



Wisconsin Clean Energy Plan: Transportation Recommendations

Introduction

Transportation greenhouse gas emissions are a result of what the Center for Clean Air Policy (CCP) refers to as a ‘three legged stool’ – vehicles, fuels, and vehicle miles traveled. Critical to any successful transportation decarbonization plan is a three-pronged strategy that encourages technology advancements and influences consumer choices about transportation mode, fuel sourcing, and miles driven.

WiACES tenders the following starter-list of recommendations to the Department of Administration for consideration as it develops the Wisconsin Clean Energy Plan.

About the Wisconsin Automated, Connected, Electric and Shared Mobility Association (WiACES):

WiACES is an objective source of knowledge and information on emerging automated, connected, electric, and shared (ACES) mobility technologies. The organization advocates for safe, equitable, democratized transportation technology adoption in Wisconsin and works collaboratively and inclusively to facilitate unbiased and technically accurate discussion about ACES mobility and interrelated policy areas. WiACES is independent of any agency or governmental body.



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Policies that accelerate the transition to EV, CAV, and shared mobility platforms

Parking and lane incentives:

- Local authorities could introduce parking benefits and unrestricted access to high-occupancy vehicle (HOV) or carpool lanes for electric vehicle drivers.
 - Hawaii offers free parking for electric vehicles at eligible parking locations that are metered. In Nevada, local authorities with public metered parking areas are required to launch programs for alternative fuel vehicles to park in these areas without paying a fee.

Memorandum of Understandings:

- Wisconsin becomes a signatory on the existing Zero Emissions Truck & Bus Memorandum of Understanding (see <https://ww2.arb.ca.gov/news/15-states-and-district-columbia-join-forces-accelerate-bus-and-truck-electrification>)
- Leverage WisDOT's Mid America Association of State Transportation Officials (MAASTO) leadership position to advance and sign a multi-state EV charging corridor Memorandum of Understanding with other Midwestern states.

Update truck regulation:

- Restrictions on truck size and weight have been put in place to 1) limit wear and tear on roadways, and 2) address safety concerns. Advocate for the introduction of performance-based standards that replace, or compliment, current limits on vehicle weights and dimensions. These standards should introduce specific performance criteria in common operational settings, which may include fuel use and applications of advanced driver assist systems.

Public procurement for clean vehicles:

- Promote clean mobility solutions in public procurement tenders. Authorities at the regional or state level could commit themselves to purchasing environmentally friendly automobiles, which would raise awareness (and potentially demand) for cleaner mobility options.

Emissions standards:

- Advocate for stricter fuel efficiency policies requiring that new vehicles sold in Wisconsin meet California's more stringent standards for greenhouse gas and other air pollutant emissions.
- Develop a state-level plan to support medium/heavy-duty electric vehicles on Wisconsin roadways that helps meet emissions goals.

Policies that encourage the transition to greener fuel sources

Encourage high capacity charging sites designed for vehicle fleets:

- Increasing EV fleets could have an outsized impact on emissions because nationally light to heavy-duty freight vehicles make up more than three-quarters of transportation emissions and zero-emission bus fleets in the U.S. grew 36% between 2018-29, including purchases by transit systems in Milwaukee, Madison, and Racine (Governor's Task Force on Climate Change Report)
- Wisconsin would enjoy economic development from driving EV fleet charging because it is home to numerous companies with unique capabilities related to the development and manufacture of the high-capacity charging infrastructure required for these large loads.
 - Ramping up the deployment of electric vehicle fleets has advantages over personal vehicles in terms of overcoming charging infrastructure challenges : (A) more regular routes and driving schedules make range anxiety less of a concern as well as allows for planning to utilize charging infrastructure more continuously thus better optimizing infrastructure spending; (C) fleet charging will largely take place on private land where costs associated with acquiring property and competing for space with other public interests are less likely to be issues.
 - Wisconsin cities and firms which adopt EV fleets will enjoy an economic benefit from lower costs of ownership as well as perceived embracing of new technology.
 - Fleet vehicle charging can advance the state's goal of reducing air and noise pollution in cities.

Further promote managed, time-of-use charging:

- Aligns with Governor's Task Force on Climate Change Report recommendation #9: Support load management. Establish programs at the PSC to incentivize load management, or demand-side management (DSM), including tariffs to incentivize stationary and mobile battery load management.
- Wisconsin is a leader in energy controls which are central to enabling electric vehicle charging to occur during times of low energy demand on the grid, lower electricity costs, as well as times when renewable energy sources are providing the greatest share of production. Furthermore, pilots in Texas and elsewhere have shown a strong willingness among EV owners to opt into the use of automated smart controls technology to realize these benefits (See Twitchell, J. A Review of State-Level Policies on Electrical Energy Storage. Curr Sustainable Renewable Energy Rep 6, 35–41 (2019))

Policies that encourage the transition to greener fuel sources continued...

Encourage microgrids with energy storage planned around electric vehicle charging loads:

- Aligns with Governor's Task Force on Climate Change Report recommendation #6: Develop electricity storage and microgrids for critical infrastructure. Microgrids should be powered by renewable energy wherever possible. Maximize the value of battery storage/access to supplement peak demands/low generation time periods offered to EVs.
- When a part of a microgrid, charging vehicles can store excess renewable energy generated, and serve as storage assets to support resilience needs.
- Wisconsin is home to companies and academics who are industry leaders in the technology and know-how required for storage backed micro-grids. This is the Midwest Energy Research Consortium's strength (<https://m-werc.org/>), which can catalyze pilot and demonstration projects.
- Allows for fleet charging to consistently and directly utilize renewable energy
- Pairs well programs that allow parties to pursue renewable energy credits, such as We Energies Dedicated Renewable Energy Resource pilot, especially because it allows fleet operators access and match solar energy generated during the day with their large vehicle charging loads at night
- While innovative battery storage programs have been implemented in other states like New York, Utah, Massachusetts and Arizona, there is still valuable leadership that Wisconsin can demonstrate related to pilots of battery storage paired with fleet vehicle charging (See Twitchell, J. A Review of State-Level Policies on Electrical Energy Storage. Curr Sustainable Renewable Energy Rep 6, 35–41 (2019))

Promote alternative fuels for trucks:

- Truck electrification proceeds at a slower pace than passenger vehicles because the batteries required for long-range travel are bulky and costly. As electric trucks slowly gain market share, fossil fuels greener than petrol or diesel, such as natural gas, are a promising alternative when embarking on a decarbonization process.
 - One particular concern that needs to be addressed for EV charging for heavy duty trucks (and buses, where relevant) is the increased demand such heavy vehicle charging places on the grid. Special utility pricing programs should be initiated to encourage charging such vehicles during off-peak time periods.

Policies That Reduce Vehicle Miles Traveled

Encourage multimodality:

- Define an investment plan to smooth interchanges at bus, taxi, bike, and train stations (and other terminals).
- Combine bicycles with public transport. Integrate bike-sharing systems with buses, trains, and ride sharing services.
- Introduce digital systems for passenger ticketing, real-time information sharing, and reservation.
 - Involve private shared mobility providers and stakeholders interested in developing an interface to provide access to a single ticketing and payment channel.

Promote a shift from private cars to rail in long-distance travel:

- Exploit trains with higher capacity.
- Improve timetable planning, like bundling of trains with the same average speed in timetable channels.
- Invest in high-speed rail.

Promote Transportation policies that serve the interests of low income/communities of color neighborhoods (Underserved Communities):

- Assess social justice impacts on all transportation projects.
- Provide funding for Underserved Communities to encourage access to wide array of mobility options (public transport, shared mobility, alternative to motorized transportation, etc).

Consider leveraging parking and congestion management policy:

- Parking and congestion management policy provides an opportunity to reduce congestion and promote a modal shift in transport demand.
 - Local authorities could consider introducing or raising parking fees in certain areas.
 - Local authorities could consider introducing cordon-based pricing, where a charge is levied for crossing a cordon, and may vary with time of day, direction of travel, vehicle type, and location on the cordon.
 - Local authorities could consider introducing area license-based pricing, where a charge is levied for driving within an area during a period of time. The price may vary with time and vehicle type.
 - Local authorities could consider introducing distance or time-based pricing, where a price is based upon the distance or time a vehicle travels along a congested route or in a specified area, and may vary with time, vehicle type, and location.
 - Local authorities could consider introducing point-based charges (e.g., tolls to cross a bridge or to enter a section of motorway).

Policies that reduce vehicle miles traveled continued...

Promote carpooling:

- Establish lanes for high-occupancy vehicles on roads into city centers.
- Establish park and pool venues on main roads.
- Integrate carpooling with public transport.
- Carry out the necessary public relations to raise awareness for any/all the above.

Promote cycling and walking zones:

- Invest in new bicycle parking.
- Improve funding for maintenance of existing bike paths in local municipalities.
- Enhance funding for amenities along bike paths to incentivize their use (coffee/soft drinks and food vendors, maintenance stations (bike pumps/repair tools, etc.)).
- Encourage separated use lanes for pedestrians and bicyclists.
- Provide enhancement incentives for commuting to work via bicycles/walking vs. use of motorized transportation.
- Dedicate more space to cyclists: widen certain tracks and build alternative routes to move bicycle traffic through and away from the congested routes.
- Develop campaigns focused on more considerate vehicle behavior in bicycle areas.
- Improve bicycle travel times by prioritizing ambitious short cuts like tunnels and bridges over water, railways, and large roads.
- Strengthen partnerships with companies, shopping districts, public transport providers, and neighboring municipalities to promote the use of bikes.
- Invite bids for new bike-sharing systems.

Promote public transport and clean car sharing:

- Improve, modernize, digitize information about transport services.
- Exploit new technology to supply favorable services, such as SMS ticketing, and downloadable public transport maps or timetables.
- Highlight advantages of public transport compared to individual motor transport.
- Attract new passengers; keep existing ones.

Resources

Wisconsin Governor's Task Force on Climate Change Report:

<https://climatechange.wi.gov/Documents/Final%20Report/GovernorsTaskForceonClimateChangeReport-LowRes.pdf>

Center for Clean Air Policy:

<https://ccap.org/>

The Future of Transport Between Digitalization and Decarbonization (2020)

Michel Noussan, Manfred Hafner, Simone Tagliapietra

National Renewable Energy Laboratory (NREL):

<https://www.nrel.gov/transportation/transportation-decarbonization.html>

The World Bank – Transportation Decarbonization: How Do We Make the Economics Work?

<https://www.worldbank.org/en/news/feature/2020/12/15/transport-decarbonization-how-do-we-make-the-economics-work>

Brookings Institute: The Challenge of Decarbonizing Heavy Transport

<https://www.brookings.edu/research/the-challenge-of-decarbonizing-heavy-transport/>

International Transport Forum: Decarbonizing Transport Initiative

<https://www.itf-oecd.org/decarbonising-transport>

Center for American Progress: Policies to Decarbonize Transportation

<https://www.americanprogress.org/issues/green/reports/2017/01/20/296906/policies-to-decarbonize-transportation/>

Deloitte - Decarbonizing Road Freight: Getting Into Gear

<https://www2.deloitte.com/global/en/pages/energy-and-resources/articles/decarbonizing-road-freight.html>

The Fuels Institute: Decarbonization in the Transportation Sector

<https://www.fuelsinstitute.org/Resources/Carpool-Chats/Decarbonization-in-the-Transportation-Sector-Episo>