

Founder/CEO at Extensible Energy - John Powers | Transcript

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Speaker 1: Welcome to Green Building Matters, the original and most popular podcast focused on the green building movement. Their host is Charlie Cichetti, one of the most credentialed experts in the green building industry and one of the few to be honored as a LEED Fellow. Each week Charlie welcomes a green building professional from around the globe to share their war stories, career advice and unique insight into how sustainability is shaping the built environment. Settle in, grab a fresh cup of coffee and get ready to find out why green building matters.

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Charlie: Everybody, welcome to the next episode of the Green Building Matters podcast. I'm your host, Charlie Cichetti, and I get to interview a green building professional somewhere in the world every single week today. I've got a renewables expert and Intergeneric got John Powers here with Extensible energy, John, how are you doing today? Take us back. Where did you grow up and where did you go to school?

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John: I grew up in White Plains, New York, in Westchester County, just north of the city. My dad changed jobs right about the same time. I was finishing high school, so the family moved west to Utah. I didn't want to go to school in Utah, so I ended up going to a place called Reed College in Portland. Close enough to get home, but far enough to stay away from home. I've been on the West Coast ever since. I loved Oregon while I was up there. My first job out of college was at Portland General Electric, and I've learned a lot about how the utilities make their rates, I know a lot about how utility economics work from that job. It's been quite a ride ever since.

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Charlie: While I'm in Georgia, my dad's family is from New York City, up the Taconic Parkway, all the way up towards Hudson and Albany. Portland, Oregon, a green city. Probably a pretty fun place to go to college at the time. How did you first start getting into sustainability?

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John: It was in college I studied environmental economics and while I was a junior I went to see Amory Lovins speak and I was hooked. He hit me at the right time. Soft energy paths were so outside of the mainstream and yet so well thought out. I really loved the angle he took on energy. You can look back at that book and there's a lot of individual facts you could take issue with, but the big picture he got right. That steered me on to this path for sure.

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Charlie: Amazing, for those not as familiar. Check out in the Rocky Mountain into just the think-tank and Amory Lovins. All through the seventies, they're coming out of an energy crisis like. What are we going to do? A little bit before my time. The work he's doing is phenomenal. Let's talk about some thought leaders. Who else might you really admire or look up to in this this movement?

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John: We do follow. For sure Carmichael Connor Bunch of their folks are doing some really smart stuff with interactive, efficient buildings, cares now on loan to the White House, where she's doing a program to to get all the federal buildings up to snuff. We also do a lot of follow the Brattle group, because Ryan Heretic and I'm a fork do some great stuff on more of the grid side of things, on what the value of load flexibility for the grid is. I do work at the Peak Load Management Alliance where I'm on the board of directors there, which is the practitioners group for what used to be called demand response, but really is how the grid is learning to interact with customers. Loads in more clever ways.

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Charlie: You're on Organ Green City. We're starting to line up this career path, maybe even a few years after your undergrad you decided to go get masters. What was kind of going through your decision-making at that time?

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John: My first boss at Portland General was a guy named Robert McCalla. He's an energy economist and it was clear from working with him for years that sort of the next step should be to beef up my education and I went to the phone program at Berkeley, never finished the PhD. I was happy enough to settle for Masters. I had to give up something when my daughter was born. I was working at a company called Quantum Consulting in Berkeley. Bruce Smith, Robert Laner and I were kind of the first three folks at that little consulting firm that we grew up to 100 and 4000 and 50 people at peak did a ton of work in buildings, mostly on behalf of utility clients who were trying to understand better how customers use energy and how they make energy related decisions. Those were the kind of questions we wrestled with under the guise of load, research, market research, demand-side program, sign and evaluation. We did a lot of work for utilities all over the country and the world. Probably worked for a 100 different utilities jobs, from a few 1000 bucks to ten million bucks of size. So did a ton of work as a consultant for the demand-side of the utility industry and then all the time at Quantum we had this sort of little software group that we didn't quite know what to do with. But I saw some opportunities and I spun that out into its own firm that I ran, called Energy Interactive. One of the first companies to put customer engagement software on the web for utilities, ways for customers to understand better. How could they save energy? How could they reduce their utility bills? How could they engage better with utility programs? That kind of stuff that was fun. We sold that on good terms to. It was successful venture back exit and I stuck around with for a couple of years. But it turns out I'm not a big European

conglomerate kind of guy. I left and started things up again as a start-up and in the right place.

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Charlie: You've got all this energy experience, the utility you mentioned. Demand before we move on. You're an expert with energy and utilities, just for our listeners. Can you help us under explain the difference between the demand and consumption right in the past? I've said he: how fast do you eat the cake and how much cake did you eat? But can you just kind of real quick? What's the difference in KW and kilowatt hours? Could you mystify that? Real quick

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John: absolutely would love to. First off, let's talk. Economists talk. You and I pay for energy by the kilowatt-hour at our homes, but a commercial building. While, yes, it pays for kilowatt hours, it also pays based on the highest 15 minutes of usage of the entire month. So that's a demand charge and it can be up to half the bill depending on the jurisdiction you're in in California it's up to half the bill in some other parts of the country. It's more or less so that demand charge. If you think about how fast you eat the cake, so think about when you drive. You're not talking about how far you've driven, but what's the fastest you drove on your entire trip. So if the cab pulls you over for going 80, it doesn't matter. If you averaged only 40 miles an hour during your trip, it's still 80. That's going to cost you a lot of extra money. Similarly, a demand charge, basically up to half your bill, could be based on the worst mistake your building made in the entire month.

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Charlie: That's a great analogy. To start using that one about the speeding in the car. That's a good analogy. Thank you related to that. Before I move on, I want to get our audience here. Why do utility companies give you incentives to save energy, rent your fit. They don't want to build

multibillion dollar powerpoints. They'd want to manage the grid, not have brown blackouts. Could you could you hit on that for a little bit?

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John: The first priority most utilities is reliability. They want to make sure that you have. Usually it's like no more than one outage per decade right. They really want to keep the reliability for all of their customers very high. Energy is quite cheap. Reliability is expensive. Reliability requires building a lot of infrastructure, some of it redundant, and so has very little to do with the expense of producing the power and every bit to do with the expense of keeping it reliable. Now we're adding more and more cheap distributed renewables to the grid, which is fantastic because that's helping to decarbonise the world. And that's what we're all about. But it does make it harder to maintain reliability when you don't know the exact output of these plants, minute to minute, second to second, hour to hour. So as we put more non dispatchable, that's fancy utility talk for variable, non dispatchable, renewable resources on the grid, we have to make the other side of the equation, the load side, more flexible. Load flexibility or demand. Flexibility is a term nobody was talking about even a year or two ago, and now it's a big priority for all utilities to make sure they can engage with the customer on the other side of the meter and take advantage of the flexibility of the usage in many of the loads in the building. That's what our company is focused on is making sure we can tap into that by understanding what the grid needs are and then understanding what in the building can be shifted from minute to minute and hour to hour to match-up more closely with the needs of the.

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Charlie: It's amazing. Well, thank you for demystifying that, and it seems like there's this huge need there, working between again all these distributed renewables, the reliability back to the utility company. Let's talk about your company that you founded 12 or so years ago, and then then I

will ask you to look back on some highlights you've put together this green and this energy focus career, but tell us a little more about your company.

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John: Extensible Energy makes lightweight, modern energy control system for small, medium commercial buildings. It's probably 90% software, although we do put a couple of components into each building so that we can communicate with it and control the loads inside that building. The software primarily lives up in the cloud, of course, where we can forecast what the whole building is going to do, forecast what the needs of the grid will be and then match the two up in a way that saves the most money for the end customer. We're a customer first company. We want to make sure the product works, saving the customer money: 20. Founded the 65, regardless of what the utility wants or what the grid needs. So that's like optimizing against those demand charges we talked about, for example, or against time of use, charges where utilities charge a different amount for on peak usage versus off-peak usage. Where we have watches, all of the flexible loads in the building that could be stationary battery behind the meter, that could be car chargers, electric vehicle charging behind the meter, but primarily in most buildings, that's heating and cooling. No one cares when the compressors run, they only care that it's comfortable inside, and that gives you a lot of energy that can be shifted from minute to minute and hour to hour. So that's our software, saves the customer money, keeps them more comfortable than they were before we got there and helps them to also control across multiple buildings. At the same time they own a fleet of buildings and control their carbon footprint or our comfort, control cost and carbon.

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Charlie: You've been doing this a while, your energy experience, the utility of the grid, then the software and the startup where you're at there, in California, and then it's like, okay, this is where we need to be. It makes sense to me. I think how do the renewables factor and is it important that

some of your clients do have some PV or some other renewables? Is that a pretty key component here that you really work well with?

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John: I'll say yes and no. The renewables can be onsite at the end customers sit or they can be any part of the utility portfolio as well. A lot of our initial customers came to us through solar project developers, because saving demand charges is especially important when you have solar, because solar's already taking care of a lot of the energy charges on your bill. But not demand. One cloud can ruin the demand savings in an entire month. We are very well with solar, but we have clients with and without so, on, their own facility.

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Charlie: Thanks for that. Let's look back one more time. You've pieced together the green building and this energy focus career. What are some highlights as you look back, what's on the proudest accomplishments list?

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John: I mean there's the silly stuff. I might be the first guy to ever put a load shape on the internet and like I said before, I ran some big projects for utilities and what not, but really it comes down to the people. In my opinion, the thing I'm probably most proud of is that I've given more than 200 people their first jobs in energy. I really place a priority on that. We engage in the Bay Area. You mentioned our Silicon Valley neighbors. We engage in hackathons and other things where we're trying to make sure we can tap into the talent. Again, I've nothing against Tiktok per say, but we need some ice points on this climate tek thing pretty urgently. We try and get people to stop optimizing the next click on a cat video and pull them into the more purpose driven climate, the and green buildings world.

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Charlie: I love that you love that job creation inspiring, setting some people on these, these kind of green and energy paths. Thank you for sharing. Help

us get through the difference between proptech, cleantech, climate tech. How do you sort through it all?

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John: We sit at the intersection of sort of proptech and sustainability. We work primarily in energy because buildings use 70% of the electricity used in the US right. If we're going to clean up the grid and electrify everything, you have to start with buildings in our in our view. We consider ourselves to be both a cleantech and protect company right. Energy control software goes into buildings just like any other component of of Protec stack. We interact with things outside the building. We interact with signals from the grid or utility operators. We interact with the output of the local or not so local solar. We interact with the revenue meter, which really most building management systems neglect altogether, which astounds me every time I discover it. We're making sure that the operating steps we take inside the building minimize your cost and carbon footprint in a way that keeps you comfortable and in control and sustainability.

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Charlie: It's a space that I'm strong to spend a little more time myself. Any other kind of special projects you could name anything, kind of know. You also, like you, said, help me to some startup. You also are involved with some of your trade organizations. What's a busy day for John?

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John: We're doing great project now with schools in the central Valley in California. So there's a school district that's piloting our software. They have solar on many of their buildings, including the to that were initially installed at, and the savings are going great. We're saving the money, keeping them comfortable. We're hoping that opens up the whole rest of the district. Schools were some of the first buildings to really embrace solar. They were able to finance it cheaply with some programs that were available as much as a decade ago. There's thousands of solar equipped

schools that could take advantage of a very low cost way of rolling their demand to go with that solar savings and keep the money in the classroom. Keep the money in the school, no need to send it off to the utility. We're working with multiple school districts in California in particular. In the Central Valley. We're coming to the end of the pilot period. We're going to be presenting the results to them. It's pretty exciting stuff. In the longer-term we are doing some work with Lawrence Berkeley lab project called the Calflex Hub, which is testing the value of load flexibility for both the grid and the customer. That's a really exciting project where we talk about that on social media quite a bit because we're trying to attract attention to the shared value of load flexibility between the customers and the grid, and after that you hit a lot of them right. I do in fact mentor some startup and I do some work with trade organizations, particularly that Peakload Management alliance that I mentioned earlier.

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Charlie: I can tell you really enjoy all this. I love to ask this question. If you had a crystal ball, what's next in this green building movement and this sustainability movement, anything you're reading up on?

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John: It's all tied to the commitments that forget that Fed, the individual states, have all made for renewable portfolio standards. Those are not going to be met unless we can get more flexibility out of the buildings we already have. A lot of the early LEED and other green building work was done around energy efficiency and materials, and that's fantastic. Energy efficiency is all about hardware. It's about better windows, better insulation and higher efficiency units and the rest. But grid interactivity and load flexibility is all about software and taking full advantage of load. Flexibility is going to help decarbonise the grid and the impact of buildings faster than anything else in the next five to ten years. If we can take advantage of the load flexibility that's already inherent in Malta, medium commercial buildings, that's more than a 100 gigon hours of equivalent Limon battery,

is a multi-billion dollar opportunity just in the US, probably five times that globally, and it's something we have to tap if we're going to meet the renewable portfolio standards that the states have all set. If we're going to get the stage renewables up and up and up to a 100% as soon as possible, you have to make the load side of the grid more flexible.

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Charlie: I think you're right. There's the mandate. If it's not this state, through this country, it's the company for 104, their own mandates. A lot that are going to say. This is how we're going to do it and this is why so thank you for that. Let's do some rapid fire questions. What's your specialty or gift? What are you really good at it?

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John: A good argument, learn more by disagreeing with somebody than I do with saying that guy's really smart right. Do a lot, will take a position to understand where the other party is coming from. I'll say one other secret, ultimate software co skill I have is I can break software by looking at it. No matter how many times my engineers test something, they always want to run it through me because I can cause unexpected failures, that nobody else can. I say that partially in jest. But it's also important for to put his hands-on the company's products and make sure that they pass the the sneaky breaktest. It's so many good habits, routines, rituals. Can we have a bad habit? I'd say I'd like to get up and walk first thing in the morning. It kind of gets my head clear and and sort of pointed in the right direction for the day. It doesn't hurt that I live in the East Bay in California and the weather is always good for going out for a walk. I'm a big walker. That's probably as close to a regular good habit as I've gotten. Is there a certain distance or loop like? What's the walking habit gives us a peek into the well. My wife really is religious about it. I am frequent rather than religious about it. So there is the Marian loop in the neighbourhood which we take together once in a while. It's maybe two and a half-mile and then there's a longer one. You can do if you are attached to a particularly good podcast.

You can you put on a good podcast and go for a walk first day in the morning. I learn a lot from listening to this and other great podcasts .

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Charlie: That'ss really cool. I think there's so much you know. Just as consumers, even with learning we want to pull what we want to pull right. Whether it's streaming services hear it's podcasts, it's we don't really like the world throwing stuff at us as much. We've got to have it available, have a brand behind it and pull what we want. I'm a fantom the bucket list. Not everybody is, but I am. I'm curious. Is there any adventure travel or you want to write a book with what's on the bucket list?

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John: More travel, for sure. I would love to do some more travel. We did the the whole Florence, Tuscany whatnot thing in Italy right before the pandemic. That was on my wife's bucket list. I advise anyone married to attend to your spouse's bucket list. You'd be amazed at how much funnier and sexier you instantly become. We had a great time in Italy. I'd love to New Zealand and maybe hopefully pull in some of the South Pacific islands on the same trip. Love to do a sort of slow, lazy circle in the South Pacific, sometimes with less elephon coverage coverage than the East Bay, as luck would have it soon.

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Charlie: This summer, post-pandemic my wife and I are planning to Florence, and Tuscany small towns are three. If there's another pin cast or two that you really would recommend to the audience, please let us know, but but also books. I'm sure if you like to pick up a hardcover paperback or if you like to listen audible. But is there a book you'd recommend? And

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John: sure I'll give a couple of books, actually one that I gave to my whole team after we had our product sort of at least stabilized and had begun shipping. It was something called the Checklist Manifesto by Atul Gawande:

Uganda is a surgeon and a brilliant writer. It's not a business book at all, but it gives the sort of when and where to use a checklist and how it can help you avoid repeating mistakes you've made before. It's a great tool for learning from mistakes. Some fantastic book. One of our engineers recommended and we kind of passed around the organization a book called the right kind of crazy by. I think it's Adam Stezler, something like that and he was a LEED engineer on Mars landers and rovers and he went through the what it's like to interact with the different engineering groups at JPL and how they are able to sort of sustain such high-performance in a team. High-performance teams are what we all need more of. So that's a good book too. I really like that one as I'm an energy. Not so still listen to the Energy gang, even though it's turned over a couple of times. I'm an energy energy, Gang The podcast show.

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Charlie: John, Thank you. Two questions. As we start to wrap-up let's look back on the career, any career advice you wish you'd have known a little earlier?

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John: It sort of goes to also what I what I tell folks now because I'm old and want to tell people things earlier. I tell people, go make a difference. That's a lot different than do what you're what you love or any of that. It helps if you love it, but it's more important that you're doing something that you know is making a difference, that you can see the impact of what you're doing. If you can go figure out where you can make the biggest impact and focus on that, I think you'll end up being being happy.

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Charlie: That's really good advice to look back on and it seems like you've done that. I tried. IWhat gets me out of bed in the morning is way more about what impact can make today than pretty much anything else. Impact and our listeners, you know everyone here does have some influence and

you can make impact. We're seeing that her John story. As we wrap-up let's say, someone, sting to this podcast. They're getting inspired. They're on to reach out on LinkedIn and said: I really appreciate it. That was a great interview, but let's say they're jumping in now. You help create over 201st jobs in this sustainability movement. What advice do you give to someone that's jumping in and just kind of encouragement for them as they jump in now?

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John: I'm going to go back to the answer I just gave, which is you know more than for myself. I tell others: go and go and figure out how you can make a difference, because that's what turns out to be the most motivating for most people is not necessarily either the most money or the most easy job or the most. You know anything like that there are plenty of advertisements about the toughest job you'll ever love or any of that. The things you end up loving are the things where you can see the difference you're making and just always tell people to go.

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John: Follow that words, wisdom here. So that's been the Green Building Matters podcast today. We've had John Powers on her coming to us from the East Bay, out there out of California. John, thanks for your time today. Everybody check out John on LinkedIn. We'll put a link, connect with him and check out extensible energy and just the good work he's doing, John. Thank you for time today. Thanks so much, Charley. It's been great. I just want to say thank you to our loyal listeners. We actually are celebrating. Over one year here on the Green Building matters had cast. Me and the entire team were stoked and just so glad you continue to listen every Wednesday morning to a new interview with Green Building professional here in this industry were just some pro tips that we want to make sure that you are getting straight from us straight to you. Thank you for listening to this episode of Green Building Matters Podcast. At GBES.com our mission is to advance the Green Building movement through vesting class education

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Charlie: Thank you so much.