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| **Working Group: EV Equity and Accessibility** |
| Challenges and barriers (15 minutes):* Cost – vehicle (initial cost), charging infrastructure
* Education
* Institutional
* Access to enforced dedicated parking (multi-family, condo, row house, etc.)
* Availability of chargers on commuter routes that are not interstate highways
* Who owns and maintains infrastructure, patchwork?
* Political barriers – competing interests, for and against infrastructure, messaging against the safety (News of Tesla’s catching fire)
* Multi-family community infrastructure
* Financial limitations
* Participation in public meetings/hearings, representation – virtual access, closed caption at meetings (for example at stakeholder meetings like this one)
* Messaging – consistent, the value, language barriers
* Good utility EV programs, use of existing investments – incentives, managed charging (rates)
* Lack of on-bill financing of EV charging infrastructure
* Pricing when not charging at home or work – consistent across the state
* Simple and non-confusing charging practices
* Affordable EVs
* Institutional inertia at car dealerships and utilities – education, consistent understanding
* Change of behavior – How far can you go? Break of habit. Assess driving needs.
* Safety messaging – public understanding
* Absence of other equity policies in the state. Would be easier if there is other equity context in other discussions.
* Full benefit of EV in terms of equity?
* What do you do when there is a sustained power outage? How would you go get food and water if the vehicle is not charged?
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| Potential benefits and opportunities (15 minutes):* Public transportation – EV buses, ambulance, fire truck, wheelchair vans
	+ Saves taxpayer dollars
* Trucks (medium and heavy duty)
* Lower total cost of ownership
	+ Cheaper per mile than gasoline – the “fuel” is less expensive
	+ Maintenance – if you have maintenance it is expected
* No tailpipe emissions – air quality, GHG, climate, cleaning the grid over time
* Lower healthcare costs – asthma, in school more, learn better, happier
* Less dependency on oil, natural gas
* Inspire greater innovation. Ex. for those with physical disabilities – make more accessible
* Can update and improve without having to physically change out the car.
* Autonomous vehicles
* Manageable load for the utility – sell more energy without building more generation, use less carbon
* Local construction jobs installing charging infrastructure – good for the economy
* Better utilization of the distribution grid – lower the cost of electricity
* Better transportation services – improve the service/vehicles
* Noise pollution reduction – especially in larger cities
* Resilience – can do a lot with the car battery when the power is out
	+ Utility policies to allow you go connect to your house
* Integrate EVs to address resilience challenges (storms, natural disasters)
* Wealth creation – help someone meet their transportation needs
* Utility offer off peak charging at a better rate
* Delivery drivers – save money in fuel, autonomous driving (car make money while you are asleep)
* No oil spots
* Time saver – plug in at home, do not have to go to the gas station
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| **Rapid Fire Discussion (30 minutes)** |
| Education and outreach opportunities* Energy 101 – What is a kWh? How much does a kWh cost? What is a kW?
* EV 101
* Salesperson education – high turnover
* How safe are EVs?
* Understand the types of chargers
* Educating legislators and regulators
* PSC outreach to communities, be culturally sensitive, welcoming
* Cost for EV owner – property tax, EV fee are part of the cost,
* Battery replacement cost – Do you have to get a new car?
* Lost jobs – workforce issues (car maintenance) if you can only repair vehicles at certain shops
* Retraining programs?
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| Equity and environmental justice considerations* PSC/hearings – Won’t be able to hire a lawyer, be able to participate in hearings, need childcare, have to work, etc.
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| Financing challenges and opportunities* Targeted rebates – tiered for those who can’t buy a car
* Rebates to buy a used car, to buses and EV charging equipment as well
* Funds to convert to EV – public entities
	+ Ex. VA Dominion EV bus program. Dominion owns the batteries.
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| Implications to the electric grid* If done well it will be cleaner and less expensive per kWh
	+ Will not have to build more infrastructure if managed correctly
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| Infrastructure considerations* Deploy the appropriate type of fast charging
* Safety around charging stations – well lit, access, big issue with women
* Utility help with charging, and type of charger that can be managed
* Who owns it? Utility? Town? Free market?
* Stumbling block – need to address to increase adoption of EVs
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| Regulatory and legislative considerations* Rate design
* pricing of fuel
* charging infrastructure ownership
* Interoperability – fosters competition
* Road tax
* Who owns it?
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| Other:* Mining lithium
* Battery end of life
* Encouraging recycling – build the infrastructure – in state
	+ Are they considered solid waste?
	+ Now, the dealership manages it.
	+ Tesla has a system for this.
* Second life batteries
* Research is being conducted on battery end of life.
* With greater EV adoption this will lead to advancements in battery development and different types that may be better/more EJ friendly.
* Battery leasing – South Korea and Hyundai. Makes the car cheaper. You lease the battery and return it when it is at 70% efficiency for a new one.
* Right to repair? Small shops to repair vehicles? What will happen to them?
* Refurbished Tesla – Can’t use Tesla charger.
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| **Stakeholders and Subject Matter Experts** |
| * Additional stakeholders:
	+ Affected communities
		- Bankers, teachers, NGO leaders, EJ advocates
	+ City and transit planners
	+ Faith-based leaders
	+ Grass tops organizations – trusted partners
	+ Auto manufacturers
	+ Social science experts
	+ EV charging companies – focus on development in EJ communities
	+ Owners of rentals-landlords, property management groups
	+ Potential EV owners – What is stopping them from purchasing an EV. Fleet owners as well.
	+ EV Hybrid Noire
* Subject Matter Experts:
	+ Proterra
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| **Final Report Out Question** |
| What is the greatest challenge or opportunity to transportation electrification identified in your working group?* Education
* Infrastructure – Can see the difference between states.
* Vehicle price – large gap in price from pre-owned ICE vehicle and EV
* Variety of vehicles
* Managing expectations
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