

David Everett
501 E. 3rd St.
Fort Scott Kansas, 66701
620-644-8217
davidteverett@yahoo.com

29 January 2022

**TESTIMONY OF DAVID EVERETT BEFORE THE KANSAS HOUSE
TRANSPORTATION COMMITTEE REGARDING 2021 S.B.101 on 1
FEBRUARY 2022**

Good afternoon, Representatives. I thank you for allowing my appearance before you today.

I am a resident of Fort Scott, Bourbon County, Kansas and an e-bike owner and user.

I am here to testify concerning S.B. 101, which purports to approve and regulate e-bikes in the state of Kansas. I have several areas of interest to call to your attention regarding this bill. A good summary of what I have to say is that I am firmly opposed to Sections 1 and 7 of S.B. 101.

**Does This Legislature Represent Kansans, Or The Special Foreign
Interests Of The Bosch Conglomerate?**

If I have it right, not one single Kansan has asked this legislature to change our current classification system. Instead, interests from outside the state are responsible for motivating this bill. Namely, “PeopleForBikes,” hereinafter “PFB,” a supposed Boulder, Colorado lobbyist organization. Following the money, however, we find that the “Trade Organization” aspect of PFB is composed of mostly foreign corporations, the largest of which appears to be the Bosch conglomerate companies, but not any of the most popular American e-bike companies, though some American traditional bike companies are PFB supporters.

I have tried to discuss the model language PFB perpetuates with several leaders of PFB, including Alex Loggeman who appeared before the Kansas Senate Transportation Committee with testimony, to try to better understand what this is all about. There has been no response from PFB. They do not want to explain anything to me. To that extent, I can say that PFB is not concerned with the interests of Kansans. This committee should pay careful attention to what PFB's interests actually are.

**Which Is More Important—Uniformity Of Laws Between States, Or
Uniformity Within The Same State?**

PFB's claims are perplexing. They claim that uniformity of State laws is overarching, and also that American e-bike companies need standards so that their bikes are marketable in Europe. I cannot logically square their reasoning with reality.

This legislation would allow for home rule by municipalities of a very limited 3 classification

system. But America's most popular e-bikes are clearly outside those 3 classifications. And they all use "750 watt" or larger (whatever that means, see below) electric motors. S.B. 101 would outlaw the most popular e-bikes being sold in America, because it eliminates the "750 watt" motor, requiring all e-bike motors

If uniformity of law is what PFB really wants, it makes little sense that they are so willing to allow for Home Rule of municipalities.

Let's do some thought experiments. Let's say first that Mr. Loggeman and PFB are most concerned with uniformity between Kansas and Colorado Law. Both eastern Colorado and Western Kansas are sparsely populated. In the grand scheme of things, very few numbers of e-bike riders are going to be crossing the Kansas/Colorado state line compared to e-bike riders in metropolitan areas of either state. E-bikes currently have quite limited range. It is hard to imagine what purposes e-bike riders would have going from nowhere to nowhere within their e-bike's range across the state line. I am sure there are some. But the numbers of these people, and the lack of rural enforcement compared to urban enforcement, are nowhere near the numbers of riders in metropolitan areas or the number of law enforcement officers enforcing traffic regulations in these metropolitan areas. But you can be sure that Mr. Loggeman will not be riding his e-bike from Boulder to any city in Kansas in the foreseeable future.

In the Kansas City Metropolitan area, for instance, a reasonable e-bike ride within range of the e-bikes currently on the market might easily involve crossing three or four municipalities. If each of these municipalities chooses a different classification, and the state limits each e-bike to only one classification, the patchwork of laws PFB tells this legislature is so important will be created, and not eliminated, by S.B. 101. Whereas a Colorado rider might easily enough ascertain the difference between Kansas and Colorado law, checking the ordinances of every municipality in a metropolitan area is a daunting task.

But what if each municipality in the Kansas City area could outlaw certain kinds of cars based on, say, horsepower, so that drivers of motor vehicles could be ticketed or arrested for driving their motor car in some other city that made it illegal to drive anything not under 150 horsepower? You'd have a lot of upset citizens voting you out of office if their expensive cars were suddenly useless. And while e-bikes today are not as popular as motor vehicles, their popularity for short range applications, exercise and recreation is rapidly growing. And while it is mostly neglected as an e-bike purpose, I use mine to work. Not to get to work, but to do the work itself.

So Imagine that you bought a Class 1 e-bike because that is what the city of Olathe mandated. But then you realize that Overland Park mandated only Class 2. Now you have to go around Overland Park instead of through it, if you're lucky enough that other cities around the area didn't further complicate things. I think you get the idea. A ten mile ride might become a fifty mile ride. Home Rule with a three classification system is a horrible idea if the idea is making e-bike riding a simple and carefree situation under a polestar of uniformity of law.

I live five miles from Missouri. Travel into Missouri is something I do concern myself with. I'm much less concerned with uniformity between Kansas and Missouri than I am uniformity within Kansas.

PeopleForBikes Isn't Really About Representing The Interests Of American E-Bike Companies

PFB seeks to create a perception that it is a trade association promoting the interests of American e-bike companies that need to be told by this legislature what kinds of bikes they should sell in the United States so that they can sell those bikes in Europe as well. This doesn't pass the smell test.

First of all, none of America's largest most-popular e-bike companies are included among PFB's corporate sponsors. While some American manufacturers of traditional bicycles are represented, it is easy to understand that traditional bike companies have differing interests than e-bike companies.

PFB does not tell us why Europe shouldn't conform its laws if it wishes to buy American bikes instead of limiting Kansans to European standards. Isn't it odd that the maximum speed for a class 3 bike is 28 miles per hour, instead of matching a common local surface street speed limit of 30 miles per hour?

Many of you on this committee will note that traffic experts tell us over and over that uniformity of traffic flow is key to safety, which is why we have minimum speeds on freeways. It's just not safe to drive forty miles an hour in traffic that is mostly going 70-80 miles an hour. In a similar vein of reasoning, it makes little sense to limit e-bikes to 28 miles an hour in 30 or 35 mile an hour traffic.

Moreover, e-bikes follow the same rules of the road as bicycles which follow the rules of the road for motor vehicles with some few exceptions, notably that bicycles are to keep to the right of the road as far as practicable. In reality, this means motor vehicles pass in the same lane already occupied by a bicycle and the bike rider rides in near if not the gutter.

I presume a bike rider lying on the ground with a broken bleeding body isn't going to care too much that his speed limit was modeled on Europe where it made sense to have a speed limit of 35 KPH (28 mph) because the same speed limit was common to motor vehicles on many or most local surface streets. In that case, the rider will be complaining that there are two different speed limits resulting in motor vehicles trying to pass him in the same lane because they are allowed to go a bit faster. Let us model speeds on American speed standards instead.

This PFB standard is all about making sure European e-bike companies have an easier time selling their e-bikes in the United States, rather than the other way around; otherwise, logically, they'd be asking European nations to set their standards on MPH rather than KPH. Better yet, they'd ask to dispense with one universal worldwide KPH standard and simply ask for speedometers on all bikes so that the rider can govern his speed accordingly. But that wouldn't give Bosch an edge.

Kansas should allow the free market to govern what American e-bike companies market, so that those that want to expand to Europe can make their own choices about what kinds of bikes to build.

S.B. 101 Has A Vague and Unworkable Standard Of “Less Than 750 Watts.”

Next, as mentioned above, the “less than 750 watts” is also a very bad idea. I am very uncertain of what this *actually means* and find it very vague.

The main reason for this is that there is more than one standard for the measurement of “watts.” I am sure we are all familiar with the wattage ratings on electrical appliances, that your T.V. might consume 150 watts and your toaster might consume 2000 watts and so on. If the average consumer is really paying attention, they might realize that there is a huge difference between “peak” and “nominal” wattage. You may know that the initial surge of power needed to get an appliance running is usually far greater than the nominal usage after a device has been powered up. Some appliances might have both ratings. You may know that in the event of a power outage, you want to turn everything off, and turn things back on one at a time to avoid a simultaneous peak power draw which might crash the grid again. I'd like to think the most reasonable measure is nominal watts, but law doesn't concern itself, usually, with what an individual might find reasonable. Unfortunately, I can't predict what prosecutors and judges might decide it means, but I can hope they'd find S.B. 101 unconstitutional for vagueness.

But there is at least one more “wattage” standard, and that is mechanical. Because electric motors convert electrical energy to mechanical energy, this standard could easily be in play.

Just ask any creative lawyer in need of new complicated areas to litigate.

But S.B. 101 doesn't define “watts.” Does it refer to peak or nominal electrical power, both calculated by multiplying volts by amps, or does it not refer to electrical power at all, but the mechanical power the motor shaft produces? I can't tell. I have no idea. Not even Mr. Loggeman is willing to tell me, and he's supposedly trying to clear up confusing standards. None of the 36 Senators who voted for this bill can tell me, or can even tell me they all meant the same thing. I think those 36 Senators were asleep at the handlebars while Mr. Loggeman, well-paid by the Bosch conglomerate, cozened the interests of Kansans and argued uniformity as the grounds for a patchwork of laws.

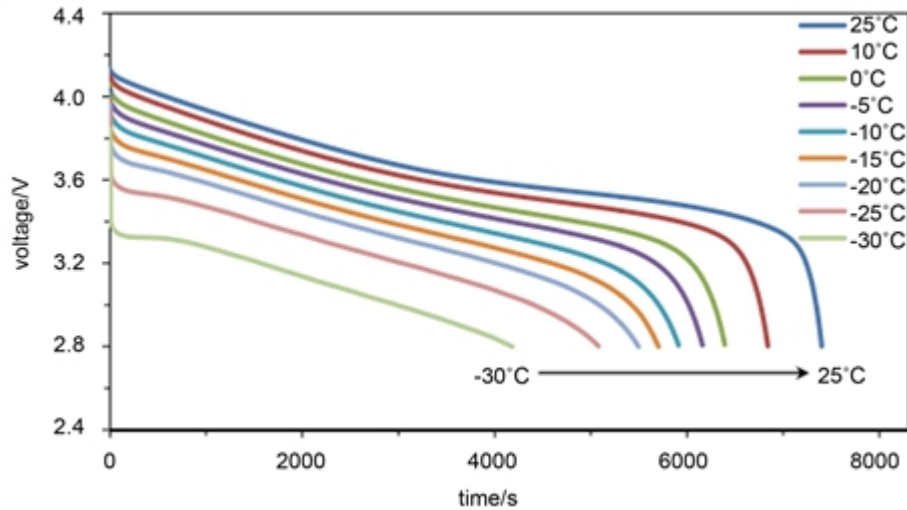
I find it highly suspicious that this bill draws the line just under 750 watts. 749 watts is legal, 750 is not. But unlike Europe, which itself has a huge patchwork of laws and a lack of uniformity, 750 watts seems to be the most popular motor size in the United States. A motor size unpopular with European manufacturers like the Bosch conglomerate. Perhaps Bosch did the math and found it less expensive to fund PFB than to tool up to make 750 and 1000 watt motors to compete in the United States.

But variables in the power standards aren't the only variable. There are physical variables not previously included in the Federal childrens' safety standards for marketing that PFB bases their model legislation on.

Electric bikes have been around more than one hundred years. They have never been feasible for consumer marketing in the past. Lithium Ion battery technology is what made the electric bike possible for consumer marketing, because of batteries light enough and powerful enough

to make the e-bike a reasonable thing. In the past, a lead-acid electric bike might weigh a several hundred pounds to have a range of a handful of miles. Today a lithium ion bike can weigh less than a hundred pounds and get you more than fifty miles down the road.

For instance, temperature greatly impacts lithium ion battery performance. At certain low temperatures, lithium ion technology barely works at all if it doesn't entirely cease working. Testing temperatures aren't included in consumer information.



As one can see at the left hand side of the above graph, temperature effects battery voltage. And volts times amps equals watts. All chemical batteries are subject to lowering voltage as they are discharged, as well.

Manufacturers recommend that lithium ion batteries be maintained at around 90% of fully charged for purposes of optimum battery life. That means the voltage at 90% is going to be somewhat less than than the fully charged voltage. And, as one rides, unless the e-bike's controller unit compensates, and not all do, (and resulting in deteriorated range) the wattage also deteriorates.

So is this wattage rating at room temperature? Will my 750 watt bike @ 70 degrees become an 800 watt bike at 90 degrees? Was my wattage rating using a 90% capacity battery or steadily supplied current source? Suppose I take the advice of an e-bike expert who tells me I can increase my e-bike's range by using a 52 volt battery instead of the 48 volt battery it was designed with? Should I be subject to becoming a scofflaw merely because I wanted to ride further, without considering I was increasing my wattage? Would this be “tampering” with my e-bike?”

If I ride in cold temperatures only, would my otherwise “illegal” e-bike suddenly become legal, because the voltage of the battery drops in cold temperatures?

Worse, since 749 watts would be legal and 750 illegal, would any of these variable factors, minor as some may be, unintentionally push my bike over the edge?

Or suppose I bought an after-market kit that is marketed as appropriate for a range of battery voltages but only has one wattage rating?

I do, in fact, have one such “1,000 watt” after-market conversion kit. The instructions told me that the minimum battery voltage, fully charged, is 24 volts and the maximum is 52 volts, but it gave me no information on which battery voltage the motor was rated at, much less temperature.

PFB wants us to solve all these complexities with stickers. Stickers the dishonest person can buy online, whatever the actual power consumption?

For enforcement purposes, police officers and prosecutors and defense counsel will have to become electrical or mechanical engineers and devise testing procedures to determine if the true power capacity matches a sticker that might have faded in sunlight or peeled off, (Eventually all stickers tend to do one or the other) to meet a subjective standard in this bill.

Moreover, the upper limits of human capacity to pedal a traditional bicycle is at about 1800 mechanical watts for a professional, in bursts. Sustained pedaling at about 1200 watts can be achieved by human power alone. 1800 mechanical watts can be translated to about 2.4 horsepower, which is in turn about 1790 electrical watts. It makes no sense to limit e-bikes to substantially less power than what a human can produce, (with a system of gearing, if you're wondering how humans can have more force than almost 2 and a half horses) unless this legislature wants to somehow also introduce regulation of leg-power. That is because the federal standard is not one of traffic regulation, but instead what the federal government will allow for marketing to all persons, including children. But what is a safe product for children is not necessarily what adult Kansans need, and this legislature should not treat adults as children to regulate traffic.

Talk about a can of worms. Only the lawyers will like this bill.

A better standard would simply be a weight standard. It could be made physically impossible to have too powerful an e-bike by weight alone, and all law enforcement would need is a weight scale without becoming electro-mechanical engineers or trying to read faded or missing stickers that may or may not have been honest at the time they were affixed. With current technology, about 120-150 pounds should be sufficient. This may need to be revisited if battery or electric motor technology advances to significant weight reductions over what is possible.

Less Than 750 Watts Will Not Meet The Needs Of Many Kansans.

Personally, less than 750 watts doesn't get me uphill. I'm not interested in killing or greatly injuring myself by being a speed demon¹ house testimony. In the worst case I wouldn't even want to go faster than about 35 miles-per hour.

Combining my e-bike with a trailer, I use it for work. I haul tools and materials. I myself weigh about 275 pounds and my gear might be a couple hundred more. Limiting me to less than 750 nominal watts will make an e-bike insufficient for these needs.

If anything, I'd ask that you amend current law to raise the nominal electrical wattage to “not more than 2,000.”

Including myself, many unhealthy overweight Kansans need a form of exercise that they are capable of. Their health deteriorates because they are not capable of the exercise they need to lose weight. Electrical assistance solves this problem for us. But what good is an e-bike that is fine for level surfaces but then won't get you up a hill?

This legislature should grant 2,000 watts to adult Kansans and their myriad of purposes they may put e-bikes to. And it should keep kids safe by limiting those under 16 to 750 *nominal* watts.

Conclusion

Currently Kansas and its people is and are not experiencing any significant problems with e-bikes. S.B. 101 is a solution in search of a problem, unless that problem is one of special interest foreign corporations trying to figure out how to get an edge on American e-bike companies. It is my belief that S.B. 101 is not about the interests of the people of Kansas but instead about foreign special interests wanting to eliminate the competition, perhaps about the interests of municipalities wanting to raise more revenue through their courts, and adding new areas of complex litigation for lawyers to enrich themselves with. I cannot conclude that S.B. 101 primarily has the interests of Kansas e-bike owners and riders in mind at all but instead is about offering us less selection that will increasingly fail to meet our needs while draining our pocketbooks either buying new compliant e-bikes or paying fines and fees or defending charges of unregistered uninsured motor vehicles, driving without a license or on a suspended license, or whatever else creative attorneys might find to harass the citizenry with or charge them increasing fees over. S.B. 101 should not be passed.

Respectfully Submitted,

s/David Everett

David Everett