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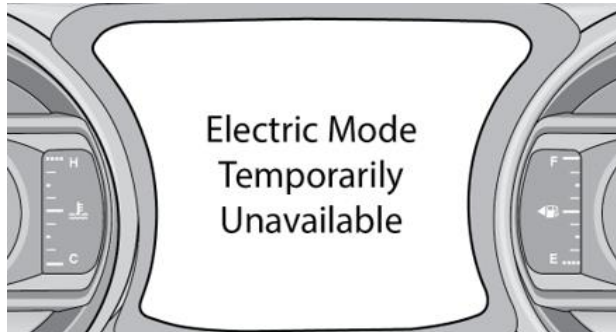
Case Number: S220800020 Rev. B

Release Date: May 2023

Symptom/Vehicle Issue: Electric Mode Temporarily Unavailable, Cluster Message Displayed Vehicle in Fuel Oil Refresh Mode (FORM)

Customer Complaint/Technician Observation: Owner complains the vehicle will not go into Electric Vehicle (EV) mode. Technician observed no Diagnostic Trouble Codes (DTC's) and the message for FORM during the initial startup for 5 seconds and the vehicle is not entering EV Mode during drive test cycles.

Discussion:



Note: message displays during initial start up for 5 seconds.

Operator Choices that can inhibit Electric Mode - and what to do about it

Transmission in Manual Shift mode - Shift to Drive to use Electric mode.

Heavily depressed accelerator pedal position, requesting high power demand - Beyond the limits of the electric drivetrain, will cause engine to run, enabling the powertrain to produce its full combined power available in Hybrid mode.

Sustained high speed operation in Electric mode - Using the engine is more efficient for high speeds than Electric drive.

Transfer case and drive mode selection - eSave mode almost always runs the engine. Hybrid mode, in 4WD Low, will also run the engine.

Electric range is depleted - You need to recharge to enjoy Electric mode, or you can continue normally in Hybrid.

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Hood open (or a hood switch fault) - This is to prevent unexpected engine starts with the hood open.

Thermal Protection that can inhibit Electric Mode - and why

Engine, transmission, or engine starting belt too cold - Some systems require warm-up to function properly if the outside temperature is below 32°F (15°F in Electric drive mode).

Electric cabin heating capacity limits (or electric cabin heater fault) - Unlike Battery Electric Vehicles (BEV's), the PHEV Wrangler can warm the cabin more efficiently with engine heat when operating below 15°F outside temperature.

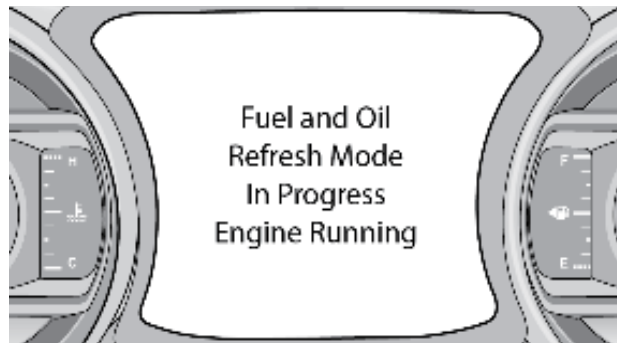
HV battery, motors, or contactors over temperature - This is a temporary hardware protection feature. Vehicle performance will resume once protection is no longer required. If the vehicle performance is accompanied with a Malfunction Indicator Lamp (MIL) .

Component Protection that can inhibit Electric Mode - and what to do about it

HV battery undervoltage - Sustained EV operation at high speed, especially with aftermarket wheels and tires, can induce this.

Other electric propulsion system faults indicated by a MIL service required.

Fuel And Oil Refresh Mode



FUEL AND OIL REFRESH MODE Since it is possible to operate this vehicle for extended periods without running the gas engine, the fuel within the tank can become stale and/or the engine oil's lubricating properties can be reduced as the vehicle's engine is not operating under its normal engine operating temperatures.

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To prevent engine and/or fuel system damage due to stale fuel, or lubrication, this vehicle is equipped with a Fuel Oil Refresh Mode (FORM). The vehicle will automatically enter the Fuel Oil Refresh Mode to minimize these conditions. When operating in this mode, the gas engine must operate at its normal operating temperatures, no EV propulsion (electric only operation **is inhibited**). A reminder message will be displayed within the cluster during initial start-up whenever **Fuel AND Oil Refresh Mode** is active. The vehicle will automatically exit the Fuel Oil Refresh Mode when conditions have been satisfied for adequate run time of up to 2 hours.

If the vehicle enters Fuel Oil Refresh Mode, due to stale fuel, the engine will run during this mode, no EV operation until the **low fuel level warning** is achieved. If desired, it is possible to exit the **Fuel Only Refresh Mode** by adding a minimum of four gallons of new fuel to the vehicle.

NOTE: If the vehicle enters Fuel and Oil Refresh Mode to maintain engine lubrication, adding fuel **will not exit** the mode sooner. If the vehicle enters Fuel Oil Refresh Mode for lubrication requirements, the engine must operate at maximum operating temperatures until accumulated engine run times of 20 minutes to 2 hours. This can be best achieved by engine running at highway speeds above 50 mph for extended periods. If the vehicle is shut down without the proper accumulated engine only run time, the engine will run without entering EV mode on subsequent trips.

NOTE: Frequent short trips without (max engine operating temperatures) usually triggers the lubrication-based oil refresh mode. If the engine run time is not met in-between the oil change intervals, changing the engine oil, and resetting the service reminder is the recommended option.

DO NOT RESET THE OIL INDICATOR WITHOUT CHANGING THE OIL FOR THIS CONDITION.

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