

Dan Smith

VP of Electric Service
Delivery at Austin Energy

Interview with **Dan Smith**

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Dan Smith is the vice president of electric service delivery at Austin Energy and whether he likes it or not, he is a Legend. Dan is in charge of electric service reliability and he has done a number of roles at Austin Energy before growing into his current role. Alan Ross spoke with Dan recently and here are the highlights of that conversation, which we hope will enlighten and inspire you.

Transformer Technology: Austin is arguably one of the top five smart cities or leading cities. I think Austin is the fastest growing city in the country, as every time I go there, I see a new skyline. Can you tell me a little bit about when you started with Austin Energy and where you are now? Why do you have a love affair with Austin Energy and the city?

Dan Smith: I came to Austin Energy 16 years ago. At that time, I was working in the semiconductor industry in Austin, but I also had responsibilities in Germany and Japan. I got an opportunity to join Austin Energy as a substation relay engineering manager, but I didn't have a lot of utility experience other than just interfacing with them. But somebody thought that I had the leadership skills and the aptitude to come and learn it, and that really started a love affair on the utility side.

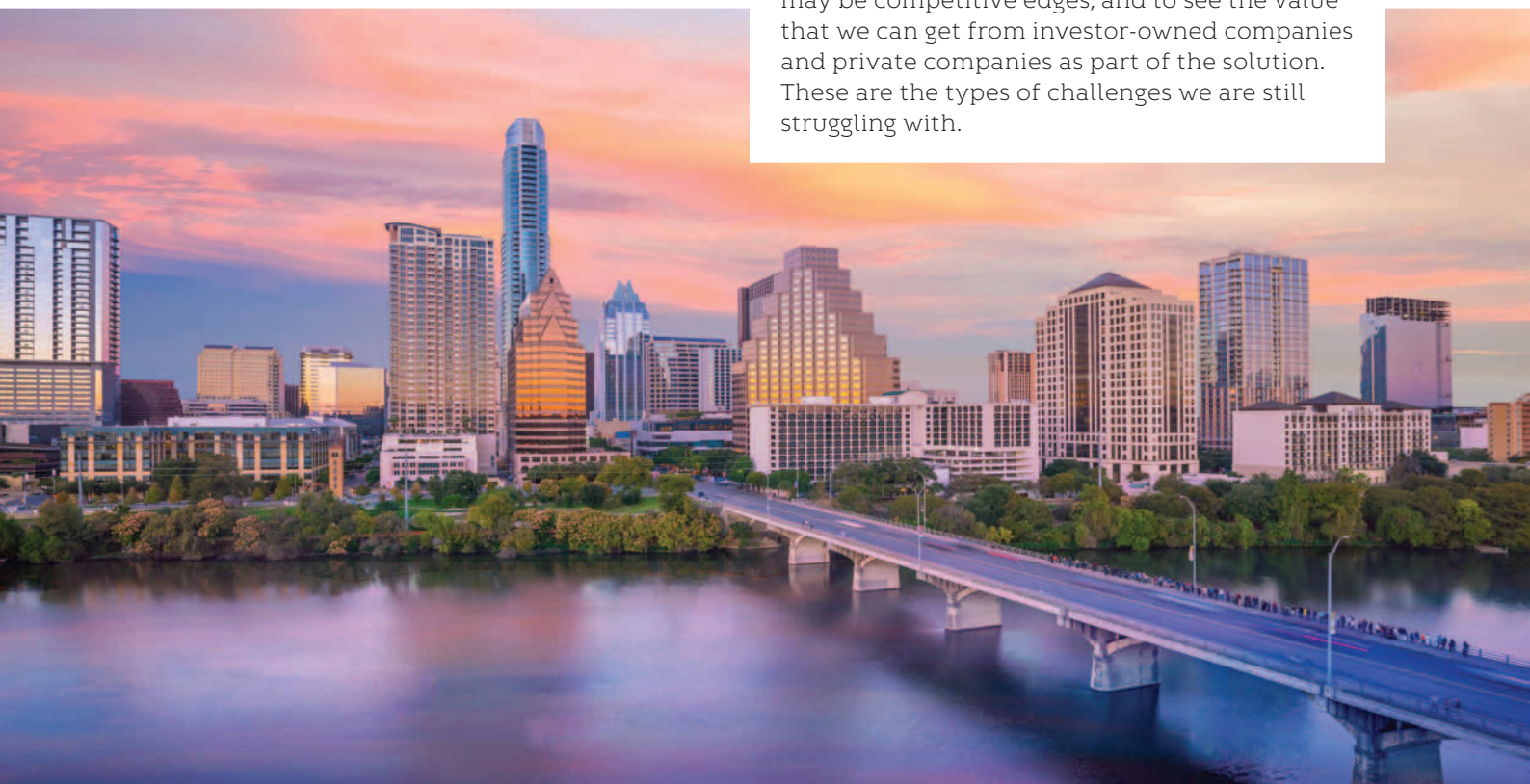
I've been in the electrical industry for over 30 years. However, it was during that transition to the utility business that I really felt at home and I've really enjoyed the opportunity to work for a community-based utility like Austin Energy and serve the community and a customer base in a more holistic way.

I worked in substation relay engineering for a number of years. Then I became the director of a transmission substation, moved on to become a smart grid system operations director and finally the Vice President over the T&D arm, electric service delivery.

TT You lead a field service group, but you also have a very innovative group for digital, diagnostics and innovation, which is more of a Smart Cities effort. Before we talk about Austin as a smart city, where do you think we are as a country in this effort? What does that even mean?

DS I think we are somewhat in an infancy stage. One of the interesting aspects is that the whole concept is becoming more holistic than just cities. We now look at communities, regions and areas, and ultimately the connectedness is going to move far beyond just the city perspective. And that becomes a real challenging element.

A real struggle for us is to get all these disparate organizations involved that span both the municipalities and the private and the public sectors to work together and deal with what may be competitive edges, and to see the value that we can get from investor-owned companies and private companies as part of the solution. These are the types of challenges we are still struggling with.





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For example, in Austin, small cell technology is something that's just now being introduced into our area, but that's a competitive space. So, how do you provide competitive opportunities while at the same time making sure that you are providing services for all?

A good example is downtown Austin, which is a targeted area, and then we have other outer portions of the city with underserved people where there are not the same revenue opportunities. So, this is the mix that a public entity and a municipality needs to be cognizant of when we are trying to roll out to smaller cities. It is about realizing that you're trying to provide services for all, not just for the ones who can afford it.

TT We know there is a move throughout the world to the smart city, but some of the older cities struggle with the idea of competing in a world where you have limited resources. Austin is unique in the fact that it has a lot of resources that other cities don't have. There are a lot of cities like Austin throughout the United States that are fast growing and while that offers opportunity, it's also a lot of challenge.

Last year you made a speech at the 2018 Electric Power Reliability Summit (EPRS) talking about distributed energy resource (DER). Can you tell us a little bit about how DER, solar and wind are affecting Austin?

DS I think in general terms we are managing quite well. What we have done at Austin Energy is try to incentivize levels of distributed energy resources, not only at the residential level but at the commercial level too. Then we are putting this out into the grid scale type of installations, although not at what I would call bulk utility or Power Purchase Agreements where you are dealing with hundreds of megawatts, but that is certainly part of the solution. What we are seeing moving forward is our ability to handle much more distributed energy resources than we initially thought we would.

Initially, we believed there were some limits to what you could do because of running into voltage and protection related issues, but we found that they have not been a constraint for us. And for the foreseeable future, we think we can technically manage that. I believe that the future opportunity is how we can use DER as a greater asset to us, which is posing the challenge of who controls that asset, or who at times may control the asset.

What we see is that the state of California is leading in this respect more than we are, as they use smart inverters. Smart inverters are able, for example, to both support feeding VARs into the system and provide opportunities for a utility to at least at times control the asset and incentivize the customer, which provides some unique opportunities that may help utilities avoid installing more traditional wired assets. What if we had the ability to better control certain assets that the customer may own? Those are some of the challenges that we see moving forward.

Still, at this particular juncture we are able to handle the amount of DER that is happening. However, I think part of the coming change is that while we have been focused on rooftop solar, new assets are beginning to sprout up—and these are energy storage systems and electric vehicles. They may turn out to be considered a distributed energy resource in and of itself.

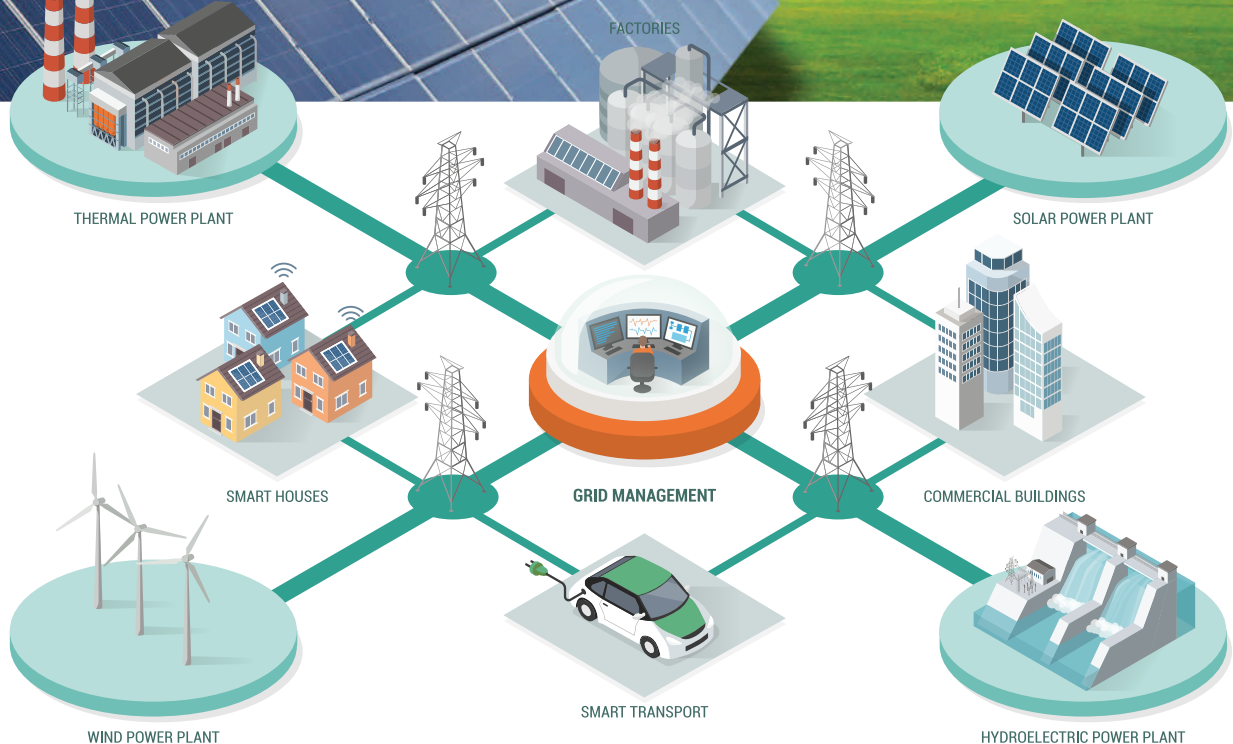
Another asset to consider is load management tools. They have the ability to load shape through some of the traditional methods of smart thermostats. But then again, what if we were able to go further, either through signals or control and shape that load where you might operate certain appliances to times when it's non-peak and flatten the load out; or make it match closer to resources like renewable energy sources like solar and wind? That is another asset class that most of us in the utility world are now considering a DER as well.

TT Here is one concern. We have a step-down grid. We generate power, step it up across the nation, step it down, step it down, turn it into a 110 outlet and everybody is happy. Now with DER, the pattern is step down - step up, step down - step up! Is the smarter inverter going to fix this, considering that the asset that is being stressed the most is the poor transformer, however, the transformer is built to be a step-down unit, and now it's become a step everywhere asset. What is the impact of smart inverters and the change to DER on the heart of the system - the transformer?

DS This is a good question. We don't see the penetration of, for example, rooftop solar as a problem that could not be managed. What we do have more concern with is a ubiquitous charging system, which is becoming people's homes. As more and more people put an AV charger at home and are charging at night, and then you couple this with the air conditioning load and a hot summer evening - this is the point where we anticipate to start seeing transformer loading issues.



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Safety is the most important value in your organization that has to be built on desire and not compliance-based culture.

TT Moving on to safety, we understand this is a passion of yours. How do you affect true safety behavior amongst your staff?

DS Thank you for bringing that up because I am passionate about safety. I believe that for companies to be truly successful, whatever their mission and products or services they provide, their success will depend on how well they live out the principle that **safety is job one**. This is the most important value in your organization and what really starts to move the needle on this is culture. Regardless of how many policies, procedures and rules you put it, and the right tools you put in people's hands - what is really going to move the needle is changing the culture.

You want to move from what I call a compliance-based culture to a desire-based culture. Looking at it from this perspective, if you are focused on compliance, then everybody knows that there are rules and if you follow the rules, one: you will be safe; and two: you won't be disciplined. This is your upper limit, the compliance. But what do you do at two o'clock in the morning when there is nobody there watching you? You could do whatever you wanted, and probably get away with it.

So instead, you want to move to a place that is desire-based, so that the employees know what the company is ultimately trying to achieve and then they are after the same goals for their safety. And this is reflected in the quality of the work they do, and also in how they look out for their brother and sister that they are working with. They are looking at the public interest as it becomes limitless in a sense of what they can do to improve and get better.

From my perspective, 60% of my 560 employees work in the field, so a large percentage of my people are out there, in harm's way, all the time. I couldn't write enough procedures for them to just follow and be safe. That book would be bigger than the height of this room. Instead, they have to always be thinking, and desire to be safe. *Why do I do that easy task of doing a walk around my vehicle or putting a cone out front? Why do I do that?* For them to catch the why behind these actions is really significant and it changes things - and this is where you go from compliance-based to desire-based behavior. This is not only life-changing for them in regard to safety, but it also affects all aspects of their job to the point where they become the integral part to the success of the organization.

In the last five years we have significantly reduced the injury rate at Austin Energy, and even more significantly, we have reduced the severity of those injuries while at the same time we have increased reporting and learned from each other. And this is primarily down to the focus on the culture. We haven't rewritten that many policies, procedures and safety manuals. Instead we have been changing our culture and making it safe to challenge things, encourage each other, look beyond the obvious, and getting closer to that why.

Editor's Note:

Shortly after this interview Dan Smith retired from Austin Energy however his passion continues as he is now the Vice President of Transmission System Operations at the Lower Colorado River Authority (LCRA), in Austin, TX.