



Considerations for Ordering a ZEV

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Agenda

- ZEV Suitability and Decision Tree
- FY24 ZEV Vehicle Offerings
- ZEV Capabilities
- Operational Best Practices
- Charging and Infrastructure
- Lessons Learned
- Q & A

Is a ZEV right for your agency?

1

Is there a ZEV model available that meets your mission requirements?

3

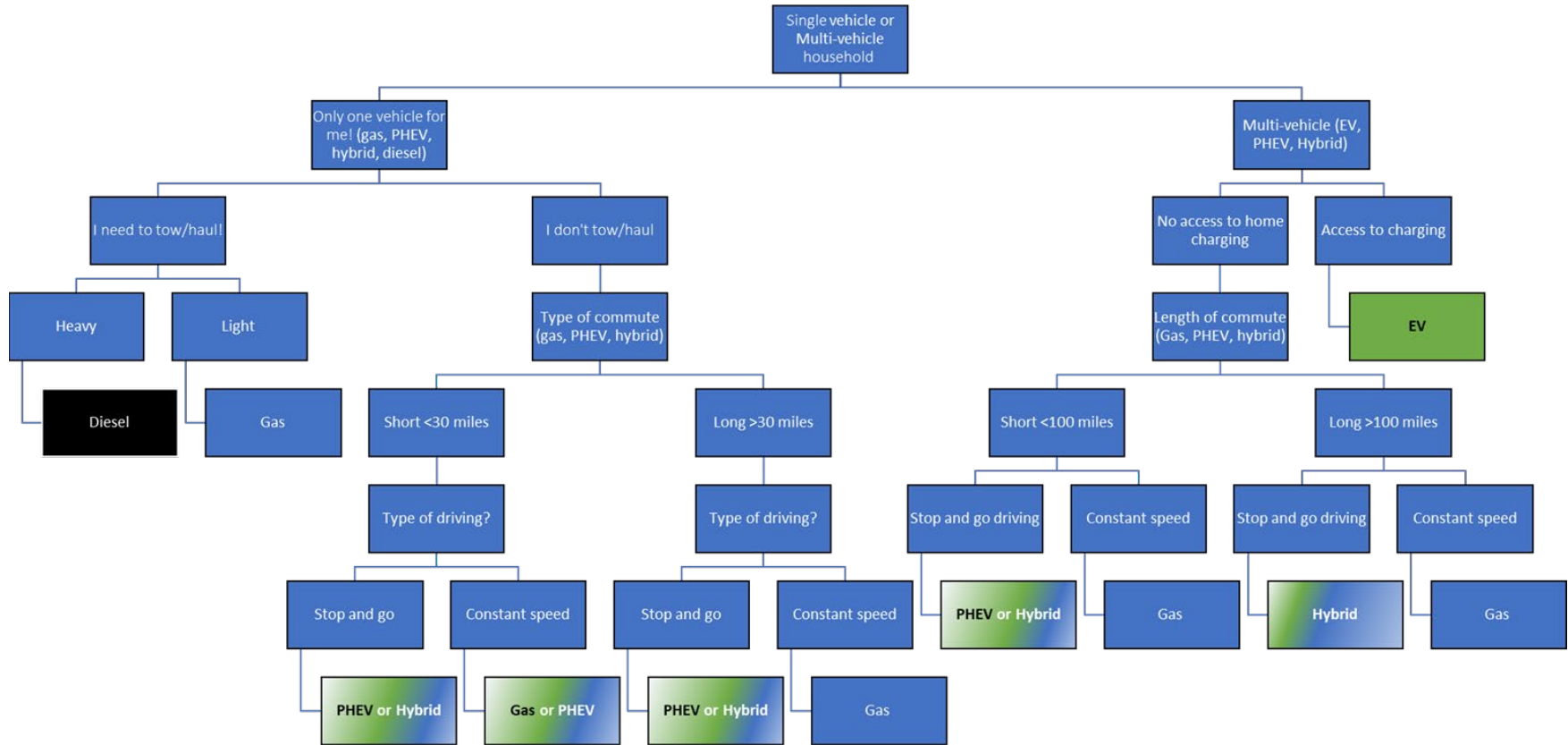
Are agency funds available to support the AFV incremental cost?

2

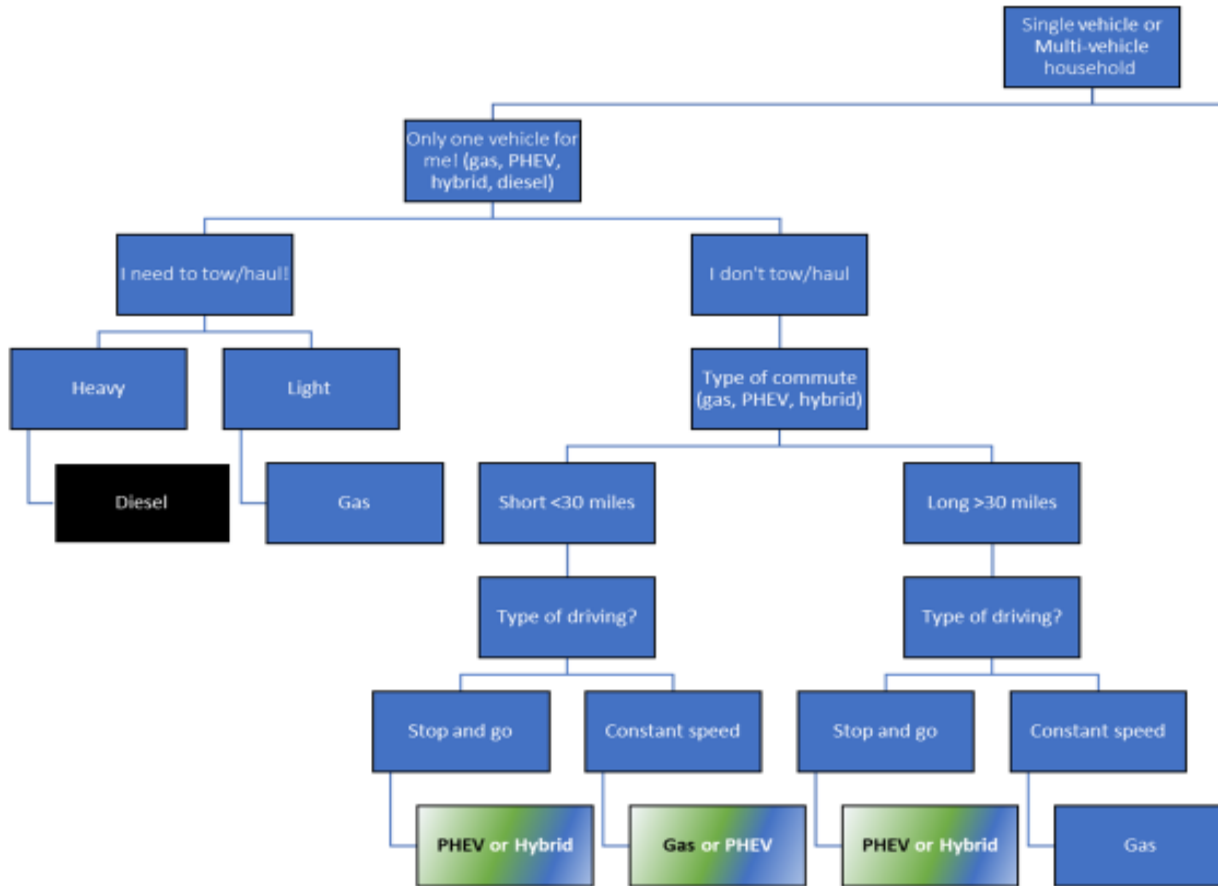
Do you have charging infrastructure in place?

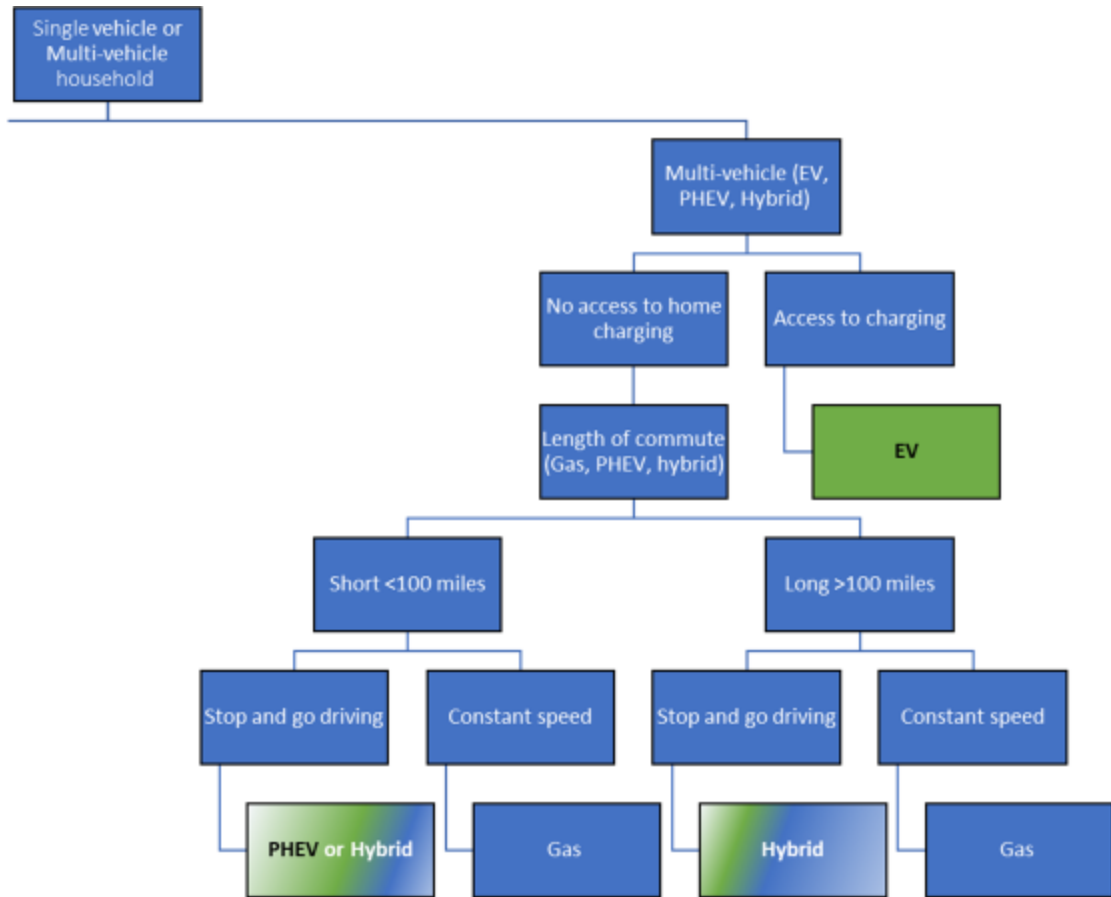
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How close is the nearest vendor for service?



:Source: Southern Illinois University





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FY24 ZEV Offerings

FY24 Light/Med. Duty ZEV Offerings



Nissan Leaf



Chrysler Pacifica



Ford F150 Lightning

Sedans	Type	Incremental	Notes
8E Nissan Leaf	Subcompact BEV	\$5,095	ext. range (149-212 +\$115 to rate)
9E Tesla Model 3	Compact BEV	\$25,238	ext. range (272-315 +\$75 to rate)
10E Ioniq 6	Midsize BEV	\$0.00	Rate only \$9 dollars more than 9E

Vans	Type	Incremental	Notes
20P Chrysler Pacifica	Minivan PHEV	\$9,797	All 50 state delivery
34E Ford e-Transit	Full-size Cargo Van BEV	\$3,660	CONUS delivery only
162E Ford e-Transit	Dry Cargo Van BEV	\$13,519	CONUS & HI (no AK)
95E Ford e-Transit	Panel Van, Maintenance BEV	\$18,324	CONUS delivery only

Pickups	Type	Incremental	Notes
55E F150 Lightning	Crew Cab Pickup BEV	\$4,907	2K units b/t 55E & 56E; 55 AMPs
56E F150 Lightning	Crew Cab SSV BEV	\$6,265	no center console or mats; 55 AMPs
57E Silverado EV	Crew Cab Pickup BEV	\$27,105	450 mile range (ext range option)

FY24 4X2 SUV ZEV Offerings



Hyundai Kona



Ford Mustang Mach-E




Hyundai Ioniq 5

SIN	Type	Model	Low Bid	Incremental	Range	Delivery/Notes
98E	BEV	Hyundai Kona	Y	\$11,551	258 mi.	CONUS & HI (no AK)
		Kia Niro	N	\$15,105	253 mi.	CONUS only; no AK or HI
98P	PHEV	<i>Kia Niro</i>	Y	\$11,291	34 electric mi.	CONUS & HI (no AK)
		<i>Ford Escape</i>	N	\$11,777	37 electric mi.	50 state only; no export
91E	BEV	Ford Mach-E	Y	\$13,420	247 - 310 mi.	50 state dealer delivery only; no export; ext range +\$144 to rate
		Kia EV6	N	\$16,485	232 mi.	CONUS only; no AK or HI
		Nissan Ariya	N	\$20,367	216 - 304 mi.	CONUS only; no AK or HI; ext range +\$52 to rate
100E	BEV	Hyundai Ioniq 5	Y	\$5,046	220 mi.	CONUS & HI (no AK)
		VW ID 4	N	\$6,735	275 mi.	CONUS only; no AK or HI

**Late Openings*

FY24 AWD/4X4 SUV ZEV Offerings

SIN	Type	Model	Low Bid	Incremental	Range	Delivery/Notes	
	96P	PHEV	Mitsubishi Outlander	Y	\$12,343	24 electric mi.	CONUS & no AK or HI
99P	PHEV	Hyundai Tucson	Y	\$11,306	33 electric mi.	CONUS & HI (no AK)	
96E	BEV	Ford Mach-E	Y	\$15,454	224 - 312 mi.	50 state dealer delivery only; ext range +\$144 to rate	
		Subaru Solterra	N	\$17,556	228 mi.	CONUS & AK (no HI)	
		<i>Nissan Ariya</i>	N	\$24,003	205 - 272 mi.	CONUS only; no AK/HI; ext range +\$52 to rate	
		Kia EV6	N	\$25,494	282 mi.	CONUS only; no AK/HI	
		Tesla Model Y	N	\$28,193	279 - 330 mi.	All 50 states & PR; ext range +\$40 to rate	
112P	PHEV	Jeep Wrangler	Y	\$9,827	22 electric mi.	All 50 states & GU	
105E	BEV	Hyundai Ioniq 5	Y	\$15,036	260 mi.	CONUS & HI (no AK)	
		VW ID4	N	\$17,039	255 mi.	CONUS only; no AK/HI	
		<i>Blazer</i>	N	\$19,885	TBD	50 state dealer delivery only; no export	
105P	PHEV	Grand Cherokee	Y	\$22,719	26 electric mi.	50 state only; no export	
105G	BEV	<i>Blazer SSV</i>	Y	\$9,000	TBD	50 state dealer delivery only; no export	
105L	BEV	<i>Blazer PPV</i>	Y	\$21,476	TBD	50 state dealer delivery only; no export	

Mitsubishi Outlander



Subaru Solterra



Kia EV6



Chevy Blazer

*Late Openings

ZEV Considerations

ZEV Considerations

- Range expectations
 - Extreme temperatures, steep terrain, and driving conditions can all impact range.
 - Towing may reduce range up to 50%.
 - Extreme climates may reduce range up to 35%.
- Mission requirements
 - Verify available mission-essential options prior to requesting a ZEV.
 - Most BEVs cannot accommodate aftermarket modifications.
 - Look at extended range option, as agency mission dictates.

Operational Best Practices

Operational Best Practices

- Maximize drive time
 - Avoid harsh braking and acceleration.
 - Keep the vehicle charged between 20-80%.
- Minimize range lost
 - Set cabin temperature while the vehicle is connected to its charger.
 - Heating and cooling the cabin can significantly decrease the range.
 - Towing or heavy payloads can also reduce the range.
- Roadside Assistance
 - If towing is required, contact the MCC at 1-866-400-0411.
 - Avoid allowing the battery to drop to 0% charge.
 - Place vehicle in neutral and ensure it is towed by flatbed truck.

Charging and Infrastructure

Charging

- Factors to consider when charging
 - Know which charging connector the vehicle uses
 - Do you need an adapter?
- What are the charging capabilities?
 - Battery capacity
 - Types of charger
- Where can you find charging stations?
 - WexConnect app
 - ChargePoint app
 - Plugshare.com
 - EPA charging location finder
 - https://afdc.energy.gov/fuels/electricity_locations.html#/find/nearest?fuel=ELEC



Charging

- Types of Chargers
 - Level 1 - residential charging
 - Level 2 - some residential @240V or commercial @280V
 - DC Fast Charging - heavy traffic corridors
- RFID/ChargePoint Charging
 - FSRs must order a WEX linked ChargePin
 - Locate nearest Chargepoint charger (WexConnect)
 - ***Important*** Monitor charging...idle fees could be charged



Lessons Learned

Lessons Learned - Tesla Model Y



- Outstanding charging network
- Connects required to charge outside Tesla network
- Odd gear selector
- Absence of a gauge cluster
- Roadside assistance easy to use
- Tires are expensive \$369 each
- Exceptional range! (330 miles)
- Subpar build quality

Lessons Learned - Ford F-150 Lightning



- Simple charging w/ChargePoint RFID
- Automatic charging route in navigation system
- Acceptable range for size (190 miles)
- Little difference in operation of ICE counterpart
- Build quality is outstanding!
- Most customers will need/want sidesteps (very tall)

Lessons Learned - Chrysler Pacifica PHEV



- 16 kWh battery
- Long charging times on solar charger
- 32 mile all electric range = 82 MPGe
- No difference in operation of ICE counterpart
- It took 6 hrs 14 mins to charge from 3% to 83%
- Only uses J1172 charge cable; no option for level 3 charging.

Lessons Learned - Hyundai Kona



- 64 kWh battery.
- 256 mile stated range.
- Uses J1172 adapter or CCS Type 1 or 2 for fast charging.
- Added 180 miles of range in 5 hrs of charging w/Beam solar charger.
- Initial drive of 3.5 miles we lost 23 miles of range.
- Charging port location is ideal at the front left bumper.

Questions??

