PODCAST

Why America is poised for an Ev boom

ABB Decoded

America’s love affair with auto culture is profound – but the rise of electric vehicles is set to change the shape of the American automobile market. In the latest episode of ABB Decoded, we talk to ABB’s Bob Stojanovic, head of charging infrastructure in the US, about the great opportunities that lie ahead for the US Auto industry, and its consumers, if they make a culture shift towards EVs. But as Bob explains, those opportunities go hand-in-hand with many challenges.

Anthony Rowlinson: Hello! And welcome to episode eight of ABB Decoded, the podcast that tries to press pause on our fast-moving lives and shine a light on the technology and trends that are reshaping our world.

In this episode, we’re crossing the Atlantic, to America’s West Coast in fact, for a conversation with Bob Stojanovic, ABB’s Director of Electric Vehicle Infrastructure for North America.

A self-confessed ‘car guy’ and a mechanical engineer by training, Bob is deeply embedded in the mega-trend shift towards e-mobility that we’re witnessing across the globe.

His vantage point in California, one of the hot spots of US car culture, gives him an ideal view of the changes happening all around us, so he’s perfectly placed to comment on the pace of the transition to e-mobility in his own huge state and further afield in the US.

Concerns over air pollution from combustion-engine vehicles are driving ever-tighter restrictions on what were once called gas-guzzlers and have hastened the adoption of EVs.

The new Biden administration is also committed to transport and environmental policies which are likely to accelerate the production of zero-emission vehicles and the infrastructure that’s needed to support them.

But in a country the size of the US, big shifts mean major challenges as well as huge opportunity. Let’s allow Bob to steer us through some of the twisty freeways that lie ahead.

Bob Stojanovic: My name is Bob Stojanovic and I've been with ABB 22 years. I am the director of e-mobility for North America. So, I'm responsible for sales and marketing for North America, as well as the P&L for the United States, as well as sales and marketing.

Anthony: Thank you, Bob. And before we get into our discussion of e-mobility in the US, could you give us an idea of how big ABB is in the United States, and how important that market is for ABB?

Bob: Sure. The US is currently the largest customer market for ABB, representing roughly a quarter of group revenues. There's a few key stats on ABB's US presence. So, we employ nearly 20,000 people in the US. We have nearly 50 manufacturing sites among more than a hundred locations. All divisions are represented in ABB's diverse US portfolio.

We are widely recognized and represented across electrical distribution and wholesaling, so in the electrical contractor space, along with our GE acquisition and various other US brand name acquisitions over the years. ABB's become a much more visible brand in electrification.

Anthony: Great. now given the 2020 we all experienced, with the COVID-19 outbreak and its ongoing presence, how has ABB in the US weathered that storm – and what's the business outlook as we begin to adapt to operating in and around pandemic conditions?

Bob: I have to say it's doing shockingly well. I can speak for my own business for the e-mobility and EV infrastructure business, it was a tough time for the first few months for everybody because of the uncertainty. I think, as people began to understand how to deal with the challenges, business actually resumed in the industrial electrical space for the most part. Maybe the biggest impact was on commercial buildings because nobody knew the future of, of work but EV infrastructure charged ahead, no pun intended, and we've been having record sales since then.

Anthony: Bob, do you think, the change of administration has helped in that regard, particularly because Joe Biden has made quite significant public statements about the green economy and infrastructure investments? Do you think the e-mobility transition will benefit from that?

Bob: I think there's definitely a halo effect associated with that. I mean, I think those policies are not yet in effect, so there's no real sales attributed to that. But the industry is moving forward because it's just a better experience from a driver's standpoint and therefore the infrastructure needs to be there to support the vehicles as they come on the road. So, the automakers are doing their part by getting new vehicles out there giving customers choice. And then of course in the industrial segment some of the heavier vehicles are coming out as well. So, the last mile delivery vans are being electrified as well as the class six through class eight trucks.

Anthony: Okay, so where do you think North America is in terms of its progress towards higher levels of e-mobility?

Bob: We're still in the early stages. It's been a great experience, I think, for the early adopters because they recognized how good the technology is and, and how much better it's going to get, but there's a long way to go. And a simple way to look at that is if you look at the number of brands of vehicles, and if you look at the representation of electrification across their portfolio, it's still relatively small. And that goes all the way up the food chain through the delivery vehicles, as I said, or the class six through class eight trucks. So, it's very early in the adoption curve.

Anthony: But, do you see a phase of rapid adoption around the corner? It certainly feels like that in some parts of Europe – so is your experience similar? Or is e-mobility in the US developing in its own unique way?

Bob: So, I'm in California, so I think EV is a little bit more up front and center because of the trends. I'm not sure that that's the case for all parts of America, but we're definitely seeing the preparation for the massive upswing that you're going to see in growth in EVs. So, for example, we're seeing huge efforts by the auto manufacturers to get their dealerships up and ready to support the sales of these vehicles by adding infrastructure over the next year and a half. So that's, that's typically the first step. And then of course we see our more traditional network operator partners continuing to grow their business. And then we're also seeing new networks pop up. So, the infrastructure is being acquired by private companies. So, like I said, the policies of the new administration still haven't hit the market.

Anthony: Ok, so just in terms of the nuts and bolts for a moment, when you talk about newer infrastructure at car dealerships, for example, what sort of things are you seeing?

Bob: When they take vehicles, they're supposed to come basically almost fully depleted. So therefore, when they receive them, they need to charge them. So, you're seeing preparation for high power charging as well as lower level, what we call destination charging work and sit for a few hours. But in some cases, they're going to need a fast charge because they need to turn a certain number of vehicles or get them in the lot or get them ready for a test drive.

Anthony: I see. So, a customer could come up and say, "I want to test-drive… I don't know… a new F-150 truck, for example" and it might not be fully charged in the showroom… but a dealer would have to get busy on that right away?

Bob: Yeah. That's exactly right. I mean, you would never want it to be that way. You would expect that when the customer shows up, it's fully charged, so they have to decide on the best way to do that. So whether they're going to have a bunch of level two chargers where they're charging multiple vehicles over some period of time, or let's say somebody forgot, or even in the test base, I mean, we're taking service for granted for a second. So, if they get a vehicle into service and they need to work on it, they're going to need to test it, to test drive it and charge it up and run it. So, all these reasons they're going to need it.

Anthony: And presumably that's where ABB fits right in with our charging portfolio?

Bob: That's true. So, our portfolio is probably the broadest in the market, so we can do everything from a level two charger up through 350 kilowatts currently and we're going to be pushing, I think, the envelope on that even higher over the coming years.

Anthony: Thanks Bob. Ok, let's broaden the conversation a little bit, well quite a lot actually. Why does e-mobility matter in the US?

Bob: Wow, that's a big question. So, e-mobility matters from a couple of different perspectives. I mean, I think the most visible one that you're seeing in the media is basically to do with greenhouse gas emission reductions, and that, of course, is a result of the increased efficiency you get from electric vehicle and the power conversion. So that's pretty well-documented. Of course, it really depends on, on what the power mix is of a given state in the United States. But generally speaking, those studies have been out for some time. They prove the case. There's other pieces that people really aren't as aware of, but which can be life changing.

And it hit me a couple of years ago when I was in New York City, when I was talking to the utility there that they move a lot of things by truck over there and diesels are pretty loud. Let's say you're in a concrete canyon basically, like somewhere in Manhattan and everything echoes. And all you hear is these diesel trucks waiting outside unloading and loading. So, from a quality of life standpoint, and then you take out the fumes and emissions that people have to live with while that's going on, I think it's life-changing for people in an urban environment where noise goes down and noxious fumes go down. So, there's that piece to it, which people don't talk about enough, I don't think.

Anthony: And I guess, again, that's very much core to ABB's values, isn't it? Sustainability,-climate change targets, energy efficiency, all of these subjects fit right into what we're about as a company.

Bob: Yeah. I mean, that's exactly what we're trying to do and as an engineer, efficiency is always a beautiful thing, right? So, you try anything you can do to be more efficient and more productive that's better for the environment that's right in our mission so.

Anthony: I think it's pretty clear that the time is right for a global shift to e-mobility, but focusing again on the US, what are the challenges to electrifying America's road transport infrastructure?

Bob: Well, I think the biggest challenge is policy. There's so many people trying to get this done and everybody's trying to take a different view on it. So, I think coordination of efforts to make things simple and achievable is probably the best thing we could do. And I can give you a little story. So, when I went to get my EV, there was a host of incentives to get the EV. And I'm in the business and I should have been in the best position to really understand on how to do this, but in order to collect those rebates and incentives, there's quite a bit of work involved. And I don't think that was the intention. The intention is to

make sure that people that are qualified get the incentives. So, I don't really think they think through the process of making things simple for people to do.

That's just from a legislation or incentive standpoint. I think from a more practical standpoint, I think we, as a society need to agree upon how we're going to pay for the infrastructure that's needed. And I think that varies state to state where it's a little difficult for the United States. And, one of the things that's controversy right now is how do you replace the fuel tax that is subsidizing the cost of the roads, right? So that's clearly a necessary cost and EVs do weigh more, so where's that going to come from? So, these are the things that need to be thought out in order to make sure that we can maintain and operate the infrastructure successfully.

Anthony: And Bob, I gather that you're an EV owner yourself. What EV do you drive?

Bob: I have a Chevy Bolt currently and the reason I drive that is because at the time that I got it, I wanted to make sure I had a vehicle that could be charged by an ABB charger so that I could take it to sites and test the chargers and go through the experience.

Anthony: Right. So, you're getting the true consumer experience?

Bob: Yeah. But now there's many more choices, which is exciting. You know, so the Mustang Mach-E has been pretty successful over the last few months. So, it's gotten this quite some notice from people, in converting people over.

Anthony: Now, you've touched on this already, but I'll ask again as this is an important point, what needs to happen to bring more coordination to the electrification of America's road transport network? What are the main enablers and opportunities?

Bob: I mean, state and local government typically need to talk together to figure out where they need to put the infrastructure, let's say, to support the highways. So, there's private efforts to support highway infrastructure but clearly more is needed and coordination between state and local agencies on where it needs to go. And then coordination also with the utilities on making sure that power is available and that the grid connection can be had in a reasonable amount of time. I think that's one of the challenges that they face today is we try and put in infrastructure where the grid connection isn't large enough to support it. There's long lead times for the equipment and the installation. There's other things as well. So even for smaller infrastructure, I've seen this when I was in the solar industry, I spent a few years in the solar industry, where the time it takes to get a permit to put in a solar system, even on a commercial or even residential house was rather ridiculous early in the day. And there was a concerted effort to streamline the paperwork in order, and the process to get those necessary documents done pretty quickly. So now it's a nice process, relatively speaking. You can get it in a few days.

Anthony: But I guess the sheer size of the US makes these things harder, in the sense that everything is bigger in the US? It's a bigger opportunity, but also a bigger challenge, because there is just so much more to do.

Bob: Yeah. People underestimate, I think, especially from Europe, how far apart everything is. So, when we say it's bigger, that's what we mean, the distances between cities is quite large. So, the question is how far should these charging stations be along the highway? I think consensus was based on older vehicles that had a certain known range and then they were basically putting them 75 miles apart. And that seems to be working for the most part. I don't know that that's always practical, but you need to support those vehicles that are, that were sold years ago that are still on the road. I think there's a statistic the other day that the average US vehicle on the road is 12 years old now. And it's a known fact that electric vehicles will last longer than internal combustion engine vehicles because there's less moving parts. So, you may have some major components that need to be replaced, but generally speaking, they'll last longer. So, if that's the case, you need to support vehicles that were sold 10 years ago for another 10 years and the range is noticeably less.

Anthony: So, can you see any sign yet of a tipping point where we're getting towards EVs becoming the norm? You know, where it's just the ordinary thing to do rather than the exceptional thing?

Bob: Yeah. I think it depends who you talk to. The studies are relevant. So, some people peg it to getting in excess of 300 miles range is the gold standard for getting mass adoption. For me, I'm a car guy. I grew up in an automotive town just south of Detroit, so I was in Windsor, Ontario, and I've always been into cars. But what's shocking to me and I actually had to look up the statistics, so of course I had my car when I was at high school or let's say college. And I had a friend who was a mechanic and we made it pretty hot, right, and spent a lot of time and money and had fun with it. Well, my Chevy Bolt can out accelerate that car. So, I have a $300 a month Chevy Bolt that can out accelerate that car and it cost me almost nothing to maintain.

So, the issue is you need to get people into them and experience how much better the technology. It's a quiet ride. It's a faster car. It's more responsive and I don't have to take it for oil changes and I never have to get the brakes done. So, if you add all these things up, it has a huge impact on your life. You just need to think about it. Right now, people don't think about it because they do things the way they always have.

Anthony: But then I guess when you get a company like Volkswagen, for example, shifting really hard to EVs and then Ford going the same way. If companies of that size are saying, "No, this is the way it's going," then that becomes the way it's going, doesn't it? It just happens.

Bob: Oh, that's correct. I mean, it's going that way. I think everybody knows that. It's just that the consumers are rightfully a little hesitant because they only know what they know and everything. You know, people always fear change, so to get people to change is always the hardest thing. But if it's a better experience, that's why I say you just need to get them in the car and let them, let them drive it, let them experience it. They're not switching back. I mean, my wife and I only drive the Bolt, right? We don't drive our internal combustion engine vehicle very often. It's always the second choice.

Anthony: And what role does ABB have to play in all this? Obviously, we see automakers manufacturing the cars, but then a company like ABB must have a very important role to play on the infrastructure side?

Bob: Well, I think, for us, I mean, we put it all together, so there's the cars, but we do everything from, let's say, the point of generation to plugging in the vehicle. So, getting that link between the vehicle and the electrical provider is pretty key, right, and making it simple and reliable and serviceable. I mean, I think that's the most important thing is that you've got somebody who's bankable, who's going to be there, who's been around for over 100 years and will be around in order to make sure the technology works going forward.

Anthony: And that applies as much to home chargers as it does to highway chargers, doesn't it?

Bob: Absolutely. I mean, the home charger, you have a little bit more flexibility. I mean, but the highway chargers, you're not going to change them out as easily, right, so you're just going to have to fix them if there's ever a problem.

Anthony: And just returning for a moment to President Biden, he recently test-drove the electric Ford F-150 truck, so is it fair to say – regardless of political affiliation – that the US president driving America's best-selling truck – and now it's electric – is actually quite a big deal for e-mobility?

Bob: That's huge. But I mean, not taking any political sides on this, I mean, if you've seen some videos of Joe Biden, you also know that he's got a really old, I think he's got a 1960 something Corvette, right? So, he's a car guy as well, right? So, and it showed in his face. I mean, he was genuinely having fun driving that vehicle up the test track, right, to the acceleration. So, I don't think you can, you can't fake that, that piece of it. So, I mean, honestly, there's a lot of demand built up for these electric pickup trucks. So, between Ford and Rivian and the GMC Hummer, and believe me in the United States people spend a lot of money on their trucks. So, if I walked down my street there's a lot of people with really nice trucks in their driveways. So that's a market that was well done by Ford. That's really going to take off, I think, for them.

Anthony: Bob, is it fair to say that the major US automakers were not the fastest to bring EVs to their fleets, but that all of a sudden that's changing in a very big way?

Bob: Well, I mean, Tesla's the first one to show that it could be done in scale, right? Tesla went after the premium automotive market, right? So, they really put the hurt on some of the higher tier brands like BMW and Mercedes and I don't know not so much Porsche, I think, but in some cases, I think that's why Porsche responded. So, because it was a premium vehicle that it really hit the luxury manufacturers, and then they launched the Model 3 and then it went after the mid-tier stuff. And I think that's when generally speaking, the entire automotive market kind of said, "Well, it's time to shift over, right? And it can be done in scale."

Anthony: So, do you think Tesla really were the game changer for US e-mobility?

Bob: There's no question they were, right? Everybody was a skeptic until there was a mainstream automobile that people could afford that was a better experience by a company that never had done it before, right? (laughs). They've shown to everyone that it can be done.-Well, not only done, but when I say done, done better. I mean, it's faster. It's more efficient. It's got all kinds of new technology in there that people never even thought of putting in vehicles before.

Anthony: And do you think there are still cultural challenges to overcome in the US before the benefits of all this new technology are widely acknowledged?

Bob: Oh, there are absolutely cultural challenges to adoption of EVs because the country is, so I guess divided politically amongst unfortunately the environmental issues. So, some people view Teslas, and it's well-documented on video and in various blogs, where like people go out of their way to either ice chargers, meaning put an internal combustion engine in front of it, or they used to have people with pickup trucks that would "coal roll" people in Teslas, where they would somehow magically be able to put out black smoke out of their tailpipe. So, there's cultural issues, no question. But that's why if you give people what they want from a vehicle standpoint, it shouldn't matter to them really what, whether it's electric or not.

Anthony: But as you said, there are political and cultural issues that might need to be overcome first?

Bob: If they look at a vehicle and it's a moniker for the green movement, I've seen people, I know people that way that say, "I'm not going to buy that because I don't believe that." Well, okay, fine, but you know, if it's a better car and it goes farther than yours or faster than yours, then why wouldn't you buy it? And that's when I think they change their way of thinking.

Anthony: And Bob, just looking forward again, what do you think the US e-mobility future looks like? And can you foresee a time when EVs are the default choice for most Americans.

Bob: Yeah, I can absolutely see that. And, just having the benefit of having stuck my neck out in the solar industry some years ago, right, where that was, the costs were way too high and there's no way you could get there. But scale changes everything. I think if you can get the bulk of society investing in a technology, eventually, because the R&D that goes with that has some pretty dramatic impact on costs and reliability and scale. And I think we're starting to see the benefits of that already in EV, right? So, there's two pieces you can look at it.

There's the vehicle itself and then there's the battery. I think there's more work to be done as far as what you can do from a storage standpoint, probably more, batteries with higher capacity, with different types of chemical compounds or compositions, or lighter. But that's probably the single biggest area for acceleration, because right now the vehicles that are being produced are such high quality, I would say, that it's going to happen. It's just a matter of time. In fact, if you look at the adoption rates right now, you know, forever we were saying we're below 1% and then all of a sudden, we're at 2%. So somehow, we doubled, right, and if you double every few years, it doesn't take too long before you're the majority.

Anthony: So, why is that some parts of the US, like the West Coast, are so far ahead of others in their rates of EV adoption?

Bob: There's some market dynamic things that go on, like California is roughly 50% of the EV market right now and then the question is why is that? Is that because California is always ahead of maybe some of the trends, whether it's fashion or otherwise, or is it because there's policy in place? And I think

it's a combination of all of it, right? I mean, Tesla started in California. There's a lot of policy in place that is not related to CO2 emissions. It's related more to air quality in Southern California, so anything that you can do to get nitrous oxide or other pollutants out of the air is encouraged. So, there's all kinds of different little policy aspects in there too to get electric vehicle adoption or not even electric vehicles, zero emissions vehicles, right? So, it could be hydrogen, it could be something else. So that's always been in play. And in fact, California's kind of had a, from that aspect, I guess an unequal amount of influence on automakers for many years, because of the air quality standards they were putting forward and therefore it was driving the vehicle emissions protocols of many of the manufacturers.

Anthony: And without wishing to be too simplistic, is it the case that what you see today in California might be what the rest of the US experiences in, I don't know, two or five years?

Bob: Yeah. I would say closer to five years. I mean some of the larger metropolitan areas seem to follow probably a little more closely and quickly. I think the more rural areas will take some time. But again, they have those distance dish issues to deal with too. So, I think you see a lot of turnover in cities because of population density, right? So that's the other reason you'll see it more readily, right? You're not going to see it in a place that's less dense, so it may not be as obvious to you.

Anthony: So, it's all eyes on the West Coast if we want to understand US e-mobility trends?

Bob: Yeah, I think so. I mean, it seems like. It's always been in the automotive car center of the universe for the US anyway. Even though they're not really, up until now they haven't been making cars in California for a long time, I mean, the manufacturing moved out for a while, it was always the hub for whatever's exciting going on with vehicles, right? So, there was a car culture with Southern California that was, maybe it started back in the '50s with the whole, you know, surf culture and hot rods and that sort of thing, and then the racing.

Anthony: And talking of racing, how useful is it to have an event like the New York E-Prix promoting the benefits of e-mobility to a wider audience?

Bob: So, I've been to one event already and I think it was fabulous. It seems like Formula E really ignites some passion amongst people, especially in our industry, right? So, in the electrical industry, people from the utilities, people from electrical wholesalers, which is a pretty large business, right? And, you know, most people do like races, so I think from that standpoint I think it's a great event in order to promote the electrification of mobility and what can actually be done. Because let's face it, that's what it is, right? We're showing to what extreme you can get with seemingly unconventional technology, right?

People used to think the only way you could do is you had to have a really loud car that was burning, I don't know how much CO2 per hour. And so, and that still exists and it's still exciting, but it can be done electrically, right, and that's the point.

Anthony: Bob, it's been fascinating to chat to you about the future of e-mobility in the United States, and thanks so much for your insights into this rapidly developing market.

And if you've enjoyed listening to a technology expert on one of the hottest topics in industry, why not like, subscribe, or share ABB Decoded wherever you get your podcasts. Until next time.