

AI needs more than chips: Why power and grid buildout matter

Nadine Blaney [00:00:20] Well, AI's next bottleneck isn't chips. It's power. Fiona Wu from Magellan Investment Partners joins me with a closer look at how to play the AI boom beyond big tech. Fiona, nice to see you.

Fiona Wu [00:00:33] Lovely to be here.

Nadine Blaney [00:00:35] Why are we focused on power, instead of chips?

Fiona Wu [00:00:38] Because AI isn't just a chip story, it is also a power story too. You can have the best chips in the world, but if you can't get reliable power to a site at scale, you can run training clusters or build data centres. Power is becoming one of the real bottlenecks in AI. US government-backed research shows data centre demand has tripled over the last decade. And could even triple or double for the next few years. That's where utilities matter, because they are the ones to build the network, connect the load, and in some cases add generations. So, if you would like another exposure to the structural AI scene, power is an important lens.

Nadine Blaney [00:01:24] So power and utilities, and we don't often use the word utilities in relation to AI. We also, Fiona, often hear that China is in a better position when it comes to this power race, if we can call it that. So, are there opportunities in the United States or for U.S. power companies?

Fiona Wu [00:01:44] Yes, structurally, China does look better positioned in some ways because of its ownership structure allows fast grade build out and faster coordination. I'm saying this not just to please my dad, because my dad worked at a state grid in China for his whole career. But it helped explain why there's huge opportunities in the U.S. because there are huge catch-up investments ahead. So that's where your telecom comes in because a tech company don't want to become a power company. They don't know want to build a network or navigate utility regulations. But utilities are the specialist who can turn a data centre announcement into electrons flowing to a site. And the skill is real, traditional data centre is around 20 to 40 megawatt. A training data centre could be several hundred megawatts, in some case, one or two gigawatts. It's not just one building. You start to feel like you're dropping a small city into the grid. So that could be a once-in-a-generation capex cycle for all the utility companies.

Nadine Blaney [00:02:52] So, where are you seeing this show up at the company level so far?

Fiona Wu [00:02:56] So across our universe, we're already seeing a number of utility companies are lifting their capex spending meaningfully. So, for example, Xcel Energy lifted its capex by more than 30% in its most recent updates, supported largely by the large low demand, including Google data centre in Minnesota. Another good

example is Evergy in the Midwest. Also lifted its capex spending by around 25 percent to meet the rising demand, including the data centre activities in Kansas and Missouri.

Nadine Blaney [00:03:35] So that all sounds exciting. Real companies making real moves. What are the risks though?

Fiona Wu [00:03:40] It's a really good question. So, I think one of the biggest risks is affordability. When the market gets excited about AI story, the household sitting at home is asking a much simpler question, is my power bill going up again? So, utility have a fantastic growth opportunities, but if the household bill rising too high, it could create political and regulatory pressure. But that matters because utility return ultimately depends on regulatory support. And that matters even more because the household bills has been rising in the past several years due to inflation, energy cost, and extreme weather events. And the low-income households are most exposed. And the timing matters too, this year is a midterm election, and there are government elections in 36 states. So, elections can amplify the focus of affordability. But that said, the risk is not uniform. In a tighter power market, such as Pennsylvania, Maryland or part of the Northeast, affordability tends to be a sensitive topic. But in some of the Midwestern states, such as Iowa, it is generally less of a pressure point.

Nadine Blaney [00:05:02] You mentioned those gubernatorial elections, so electing a governor, I think in 36 states, which is incredible. So, tell us, how could that potentially impact utilities?

Fiona Wu [00:05:16] So the governors actually don't set up the utility rates directly, but they do appoint the commissioners. So, commissioners are the regulators for utilities and the governor more broadly shapes the political tones. As the election gets close, affordability tend to be a much louder issue. We're already seeing noise around the power bills, pressure. And more scrutiny over whether data centres are genuinely benefiting local communities or they're just shifting the cost to the residential. That said, affordability cannot look on its own. If a region under-invests and the reliability starts to slip, the regulators are more willing to support higher investment because at that point, the focus shifts to keeping the lights on. So, reliability still matters enormously. So for the story, it's not only a girl story. It is a balancing act among affordability, reliability and growth.

Nadine Blaney [00:06:16] Do you think, though, that households could end up paying for this power boom that's needed to fuel data centres?

Fiona Wu [00:06:25] This is one of the biggest misconceptions in this debate. If a tariff is designed properly, the large load user can actually benefiting other customers because those large load customer can observe meaningful share of the fixed system cost and improve the network utilisation. The simplest way to think of this is if a large user paying more into the system, or the fixed cost, don't have to sit with all the households. A good company example is Dominion Energy in Virginia. It serves the largest data centre market in the world. The residential bills have average 9% below national average and the data centre load was growing like 20% for the last 10 years. Another good company examples is Alliant Energy in Iowa and Wisconsin. The customer bills actually going backwards because data centres are helping reducing those custom bills. Then another thing I want to highlight is I see lots of utilities now proposing large load tariff, which to make sure the residential are not subsidising the large data centre expansions.



Nadine Blaney [00:07:41] So you're seeing this better tariff design and stronger customer protections. Is that across the board or where is that?

Fiona Wu [00:07:47] There's where jurisdiction matters. We have been identifying jurisdiction ways of constructive tariff design and the stronger customer protection as the names like Wec Energy in Wisconsin, CMS Energy in Michigan, and Evergy I mentioned earlier in Missouri and Kansas. The features we're looking at are such as upfront cash payments, the length of the take or pay contracts, the minimum load guarantee and exact fees. So, this is very important because it helps to reduce the risk for residential customer to subsidise all the speculative build up.

Nadine Blaney [00:08:29] So what you're saying, Fiona, then, is that utilities, probably one of the least sexy sectors, is actually a way that you can play the whole AI theme.

Fiona Wu [00:08:40] So investing in AI is largely based on the innovation market share and execution. The upside could be significant, but the earning path is normally a lot more volatile. Utilities offer a different value proposition. They are not building the AI; they are enabling the physical system behind it. So that can be attractive because the earnings are more stable and more predictable. And less driven by who wins the next product cycle and more driven by the regulated investment and the return framework around it. If AI turns out to be a bubble, those companies are still allowed to earn a return on investment capitals as the way it regulates. So, you are not exposed to meaningful downside risk. In a way, utility won't be a flash part of the story, the AI story. Be the most durable ones.

Nadine Blaney [00:09:42] Magellan Investment Partners, thank you so much.

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