we have that consensus or acceptance, then that's probably the best we can do. It's not realistic that everyone's going to be happy.

**Marta:** Some of the segments tap into the wind resources available to the west, like from Buffalo Ridge for example. But it also reinforces lines to some of the coal plants, like in North Dakota. I'm wondering how the coal resources factored into the planning of the lines, and how the Clean Power Plan and the effects it will have on the future were factored into the planning.

**Teresa:** So, the transmission grid is a network. The whole point of the grid is to have many connections to that grid so that all different resources can inject onto the grid, and that the customer at the end will always have power, regardless of what is happening. So part of the challenge of figuring out the right facilities for a grid is a couple things: 1- Where is energy policy going? 2- What are the physics behind operating a grid and making everything work? So, coal plants are a part of the portfolios of the utilities, and we have to plan and operate the grid in a way that addresses the physics of making it all work, and supports the policy, *and* the economics that come out of that too.

We like to say that the grid is agnostic, if you will. It's not green, it's not black...you can't say, "Well this facility is only for this type of generation." Unless it's not a network and it's just one straight line. If it's not that one straight line, it's called a radial facility.

The key is in the mix, the whole thing. So you have to set up your grids so it is capable of delivering from whatever mix of resources are in play at any given time. Our challenge in designing and figuring that out is asking where the large renewable resources would be coming in from, where are all the other power plants right now, and then where are the small, community-based distributed generation type resources...where are they focused in? And then when you take that whole mix together, what's the set of facilities that will let you delivery whatever mix of those, which is going to be different levels at any different time, and meet all the requirements that we have to meet for planning and operating the system.

It's a mix of various factors, but it's saying that we want to be able to support the diversity of choices that are out there. The choices could be on a policy side, they could be on an economic side, and they could be on a physics side. But we need to set the transmission grid up to be able to support all of those things, and to support those over time. So it's the modeling, it's the forecasting, and then it's the balancing of all those factors.

**Marta:** How challenging was it to get that message out to some of the people who were opposed to this project?

**Teresa:** It's very challenging, because people come at that understanding from different perspectives. It's easiest if people have some level of technical understanding of it, because that gets into the nature of it. The biggest part of what we have to do is make this all work. There is a lot behind operating a grid 24-7, 365 days a year, with varying generation inputs and loads at any given time...a lot behind that. So if you have some technical understanding it's a little bit easier to explain.

Where we probably have more challenge is with people who are coming at it from primarily a policy perspective, who may not have the understanding of what it takes. Some of the policy people want to say "no coal, only renewables" for example, but from a physics perspective, that can bring challenges. If we had only renewables and we don't have storage, you know, renewables aren't on all the time, and people aren't willing right now to say, "Okay, I'll just not have power when renewable sources aren't there." Maybe someday people will be there, but they are not there now.

Nor do the rules and mandatory standards that we have to meet--they do not allow for that. So even if we wanted to, we couldn't do that. But that's where some of the challenges come in. When people want the choices that are made for utility infrastructure to support only one type of policy, or one type of direction, when the reality is they have to support a lot of different things. It's getting that balance and making those choices to the best we can with the stakeholder input and all the different factors in the economic, physical, and policy fronts to make that best choice.

**Marta:** Getting some of the renewable energy advocates on board happened early on. But having groups like Wind on the Wires and Fresh Energy supporting the projects. Was that something that kept coming up?

**Teresa:** The goals were mutual goals, obviously, because part of the root of what was behind CapX2020 was the state's Renewable Energy Portfolios and the state energy policy choices that were made to support renewable energy. With utility scale renewables, the sources for those tend not to be where the people are...where the bulk of the infrastructure is now. So for Wind on the Wires, advocates for large utility-scale wind farms, transmission was very important to them, to be able to bring their product into the market and off the ground.

That was a very good synergy there, so say, okay, for the wind energy goals and renewable energy goals to be met in the states and the region, we needed this infrastructure, and so those groups supported the infrastructure. It was a mutual benefit because we all wanted to have the infrastructure in place so the states would be able to meet those energy goals. Those were very good things, and lot of mutual support there. Probably, again when I said before about some of the policy advocates being a challenge...it wasn't those who wanted green energy, for example, but those who wanted *only* green energy and wanted to take away anything not deemed as

renewable. That's where the challenge comes in, because from a grid and a network perspective, you can't isolate and say that this facility is only for this. When you're integrating into a grid and a network, you're taking that mix.

What we're trying to do then, is say that to the extent that policy or economics or whatever supports higher utilization of renewable resources and lower utilization of fossil resources, we need a grid to be able to support that. To the extent that it goes a different direction, we need a grid to be able to support that. And we're moving towards that--towards a grid that has the ability to support higher levels of renewable energy.

So that's the challenge of the utility, is to be thinking about all of these facets. Again, as a utility we are bound to make those choices. As a Commission they are bound to judge those, and look at the costs of those, and support the policy of those, and together we need to come out with what makes sense, and then do that.

**Marta:** And as you said, there are people that will never be satisfied.

**Teresa:** Yes, not everyone, just as in anything, rarely will you get 100% on one side or the other of an issue. Our basic position is that we want to inform, teach, and get people involved. We didn't want to surprise people. We wanted to work with people the best that we could within the constraints that we had...say, to route something in a way that best addressed the issue that are there. So we absolutely want involvement, we absolutely want to work with people. We continue to work with people to get that best solution, and we hope for happy people. If they're happy, that's great. If they can't be happy, if we can at least get to the point where there is acceptance and we've come to a reasonable addressing of whatever the issue is, then that's good.

**Marta:** Going off of this public engagement bit, and reaching people early. That was clearly a strategic decision by the CapX group. Will Kaul said that we wanted to meet people at coffee shops and informal meetings before the formal public hearings. Is this approach different from other projects in the past?

**Teresa:** I would say that it has been an evolution towards that. That yes, it is probably different from the last time there were major projects similar to this, but I will say that going forward this is *absolutely* our approach that we are taking on all projects. We treat all projects this way, as far as getting that information out there, starting that engagement early. Partly because of the good outcomes we had with doing it in CapX.

I would say that it's been an evolution over time that certainly CapX didn't just spring out, but it was an evolution leading up to that where the more we can get people involved early, and have them be informed...people don't like surprises. Especially when you are involving their property, their town, their philosophies. To the extent that people want to be involved, we want to facilitate

that involvement and we think that that time investment and financial investment in doing that really pays dividends in the later portions of the project by shortening time in some of the permitting processes or resulting in less money spent negatively in fighting over things. Rather, we can spend that in aligning things to the best we can with the interests of all the stakeholders involved.

**Marta:** Buy the Farm was really tested for the first time since it was passed in the 70's with the CapX projects. For the most part, when you think of 800 miles of lines, there didn't seem to be too many overall. Could you speak a little bit about the Buy the Farm process?

**Teresa:** The legislation, the statute was there, so the question then was how to interpret the different definitions within the statute and carry it out. If there is a law, we are going to follow the law. That's the bottom line of it that happens in any project with any law. So with that as a backdrop, this law was somewhat untested and hadn't been used in a significant way. We ran into figuring out how to interpret these, and wanting to make sure that when we were "buying the farm," that the farm qualified under the law for that, and that the prices and things for that made sense as well, because everybody is paying for that.

The cost of buying the farms went into the project, and everyone pays for that. It's under a sense of financial responsibility to all of the people paying their electric bills that we set the right precedent, and that we follow the law correctly, and interpret the law correctly so that the overall project costs that people are paying for is the right cost, and is the minimum cost appropriate given the set of circumstances.

There was some controversy in some of the cases about some of that interpretation, but our intent behind it was to say, "Okay, we are going to follow this law. What is the interpretation of the law? What properties qualify? How do you deal with the compensation for that, and then what is the impact on the overall project cost?"

**Marta:** I guess I hadn't realized that the Buy the Farm costs were wrapped up into the overall project costs. It makes sense, where else would they go, really.

**Teresa:** Yup, as part of the project costs. Some people thought that it was coming out of the utilities, but that's not the case. It goes into the overall project costs which goes into the rate base which is then paid for by everyone who is paying their electric bill.

**Marta:** What were some of the most important benefits of having this collaborative approach to project management and managing all these projects at one time?



**Teresa:** Because we had a large amount of work to do, and a large amount of procurement of all the materials and services needed, we were able to consolidate some of that into a Project Management Office (PMO) type approach, and I'm sure other executives have talked about that.

By having a PMO and the different agreements that we had set up to say, "Multiple utilities are going to own such-and-such project, but one utility is going to be the construction manager of it and we will have agreements to support that. And then here's how we deal with managing the activity going forward...all the problems and challenges, and making the financial decisions."

So we had governance set up around that, for working with the partners, and then we had a PMO office set up to look for economies of scale, to set up good processes for teeing up information for all the project reporting, for working with our contracts and contractors, for establishing certain standards, for managing safety, and all of the million different facets that go into executing a large construction project over many, many miles.

We kind of liken it to the building of Vikings Stadium, but we'd be building probably a couple of them and over a lot more miles than one site that you have control of. So really, the focus was on how do we find efficiencies and find a good positive way to managing it that lets you do all those things the most economically as you can.

And, that supports innovation and different things. There are a lot of utilization of helicopters and other techniques like that, that helped us address things like environmental concerns. We would use helicopters so weren't involved on the ground.

Dealing with all the different permitting aspects, and making sure that we dealt with all the unique permit elements associated with each of the different properties at different stages at times of year. We used a lot of construction mats to mitigate impacts on churning up the ground, or being able to work in wet areas by virtue of putting these mat roads to allow us access with the equipment.

Our overall philosophy was minimizing cost, making sure we addressed all requirements- whatever they were-associated with permits and schedules and everything else. Then doing it in a way that tee-ed up information to the right people at the right time.

**Marta:** One thing that has been mentioned a lot is the sharing of best practices. It's there internally within the CapX group, pulling from each organization involved. One person mentioned that after the Bemidji project, one of the earlier projects, there was an evaluation of done with best practices identified to use going forward. Am I remembering what this person told me correct? Do you remember it?

**Teresa:** Lessons learned is something philosophically that's very important to Xcel Energy, and then to really all the CapX partners. But absolutely. Different projects were going at different rates, and to the extent that we encountered something and figured out a way to deal with it in one of the projects, we wanted to take that best practice and make sure we brought it into the common knowledge and carried it forward.

Yeah, I would say that all the different utilities came at things a little bit differently based on their experiences and their particular service territory perspectives, so everybody learned from each other and then learned from our collective experience working together on the CapX projects, and took those learnings into each subsequent project as earlier ones finished.

We definitely did do some formal lessons learned collecting analysis and putting them into our documented project practices, standards, and approaches and thing like that.

**Marta:** I'm assuming you think that was beneficial, but was the difference from the earlier projects to the later projects noticeable?

**Teresa:** Absolutely! Yes, I would say definitely creating a base of knowledge, a base of collective knowledge...because again, people weren't used to working together in quite this way, so you're kind of paving an unpaved path, and as you get that going, then I don't know I guess it's more a paved path and you're improving the road as you go.

But I'd say definitely from a practices perspective, and a techniques, and level of knowledge, all the entities benefited from having worked through this process together.

**Marta:** One of the things that I've been wondering and thinking about a lot is if the CapX project was successful because it was the right people, right place, at the right time, or could it be replicated in other states or parts of the country? As someone who does work in a broader area than just the Upper Midwest and Minnesota, do you have some thoughts on this?

**Teresa:** Yeah, it's kind of a question of is it something that's repeatable or was it something that was circumstantial to a particular time and place. I would say definitely, I think it's repeatable, but to be repeatable you need some of the aspects that were part of the specific time and place. You need to have a common cause, and you need to be able to define a win-win for everybody who's involved.

So, you need a common cause to bring you together, to say this is something...for example, a regional need...it's beyond any individual utilities own area, so it makes sense for us to do something together, some common driver. Maybe the common driver could even been a state or a region says that the utilities need to work together to come up with something. But you gotta have a common driver.

And then for any deal to work, you have to have a win for everybody involved in in. If it doesn't make sense--and you can define "win" in a lot of different ways--but meaning that it makes business sense, philosophical sense.

So you have to have a win-win and a common driver, and if you do, then you have to have the relationships. I think relationships are really important, and having a relationship means having something that is beyond a specific situation but you're interested in a relationship that is more pervasive than that. If you don't have that, and you're not willing to put work into maintaining it...just like a marriage, times aren't always smooth when you're working together on something or trying to come together on something. So you have to have a level of trust, that you have both good motivations and that you're trying to get somewhere together, and that you can work through whatever bumps that you're gonna have together. So there has to be a certain amount of trust and willingness to align with each other and hold that coalition together through the inevitable bumps and bruises and problems and other things that are going to come.

I think it is absolutely repeatable, but there are some conditions to it that have to be there for it to be successful.

**Marta:** You have a pretty optimistic take on this. Some people attribute "Minnesota nice" as the reason this group could cooperate like they did. I think there are the policy drivers there, which you mentioned. There are FERC orders that tell RTOs to play nice together and plan together, but we don't necessarily see this level of cooperation everywhere now because of it.

**Teresa:** Certainly, we have a culture of expectation that we play nice together, it certainly doesn't hurt. But could it only happen in Minnesota? No! I don't think it could only happen in Minnesota. I think there's opportunities for it to happen in a lot of places, as long as you have the willing parties that are willing to do some of that.

Part of that willingness means, "I win and I let you win, too." Versus, say Xcel Energy could say, "Well, I could do it all myself, I've got enough money. I want everything." ...If we wanted to do that, to say we're the big dog, well maybe we could, but does it really make sense to do that? Does it help the cause longer term? Does it allow for us all to meet our collective goals? Does it just bring about a bunch of future fights? If you look at these things with a logical business perspective, in my mind, it makes logical business sense to work together.

It makes logical business sense for us to do things where we all can have a win in it, and we all can do something together. Maybe I don't win as much, but I still win. And other people win too. That's the attitude that you need to make it successful, because if the attitude is, "I only win if everybody else loses," then you're not going to have a coalition like that. It's not going to work.

I think that's an important thing, and it gets to the personal level that's needed to advocate for this within the companies, and then the companies themselves, that they are willing to allow for that. Sometimes either the personal character or the company character isn't going to line up with that, and then you're going to have trouble holding something together. It's all those factors that are coming together, and then a willingness to maintain that relationship and see that value. Being able to say, "Yeah, I could get 100, and I'm gonna take 50 instead because it makes sense for the long-haul."

**Marta:** Do you see the CapX projects as an opportunity in the future for utilities to work together like this? It might not be on transmission, and it might not be all 11, but it does it make it easy to do something like this in the future?

**Teresa:** Absolutely it does, because we have a base of success, and we have relationships. It supports working together on similar things, or exploring things in perhaps a different way than we might have done before CapX2020 because we have built relationships, we have built a precedent of success, and we see value that has come from that collective that was not there before the collective. So, I would say yes, it does make it easier to work on future things once you have a base of success and familiarity to work from.

**Marta:** Would you say that it's different this time around with the CapX project compared to past projects that certain utilities might have worked on together?

**Teresa:** Yes, I would say so. That has been my experience from my Xcel perspective. This CapX2020 project has gone so much deeper and so much broader, and over so much time associated with it that it has built a different kind of relationship than previous.

**Marta:** What haven't I asked you about that you think we should talk about?

**Teresa:** Nothing comes to mind. I think it was good to talk about the win-win philosophy, which again I personally believe in, as well as being part of the overall CapX, and just the innovation and value of hammering out a relationship and a collaborative that works. I hope in the future that others will be able to do this, but we will be able to continue with it and that we'll be able to continue to do this thing in other areas, as well. And in other industries in things where it makes sense to look at, hopefully it can be a model for that.

**Marta:** What other industries come to mind that you think could use this model?

**Teresa:** I'd say other industries that are kind of this mix of public service and...infrastructure, I'd say. That most immediately comes to mind, because you have telecom industry, you've got transportation, you've got other things that are wide-reaching where you have some sort of a regional common goal and different providers. I'd say those could all be good possibilities for

doing something like this. It's kind of the uniqueness of regulated, infrastructure providers that have a very broad reach and impact a lot of stakeholders.

**Marta:** Well, this seems like a good place to end. Thank you for speaking with me today, I really appreciate it!

**Teresa:** Thank you, you too.