The Property Line - Powering Progress: Overcoming Energy Challenges in Data Center Development

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Welcome to The Property Line, a commercial real estate podcast brought to you by Seyfarth Shaw's Real Estate department. The Property Line is a brief discussion of current market trends, bringing you insights from our acclaimed national team of real estate attorneys. Each episode focuses on a key takeaway for the busy real estate professional. Now, on to this week's discussion.

Denice Tokunaga
Hello, and welcome back to The Property Line. My name is Denice Tokunaga, and today my co-host, Chris Cottrell, and I are joined by Jeff Zygler, founder and CEO of Active Infrastructure, a national owner and developer of data centers. And Shawn Cutter, co-founder of EnergiAcres, an energy infrastructure developer. Thank you both for joining us today.

Shawn Cutter
Thanks for having us.

Jeff Zygler
Thank you for having us.

Denice Tokunaga
So I'll just dive right in you know, as demand for energy intensive developments like data centers continue to rise, it's safe to say the primary issue right now is, frankly, just getting power where you want it. What are the challenges you're seeing around this? Jeff, how about we start with you?

Jeff Zygler
Historically, in the United States, power was generated away from the large population centers because people didn't like to see the giant smokestacks or the environmental issues that could come from, let's say, a coal fired plant or nuclear plant. So power was generated out further away from the population and brought back into the populated area via transmission lines. With the rise in higher computing requirements and data centers, they are running out of the ability of the pipes that bring the power from those power plants to the end users.

So we're seeing the requirement of additional transmission lines as part of projects where, historically, you could utilize existing infrastructure and then the upsizing of existing infrastructure, which would require lines that are currently being used to be taken down and reconductored, to take it from one level of voltage to a much higher level of voltage.

Denice Tokunaga
Makes sense. Shawn, what do you think?

Shawn Cutter
I'm coming from Ohio and working primarily in the Ohio region. What we're seeing there, the number one, the number two, and the number three concerns is power, power ,and power. You're either delayed on interconnects and those, not only are you delayed, but the costs have gone up significantly. So add another zero to everything.

That's where we're at with the cost to even determine whether or not it is a possible site. Those backlogs and what Jeff just mentioned has really left parts of Ohio seven to 10 years out for a connect. So that's no power available, no way to bring a data center, or expand anymore. That's, that's what we're seeing in that part of the country. And we're hearing it's happening in others.

Denice Tokunaga
And it also seems, I don't know, based on your experience, it's not, not just in Ohio, but in, frankly, any jurisdiction. Necessarily, people jump the line also, if you will, of in line for getting power based on maybe credit worthiness, non-refundable, you know, big chunks of money that's being given to the utility company. I don't know, Jeff, your experience with that?

Jeff Zygler
Yeah, we've seen that throughout the country. So we have projects that are currently in process in Virginia, Indiana, Ohio, Texas, California, and Arizona, and in every one of those states we've experienced a delay in power or, as Chris mentioned, timelines that are not … you can't work with someone says 10, seven to 10 years, no one is relying on that. Hopefully it's shorter than that. And then you have users and tenants that have been in their buildings that are that are operational, that may be first generation or second generation data centers where they reserved, say, 40 megawatts, but have only been using 20 megawatts, but the power company has to assume that that extra 20 megawatts is being utilized at any time, because they have a legal document that allows that data center operator to use it, and if there's too much demand on the electrical grid, that's where you get brown outs and blackouts and all kinds of issues that nobody wants to deal with.

Some of those existing users have gotten smart and said, well, we're never going to use 40 in this building, so we'd like to transfer that 20 over to another building, as long as if it's in within the same off the same substation, where the same infrastructure, the utility is willing to work with them on that. But from our standpoint, so if we look at a utility in the Midwest, they're now requiring users to sign up for and guarantee 90% of their requested load for the next 10 years, where historically it was you put the request in and if you used it great. If not, there was no penalty. Now they're starting to put the onus on making sure that requirements and requests truly are going to be utilized, because there is an additional cost for the infrastructure to be built if needed, or it's also taking it away from someone else who will use the power.

Denice Tokunaga

And it's interesting. I mean, these are certainly the challenges you know that are impacting, presumably, site selection and the like. But I'm curious. I mean, what are some ways that you're finding are effective, just to ensure you have reliable energy for your projects, Shawn?

Shawn Cutter
We take an energy-first approach and bridge power using natural gas. So rather than be beholden to the grid and interconnects and delays, encode with a completely behind the meter solution. Behind the meter solution, driven by gas, can move far faster than any power project unless it's already built today. So we primarily focus on greenfield, off market sites. We can put these within data center regions, and provide data centers much more flexibility in where they're going to place their data centers and get the mission critical power that they need in order to operate.

Denice Tokunaga
Jeff, I think you're, you're probably looking at similar solutions. You know, necessity is the mother of invention. So, what are some of the measures that you were looking at?

Jeff Zygler
Correct, so historically, when we started looking at sites a decade ago, right? Or even three years ago, you first did your diligence on your environmental, your geotech, make sure there were no endangered species. Now, we're not spending a dime on any of that work until we know that there's power. Because it used to be, all right, maybe power is not going to be here in six months. It'll be here in 18 months. And you can you can deal, you can work with your end user on that. So, what we're now doing is reserving areas on our property for on-site power solutions. Those may be on-site batteries that can be utilized for peak shaving, and the utility runs those.

So, we'll basically give them real estate to plant batteries or another generation asset on our property to help manage the peak and troughs of the daily electrical usage in the region, which gives us more resilience, because without that, there could be an opportunity or higher chance that that grid goes down. It's over. There's too much demand on it, and now our backup generators are kicking in, which nobody wants. So just putting it on site, we're looking at gas fired turbines, hydrogen fuel cells, gas engines, because the US had does have good gas, natural gas transmission infrastructure, which can be utilized, as Sean mentioned, so long as you can get the commodity and the pipe is near you, you can utilize it. And that's what energy, how energy has been distributed throughout the country for, for quite a while.

Shawn Cutter
And maybe to add on to that, what EnergiAcres is doing, and Jeff is mentioning, we're sitting on top of existing infrastructure. We're not waiting to build something new besides a gas interconnect, and then you have the power available. And this is if you looked at the logos of how these projects are put together, you should see the same logos that exist for the utility. Essentially, what the data center expects is utility grid power, and you have to deliver everything that they're expecting in those areas.

And if you start with an energy first approach, you're not finding the perfect site and then figuring out over time, spending hundreds of thousands of dollars to determine, wow, this really wasn't the best site.

To Jeff's point, you start with energy, and you have 100% confidence the energy could be there. There's no question that there's energy to serve your project. You're starting with that premise, with the sites. And that's really where any large consumer has to start a project. If you have a large energy consuming project, like a data center, you have to start at the very onset of energy first.

Jeff Zygler
Sean, your technologies, and what you're doing and what we're seeing also is just as the industry has advanced, you no longer need that 150 foot tall chimney that's releasing your steam, or whatever the final output of the generation asset is, you can consolidate these, make them smaller wider, where they're no longer a visual or audio nuisance to the surrounding community, and you have areas that, in Northern Virginia, where a data center user installed nine turbines and nobody knew they did it. They're not connected to the grid.

It only came up when another project was moving forward and needed a zoning variance for putting turbines in, and someone highlighted that that already had been done and approved in the same zoning district. So, why was it needed by the second group. I personally went over to that data center parked on the street. You cannot hear those things running, and they are, in essence, giant jet engines encased in lubricant building.

Shawn Cutter
Yeah, we've had the technology to do this for half of a century, including the carbon capture and making things more sustainable. Data centers are the demand of our generation that are forcing function to rethink our infrastructure.

Chris Cottrell
So speaking of emerging technologies and trends, what are some emerging technologies or trends that that you guys are seeing that either you're using, utilizing, thinking about, or just generally excited about?

Shawn Cutter
To start first, absorption, chilling, using waste energy from generating power. We're doing that on site, about half of the energy released when you're burning that gas is heat to make use of that heat for a variety of different purposes, but most important, how much of a emissions and impact can you have on a data center if you can provide directly and using the waste heat from generating power. So much of what we've given up by having these power plants somewhere else is we don't actually make use of that extra energy that's on site, because that's done somewhere else and that's only generating power.

So, when you start thinking about a data center project as more of a ecosystem and how these systems connect together, I'm most excited about the technology now supports that we can put these things together, managing them in real time. There's complexity, but these are known complexities, and technology exists today to bring all of these together and to serve the largest demand for power that we've seen.

Jeff Zygler
Yeah, and I think you hit, one of the main items that we're seeing and working to try to incorporate into our projects is the heat. So data centers run by bringing cold air over a computer and heating that air up and expelling it from the building. But, when it's being expelled, it's not that hot. It's called low hundreds degrees Fahrenheit, but the exhaust coming from a generation asset is a lot hotter and can be utilized for whether it's community heat or transfer it into some other agricultural use. There's a lot more use for that hotter air that's coming off and utilities and municipalities are starting to get smart.

In California, there's a project, it's a 49 and a half megawatt data center, where it is part of a residential development, and they jumped to the front of the queue by taking that heat and utilizing it in their design to go through heat exchangers. And they jumped in front of everybody because of that method of their design. So people are getting smart on these. Instead of putting it into the atmosphere, see if you can grab it and utilize it for some form of operation that's beneficial to not only the data center, but also the community.

Shawn Cutter
Add one more, an example from Ohio, there's a city that there's already a hyper scale data center there and it said we can't take any more data centers, no thank you. We need jobs. There's no jobs for acre. We're now working with the county, and this is a county that's starved with power. Can't create the jobs to bring in and make use and create a thermal district for this very purpose, and it's something that that they're open to. So I could just reinforcing with an example here that the municipalities are getting wise. There should be other options. It's not just data center. What else can we do with this? And in our case, we're looking to support advanced manufacturing build out when you can provide heating and cooling within you know, a larger footprint, it's good for everyone. It's certainly good for the community, and open up opportunity to create more jobs.

Denice Tokunaga
Well, data center development, the challenges associated with that, as well as innovation, will certainly dominate the conversation for quite a while, Chris and I would like to thank you, Jeff and Shawn, for joining us today and sharing your insights and a special thanks to our listeners for tuning in. Please keep an eye out for future episodes. Thank you both.

Jeff Zygler
Thank you.

Shawn Cutter
Thank you.

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