Ep.3.08 - Jim Saber

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SPEAKERS

Announcer, Ed Clemente, Jim Saber

A **Announcer** 00:01

Welcome to The Michigan Opportunity, an economic development podcast featuring candid conversations with business leaders across Michigan. You'll hear firsthand accounts from Michigan business leaders and innovators about how the state is driving job growth and business investment, supporting a thriving entrepreneurial ecosystem, building vibrant communities and helping to attract and retain one of the most diverse and significant workforces in the nation.

E **Ed Clemente** 00:29

Hello, I'm your host today, Ed Clemente. And I want to thank a longtime friend, but also a person who's been in this position for a while but also working at the organization a while, Jim Saber. He's the president and CEO of NextEnergy. Welcome to the show, Jim.

J **Jim Saber** 00:45

Thanks for having me. I'm really looking forward to the conversation.

E **Ed Clemente** 00:49

Yeah, and I remember when I first met you, and we'll talk about how I had met you originally, but what do you tell people you run into and they go, what's NextEnergy? You know, it could be anything. What do you what do you kind of tell them what you think it is? And that represents the organization well for you?

J **Jim Saber** 01:07

Sure. So when I meet folks, and ask about NextEnergy, you know, NextEnergy, one, we're a

nonprofit corporation. Our mission is to accelerate smarter, cleaner and more accessible solutions for communities and cities, which is, fairly grandiose at that level of a mission statement. But we work to achieve our mission by building public-private partnerships, where, our industry partners can commercialize and deploy new solutions. And, the public sector, which for us is, down to the community level, city level, state and federal government level, where the public sector can really understand and invest in the solutions that will improve the quality of life for its citizens.

E Ed Clemente 01:58

Yeah. And in fact, you work then not only local government, but you've also done quite a bit, and we can get into a little bit more but with the federal government as well, obviously, you worked with the now-Secretary Granholm, but, governor, why don't you mention a little bit working with her way back? When you were there?

J Jim Saber 02:19

Yeah, gosh, we're going back some time now. But we worked with the governor's office and the MEDC. Really, NextEnergy was started early on in the Granholm administration, and became an independent nonprofit, through what was the Next Energy Authority Act. And we really worked with the governor's office, the MEDC, what is now EGLE and other groups within the state government to start to build out and establish what was then referred to as the alternative energy industry. And so thinking way back then, this is 20 years ago now, applications for fuel cells, new applications, when like solar energy was in its infancy, wind power etc. And NextEnergy, you know, worked with others to start to build out the supply and value chain for Michigan industry to be able to participate in these growing sectors.

E Ed Clemente 03:21

And you also, I don't know if you call her up on a regular basis now, but I'm sure you've had some interactions with the Department of Energy since she's been in the position, too, now haven't you?

J Jim Saber 03:32

Sure. Yeah, NextEnergy, we regularly partner with industry and others on Department of Energy-funded research, development and demonstration programs. So one of the programs we just finished recently was with Delta Electronics, General Motors and DTE amongst some other partners. And that was really to develop, test and deploy a 400 kilowatt DC fast charger, that would be able to charge an electric vehicle in 10 minutes. So now we're starting to mimic or get towards that gas station type experience. And that project was 50% funded by the Department of Energy. We're also affiliated with Michigan Clean Cities, which works closely with the Department of Energy, where we work really in, all across the state to deploy new mobility solutions and technologies that are going to reduce our dependence on fossil fuels. So a number of DOE programs all are in existence.

E Ed Clemente 04:41

Yeah. And I mean, just for your background a little bit. I know you went to Lawrence Tech, you're electrical engineer, I know you're an engineer, [Yeah, electrical engineer, yes.] So that means you actually know your stuff when you're talking to people.

J Jim Saber 04:56

Yeah, I know enough, I guess to not blow things up or set buildings on fire, but I kind of had a, I guess I didn't think it was, but other people thought it was fairly interesting background. I started out out of college working in the petroleum industry, where we were developing technologies. So this is back in the 80s. So a long time ago, but developing technology to let someone know if their underground petroleum storage tank was leaking. And, you know, went from there to spent a little over 10 years in developing lithium batteries. And then about five years in hydrogen fuel cells, in hydrogen fuel cell development before coming to NextEnergy. So it was kind of always in this, like advanced energy space, I guess. But I really didn't think of it as advanced energy. I just thought of it as my job.

E Ed Clemente 05:52

Yeah, and when you're in the middle of an evolution, you don't know, it's maybe kind of a revolution to sometimes, just because it's just what you're doing and stuff gets antiquated and new stuff comes along all the time.

J Jim Saber 06:05

Yeah, especially when you're like, in the when I was in the battery industry, I worked for Duracell. So, you know, a household name, type thing. And we were developing at this time, lithium ion batteries for cell phones and notebook computers. So, moving from there to the hydrogen fuel cell industry where you're working for a startup, you're in a totally different mode of operations, right? You're kind of like living for the next day and getting to the next day, and what's the next milestone that you can meet and all that. So, along the way, just a lot of different experiences.

E Ed Clemente 06:41

Yeah, the venture capital angles are always challenging I know in startups. I'm gonna ask you some more about fuel cells, but a little bit later. But also, we met originally, when a new organization that you were helpful in starting, I don't think they've changed your name too much. But it's a Michigan Energy Innovation Business Council. I think they just added the MI to it since I was actually the first president for it and starting it up. And you were very involved with that whole process. And I know it's still pretty active. And I just know that you were very helpful to me at that time. And I appreciate all the work and the guidance, and I forgot her name, who was your predecessor? She was very helpful too, she had the job before you. [Oh, Jean Redfield?] Yes, yes, I used to work with Jean as well, quite a bit. And so it was a good

experience to meet you, especially when I was trying to create, two different nonprofits at that point, because we had to also figure out a way to receive money, move it through. And then also, to make sure we had a membership-based organization, which is a little bit more of a challenge, especially if you've run a chamber of commerce before, you know what goes in with that. So why don't you start out a little bit because this is an MEDC podcast. You do a lot with the MEDC as well, why don't you mention some of the things, I know you mentioned Governor Granholm, but you're pretty active still with the MEDC, correct?

J Jim Saber 08:07

Yeah, we we are fortunate enough to be the technical program manager for the Office of Future Mobility and Electrification's real world deployment program. Right now, we just will be announcing a new round of pilots and deployments. So we'll be very close to deploying technology in 30 different Michigan communities looking to take the technology, someone's value proposition with partners in Michigan, deploy it, understand its value prop, understand what the next steps are, how does it mature in scale, and then how does it solve real world problems for Michiganders. And so we've been we've been working with OFME for the last four years now on this program, and it's growing, and it's expanded to support also testing at Michigan or OFME recognized testing sites. So if companies have new solutions that, it's not ready to go in the real world, but it needs to be tested at a test track, like the American Center for Mobility or at the Detroit Smart Parking Lab and other sites like that. There's resources that are available to support their development as well. So it's been a really exciting program. And it's been a program where, we've been able to kind of be front and center with OFME on what are some of the cool new things that are going to be really impacting our lives as we move forward.

E Ed Clemente 09:49

Yeah, and something you touched on a little bit earlier about, like all the local governments, but you're really like a statewide organization and you have projects around the state. Can you mention a few around the state.

J Jim Saber 09:59

Sure, so, I mentioned the affiliation with Michigan Clean Cities. And you know, some of the work that, we're doing with them around the state, we have a program, an initiative that's part of the EGLE, or the Department of Environment, Great Lakes and Energy. Their Catalyst Communities Initiative is called Michigan Next Cities. And it's a program where we've started with three cities, Dearborn, Flint, and Marquette. So with Marquette, we're actually working about as far north as we can in the state, to help these cities, one, build pathways and plans to achieve carbon neutrality, which is part of a recent, governor's executive order. But then, how do they plan for that? And how do we deploy solutions that we can replicate in other communities, but really show Michigan how we're going to get to where we want to be. And so we're starting out with those cities. Stay tuned for, some announcements in the next month or so, of what types of technologies and solutions that will be deployed in the cities. But think about how a city may

electrify their fleet and invest in new mobility technology, how they're going to decarbonize homes and buildings, and then how they're going to how they can best utilize new sensors and systems that will allow for a more efficient use and increase the reliability of our infrastructure.

E Ed Clemente 11:35

Yeah, and I would imagine, even in some of this, just because you've worked with the American Center for Mobility to that, there's got to be more, because we've had guests on before talking about like edge computing, and things like that. But I would imagine how the efficiency of your cars driving is going to be so much more improved, because that would be part of your Smart Cities program wouldn't it? Or similar to it.

J Jim Saber 11:59

Similar to it. Yeah. I mean, it's really how, in the Smart Cities aspect of it is how can a city or municipality, community, town, etc, understand and leverage the data that's being generated? You know, by all the things around virtually everything talks to each other. Now, our lives are so connected. How do they leverage that to really provide new services, create new value, and a higher quality of life for people who live, work and visit their cities. And so it's things that would be, we're not necessarily like preventing flooding within a city, we don't have the the systems and the budget to do those types of investments. But can we utilize technologies that would give the city the ability to inform residents that in a few hours based on all the sensors and the date, and the system's, within a few hours, you might see your baseman start to flood. You know, how do you protect against some of those things? How do you, and then, with those sensors, and technologies restore services faster. And that all comes from a sensor that can provide all kinds of data information to someone that has the ability to understand it and make better decisions from it. Same thing goes for like mobility. You think about one of the projects that, it's not necessarily part of the the Smart Cities program, but we're working with Electrion, which is an Israeli company, to develop a one mile stretch of inductive roadway in Corktown. Right? So, you know, here's the new technology that will be installed in the real world that so many others will be able to learn from, and take that data and that information to think of how do they better deploy city services, which could be more efficient use of public transit. It could be how does the city monetize the curbside. So when you're parking, you're paying for parking and charging in one transaction, and it's a more seamless experience and more easily managed, both by the city and for the consumer. So there's a lot of these types of applications.

A Announcer 14:15

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E Ed Clemente 14:32

You mentioned an international company or organization like the Israeli company, but do we get a lot of international sort of people that come here? Because they see Southeast Michigan or Michigan in general, as a place they can learn some things from?

of Michigan in general, as a place they can learn some things from.

J Jim Saber 14:50

Oh, yeah, I mean, I don't have the specific number at my fingertips. But many of the companies that have leveraged Michigan, the real world deployment program from OFME. They have, they're from outside of the country, they have been able to deploy their technology in Michigan, develop partnerships with Michigan, expand operations in Michigan, all the things because in the mobility space we like to think, but we know, we are like the center of gravity for all these things. And at some point, if you're an international company, you need to have relationships in Michigan in order to be able to scale your technology.

E Ed Clemente 15:36

It's good to know. And one other thing I note that, which is good for you, is that you call yourselves NextEnergy. So when you talk about energy, you're obviously in a lot of different fields, you're not just talking about electrification, could you explain just quickly what a fuel cell is for people that might not be familiar with them in general?

J Jim Saber 15:56

Okay, so I'll start out with the easiest thing is like a battery, right, so we have batteries in our cell phones and our computers, and now in our vehicles that you charge it, by putting electricity into it to charge the battery. And then as you use your phone, your computer, drive your electric car, you deplete that battery, and it recharges. So that battery produces direct current. And that direct current or that DC energy, it makes the wheels move. Fuel cells are, they're two different things. It's fuel, and then the cell. So the cell is very similar to a battery, it consumes the fuel, and produces DC, electricity and DC energy to power a device, make wheels move or whatever it is, whether it's like a stationary device, a generator or a vehicle, and then that fuel part is a tank of hydrogen. And so, as the hydrogen is depleted, you get to the point where you need to replenish it. So instead of charging a battery and plugging into a DC fast charger, or your computer into its charger, or whatever, you would connect a hydrogen source to it just like you would fill up a car with gasoline, and then you would you would refill that tank with hydrogen.

E Ed Clemente 17:30

I know Toyota is still kind of working on that angle pretty hard still, I think.

J Jim Saber 17:35

Yeah, I mean, so we're working on a hydrogen project right now with Shell, Toyota, Hyundai, Nikola, Air Liquide and Nel, to develop components that would allow you to refuel like a Class 8 truck in a similar time that you weigh with diesel fuel. Right? So, you think of that DC fast

charger, you can charge the car in 10 minutes. Now you could fuel this Class 8 truck that to let it go 500 miles in about 10 minutes.

E Ed Clemente 18:10

Oh, go ahead. Sorry.

J Jim Saber 18:11

I was gonna say, when we think of like fuel cells, I kind of think of like, what are the best applications for fuel cells? And like, why would one choose battery electric versus fuel cell electric? To me, you think of freight and logistics applications. And the bigger the heavier the vehicle and the longer it needs to drive on one tank of fuel, or one charge of a battery, those bigger, heavier vehicles lend themselves more to fuel cells. Passenger vehicles, like, you know, the Mustang Mach-E, and the Chevy Volt and others, battery electric will be the way to go for those vehicles, because we have the infrastructure, and we're building out more infrastructure to charge those vehicles in minutes to allow them to go to 300 miles. And so it's really freight delivery applications where weight is money. You know, if you think of having a battery electric vehicle that was so big in order to go so many miles, you would actually limit the amount of cargo you could carry. Well, that doesn't work for like a UPS or an Amazon or FedEx and those types of applications, and in some cases, in some environments, transit buses. And so it's it's really use-case specific, but there's plenty of opportunities for both battery electric and fuel cells.

E Ed Clemente 19:33

Yeah, that's, to me, it's just fascinating because I don't think fuel cell gets enough attention sometimes just because it's not as well known as, like, batteries are sort of in general, you know, because we all know about Duracell, for example, where you worked.

J Jim Saber 19:48

Yeah. I mean, I joked when I was in the fuel cell industry back in the early 2000s, the standing joke was, fuel cells were five years away from commercialization and have been for the last 50 years. And so a couple of things that's really accelerated and changed that, one, we started with hybrid vehicles, and then pure battery electric vehicles. Well, those vehicles use the same drive, the electric drive. And the other components after the battery, a fuel cell uses the same components. So, by working in batteries, we started to dramatically lower the cost of the electric drive system and all those other components. At the same time, the cost of the fuel cells come down. But one of the biggest changes that happened is back in the early 2000s, we talked about the potential for zero-emissions mobility. And we could only imagine a day where we have as much renewable energy and carbon free energy electricity that we're producing today, and what we're planning for the future. That was something we couldn't get our arms around 20 years ago. So now we have a pathway to really rid ourselves from dependence on fossil fuels.

E Ed Clemente 21:12

So we're down to the last couple of questions. But one other thing I didn't know, if you had any other sort of partners you wanted to highlight or any other stakeholders that you work with. I know you've mentioned quite a few, but I just thought if you had any other ones you wanted to mention.

J Jim Saber 21:31

I'll probably be emailing you after saying I shouldn't have forgotten a few.

E Ed Clemente 21:35

Don't worry about it. You've mentioned quite a few, don't worry. And you've also covered some of the other questions is going to ask you about trends and things. And because you've mentioned quite a few things already, actually, but the last couple of questions are, like, knowing you know all this stuff about energy now. And if you were like that kid that was going to be going to Lawrence Tech, what would you recommend a career for nowadays, because you know, kind of where the jobs are going to be a little bit, too.

J Jim Saber 22:06

Yeah, I guess I would say like for someone going into engineering, or someone going into the tech space, embrace chemistry, battery chemistry, fuel cell chemistry, just different processes for different materials, lightweighti and other things that are going to play a tremendous role in how we move forward. So chemistry is very important, understanding your way around computers and coding, embrace that, you don't have to have a degree in computer science or computer engineering to work in that space, but understand how that fits within what your field of study is. And I would say, really go into everything with an open mind. You know, when I went to school my high school counselor told me to be an engineer because I was good at math. And I grew up in the Detroit area, be an engineer, go work for an auto company. You know, I mean, that was kind of the feedback the guidance they gave everybody, I guess, if you're decent at math. And so, I don't think I've ever worked directly in the auto industry. When I was working with, at that time, Daimler Chrysler on fuel cell technology and other things, it was kind of like, that was really far out in the future, even for, you know, the other 99% of the people at Daimler Chrysler, right? And so, it's a little bit of just be inquisitive, you don't know what you're going to be what you're going to be doing, you know, life changes really fast. And keep your eyes open. And really, kind of try everything. Because you're gonna work in environments and companies where you're going to be asked to do so many different things. And don't box yourself into a corner.

E Ed Clemente 24:10

Yeah, just so you know, they told me to join the Marines in high school, because my grade point wasn't that great. Um, so anyway, the last question is, you grew up in Michigan, as you said, what're your favorite things to do or events or festivals or places to go?

J Jim Saber 24:26

Gosh, my favorite things to do in Michigan? Well, my favorite thing to do is golf. So I love to golf. We're blessed in Michigan with having so many great golf courses. I only wish that our golf season was a little longer than it is now.

E Ed Clemente 24:45

So do the golf courses.

J Jim Saber 24:46

Yeah. I love to golf. I love to spend time in the northern part of the state. It's beautiful. You know, there's hiking, there's fishing. I'm not a great fisherman, but I like to do it. There's so many different things to do. I mean, while we might might not like it when it's happening, because we have to drive through it, I mean, but four seasons. You get a little bit of everything here. And I've been fortunate enough in my professional life to have traveled all over the world. But I've always resided in Michigan, and I've always been able to call Michigan home. And when people come to Michigan from other parts of the state, or excuse me, other parts of the country, or the world for that matter, they're amazed at how inviting and friendly everyone from Michigan is. So it's just a great place to be and people who come to Michigan for business really have a hard time leaving.

E Ed Clemente 25:48

Yeah, it is an amazing state. I'm always amazed when people do come here from around the world, and they always go, wow, that's not what we expected. Anyway, well, once again, our guest was Jim Saber. He's the president and CEO of NextEnergy, longtime friend, and I appreciate you, Jim, for taking time to do this today. Thanks a lot.

J Jim Saber 26:09

Thanks for having me on. It's been a lot of fun.

E Ed Clemente 26:11

Join us next week where our guest is Tom Lutz. He's the executive secretary treasurer for the Michigan Regional Council of Carpenters and Millwrights. He'll talk to us about America's future workforce and how it's evolved.

A Announcer 26:26

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