Adam Neylon

State Representative • 98th Assembly District

DATE: May 28, 2019

TO: Assembly Committee on Energy & Utilities

FROM: Representative Adam Neylon

RE: Assembly Bill 233

Chairman Kuglitsch and Committee Members, thank you for holding this hearing and considering Assembly Bill 233.

This legislation proposes to use Volkswagen settlement funds, which can only be used to offset NOx emissions, to provide 1:1 matching grants to businesses located along major highways connecting Wisconsin to neighboring states, for the purpose of installing electric vehicle (EV) charging stations. These stations will allow EV drivers to travel to all parts of the state without worrying about running out of "juice" because they cannot find a charging station.

This proposal protects taxpayers long term by ensuring the state does not own these charging stations. As you can see from the bill language, this proposal stipulates that the businesses installing these charging stations will own the charging stations and be responsible for maintenance/upgrades.

In an effort to ensure EVs pay their fair share for using the roads, this bill instructs the energy provider or "utility" receiving revenue from these EV charging stations to remit 20% of those revenues to the PSC, then PSC must deposit those monies into an account to retire existing Department of Transportation bonds.

The PSC will be in charge of selecting the "clean energy corridor" roads and be responsible for reviewing and awarding grant monies to businesses.

In an effort to get around a business charging customers based on the amount of energy their car consumes to become charged, which would mean the business is technically a "utility," we specified that the businesses are able to charge a parking fee for accessing the charging station.

An eligible grant recipient is any business located along the clean energy corridor (gas stations, restaurants, retail stores etc.).

Senator Cowles and I believe this proposal is needed to protect taxpayers and to get the most out of the VW settlement money. By making sure the state or other political subdivisions don't own the charging stations, taxpayers will not be on the hook for any long-term maintenance/upgrades. This legislation also stretches the settlement dollars farther by distributing the monies via matching grants. And finally, we are requiring the stations to be along major thoroughfares where businesses are already uniquely situated to provide goods and services to EV drivers.

This proposal improves our state infrastructure at no cost to taxpayers. This proposal will increase revenue to DOT so EVs are paying their fair share to use Wisconsin roads. I also believe this bill will help increase tourism and travel through our state.

Thank you for your time today and please do not hesitate to contact my office with questions.

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ROBERT L. COWLES
Wisconsin State Senator
2nd Senate District

JOINT COMMITTEES:
Audit Committee, Co-Chair

Testimony on 2019 Assembly Bill 233

Senator Robert Cowles
Assembly Committee on Energy and Utilities – May 28, 2019

Thank you, Chairman Kuglitsch and committee members, for allowing me to testify on 2019 Assembly Bill 233. This bill would use $10.4 million from the Volkswagen settlement funds to provide grants to businesses along major highways of the state to create Clean Energy Corridors and ease electric vehicle mobility in Wisconsin.

The Volkswagen settlement funds, which resulted from the company routinely cheating on federal Clean Air Act emission testing, were split between states with the stipulation that the funds can only be used to offset nitrogen oxide (NO_x) emissions. Wisconsin received a total of $67.1 million in settlement funds, and the state currently has a balance of about $25 million remaining that must be spent over the next few years. To date, $42 million was appropriated in 2017 Wisconsin Act 59, the 2017-19 State Budget, for the replacement of eligible state fleet vehicles and the establishment of a Transit Capital Assistance Grant Program under which the Department of Administration awards grants for the replacement of public transit vehicles.

This legislation offers a different option for the expenditure of about 40% of the remaining balance of these settlement funds to help offset more emissions and make Wisconsin a friendlier location for in-state and out-of-state electric vehicle (EV) drivers. Assembly Bill 233 would create a grant program with 1:1 match requirement for businesses along major highways connecting Wisconsin to all of our neighboring states for the purpose of installing EV charging stations. These charging stations would be positioned to allow EV drivers to travel throughout our great state without having to worry about the limited range of their vehicle. The Public Service Commission (PSC) would be responsible for determining the Clean Energy Corridors by reviewing grant proposals and awarding grants to businesses.

These grants would help to get the Clean Energy Corridors off the ground by providing some of the upfront expense assistance on the installation of high-efficiency, rapid charging stations, but would require the businesses receiving these grants to be responsible for the management, maintenance, and upgrades long-term. This proposal also addresses the topic of EV drivers contributing a fair amount to the maintenance of our roads, including out-of-state visitors, by instructing the utility receiving revenue from these EV charging stations to remit 20% of those revenues to the PSC. These funds would then be transferred to the Department of Transportation to retire existing bonds. Businesses may, to recuperate energy expenses and for facility maintenance, charge a parking fee for accessing the charging station to the EV driver.

Businesses located along the state's major corridors are optimally situated to both reach a higher number of drivers and occupy the driver while their EV is charging, either in the gas station, retail store, or restaurant. Additionally, by creating a matching grant program, Wisconsin can ensure the remaining balance of the settlement fund will stretch further in upgrading our state's low or no emission transportation infrastructure. In short, Assembly Bill 233 would uniquely position Wisconsin ahead of the curve to remain a tourism destination for visitors and maintain the ease of transit for residents well into the future.

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RENEW WISCONSIN

Assembly Bill 233 – Clean Energy Corridor Grants

Testimony before the Assembly Energy and Utilities Committee

Tuesday, May 28, 2019

Jim Boullion, Director of Government Affairs
Jane McCurry, Electric Vehicles Program Manager

Chairman Kuglitsch and committee members, thank you for the opportunity to speak to you today. My name is Jim Boullion, Director of Government Affairs for RENEW Wisconsin. With me, and also from RENEW Wisconsin, is Electric Vehicles Program Manager Jane McCurry.

RENEW Wisconsin is a nonprofit organization founded in 1991 that promotes all forms of renewable energy in Wisconsin. We work on policies and programs that support solar, wind, biogas, geothermal energy and electric vehicles.

RENEW Wisconsin supports AB 233 and its goal of expanding the availability of electric vehicle charging stations in Wisconsin.

I would like to turn it over to Jane McCurry to share additional information about the market for electric vehicles, and details of the Volkswagen Settlement and why this legislation is needed.

The market for electric vehicles is changing fast. The upfront price of an electric car is dropping, and is expected to reach parity with internal combustion engine cars by the mid-2020s. Every major auto manufacturer has pledged to overhaul their vehicle offerings. We expect almost 200 new electric vehicle models to be available in the next few years, from SUVs to pickup trucks and sedans.

While most electric vehicle charging is done at home, public charging stations are needed for citizens who live in multifamily buildings, who travel long distances for work, and to support our robust tourism sector. Currently, Wisconsin only has 32 fast charging locations, most of which are densely located in the Madison and Milwaukee areas. In order to make driving electric accessible for everyone in Wisconsin, we need to build a network of fast rechargers that will allow both urban and rural Wisconsinites to drive electric with confidence.

The Federal Volkswagen Settlement, where the money for this bill originates, specifies that the funding can only be used for certain purposes. The Settlement authorizes using up to 15% of the funds for zero emission vehicle infrastructure. As of today, 45 states have opted to use part or all of their available zero emission vehicle infrastructure funding to build out the electric vehicle infrastructure in their state. Wisconsin is one of only 4 states that has submitted a plan for using Volkswagen Funds that did not take advantage of this opportunity.

In the Midwest, there is consensus that we need to act now. Illinois, Indiana, Iowa, Michigan, Minnesota, and Ohio are all using the available Volkswagen funding for charging station infrastructure. Each of our Midwest neighbors have slightly different programs for utilizing the funding, however, the consensus very much reflects AB 233's plan to prioritize fast charging along major highway corridors.

Because 85% of Wisconsin's Volkswagen funds must be used for retrofitting or replacing diesel vehicles, we strongly support using the remaining 15% to create a permanent network of high-speed public charging stations, which would give people and businesses the confidence they need to buy hundreds of thousands of electric vehicles in the coming years.

We believe that investing this 15% of the funds in charging stations is by far the best use Wisconsin's Volkswagen Settlement funding. It is a long-term investment in a critical technology that will last for decades and will benefit everyone in our State.

I will now turn it back over to Jim to make our comments on the specifics AB 233.

The coming increase in electric vehicles on the road is such an important issue that the Wisconsin Public Service Commission recently started an informational docket on the subject. The information collected in that docket may provide value to the Legislature in finding workable solutions to some of the issues identified in this bill.

As to a few of the individual items in the bill, we have the following comments:

- <u>20% to the transportation fund:</u> RENEW does not object to EVs and EV charging stations paying their fair share to support road construction. However, including a provision on road funding in this particular grant program presents some problems:
    - This would create a tax on charging stations that receive grant money but not on other charging stations. This will be anti-competitive and difficult to implement.
    - *Instead of establishing a 20% tax, we would recommend including in the legislation a directive to the PSC asking them to make a recommendation on the best method for public vehicle charging stations to contribute to the road fund.*

- <u>Time of use fees only:</u> As currently written, Grant recipients may only charge a parking fee based on the length of time at the charger and not on the amount of electricity consumed.
    - For a level 2 charger this is not an issue because the flow of energy can be almost equally received by all models of electric vehicles. On a DC fast charger, however, a Chevrolet Bolt can accept only 50 kW of power, but a Tesla Model 3 can accept 125 kW. So, if both cars were plugged in for the same period of time, the Model 3's battery would be filled with *2 and a half times* more electricity.

- The inequity of getting less power for the same amount of money on a per minute system is a problem. To address it, at least 21 states have allowed financially charging by the electron specifically for electric vehicle charging stations without violating public utility laws.
- *This is an issue that the PSC has included in their EV docket and they will likely make a recommendation on how this should be handled.*

- Grants may not exceed 50% of the cost to purchase and install a charging facility.
  - We agree that grantees need to have "skin in the game," but the 50% limit may reduce the number of DC fast charging stations that will be deployed using these funds. For example, Pennsylvania allocated $1 million in funding, not part of the Volkswagen Settlement, for 50% matching grants. Their fund did not get any applications until they increased the percentage. Especially in more rural areas of Wisconsin, we may need more than 50% of matching funds to incentivize the installation of fast chargers.
  - *We would recommend limiting the grants for level 2 chargers to 50% and allowing grants for DC Fast Chargers up to 75%. Allow the PSC to determine through their application criteria what proposals best serve the State's goals.*

Wisconsin's plan to use $10,065,000, the full 15% of our allotted settlement funding, will go a long way toward ensuring Wisconsin will not fall behind in the transition to electric transportation. These charging stations will kickstart a whole new market of transportation that will benefit our State and local economies for decades to come. This is an opportunity to ensure all Wisconsin citizens have access to electric vehicles.

Not only that, but electric vehicles provide an opportunity to fuel our transportation with clean, homegrown energy that is produced right here in Wisconsin. Wisconsin spends $8.2 billion each year on fuel for transportation that comes from out-of-state. The program created by AB 233 will bolster our local energy production and local economies for decades to come.

Thank you for the opportunity to speak to you today. We are very excited to see your leadership investing in the transition to clean, high-tech transportation.

RENEW WISCONSIN

AB 233
May 28, 2019

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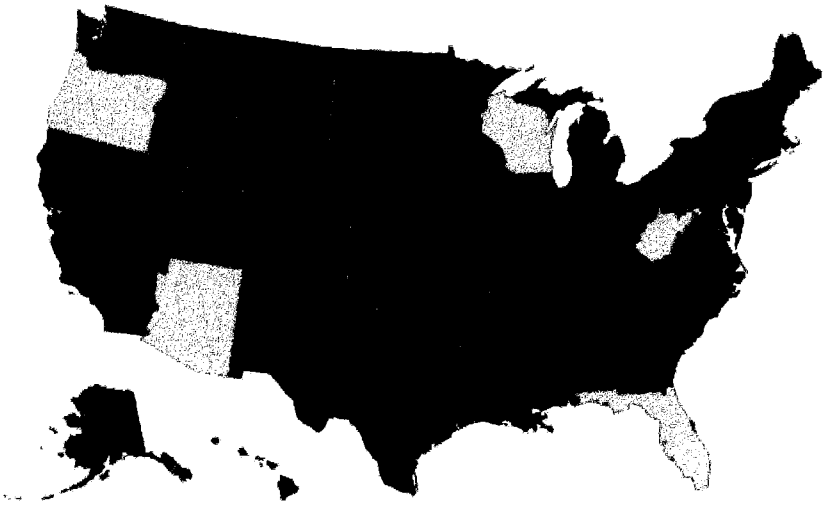
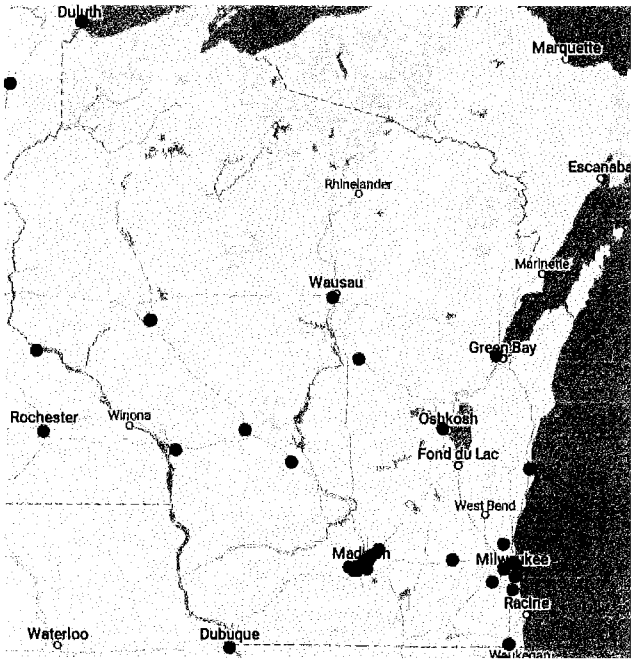


Wisconsin's current DC fast charging locations. *Via U.S. Department of Energy Alternative Fuels Data Center.*



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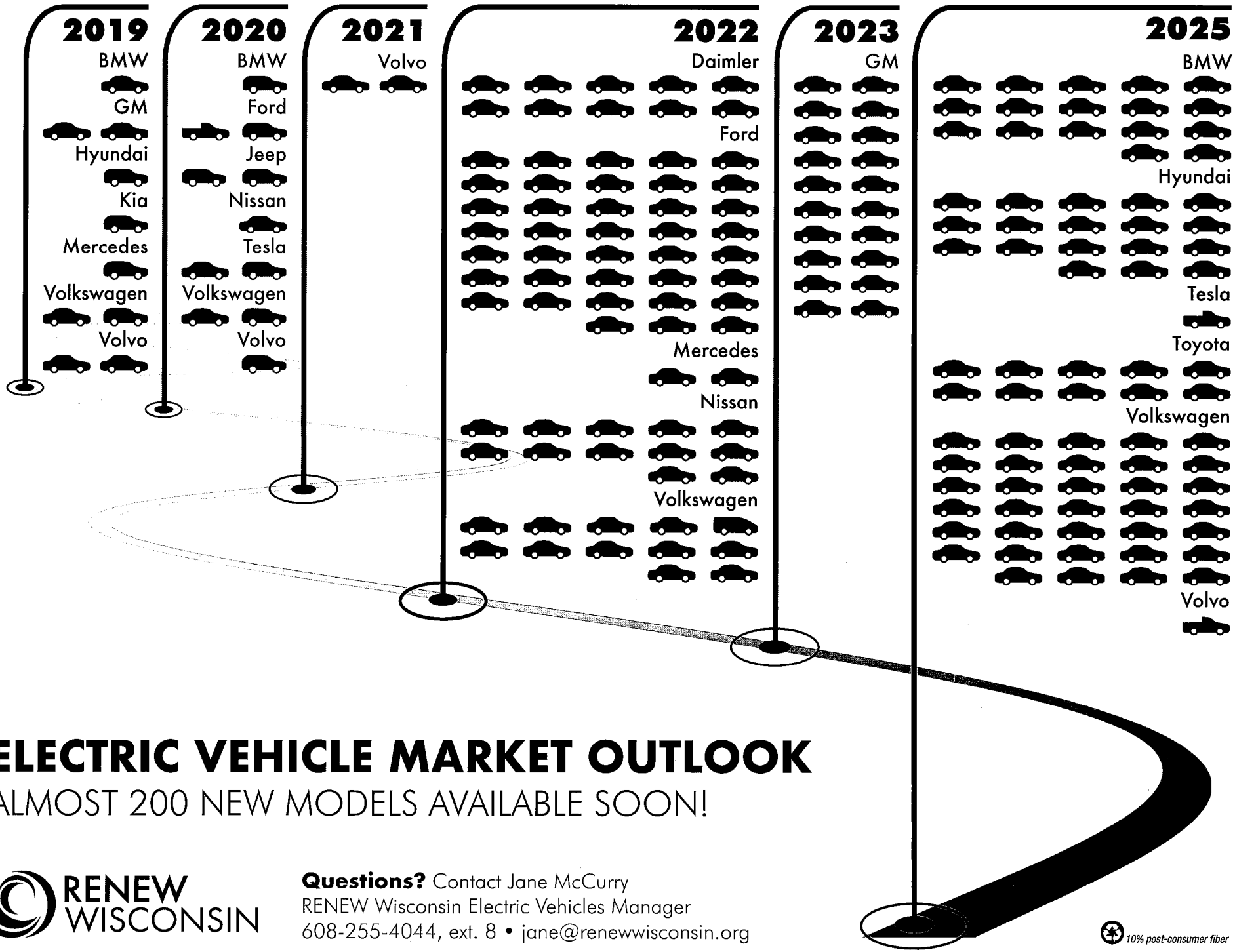

ELECTRIC VEHICLE MARKET OUTLOOK

ALMOST 200 NEW MODELS AVAILABLE SOON!

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Questions? Contact Jane McCurry
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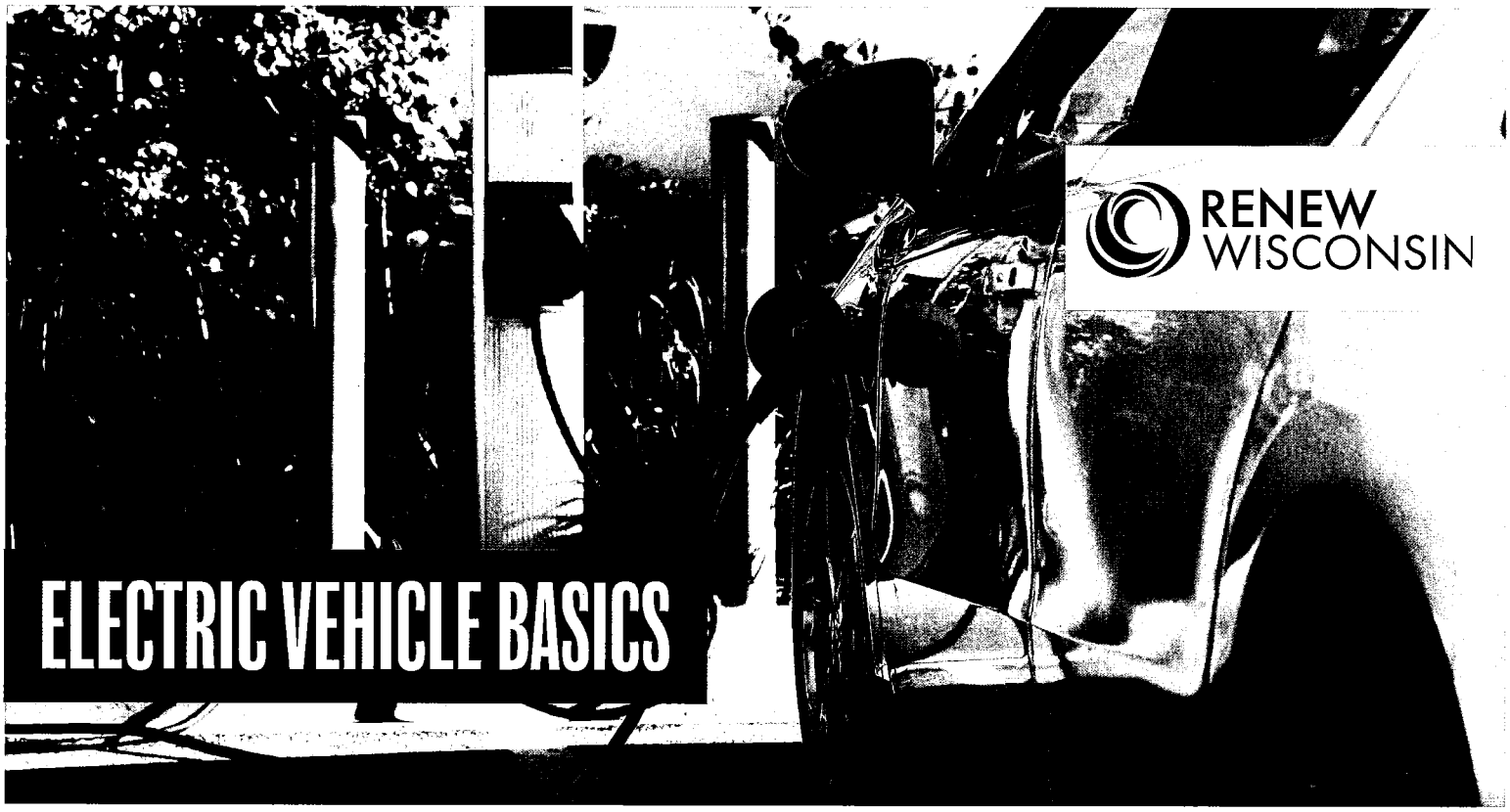

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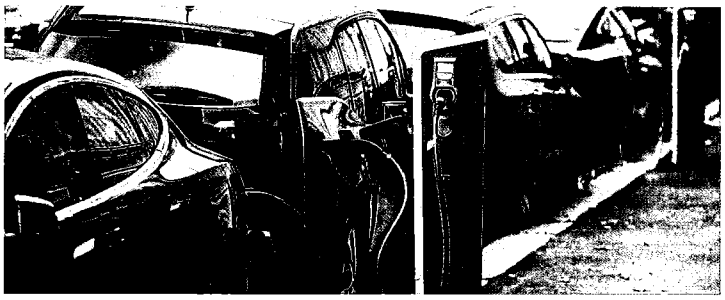

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5. **Promote Renewable Energy.** Swap out fossil fuel gasoline for fuel that can be generated from renewables.
6. **They're fun!** Instant torque, fast pick up, and a quiet motor means a more enjoyable ride.

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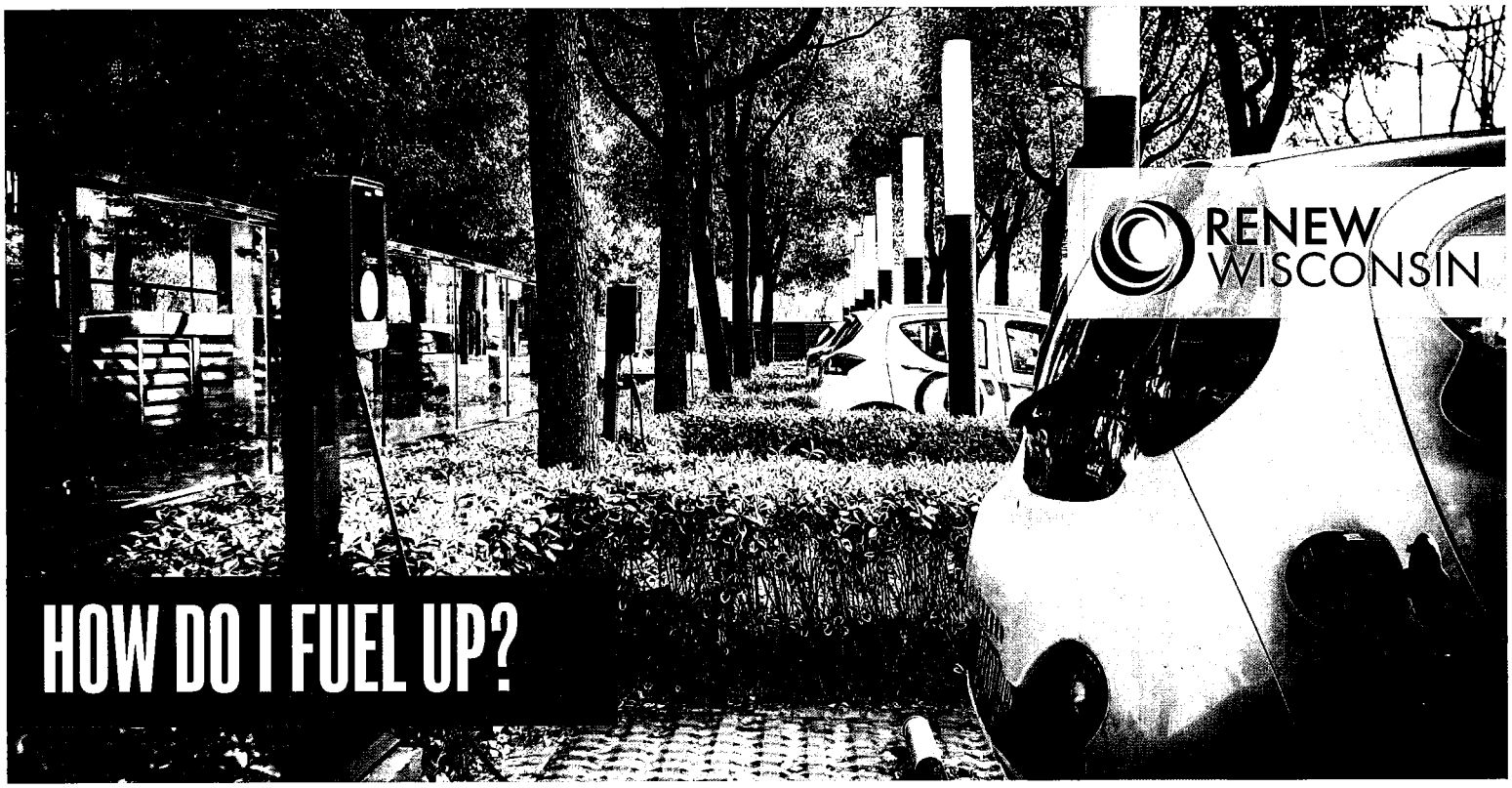

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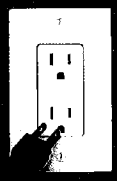
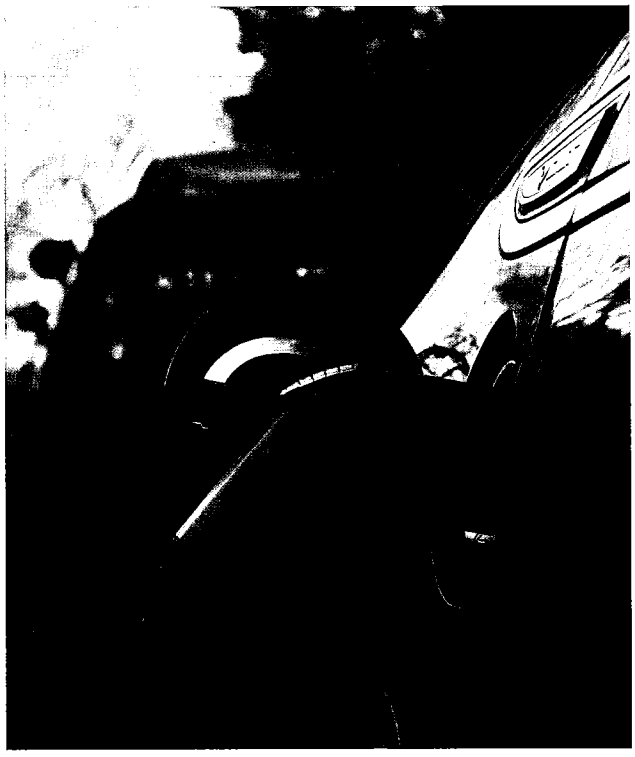
HOW DO I FUEL UP?

Electric vehicles are most commonly charged wherever they're parked overnight. Workplace and public charging stations are also becoming more common. To charge your electric vehicle you plug it into an outlet or charger. There are 3 types of chargers, differentiated by how fast they can charge the battery.

LEVEL 1

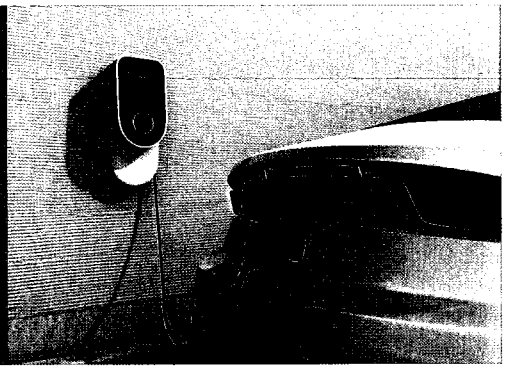
This is a standard wall outlet. Level 1 charging adds 4 miles of range per hour plugged in.





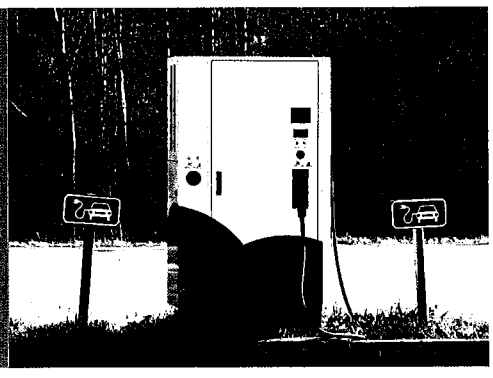
LEVEL 2

This is most likely what you'll get installed in your garage. Power comes from a 240V outlet. It takes 3-13 hours to get a complete charge.



LEVEL 3

Most commonly called DC Fast Charging, it takes 20 minutes to an hour to charge completely.



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Assembly Bill 233 – Clean Energy Corridor Grants

Testimony before the Assembly Energy and Utilities Committee

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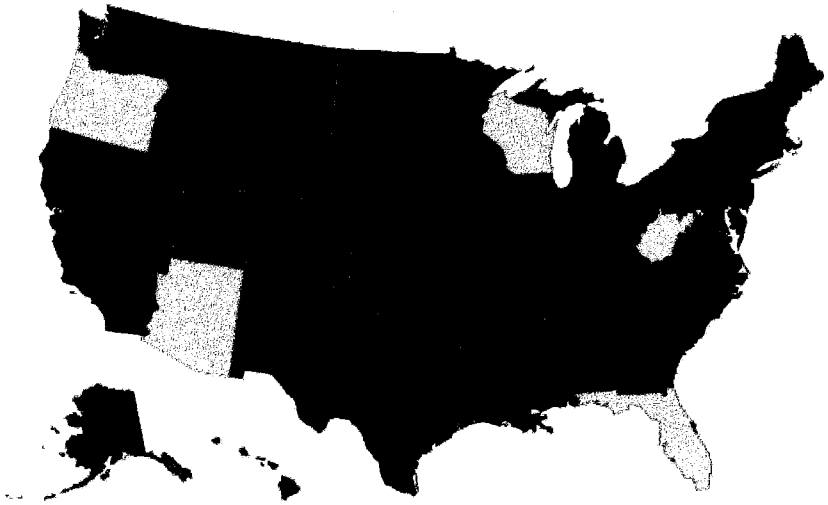

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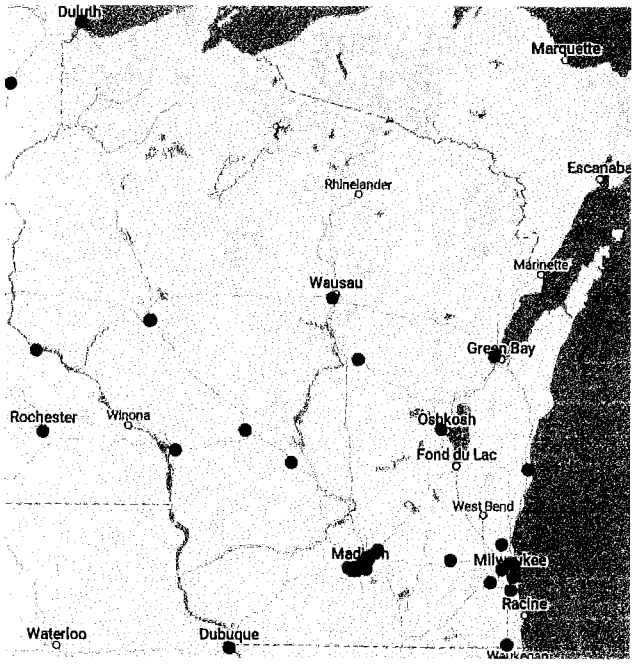

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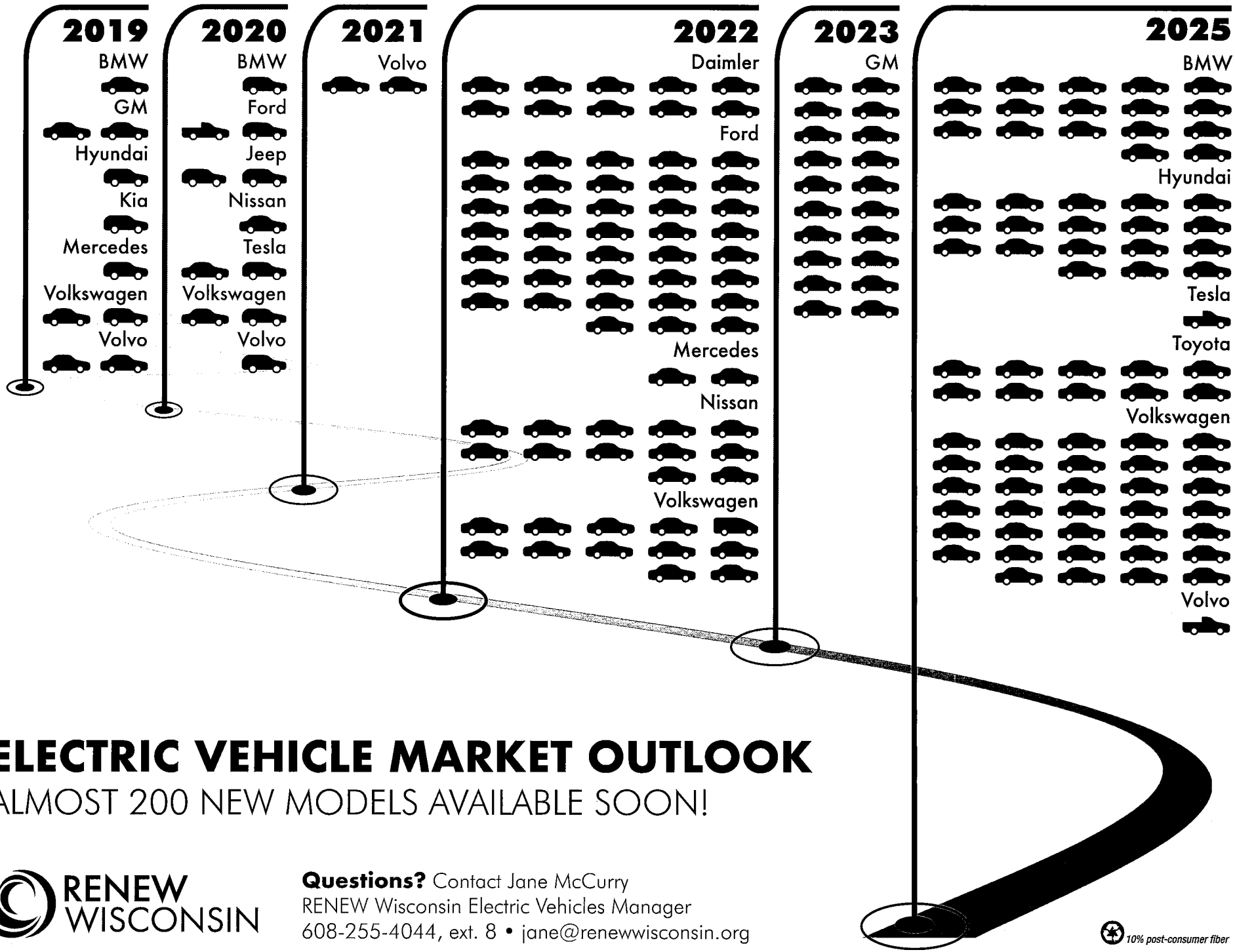

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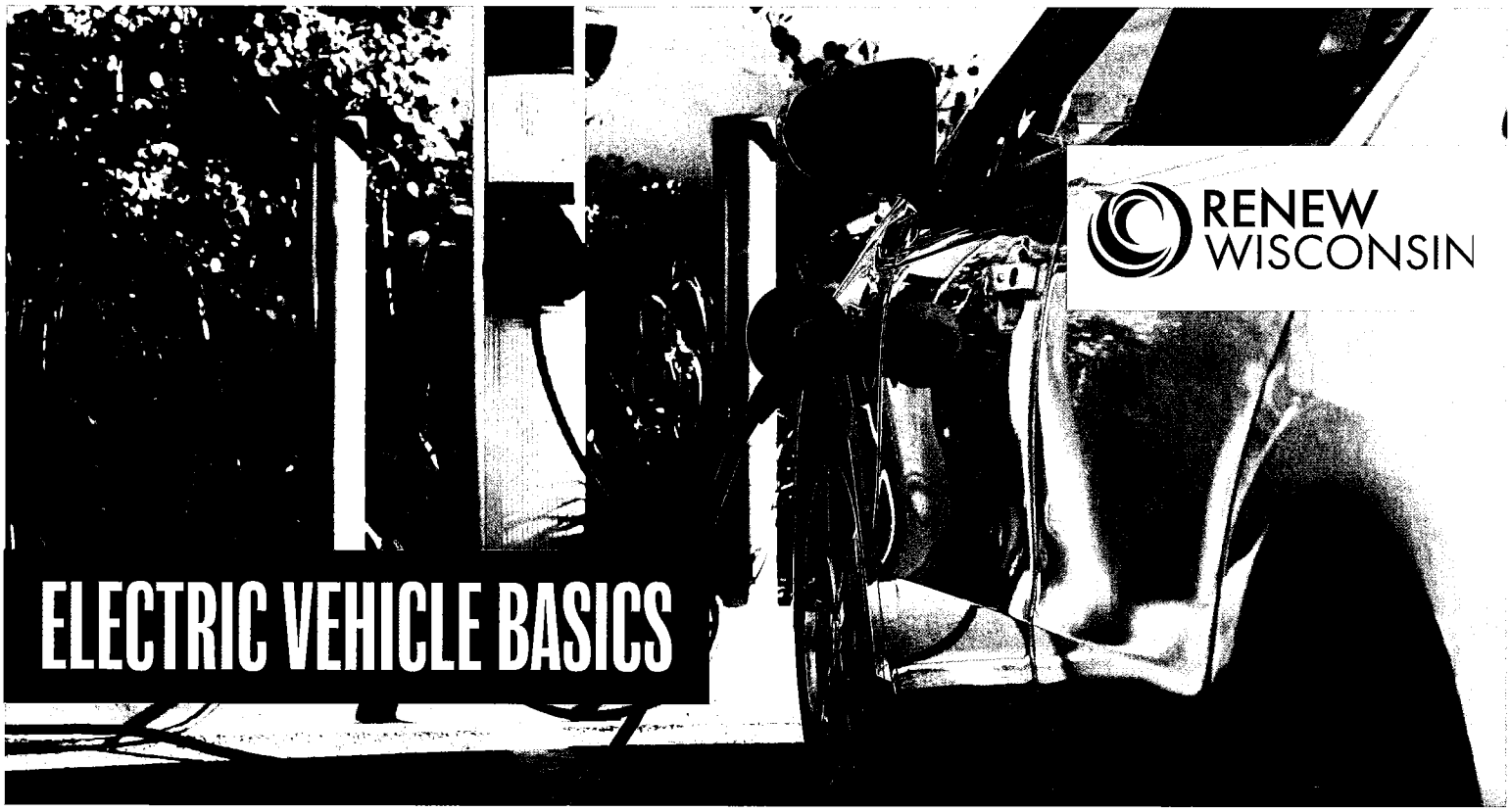

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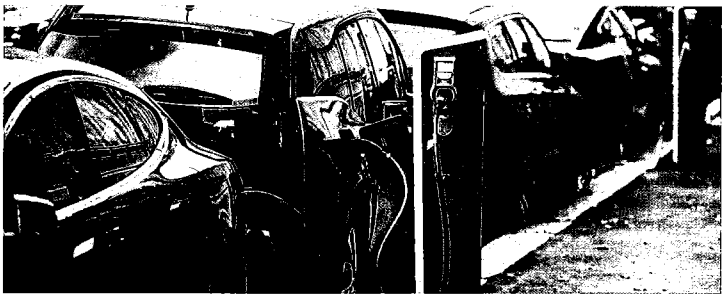

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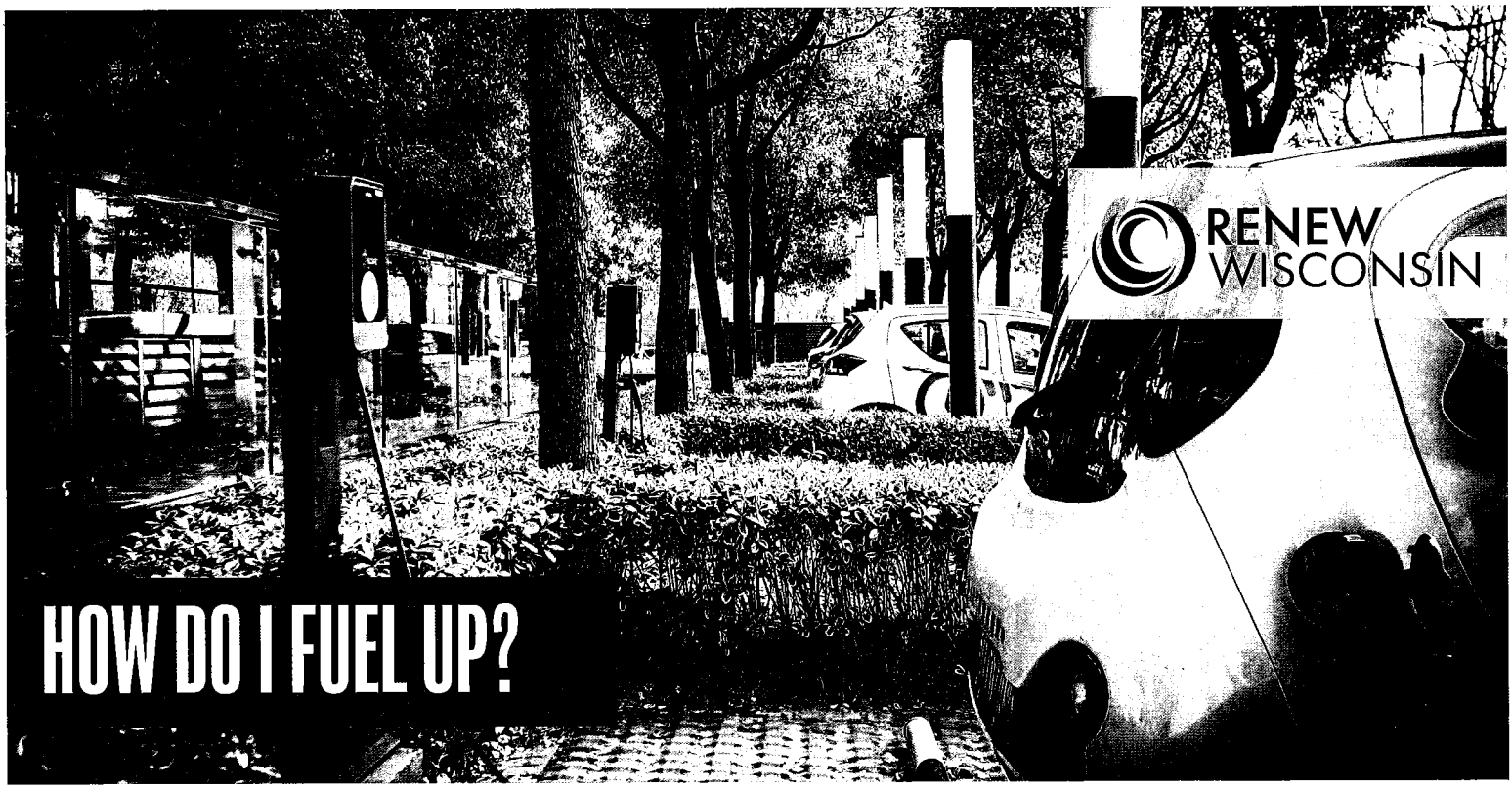

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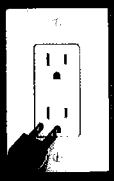
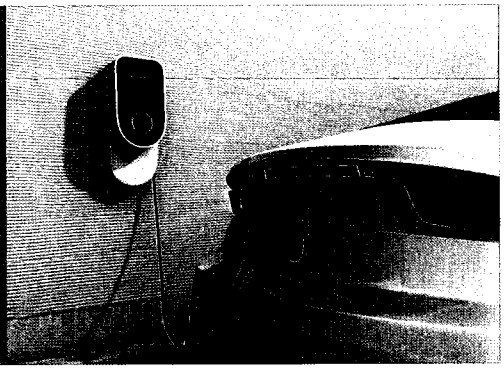


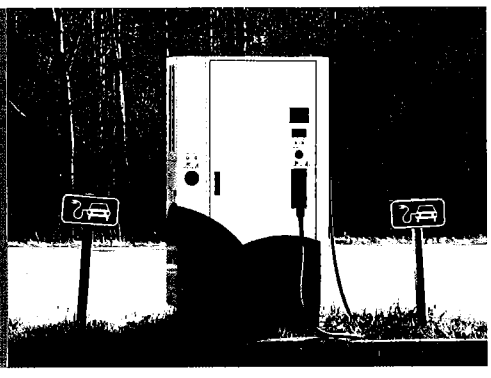
LEVEL 2

This is most likely what you'll get installed in your garage. Power comes from a 240V outlet. It takes 3-13 hours to get a complete charge.



LEVEL 3

Most commonly called DC Fast Charging, it takes 20 minutes to an hour to charge completely.



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To: **Assembly Energy & Utilities Committee**

From: **Wisconsin Utilities Association, Inc.**

Re: **AB 233 Testimony**

Date: **May 28, 2019**

Good afternoon Mr. Chairman and Committee members. Thank you for the opportunity to testify today on AB 233, relating to EV charging infrastructure. My name is Bill Skewes and I am the Executive Director of the Wisconsin Utilities Association (WUA), representing Wisconsin's investor-owned energy providers. Joining me today is Deb Erwin, Manager of Regulatory Policy for Xcel Energy to assist me in answering any questions of a technical nature.

The Wisconsin Utilities Association (WUA) appreciates the Legislature's efforts to address this rapidly growing and evolving segment of our transportation system. We respectfully testify today for Information Only.

We strongly support the authors' efforts to create charging corridors within the state to facilitate EV travel throughout Wisconsin and the Midwest. We think it makes sense to use the portion of the VW settlement dollars outlined in the bill to fund this infrastructure and we applaud the Chair for moving the discussion of EV charging, forward.

We share the authors' interest in facilitating the growth of the EV market and have expressed this in communications to Legislative Leadership, the Joint Finance Committee, the Governor and the Public Service Commission.

However, we are concerned about the provisions of the bill that require utilities to collect revenues through rates and forward them to PSC for eventual deposit in the Transportation Fund to address road funding for EV use. While we understand the need to ensure EVs pay an appropriate share into the fund for using Wisconsin roads, we request that an alternative mechanism to address this issue be considered.

Please note that we are committed to working with the authors and Chair to resolve this issue before the bill advances and look forward to being able to amend our position from Information Only, to Support

Again, thank you for the opportunity to testify today.

cleanwisconsin

your environmental voice since 1970

Testimony of Carly Michiels
Government Affairs Director, Clean Wisconsin
Assembly Committee on Energy and Utilities
Assembly Bill 233 – Charging Facility Grant Program
May 28, 2019

Thank you, Committee Chair Representative Kuglitsch, for the opportunity to provide testimony on Assembly Bill 233 relating to charging facility grant program introduced by Representatives Neylon, yourself, Allen, Kitchens, Kulp, Mursau, Petryk, Skowronski, Spiros, and Tauchen.

Clean Wisconsin is a non-profit environmental advocacy group focused on clean water, clean air, and clean energy issues. We were founded almost fifty years ago and have 20,000 members and supporters around the state. We've been working on clean energy issues in Wisconsin since our founding, and while some of the particulars have changed, Wisconsin remains a state with abundant opportunity for renewable resource growth and electrification. Clean Wisconsin employs scientists, policy experts, and legal staff to bring all the tools at our disposal to protect and improve our air and clean energy resources.

As we all know, powering our transportation sector is still very carbon intensive. In 2017, transportation accounted for 27 percent of all carbon emissions in the US. Powering our cars, trucks, busses and other modes of transportation with electricity is critical to cutting carbon emissions. We need our state to lead the way in encouraging electric vehicle (EV) use by helping to lay the groundwork for an easy and fast network of charging stations across the state.

The market is good for electrification. EVs are cheaper and more efficient to operate than gas and diesel vehicles, and as gas prices continue to increase, EVs are even more competitive. As demand increases for renewable energy and wind and solar continue to replace fossil fuels for electricity generation, EV emissions will be even less carbon intensive moving forward. EVs are healthier for our communities than gas and diesel vehicles because fewer combustion engine emissions means less hazardous pollutants and particulate matter.

However, there are things that keep people from buying, using, and traveling with EVs in Wisconsin. For example, there is a lack of a robust network of charging stations to allow people to confidently travel long distances around the state. EVs are often a least cost option, and production is ramping up – we need to take advantage of this opportunity.

The Volkswagen (VW) emissions settlement money is this opportunity. This money was distributed among states from an Environmental Mitigation Trust. It is money for the state of Wisconsin to use to offset emissions of nitrogen oxide (NOx). This bill designates a little over $10 million of the VW money for matching grants for the installation of public electric vehicle charging stations. Interconnectivity is a key component of this bill as it has the PSC designate a clean energy corridor consisting of contiguous state trunk highways connecting Wisconsin to Minnesota, Michigan, Iowa, and Illinois.

The heart of this bill is well-intentioned, and we appreciate the initiative from the legislators who introduced and support this bill. Governor Tony Evers also included a similar proposal in the budget bill currently being debated. Both utilize $10 million of the VW settlement money for EV charging infrastructure. While the two proposals have some differences and some components of both proposals need to be worked out, it is great that this issue is receiving bipartisan support. Everyone seems to agree that we need to continue building our EV charging infrastructure to incentivize electric vehicles coming to Wisconsin.

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We advocate Wisconsin having an active role in facilitating the transition to a clean energy economy, especially in this way utilizing the VW settlement money. Clean Wisconsin submits the following observations and questions concerning certain aspects of AB 233:

- Utilities that receive revenue collected from the charging facilities shall remit to the PSC 20% of that revenue, who will then deposit it into the state transportation fund. The 20% remittance for transportation likely results in some type of surcharge or perceived tax on EV consumers. We acknowledge as fuel efficiency improve for both combustion and EVs new approaches are necessary to address the traditional funding of transportation through things like gasoline taxes charged on a per gallon basis. Wisconsin already did increase EV registration fees by $100. Instead of a 20% remittance, Clean Wisconsin advocates for a transparent market-based pricing structure like a tax charged on a per kilowatt hour basis. This is similar to the existing gas tax and would be similar to current market pricing structures where you have the cost of the commodity and excise/sales taxes added on top. We believe this provides comparable market signals where there is one price, at one time, at one point resulting in more simplicity at the time of the transaction and avoids unnecessary regulatory proceedings in front of the PSC.

- On the same note, the grant recipients may charge a parking fee to consumers. The parking fee is based on the time of use and not on the amount of electricity consumed by the user. The parking fee being charged this way seems to be an attempt to address the sale of electricity issue and for it to be unrelated to the actual volume of energy used. It is unclear if this parking fee would be additive to the cost of charging or if it would be in lieu of the cost of charging. Again, Clean Wisconsin advocates for a transparent pricing structure which allows EV owners to be charged for the service being provided.

- Multiple added charges like a 1). 20% tax, 2). parking fee, and 3). the cost to charge the vehicle, in addition to any other increase in things like the 4). EV registration fees could quickly price them out of the market. This would no longer make EVs a competitive alternative. It is important to keep in mind a balance is preserved in incentivizing EVs in Wisconsin, especially in the early stages. We want to avoid so many taxes and fees accruing that they are no longer a reasonable option.

- In addition, as Wisconsin looks for a long-term solution to the transportation funding issue, we encourage the DOT, the legislature, and the Evers administration to consider funding mechanisms which are correlated to public infrastructure use, such as fees charged based on miles traveled and vehicle weights. These options could be more like user fees and again, provide a more transparent pricing structure.

Clean Wisconsin appreciates the significant investment in EV charging infrastructure both in AB 233 and in the Governor's budget. It is our hope that some of the differences between the two proposals and addressing some of the concerns highlighted can produce broad bipartisan support. Again, we are pleased to see the increased attention on electrification and working together toward a clean energy economy.

Thank you.

Written Testimony of the Customers First! Coalition
2019 AB 233 - Charging Facility Grant Program

Assembly Public Hearing
Committee on Energy and Utilities
May 28, 2019; 1:30 PM
225 Northwest, State Capitol

Chairman Kuglitsch and Committee Members:

Thank you for the opportunity to testify today. This is an exciting, emerging topic that warrants our discussion. We appreciate the bill's authors for bringing it forward.

The Customers First! Coalition is an alliance of Wisconsin-based organizations and businesses that include consumer organizations, municipal electric utilities, rural electric cooperatives, wholesale electric suppliers, an investor-owned utility, renewable energy advocates, and utility workers.

Our Coalition supports Assembly Bill 233 and the use of a portion of the state's VW settlement funds for the purpose of EV charging infrastructure. We believe state policies should be designed to support EV adoption and the associated benefits that can come with it, including:

- Downward pressure on electric rates for all customers;
- Lower fuel and maintenance costs for EV drivers, fleets, and transit systems; and,
- Environmental benefits from lower emissions.

EV registrations doubled nationally from 2017 to 2018. Because of the variety of benefits EVs provide and their popularity among early adopters, EV penetration is expected to continue to grow. However, questions about EVs are still holding some drivers back. "Range anxiety" due to a lack of public fast charging stations along travel routes is a legitimate concern that can be corrected with appropriate investments. Using this portion of VW settlement funds to establish a grant program to assist in EV infrastructure build-out will help your constituents access the many benefits that come with EVs.

Using data from May 18, 2019, the average price of a gallon of gas in Wisconsin was $2.74. The electric "eGallon" equivalent, according to the Department of Energy is $1.27. With EVs getting longer range, and new vehicles coming on the market under $30,000, EVs are coming into reach for more and more people. And since the emissions associated with EVs are around half of their gasoline-fired

equivalent vehicles, their emission-saving benefits will multiply as more drivers are able to hit the road and travel our beautiful state, charging at stations where an early assist may have been made possible using these settlement funds. As utilities transition their generation portfolios to more renewable energy, the environmental benefits of EVs can continue to grow.

Facilitating EV proliferation in Wisconsin may eventually benefit all Wisconsin electric customers. Studies in other states, including a February 2019 Synapse Energy report that's before you, have shown that EVs can drive down rates for all customers. When rate structures incentivize off-peak charging, EVs help make the best use of existing generation assets and the grid.

To those who say that state government should not be in the business of assisting in the build out of EV charging infrastructure, I note the following:

1.) The VW settlement funds are not taxpayer- or ratepayer-funded. They are settlement funds which must be spent on emissions reductions. And, EV drivers will still pay to charge at these stations, contrary to some blog posts on this topic.
2.) Much of Wisconsin's VW settlement funding is already being spent on a public transit vehicle replacement program, with most of the replacement buses being diesel-fired. The money proposed for EV charging stations is only a fraction of the state's total VW settlement award.
3.) Tesla's existing private charging network benefits Tesla drivers only. In order to help more affordable models of EVs with smaller batteries become within reach for more Wisconsinites, publicly-available, fast-charging infrastructure is needed to help get them across the state. A Volvo study recently found that the top two things holding drivers back from purchasing an EV were fears of running out of battery power and a lack of public charging stations. We can help alleviate those fears by using settlement funds to help spur charging station deployment. Not only will all utility customers benefit from greater EV adoption, but the environment will, too.

While we support using this portion of the VW funds for the purpose of EV charging infrastructure, we are also open to amendments that may be needed to gain additional support for Assembly Bill 233.

Thank you for your consideration.

Kristin Gilkes
Executive Director
Customers First! Coalition
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https://madison.com/wsj/news/local/environment/wisconsin-to-spend-million-of-volkswagen-diesel-fines-on-new/article_2dc46bf2-bc8a-557e-a095-ea11148055eb.html

Wisconsin to spend $25.8 million of Volkswagen diesel fines on new diesel buses

CHRIS HUBBUCH chubbuch@madison.com Dec 10, 2018

With sights set on eliminating carbon emissions, Madison is preparing to use some of the fines Volkswagen paid for cheating on emissions tests to buy diesel buses that will likely be on the road years after VW has stopped making gas and diesel engines.

Madison is in line to receive about $4.8 million in grants and loans from a $32 million pot of money administered by the state Department of Administration that will allow 10 cities to buy 58 new buses.

All but six of those buses will be powered by diesel engines, which generate about twice the climate-warming emissions of electric-powered buses in Wisconsin.

The money is part of a $2.9 billion settlement Volkswagen agreed to pay after admitting to violating the federal Clean Air Act by selling diesel engines with software designed to report inaccurate nitrogen oxide emissions.

Wisconsin is scheduled to receive $67.1 million over 10 years to offset the excess pollution. State law requires $42 million of that to be spent in 2017-2019 for replacement of state vehicles and the transit assistance program.

But not all of the money will end up with transit authorities. Madison and Milwaukee County will have to pay back 75 percent of the money through reduced state aid. Smaller cities will return 20 percent. In Madison's case, that works out to about $360,000 over 10 years.

Department of Administration spokesman John Dipko said it will be up to the Legislature what to do with that $12 million.

Madison sought funds to replace 15 of its 223 buses, some of which have been in service for 16 years, are rusted out and often break down. All have at least 415,000 miles on the odometer.

The new buses will run 21 hours a day on the highest-demand routes, where Metro Transit marketing manager Mick Rusch says crowding is a threat to ridership, especially for those with other transportation options.

"The choice riders might get back in their car," he said.

According to the city's application, the new buses will burn low-sulfur diesel and feature fuel-efficient engines and exhaust filters to reduce particle pollution. The city estimates they will reduce nitrogen oxide emissions by at least 90 percent.

But with an average fuel economy below 5 mpg, the new buses will burn more than 50 gallons of diesel each day in their first few years and will likely be on the road well beyond 2030.

VW, which shifted its focus to electric vehicles after the scandal, recently announced it would stop making internal combustion engines in 2026.

Only one Wisconsin city, Racine, intends to use the money to buy electric buses. Racine received nearly $6.2 million for charging equipment and six buses that it hopes will provide commuters to the new Foxconn campus with a "quiet, high-tech experience."

While the electric buses are more expensive, they cost only about a third as much to operate.

Racine communications director Shannon Powell said Mayor Cory Mason "has made it a priority to be as environmentally friendly and sustainable as possible."

'Missed opportunity'

Environmental advocates say state leaders should have used the money to encourage the adoption of zero-emission electric vehicles — as was done in states such as Nebraska and Colorado — rather than re-investing in old technology.

"The VW settlement is a unique opportunity that should be used to cover the premium of zero-emission vehicles, not to subsidize a city's regular procurement budget for status-quo technologies," said John-Michael Cross of the Environmental and Energy Study Institute. "Transit agencies should be working to leap ahead and electrify their fleets as quickly as possible."

Transportation accounts for about 28 percent of the nation's greenhouse gas emissions, about the same as electricity generation, according to the Environmental Protection Agency.

As utilities pivot from coal to renewable and less carbon-intense fuel sources, replacing internal-combustion engines with electric motors could reduce overall emissions by as much as 67 percent by 2050, according to a study by the Electric Power Research Institute.

Wisconsin could have installed charging stations along the interstate system instead of dangling loans in front of cash-strapped transit authorities trying to keep aging buses running, said Ashwat Narayanan, director of transportation policy for 1000 Friends of Wisconsin.

"I don't place too much blame on the transit agencies because they're just doing what's rational," Narayanan said. "Having newer buses is a good thing, but we have a big missed opportunity here."

Electric buses require expensive charging equipment and, in Madison's case, some updates to the 40-year-old bus barn on East Washington Avenue.

Madison is scheduled to get its first three electric buses in 2020 thanks to a $1.3 million grant from the Federal Transit Administration and matching funds from Madison Gas & Electric, the city's electricity provider, which has pledged to reduce its carbon emissions 40 percent by 2030.

As part of a five-year, $57 million overhaul of the bus barn, the city is planning to install chargers and expand garage doors next year to accommodate the taller buses.

But in the meantime, diesel buses can help by reducing the number of cars on the road each day.

"Single-occupancy vehicles are by far the biggest emitters of air pollution and climate change emissions in the transportation sector," said Jeanne Hoffman, facilities and sustainability manager for the city of Madison.

Hoffman also notes that in the time since the city first looked at electric buses, electric vehicle prices have gone down.

Wisconsin VW settlement transit funds

Nine cities and one county are divvying up $25.8 million in Volkswagen settlement funds with all but Racine buying diesel buses.

Applicant	buses	type	grant	loan	total
City of Appleton	15	diesel	$6,151,080.00	$1,537,770.00	$7,688,850.00
City of Eau Claire	3	diesel	$1,576,560.00	$394,140.00	$1,970,700.00
City of Green Bay	4	diesel	$1,476,800.00	$369,200.00	$1,846,000.00
City of Janesville	3	diesel	$1,203,600.00	$300,900.00	$1,504,500.00
City of La Crosse	1	diesel	$337,200.00	$84,300.00	$421,500.00
City of Madison	10	diesel	$1,199,700.00	$3,599,100.00	$4,798,800.00

Applicant	buses	type	grant	loan	total
Milwaukee County	11	diesel	$1,365,375.00	$4,096,125.00	$5,461,500.00
City of Racine	6	electric	$4,952,724.80	$1,238,181.20	$6,190,906.00
City of Sheboygan	2	diesel	$722,400.00	$180,600.00	$903,000.00
City of Wausau	3	diesel	$971,395.20	$242,848.80	$1,214,244.00

"The point is that it's just like any other new technology: as it starts to penetrate the market it gets better and cheaper," she said."It isn't cost-effective or smart for the city to go all-in right away."

Electric Vehicles Are Driving Electric Rates Down

Jason Frost, Melissa Whited, Avi Allison

February 2019

Electric Vehicles are on the Rise

Plug-in electric vehicles (EVs) are growing as a share of the light duty vehicle market in the US and globally. In California, EV sales have been increasing especially rapidly. Between September 2017 and August 2018, EVs accounted for 6.5 percent of new light duty vehicle sales in California.[1] California's two largest utilities, Pacific Gas & Electric (PG&E) and Southern California Edison (SCE), estimated that there were more than 250,000 EVs in their service territories in 2017,[2] a number which has certainly increased substantially since that time.

Another sign of the accelerating transition to cleaner electric transportation is the number of electric models that auto manufacturers are planning to introduce in the next few years. According to a June 2018 study by the consulting firm AlixPartners, 207 new EV models will be available globally by 2022.[3] With more available options that suit a wider range of customer needs, EV sales are likely to continue increasing in the coming years. With large quantities of cars plugging into the grid, there is a potential for significant electric utility system impacts.

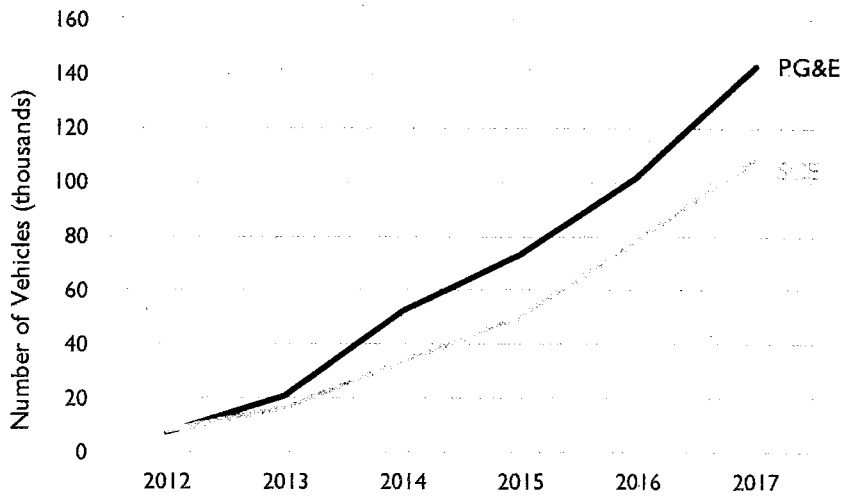
How are EVs Affecting Electricity Rates?

Recent growth in EV adoption has raised the question of how EVs affect the electricity rates paid by all households, including those that do not own EVs. This is an important equity question that should be analyzed when determining the role that electric utilities should play in supporting the transition to EVs. Answering this question requires comparing electric utility revenues from EV charging with utility costs associated with serving EV load. If the utility revenues from EVs exceed the utility system costs, then EV adoption can reduce electricity rates for all customers. Conversely, if the costs are greater than the revenues, non-EV owners could end up paying more for their electricity.

To address this question, Synapse evaluated the utility system revenues and costs associated with EVs for the two utilities with the most EVs in their service territories — PG&E and SCE. Specifically, we analyzed the electricity rates that EV owners pay compared to the marginal cost of electricity plus the costs associated with any upgrades to the grid required to accommodate EV charging and the expenditures resulting from utility EV infrastructure programs.

Our analysis relied on EV load profiles from the California *Joint IOU Load Research Reports*, as well as on-peak and off-peak marginal costs filed by the utilities in their most recent rate cases.[4] We also used the load profiles for residential customers that are available on PG&E's and SCE's websites as an estimation of residential load profiles without EVs.

Figure 1. Cumulative EV Adoption in California Utility Service Territories



Real World Revenues from EVs

Adding an EV can significantly increase household electricity consumption. Based on annual mileage data collected by the California Air Resources Board, we estimate that EVs in California between 2012 and 2016 increased consumption by approximately 250 kilowatt hours (kWh) per month.

Currently, most California EV drivers pay tiered electric rates, in which the price of electricity increases as customers move into higher-usage tiers. The extra electricity required to charge EVs is likely to push people into higher tiers. As a result, these customers tend to pay high rates for charging their electric vehicles.

However, roughly one quarter of EV drivers in California are on time-of-use (TOU) rates. These rates have different prices during on-peak hours and off-peak hours, and are meant to align prices more closely with the actual cost to provide electricity during those hours. By charging EVs primarily during off-peak hours, customers can simultaneously lower their electric bill and reduce costs on the grid.

Figure 2. Estimated PG&E EV Charging During Summer Peak and Off-Peak Periods

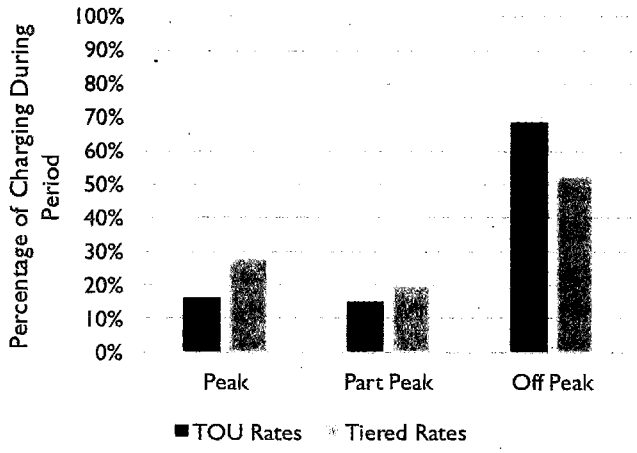
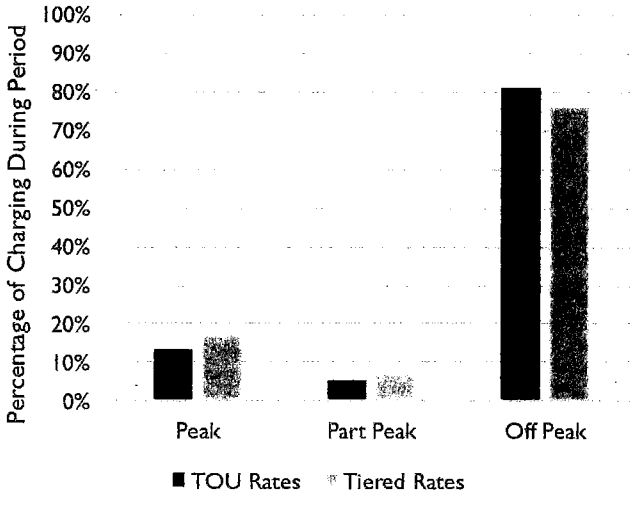


Figure 3. Estimated SCE EV Charging During Summer Peak and Off-Peak Periods



Accounting for the Costs Imposed by EVs

EV customers on tiered and TOU rates have differing charging patterns, with those on TOU rates shifting more of their usage to off-peak hours. For our analysis, we first estimated the hourly load associated with EV charging on both TOU and non-TOU rates. This was done by taking the difference between the load profiles for EV customers provided in the 2017 *Joint IOU Electric Vehicle Load Research Report*[5] and average load profiles for all residential customers.[6]

Next, we estimated the cost associated with serving additional load during those hours. A substantial portion of electricity costs are related to serving system peak demands. Peak demand is the largest amount of power that the grid needs to be able to supply instantaneously. The utility system must be built with enough generation, transmission, and distribution capacity to meet the local and system-wide peaks, even though it's needed only for a few hours a year. An important way that EVs can limit grid costs is by charging off peak and avoiding contributing to higher peak demands (and thus the need to invest in more distribution, transmission, and generation assets).

Figures 2 and 3 contrast the charging habits of EV customers on TOU rates (left bars) relative to EV customers on tiered rates (right bars) during the peak, part-peak, and off-peak periods. In PG&E's service territory, customers on TOU rates charge almost 50

percent less during peak periods than do customers on tiered (non-TOU) rates. As EV adoption increases, TOU rates will be increasingly important as a way of encouraging charging during off-peak periods to minimize utility system costs. California is in the process of adjusting TOU periods and implementing default residential TOU rates, which will help in this regard, though optional TOU rates will still be critical to manage load and increase fuel cost savings.

To estimate the total cost of serving EV load, we used utility marginal cost data for energy, generation capacity, and transmission and distribution capacity. These costs vary by time of day, and therefore we accounted for the difference between peak and off-peak costs wherever possible.

Energy Costs

EVs require more electricity to be generated whenever they are charged. The marginal cost of energy is equal to any fuel and other operational costs required to produce one additional unit of electricity. Producing electricity is more expensive at times when there is higher demand and older, more expensive power plants are used to generate the additional electricity. In contrast, electricity costs can be trivial during hours when low-cost renewable energy is plentiful.

Generation Capacity Costs

Generation capacity costs are associated with ensuring that enough power plants are available to meet the grid's peak demand (plus a reserve margin). Additional power plants may be needed if EVs require electricity during peak hours, and this can impose additional costs.

Transmission and Distribution

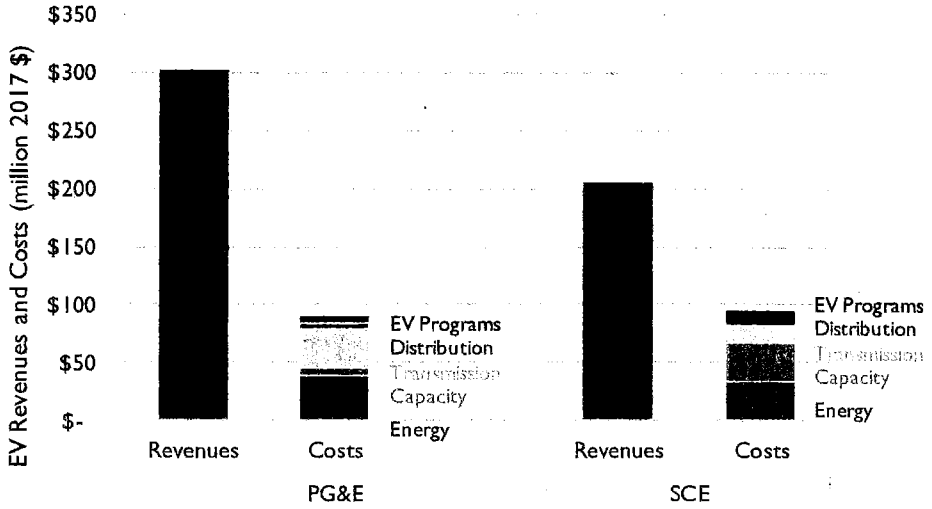
Transmission and distribution system costs reflect the cost of delivering electricity from power plants to customers. These costs are also heavily dependent on peak load because transmission and distribution lines are sized to handle the highest instantaneous amount of power they need to transmit. Increased electricity consumption from EVs could eventually lead to a need for new transmission lines.

Utilities may also need to upgrade the distribution systems that provide electricity to end-users if the local peak demand increases. A neighborhood in which there are many EVs, for example, could require distribution system upgrades to serve the new EV load. So far, California load research data indicates that these upgrade costs have been quite small. Accounting for inflation, distribution upgrade costs through 2017 were less than 1.5 percent of EV revenues in PG&E's service territory and 0.2 percent of EV revenues in SCE's service territory.[7,8]

Utility Programs

The California Public Utilities Commission has approved a variety of utility programs to support transportation electrification. The expenditures to date have been relatively modest, but will increase over the next several years. We accounted for utility program expenditures through 2017 in our analysis. While expenditures associated with such programs will increase in future years, so will the revenues from a growing number of EVs.

Figure 4. PG&E and SCE Revenues and Costs of EV Charging, 2012-2017

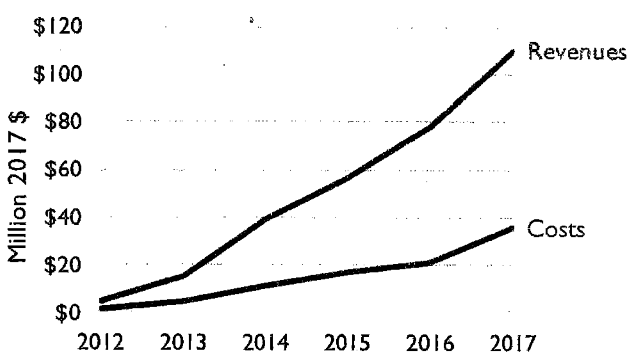


Results

Our analysis indicates that, from 2012 through 2017, EVs in California have increased utility revenues more than they have increased utility costs, leading to downward pressure on electric rates for EV-owners and non-EV owners alike. This finding holds across both utilities, and for customers on standard tiered rates and TOU rates. Figure 4 shows the extent to which revenues from EVs outweigh the costs imposed for the period 2012-2017.

A key reason why revenues from EVs outweigh the costs is that EV customers — particularly those on TOU rates — tend to charge during off-peak hours. By charging during off-peak hours, EVs impose minimal costs on the grid and help to utilize resources more efficiently.

Figure 5. PG&E Revenues and Costs Associated with EVs



Revenues from EVs Can Help Fund EV Charging Infrastructure

EVs can provide substantial emissions reductions while also helping to reduce electricity rates for all customers by using the system more efficiently. Utilities can play an important role in ensuring that EVs benefit both EV drivers and non-EV drivers alike by encouraging EV customers to enroll in TOU rates. In addition, utility investments to facilitate the deployment of charging infrastructure can help close a growing charging infrastructure gap and accelerate EV adoption, increasing associated revenues in the process.

If done carefully, utility-funded investments can deliver benefits to all ratepayer in excess of their costs. Our analysis indicates that increased EV adoption in California has already resulted in more electricity revenues than costs, and future growth in the EV market will lead to further increases in utility revenues.

The gap between revenues and costs associated with EVs has increased over time. With TOU rates and targeted investments in charging infrastructure, EV adoption can reduce costs for both EV-drivers and other electric customers while also cleaning the air and insulating consumers from the volatility of the world oil market.

ENDNOTES

[1] Alliance of Automobile Manufacturers. Advanced Technology Vehicle Sales Dashboard. Available at https://autoalliance.org/energy-environment/advanced-technology-vehicle-sales-dashboard/

[2] Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company. December 29, 2017. Joint IOU Electric Vehicle Load Research Report. 6th Report.

[3] AlixPartners. 2018. "A 'pile-up of epic proportions' awaits auto industry as investments necessary to an electric and autonomous future balloon just as market slows, according to AlixPartners study." Available at https://www.alixpartners.com/media-center/press-releases/pile-up-awaits-auto-industry-investments-electric-autonomous-future-balloon/

[4] Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company. December 29, 2017. Joint IOU Electric Vehicle Load Research Report. 6th Report.

[5] Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company. December 29, 2017. Joint IOU Electric Vehicle Load Research Report. 6th Report.

[6] Dynamic Load Profiles for PG&E rate class E-1 available at https://www.pge.com/nots/rates/tariffs/energy_use_prices.shtml, and for SCE rate class DOM-S/M available at https://www.sce.com/regulatory/load-profiles/dynamic-load-profiles

[7] Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company. 2012-2017. Joint IOU Electric Vehicle Load Research Reports.

[8] Total distribution system upgrade costs between 2012 and 2017 were $4.5 million for PG&E and $0.3 million for SCE, both in 2017 dollars.

WISCONSIN
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Assembly Committee on Energy and Utilities
Chairman Mike Kuglitsch
Room 129 West
State Capitol
P.O. Box 8952
Madison, WI 53708

Thank you to Chairman Kuglitsch and members of the Assembly Committee on Energy and Utilities for the opportunity to testify today in support Assembly Bill 233. Wisconsin Conservative Energy Forum has a unique mission in our state; to bring a free market, conservative voice to the debate over energy and emerging technologies like electric vehicles. Our support for AB 233 is grounded in the understanding that the electric vehicle market is quickly emerging and these new vehicles offer Wisconsin a large economic and consumer opportunity.

Electric vehicles are arriving quickly to Wisconsin's streets; they are no longer a science fiction dream of Elon Musk and Tesla isn't the only company capitalizing on energy innovation. In fact, Reuters Business reports 29 major auto manufacturers around the world are investing roughly $300 billion in battery and electric vehicle technology. General Motors, Ford, and Toyota have all made announcements about what the future of automotive transport will be: electric.

It's easy to see why electric vehicles are becoming popular with consumers. Without fuel and maintenance costs such as oil changes, electric vehicles are far cheaper to drive and maintain over the lifetime of the car. Batteries are also becoming increasingly efficient with the cost of battery technology plummeting in the last five years alone, the total cost of electric vehicles is dropping too.

Automotive experts now expect the first electric vehicles to reach up-front price parity with average gas-powered cars in as little as three years, by 2022. Given the additional cost savings mentioned above, these vehicles will be significantly cheaper to own and operate than automobiles on the road currently.

But consumers don't just want affordability – they want reliability too. Consumers want peace of mind to know they can drive to and from any destination in this state. And they increasingly want more choices in how to do that – improving electric vehicle technology and charging infrastructure is top among them.

For Wisconsin, a market-led transition to electricity as a fuel for our vehicles could be a tremendous opportunity. Last year alone, drivers in Wisconsin spent $7.6 billion putting gas in our vehicles. This money leaves our state and is paid to oil and gas operations around the world. Switching the source of our fuel from a market dominated by Saudi Arabian and Russian oil to locally generated electricity could bring jobs, investment, and economic development to Wisconsin.

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AB 233 moves our state in the correct direction to seize that opportunity. Creating public-private partnerships that encourage private companies to build, own, and maintain charging infrastructure is the first step to ensuring the electric vehicle market develops and can stand on its own in our state. AB 233 is also an opportunity for Wisconsin to take a hard look at a difficult problem; creating a revenue stream to ensure electric vehicles are adequately contributing to the transportation fund. Regardless of how this revenue collection is structured, we believe it is important for Wisconsin to identify a long-term solution that contributes to the transportation fund equitably and gives the electric vehicle market certainty for the future.

We have a significant opportunity to utilize this superior technology and give new meaning to homegrown energy to create jobs and economic development. The future is here, but Wisconsin is not ready for it. That's not to say we can't be ready with forward looking leadership. We applaud Senator Cowles, Representative Neylon, and Chairman Kuglitsch for showing leadership and stepping up to find solutions and pursue opportunities.

I would be happy to take any questions the committee has. Thank you again for the opportunity to testify in support of Assembly Bill 233.

Scott Coenen
Executive Director
Wisconsin Conservative Energy Forum

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The Honorable Mike Kuglitsch, Chair
Committee on Energy and Utilities
Room 129 West
State Capitol
Madison, WI 53708

May 28, 2019

Re: AB 233 – Relating to: charging facility grant program and making an appropriation.

Dear Chair Kuglitsch:

ChargePoint appreciates the opportunity to provide testimony on the above-referenced legislation, which we could support with the amendments identified below.

Background on ChargePoint

ChargePoint is the leading electric vehicle ("EV") charging network in the world, with charging solutions in every category EV drivers charge, at home, work, around town and on the road. With over 64,000 independently owned public and semi-public charging spots and thousands of customers (businesses, cities, agencies and service providers), ChargePoint is the only charging technology company on the market that designs, develops and manufactures hardware and software solutions across every use case. ChargePoint currently has 350 charging spots in Wisconsin. Leading EV hardware makers and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online and in navigation systems for popular EVs. ChargePoint drivers have completed more than 55 million charging sessions, saving upwards of 60 million gallons of gasoline and driving more than 1.4 billion gas-free miles. For more information, visit www.chargepoint.com

General Position on the Bill

ChargePoint is supportive of the goals of AB 233, which would leverage Wisconsin's allocation of the Volkswagen Environmental Mitigation Trust to support the deployment of EV chargers with a Clean Energy Corridor grant program. Lowering barriers for Wisconsin businesses and communities to install EVSE will make it easier to ride and drive electric across the state.

However, we respectfully wish to identify the following concerns with the bill as drafted. If left unaddressed, these concerning sections of the bill will prevent the Clean Energy Corridor program from being successful and hold back transportation electrification in Wisconsin.

chargepoint

Concern #1: Restricted from Setting Appropriate Pricing for EV Charging

Problem: Section 1(C)1 would limit site hosts to solely setting pricing for EV charging on the length of a charging session and would prevent site hosts from reflecting energy costs ("kWh"). This would lead to stations being underutilized, prevent Wisconsin drivers from getting what they pay for, and frustrate fair market competition.

Background: Pricing for EVSE services can be set in a variety of ways: time, session, energy, combinations thereof, and more. Site hosts primarily set pricing in order to incentivize charging behavior for drivers who use chargers deployed on their premises.[1]

Limiting the price for EV charging to being based on the length of a charging session will prevent site hosts from considering different power needs across the EV market. EV battery capacity and rate of charge vary greatly by make and model, from the ~3.6 kW charge rate of a Chevy Volt to the almost 20 kW charge rate of a Tesla Model S. If site hosts are limited to setting pricing based on time spent plugged in, the Chevy Volt would be charged the same flat hourly rate as a Tesla Model S while getting approximately one fifth of the energy during the same period.

Over 25 jurisdictions have already determined that non-utility EV charging providers are not reselling electricity nor should they be regulated like public utilities.[2] It would be premature to impose statutory pricing restrictions before the PSC of Wisconsin can weigh in on the matter.

Solution: We recommend that the Committee strike the following language in Section 1(C)1:

> ~~1. [...] An eligible applicant that is awarded a grant and installs a charging facility may charge a parking fee determined by the eligible applicant to any person who uses the facility if the fee is based on the time length of a session of use and not on the amount of electricity consumed by the user during a session of use.~~

Concern #2: Minimum Cost Share

Issue: AB 233 sets a ceiling for grants issued in support of a Level 1, Level 2, and DC fast charging along a clean energy corridor at 50% of "the cost to purchase, install, and maintain a charging facility."[3] This would prevent Clean Energy Program grants from reflecting how installation costs can differ wildly at different sites, which would limit the success of the program and would be inconsistent with the terms of the Environmental Mitigation Trust.

Background: States around the country are considering how to leverage limited resources to support the deployment of EV charging stations. The cost of equipment, installation, and operation of EVSE vary greatly between DC fast chargers and Level 2 chargers, but both are

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[1] For more background on EV charging business models, please see Attachment A.

[2] ARK. CODE § 23-1-101(9); CAL. PUB. UTIL. CODE, § 216(i); COLO. REV. STAT. § 40-1-103.3(2); D.C. CODE §§ 34-207, 34-214; FLA. STAT. § 366.94; HAW. REV. STAT. § 261-1(2); IDAHO CODE § 61-119; 220 ILL. COMP. STAT. §§ 5/3-105(c), 5/16-102; ME. REV. STAT. ANN. tit. 35, §§ 313-A, 3201(5), 3201(8-B); MD. CODE PUB. UTILS. §§ 1-101(j)(3), 1-101(x)(2); MINN. STAT.§ 216B.02 (subd. 4); OR. REV. STAT. § 757.005(1)(b)(G); UTAH CODE §§ 54-2-1(7)(c), 54-2-1(19)(j); VA. CODE ANN. § 56-1.2:1; WASH. REV. CODE § 80.28.310; W. VA. CODE § 24-2D-3.

[3] AB 233 Section (C)2

critical to supporting electric transportation in Wisconsin. While DC fast charging along highway corridors or centrally located in urban areas is needed to serve EV drivers traveling long distances or those without access to home charging, Level 2 charging serves an everyday need whether it is at work, home, or in a publicly accessible location.

ChargePoint believes that site hosts should have "skin in the game." When site-hosts share in the cost of EVSE, they are motivated to maximize the value of their investment. However, grant programs with inflexibly high requirements for private matching payment are often unsuccessful, particularly those that attempt to support the deployment of DC fast chargers.

The terms of the Environmental Mitigation Trust identify different levels of cost share requirements based on the extent to which stations are publicly accessible and whether they are deployed on public or private property.

Solution. We urge the Committee to amend Section 1(C)2 as follows:

> 2. A grant under this subsection may not exceed ~~50 percent of the cost to purchase, install, and maintain a charging facility~~ the percentage levels identified in Appendix D of the Consent Decree that established the Environmental Mitigation Trust.

In the event that the Committee prefers to further limit the percentage of project costs that can be covered by a Clean Energy Corridor grant, ChargePoint recommends percentages as follows based on our experience with similar programs across the country:

- **Level 2**: Grants shall not exceed 60% or 80% of total project costs for chargers deployed on private or public property, respectively.
- **DC fast chargers**: Grants shall not exceed 80% or 100% of total project costs for chargers deployed on private or public property, respectively.

Conclusion

ChargePoint appreciates the opportunity to provide testimony on AB 233. Thank you for your consideration, and please let me know if I can provide additional information.

Sincerely,

Kevin George Miller
Director, Public Policy
ChargePoint

CC: Representative Adam Neylon

Attachment A: Background on EV Charging and EV Charging Business Models

The nature of "refueling" a vehicle at EV charging stations is inherently different than refueling an internal combustion engine ("ICE") vehicle, and the business models for site hosts of both types of technologies are likewise different. Whereas refueling an ICE vehicle takes a matter of minutes and does not result in longer-term parking with the driver absent from the vehicle, charging an EV has a longer timeframe and often results in a parked, unattended vehicle. The combination of charging and parking services associated with EV charging infrastructure is unique.

EV charging typically takes place when drivers arrive at their destination, rather than as a pit stop on the way there. In other words, drivers charge where they park. One analysis conducted through the Idaho National Labs found that EV drivers charged their vehicles at home 64% of the time, with about 30% of charging taking place at work.[4]

Publicly-available EV charging stations are also vitally important and are installed by a range of different owners and operators of EV charging stations ("site hosts") to provide charging services to customers, employees, tenants and other EV drivers. Site hosts provide EVSE for a wide variety of reasons. Private businesses, including retailers, grocery and convenience stores, hotels, multi-unit dwelling ("MUD") owners, among others, may install EVSE to attract new customers or tenants with a valuable amenity. State and local governments may install EVSE to support their emission reduction goals, electrify their own fleet vehicles, attract visitors, and provide a valuable amenity to the community. A wide variety of site hosts may also find it valuable to demonstrate their commitment to sustainability.

Site hosts provide EV charging services as an amenity that creates direct and indirect value streams. Site hosts need to have flexibility to optimize the station utilization and encourage a desired charging behavior specific to each site and use case.

Networked, or "smart," EV charging stations provide site hosts with the ability to set pricing for EV charging services in many ways. These dynamic pricing tools allow site hosts to incentivize driver behavior, which is essential given that EV charging is a combination of vehicle refueling and parking. Flexibility in pricing allows site hosts to tailor pricing to the unique needs of the site, including, but not limited to:

- A free charging session;
- A fixed rate for the session, for which the driver pays a set fee for the entire session;
- An energy rate, for which the driver pays for the energy consumed on a per kilowatt-hour (kWh) basis;
- An hourly rate, for which the driver pays per hour, similar to how a parking meter operates;
- Length-of-Stay pricing, for which one price is charged during the first x hours and another price is charged for every hour afterwards;

[4] Smart, John. *Lessons Learned About Workplace Charging in the EV Project.* Idaho National Labs. 2015.

- Time-of-Day pricing, for which one price is charged during peak hours and another during off-peak hours.
- A minimum and/or a maximum fee per session;
- A combination of the above, in which, for example, a flat session fee followed by an hourly rate, an hourly rate followed by per kWh pricing, a minimum session fee followed by an hourly rate, or a free period of time followed by per kWh pricing; and
- Driver groups, for which station owners may set unique policies for different classifications of drivers (e.g. employees vs. visitors) using the options above.

Site hosts in Wisconsin set pricing to drivers by considering many factors, including attractiveness to drivers, projected utilization of charging stations, desired charging behaviors, comparable services from other competitors, and effective utility rates. Pricing to drivers is inherently connected to the success of charging deployments, as it is used to align site circumstances and achieve site host goals. Site hosts can choose to pass on fluctuating electricity rates or to determine another fee structure that will better optimize station utilization. Site hosts have a direct relationship with visitors to their locations and are better suited to meeting the interests of their customers (i.e., EV drivers).

ChargePoint believes that in order to maintain a level playing field among all market participants, regulation over charging station pricing to the driver must be outside of Public Service Commission jurisdiction for all charging station providers. Regardless of the entity owning or operating charging infrastructure, all charging station providers must respond to the same market forces and conditions in setting pricing to drivers.

ChargePoint cautions against preventing site hosts from determining fees for EV charging services or limiting EV usage fees to reflecting only one pricing component (e.g., time or energy). A study of over 400,000 charging sessions found that a strict "per kWh" price for EV charging services leads to the least efficient usage of EVSE, followed closely by "free" charging or flat, time-based pricing.[5] On the other hand, charging stations are used more efficiently when the site host is able to set pricing through a combination of either hourly or kWh pricing, along with a time- or session-based fee to incent turnover once charging is complete.

[5] Wynn, Ryan. "Electric Vehicle Charging at Work: Understanding Workplace PEV Charging Behavior to Inform Pricing Policy and Investment Decisions." University of California – Los Angeles Luskin Center for Innovation. Available at: http://innovation.luskin.ucla.edu/content/electric-vehicle-charging-work.

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To: Assembly Committee on Energy and Utilities
From: Alliance of Automobile Manufacturers
Date: May 28, 2019
Re: For information only comments on Assembly Bill 233

The Alliance of Automobile Manufacturers (Alliance)[1], submit these comments for information only on Assembly Bill 233. Since the settlement was finalized almost three years ago, the Alliance has urged Wisconsin to allocate 15 percent of the Volkswagen settlement funding for electric vehicle (EV) charging stations. AB 233 provides one plan for the state to implement EV infrastructure. As the legislature considers AB 233 and governor's EV budget proposal, we wanted to provide some additional information on where the auto industry is heading.

Automakers have made enormous investments to promote electric vehicle technologies, spending tens of billions of dollars on research and development, assembly plant modifications, production and promotion of plug-in hybrid electric vehicles and battery electric vehicles (hereafter referred to collectively as "plug-in electric vehicles").

Automakers currently offer 29 different battery electric vehicle (BEV) models in the United States, and over 70 models are expected by 2021. More than 30 Plug-in hybrid electric vehicles (PHEV) are offered in all different shapes and sizes – mini-compacts, two-seaters, subcompacts, compacts, midsize and large sedans, station wagons, SUVs, mini-vans – with both two-wheel drive and six different all-wheel drive options.

However, customer acceptance to date suggests product offerings alone will not suffice to build a self-sustaining, robust, and growing plug-in electric vehicle market. Among other vital complementary policies, adequate infrastructure to fuel the vehicles is absolutely essential for long-term growth of this market.

Survey after survey reveals that lack of infrastructure is one of the number one reasons for not considering an electric vehicle purchase. For example, a survey of 2,500 consumers by Altman Vilandrie & Company in the summer of 2016 found the top reasons customers gave for not wanting to purchase a plug-in electric vehicle was a perceived lack of charging stations (85%) and uncertainty over the range (74%).[2] Simply put, consumers do not buy vehicles they cannot refuel.

Public charging infrastructure for plug-in electric vehicles not only relieves "range anxiety," but also raises consumer awareness of the technology. However, Wisconsin's infrastructure

[1] The Alliance is a trade association representing twelve of the world's leading car and light truck manufacturers, including BMW Group, FCA US LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America (VWGoA), and Volvo Car USA. Together, Alliance members account for roughly 70% of the cars and light duty trucks sold in the United States.

[2] Hanley, Steve (2017, January 1), *60% of Americans Unaware Electric Cars Exist*, retrieved from http://gas2.org/2017/01/01/60-americans-unaware-battery-cars-exist/

is currently falling behind current vehicle offerings and in desperate need of a kick-start. For perspective, Wisconsin has 3,491 gasoline stations (and vastly more "pumps"), but only has 245 public electric charging stations.

According to a recently published report, *Volkswagen Settlement State Scorecard*, 37 states have allocated 15 percent of its award on charging infrastructure projects. This includes Wisconsin's neighboring states, Minnesota and Michigan.[3]

To advance the electric vehicle market, Wisconsin must invest in the infrastructure, and the EMT funding is available for this infrastructure and does not require the state to commit any taxpayer monies or funding from the general budget.

EVs are important for a state's economy, energy security, and environmental sustainability. And infrastructure is vital to enabling this EV market now and in the future. The Alliance and our members recommend Wisconsin allocate 15 percent toward electric vehicle infrastructure. We will continue working with Wisconsin's legislature, Governor and administrative agencies to secure appropriate and sufficient infrastructure.

[3] Volkswagen Settlement State Scorecard:
https://uspirg.org/sites/pirg/files/reports/USP%20VW%20Scorecard%20May19.pdf

WPPI energy

1425 Corporate Center Drive Sun Prairie, WI 53590-9109 608.834.4500 **wppienergy.org**

May 28, 2019

Dear Chairman Kuglitsch and Ranking Member Meyers,

WPPI Energy strongly supports the overall concept of Assembly Bill 233: using Volkswagen (VW) settlement funds to provide grants for electric vehicle (EV) charging infrastructure throughout the state. We appreciate Chairman Kuglitsch's, Representative Neylon's and Senator Cowles' efforts to expand the EV charging technology network and to grow this beneficial technology throughout the state. Using VW settlement funds to increase the availability of EV chargers will help address range anxiety, one of the major barriers to widespread EV adoption. Additionally, as more Wisconsinites charge electric vehicles across the state, it could result in better utilization of utility system resources and lower costs for all customers – EV owners and non-owners alike.

WPPI Energy has expressed our support for using VW settlement funds for EV infrastructure in communications with Legislative Leadership, Utility Committee Leadership, the Joint Finance Committee, the Governor and the Public Service Commission and we are pleased AB 233 does just this. **We strongly support creating EV charging corridors throughout Wisconsin using VW settlement funds.**

However, WPPI Energy believes that our 41 member utilities throughout the state can and should play a role in ensuring EV charging infrastructure is built cost-effectively and in rural, suburban and urban locations alike. **Under the current language in AB 233, a municipal utility would not be an eligible grant recipient ("business"), but investor-owned and cooperative utilities would be.** We believe that in many rural communities along the charging corridor, the utility – whether municipally, investor or cooperatively owned – may be best positioned to ensure EV charging infrastructure is built locally. Including municipal utilities will help ensure EV charging technology is equitably installed across the state, not just in urban areas along the corridor. **We ask that the bill be amended to include municipal utilities as eligible grant recipients.**

Additionally, we are concerned with the language contained in Section 4 requiring a public utility to collect VW funded EV charging revenue through rates for remittance to the transportation fund. Since EVs will not contribute to the transportation fund via the gas tax, we understand a mechanism may be needed to ensure EV drivers are paying an appropriate amount for using Wisconsin roads. **We request a different, non-utility rate based method be considered.**

We appreciate the author's willingness to engage on and address these issues. We think municipal utility involvement will be critical to the expansion of EV infrastructure in suburban and rural areas along the clean energy corridor and, based on our discussions, we are optimistic we will reach a place where we can fully support this forward-looking bill.

Thank you for your consideration,

Joseph Owen - Manager of Government Relations, WPPI Energy

Cc: Members of the Assembly Energy and Utilities Committee