STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
CALIFORNIA AIR RESOURCES BOARD

MOBILE SOURCE CERTIFICATION AND COMPLIANCE FEE PAYMENT FORM FOR ON-ROAD MODEL YEAR 2023 APPLICATIONS; CALENDAR YEAR 2022 APPLICATIONS ONLY

ECCD/NVEPB-010 (NEW. 03/2022) WORKSHEET 1 OF 1

CARB USE ONLY

Invoice Name:	MSFI210147
Invoice Date:	June 2, 2022

COMPANY INFORMATION

Company Name:	Ford Motor Compay
Street Address:	1 American Road
City, State, Zip:	Dearborn, MI, 48126-2798
Country:	United States
Contact Name:	Tina Oliver
Contact Telephone Number:	1-313-3238938
Contact E-mail:	toliver@ford.com
FI$Cal Account Number:	CCAM000031

PRODUCT INFORMATION

Payment Row Number	Product Description or file name	Model Year/Calendar Year	Unique Application Identifier: Test Group, Engine Family, Trailer Family name, Vehicle Family, ZEP Family, if applicable (ID listed in payment row must match the unique identifier given to the certification application)	Category Type (drop down)	Fee Type (drop down)	Amount
1	23_CBI_ PFMXT01.52X1_APPIPT1	Model Year 2023	PFMXT01.52X1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
2	23_CBI_ PFMXT02.52F1_APPIPT1	Model Year 2023	PFMXT02.52F1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
3	23_CBI_ PFMXT02.52P1_APPIPT1	Model Year 2023	PFMXT02.52P1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
4	23_CBI_ PFMXT02.02Y1_APPIPT1	Model Year 2023	PFMXT02.02Y1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
5	23_CBI_ PFMXT02.53CE_APPIPT1	Model Year 2023	PFMXT02.53CE	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
6	OPCARRYOVER_23_CBI_ PFMXT01.52X2_APPIPT1	Model Year 2023	PFMXT01.52X2	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
7	23_CBI_ PFMXT02.0S7B_APPIPT1	Model Year 2023	PFMXT02.0S7B	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
8	OPCARRYOVER_23_CBI_ PFMXT02.52B2_APPIPT1	Model Year 2023	PFMXT02.52B2	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
9	OPCARRYOVER_23_CBI_ PFMXT02.73JK_APPIPT1	Model Year 2023	PFMXT02.73JK	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
10	OPCARRYOVER_23_CBI_ PFMXT03.54JK_APPIPT1	Model Year 2023	PFMXT03.54JK	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
11	OPCARRYOVER_23_CBI_ PFMXT03.51F1_APPIPT1	Model Year 2023	PFMXT03.51F1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
12	OPCARRYOVER_23_CBI_ PFMXT03.54JM_APPIPT1	Model Year 2023	PFMXT03.54JM	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
13	OPCARRYOVER_23_CBI_ PFMXT03.57AT_APPIPT1	Model Year 2023	PFMXT03.57AT	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
14	OPCARRYOVER_23_CBI_ PFMXT05.03DP_APPIPT1	Model Year 2023	PFMXT05.03DP	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
15	PCARRYOVER_23_CBI_ PFMXT00.0BG2_APPIPT1	Model Year 2023	PFMXT00.0BG2	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Zero-Emission	$11,627
16	23_CBI_ PFMXT05.2AHS_APPIPT1	Model Year 2023	PFMXT05.2AHS	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Base	$23,255
17	OPCARRYOVER_23_CBI_ PFMXT02.02NP_APPIPT1	Model Year 2023	PFMXT02.02NP	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
18	OPCARRYOVER_23_CBI_ PFMXT02.02JU_APPIPT1	Model Year 2023	PFMXT02.02JU	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
19	OPCARRYOVER_23_CBI_ PFMXT02.72JQ_APPIPT1	Model Year 2023	PFMXT02.72JQ	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$11,627
20	PCARRYOVER_23_CBI_ PFMXT00.0BG1_APPIPT1	Model Year 2023	PFMXT00.0BG1	A.1 Light-duty vehicle test group and medium-duty vehicle test group	Zero-Emission	$11,627
					Total Due	**$313,936**

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I, X Wade Witte , attest that any information provided is true, accurate, and complete.

Responsible Party Signature Here

Signed by: wwitte

FORD MOTOR COMPANY

APPLICATION FOR CERTIFICATION – PART 1

2023 Model Year

Test Group:	PFMXT00.0BG2
Durability Group:	PFMXEEVNNG1H
Evap. Family:	N/A
Test Group Description:	LDT4/MDPV
Durability Group Description:	Battery Electric
Application Standards:	Federal: Tier 3 Bin 0 California: ZEV
Car Line Covered	F150 Lightning 4WD F150 Lightning Platinum 4WD

Vehicle Tested:

Range Test Vehicle NFD1-0.0-J-556 Config. 0	
Charge Depleting UDDS TN:	NFMX10072968
Charge Depleting Highway TN:	NFMX10072969

Application Release Date: November 21, 2022

For Questions, Contact:
Mark Pietron, mpietron@ford.com (313-805-7139)

Part 1. Application Index

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10. Reserved

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3. Facilities, Equipment and Test Procedures

The facilities and equipment comply with the related regulations, including 40 CFR Subpart B, §86.108-00(b)(2) [Oct. 22, 1996]

Equipment:	48 inch, single roll electric dynamometer
Regenerative Braking:	Enabled
Vehicle & Battery break in Period:	2600 mile accumulated on this vehicle / battery before test.
Range Test Procedure:	Tested according to “California Exhaust Emission Standards and Test Procedures for 2009 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light Duty Truck and Medium-Duty Vehicle Classes”, which was adopted on December 17, 2008.
Test Procedure Used:	Tested using the Multi Cycle Test (MCT) sequence as stated in SAE International’s “*Surface Vehicle Recommended Practice*” J1634 Oct. 2012.

3.1 Procedure to Determine Mass Emissions of Fuel Fired Heater

Not applicable since Fuel Fired Heater not offered for this vehicle by Ford.

3.2 Battery and Vehicle Pre-Conditioning Procedures

The HV battery and vehicle does not require any pre-conditioning to enable the vehicle system. However, Ford decided to have the test vehicle accumulated 2600 miles on proving ground track prior to testing.

4 Reserved

5 Reserved

6 Maintenance

6.1 Test Vehicle Scheduled Maintenance

Not applicable (same as “Recommended Customer Maintenance Schedule” found in next section).

6.2 Recommended Customer Maintenance Schedule

Ford’s recommended maintenance schedule can be found in the owners guide.

7 Labels

7.1 Label Locations and Labels

The Vehicle Emissions Control Information label (VECI) is located on the underside of the hood. See attachment for this vehicle's VECI label.

The Fuel Economy Label is installed on the passenger side front door. The Monroney Label now includes the EPA/DOT Fuel Economy and Environment Section (GHG, Smog Rating) based on the template published by EPA in May 2011. See attachment for label template to be used for this vehicle (The real FE label for this vehicle is not available at this time). The California Environmental Performance Label will be included on the vehicle. Please see section 17.2.3 for values.

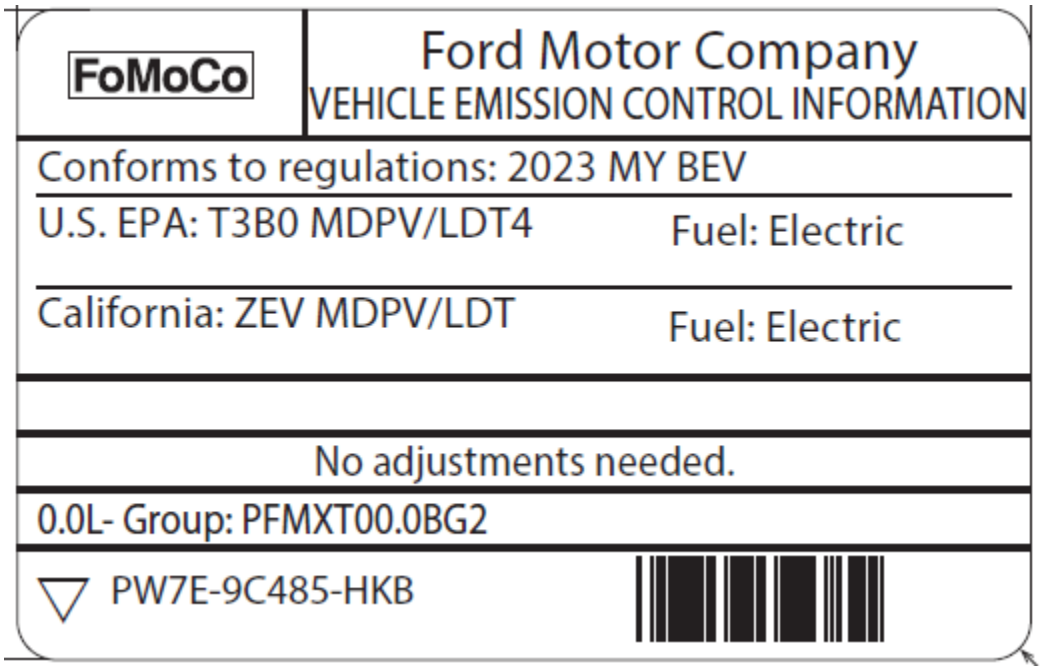
7.2 Statement of Compliance

This vehicle conforms to US EPA Tier 3 Bin 0 vehicle regulations applicable to 2022 model year new motor vehicles and to California regulations applicable to 2022 model year new ZEV light-duty vehicles.

PFMXT00.0BG2

50 State VECI LABEL

Ford Battery Electric Vehicle



8 General Technical Description

8.1 Description of Propulsion System

The propulsion system consists of an electric motor, motor controller, gearbox and the battery pack.

8.2 Description of Motor

Motor Type:	AC permanent magnet synchronous machine
Primary Electric Engine Power (peak) [kW/hp]:	210kW / 282hp
Secondary Electric Engine Power (peak) [kW/hp]:	210kW / 282hp

8.3 Description of Battery

Battery Type: Lithium Ion

Battery Capacity [Ah]: 410

Maximum Battery Voltage [V]: 403

Battery Weight [kg]: 675

Battery Specific Energy [Whr/kg, using C3 procedure]: 210

8.3.1 Battery Charging Capacity

Time for full re-charge:

Level 2 (240/48A) = 13 hrs

8.3.2 Self Discharge Information

Expected maximum: <1 % per month

8.3.3 Description of Thermal Management System

The thermal management system for the battery is a liquid cooled system, in which coolant is circulated through a chiller and the battery using a pump in order to cool the battery as it rises in temperature. The chiller is a refrigerant to coolant heat exchanger. While on plug in colder temperatures, an inline heater is used in the coolant system to heat the battery coolant which in turn heats the battery system for improved battery performance in cold weather.

8.3.4 Description of End of Life

The battery is warrantied for 8 years, 100K miles (whichever occurs first).

8.3.5 Description of Battery Disposal Plan

Ford is a member of the End of Life Vehicle Solutions Corporation (ELVS), which was created by the automotive industry to promote the industry's environmental efforts in recyclability, education, outreach, and the proper management of substances of concern. ELVS has implemented a call center to provide guidance on the safe removal, transport and recycling of the batteries to dismantlers. ELVS is in the process of investigating a recovery and recycling process in which the dismantler would remove the battery from the vehicle, identify the battery type, and ship the battery to a battery recycling facility.

8.4 Description of Controller/Inverter

The propulsion system consists of an electric motor, motor controller, gearbox and the battery pack.

8.5 Description of Transmission

The transmission is a single ratio gearbox with an overall ratio of 3.73:1. The transmission gears are in constant engagement with no clutches. There is no shift indicator light since there is no shifting of gears.

8.6 Description of Climate Control System

A/C Compressor: Max working capacity 10.3 kW.

Heater: Max working capacity in 7.0kW.

8.7 Description of Regenerative Braking System

8.7.1 Control Logic

The vehicle is equipped with a regenerative braking system in which the regenerative braking energy is captured and stored back into the battery pack when decelerating. This regenerative braking system is enabled only when the vehicle is in motion when lifting off the accelerator pedal or pressing the brake pedal while the accelerator pedal is not pressed.

8.8 Description of Charger

The charger is capable of charging at 3 different rate:

Level 1: 240V/32A approximately 19 hrs for a full re-charge

Level 2: 240V/48A approximately 13 hrs for a full re-charge

Level 2: 240V/80A approximately 8 hrs for a full re-charge

8.8.1 Power Recharging Procedures

A. Power down the vehicle and put it in park (P). Press the indention located on the charge port door and the door will rotate open.

B. Plug the charger into the charge port and ensure that the teeth on the end of the charger plug have completely engaged. Verify that the cord acknowledgement feature activates, which indicates the beginning of a normal charge cycle.

C. Follow the charging station instruction to begin charging process. Allow 3-4 hours to completely charge the high voltage battery using 240V charging station. Using the standard 120V convenience cord will result in longer charging time.

D. When the charging indication light shows charging complete, turn off the charging station and remove the charging plug.

Please refer to owner's guide for additional instructions.

8.8.2 Power Requirements Necessary to Recharge Vehicle

Level 2: 240V/32A, 48A, 80A

8.9 Accessories Which Draw Energy from the Battery

The electric air conditioning system as well as the electric heater used for the passenger compartment heater both draw energy from the battery, however they can only draw energy from the battery when the vehicle is operating. In addition to passenger compartment heating/cooling, a liquid thermal management system draws energy to thermally condition the battery while the vehicle is operating or on-plug (while on-plug this system utilizes facility power instead of drawing energy form the battery). All other 12V systems (lights, radio, wipers etc.) also draw energy from the battery when the vehicle is on and in those cases, the higher voltage from the battery is converted via the onboard DCDC converter to approximately 14VDC in order provide the energy for those systems to operate.

8.10 Other Unique Features

There are no other unique features.

8.11 Description of Warning Systems for Maintenance/Malfunction

There are warning lights on the instrument cluster to inform the driver of any malfunctions. A trained service person can connect Ford's diagnostic tool to diagnose any malfunctions.

There are separate warning lights for the following:

A. Powertrain Malfunction/Reduced Power
   a. Wrench stating "Service Soon"
   b. Red Triangle stating "Stop Safely Now"
B. Motor Coolant Overheat
C. Anti-Lock Brake System
D. Stability Control System
E. High Voltage Battery Low or Depleted
F. Low Tire Pressure Warning

Detailed descriptions of the warning lights can be found in the owners guide.

8.11.1 Cut-off Terminal Voltages for Prevention of Battery Damage

5P contactors will open when voltage is below 149V or above 413V

9 Reserved

10 Reserved

11 Starting and Shifting Schedules

11.1 Starting Procedure

Please refer to Owner's Guide for starting procedure.

11.2 Shifting Schedule

This vehicle uses an automatic shifter as in a conventional automatic transmission vehicle (move lever to "D" for Drive or "R" for Reverse) and since the vehicle uses a single ratio gearbox, there is no shift schedule.

12 Description of Vehicles Covered by Certificate

12.1 Calibration Parts List

Cert. Level	Calibrations	PCM -12A650-	HPCM -7P120-	BECM -10B687-	BCCM FRONT -10B689-	BCCM REAR -10D678-	ABS -2C219-	Date
Initial Application	PTFDC1NA05	PL3A-DB	NL38-AYH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NB05	PL3A-CB	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NC05	PL3A-HB	NL38-AYH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1ND05	PL3A-GB	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NE05	PL3A-JB	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NA06	PL3A-DC	NL38-AYH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NB06	PL3A-CC	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NC06	PL3A-HC	NL38-AYH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1ND06	PL3A-GC	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NE06	PL3A-JC	NL38-AXH	NL38-AG	NL38-AH	NL38-AG	PL38-AA	5/24/2022
	PTFDC1NA07	PL3A-DD	NL38-AYJ	NL38-AH	NL38-AH	NL38-AG	PL38-AA	7/25/2022
	PTFDC1NB07	PL3A-CD	NL38-AXJ	NL38-AH	NL38-AH	NL38-AG	PL38-AA	7/25/2022
	PTFDC1NC07	PL3A-HD	NL38-AYJ	NL38-AH	NL38-AH	NL38-AG	PL38-AA	7/25/2022
	PTFDC1ND07	PL3A-GD	NL38-AXJ	NL38-AH	NL38-AH	NL38-AG	PL38-AA	7/25/2022
	PTFDC1NE07	PL3A-JD	NL38-AZA	NL38-AH	NL38-AH	NL38-AG	PL38-AA	7/25/2022

HV Battery Assembly: NL38-10B759-AH

PDU (Primary Drive Unit): NL38- 7P500-AA

SDU (Secondary Drive Unit): NL38-7B000-AA

Note:

12.2 Vehicle Description Report

See page attached.

Vehicle Description Report

Application: 50ST

Test Group: PFMXT00.0BG2

ID Number	5017029	5017023	5017024	5017026	5017025	5017027	5017028
Displacement	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calibration	PTFDC1NE05	PTFDC1NA05	PTFDC1NB05	PTFDC1NC05	PTFDC1NC05	PTFDC1ND05	PTFDC1ND05
Fuel Tank(s)							
Carline	F150 LIGHTNING PLATINUM 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD
Wheel Configuration	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Body Style	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew
Wheelbase	145.0	145.0	145.0	145.0	145.0	145.0	145.0
Transcode Combo	AA	AA	AA	AA	AA	AA	AA
Curb Weight	6893	6695	6695	6695	6695	6695	6695
ETW	7000	7000	7000	7000	7000	7000	7000
Loaded Weight LVW	7193	6995	6995	6995	6995	6995	6995
ALVW-ETW	7500	7500	7500	7500	7500	7500	7500
Adj. Loaded Weight	7722	7622	7622	7547	7622	7547	7622
GVWR	8550	8550	8550	8400	8550	8400	8550
Min Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Max Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Min N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Max N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Emission Vehicle Class							
Drive Code	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive
Trans Type	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Max Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Alt Tire 1							
Alt Tire 2							
Alt Tire 3							
Alt Tire 4							
Alt Tire 5							
Alt Tire 6							
Alt Tire 7							
DAW Full Tank	3432	3340	3340	3340	3340	3340	3340
DAW Empty Tank	3432	3340	3340	3340	3340	3340	3340

Vehicle Description Report

Application: 50ST

Test Group: PFMXT00.0BG2

ID Number	5017029	5017023	5017024	5017026	5017025	5017027	5017028
Displacement	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calibration	PTFDC1NE06	PTFDC1NA06	PTFDC1NB06	PTFDC1NC06	PTFDC1NC06	PTFDC1ND06	PTFDC1ND06
Fuel Tank(s)							
Carline	F150 LIGHTNING PLATINUM 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD
Wheel Configuration	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Body Style	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew
Wheelbase	145.0	145.0	145.0	145.0	145.0	145.0	145.0
Transcode Combo	AA	AA	AA	AA	AA	AA	AA
Curb Weight	6893	6695	6695	6695	6695	6695	6695
ETW	7000	7000	7000	7000	7000	7000	7000
Loaded Weight LVW	7193	6995	6995	6995	6995	6995	6995
ALVW-ETW	7500	7500	7500	7500	7500	7500	7500
Adj. Loaded Weight	7722	7622	7622	7547	7622	7547	7622
GVWR	8550	8550	8550	8400	8550	8400	8550
Min Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Max Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Min N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Max N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Emission Vehicle Class							
Drive Code	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive
Trans Type	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Max Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Alt Tire 1							
Alt Tire 2							
Alt Tire 3							
Alt Tire 4							
Alt Tire 5							
Alt Tire 6							
Alt Tire 7							
DAW Full Tank	3432	3340	3340	3340	3340	3340	3340
DAW Empty Tank	3432	3340	3340	3340	3340	3340	3340

Vehicle Description Report

Application: 50ST

Test Group: PFMXT00.0BG2

ID Number	5017029	5017023	5017024	5017026	5017025	5017027	5017028
Displacement	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calibration	PTFDC1NE07	PTFDC1NA07	PTFDC1NB07	PTFDC1NC07	PTFDC1NC07	PTFDC1ND07	PTFDC1ND07
Fuel Tank(s)							
Carline	F150 LIGHTNING PLATINUM 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD	F150 PICKUP LIGHTNING 4WD
Wheel Configuration	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Body Style	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew	Super Crew
Wheelbase	145.0	145.0	145.0	145.0	145.0	145.0	145.0
Transcode Combo	AA	AA	AA	AA	AA	AA	AA
Curb Weight	6893	6695	6695	6695	6695	6695	6695
ETW	7000	7000	7000	7000	7000	7000	7000
Loaded Weight LVW	7193	6995	6995	6995	6995	6995	6995
ALVW-ETW	7500	7500	7500	7500	7500	7500	7500
Adj. Loaded Weight	7722	7622	7622	7547	7622	7547	7622
GVWR	8550	8550	8550	8400	8550	8400	8550
Min Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Max Axle Ratio	9.05	9.05	9.05	9.05	9.05	9.05	9.05
Min N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Max N/V Ratio	95.8	98.0	98.0	95.3	95.3	95.3	95.3
Emission Vehicle Class							
Drive Code	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive	All Wheel Drive
Trans Type	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Max Tire Size	275/50R22 - 95.8	275/65R18 - 98	275/65R18 - 98	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3	275/60R20 - 95.3
Alt Tire 1							
Alt Tire 2							
Alt Tire 3							
Alt Tire 4							
Alt Tire 5							
Alt Tire 6							
Alt Tire 7							
DAW Full Tank	3432	3340	3340	3340	3340	3340	3340
DAW Empty Tank	3432	3340	3340	3340	3340	3340	3340

13 Reserved

14 Request for Certificate

Vehicle Environmental Engineering
Ford Motor Company

Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053

August 3, 2022

Mr. Robert Peavyhouse
Certification Division
Mobile Source Pollution Control
U. S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, Michigan 48105

Dear Mr. Peavyhouse:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2023 model year battery electric-powered light-duty trucks / medium duty passenger vehicles (LDT4/MDPV) contained in Ford's 50 states test group PFMXT00.0BG2.

This Test Group complies with EPA final Tier 3 Bin 0 certification and in-use exhaust emission standards. Evaporative emission is not applicable to BEV program.

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this application are designed to comply with the applicable intermediate and full useful life standards.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # CD-14-19 (LDV/LDT/ICI/LIMO), subject: "Certification Application Reporting Guidance", dated November 24, 2014. Therefore, in accordance with the provisions of 40 CFR 86.1844-01(d)(14) including the provisions of 40 CFR Parts 85, 86 and 600, Ford requests that a Certificate of Conformity be issued for the LDV test group listed in this Application for Certification.

Please contact Mark Pietron at 313-805-7139 or mpietron@ford.com, if you have any questions regarding this submission.

Sincerely,

DocuSigned by:
Glen Heiser
324454DCB23E436...

Glen A. Heiser, Manager
Emissions Certification, Homologation & Compliance
Vehicle Homologation & Compliance, SE&SE

Vehicle Environmental Engineering
Ford Motor Company

Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W200
Allen Park, Michigan 48101- 2053

August 3, 2023

Ms. Robin U. Lang , Chief
Emissions Compliance, Automotive Regulations and Science Division
Air Resources Board
4001 Iowa Ave.
Riverside, CA 92507

Dear Ms. Lang:

Ford Motor Company (Ford) herewith submits an Application for Certification for 2023 model year battery electric-powered Light Duty Trucks/Medium Duty Vehicles (LDT/MDV) contained in Ford's 50 states test group PFMTV00.0BG2.

This Test Group complies with CARB ZEV emissions standards. Evaporative emission is not applicable to BEV program.

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this application are designed to comply with the applicable intermediate and full useful life standards.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # CD-14-19 (LDV/LDT/ICI/LIMO), subject: "Certification Application Reporting Guidance", dated November 24, 2014. This Application has also been prepared in accordance with the California Air Resources Board, Final Regulation Order, Amendments to Sections 1960.1, 1960.5, 1961, and 1962 Title 13, California Code of Regulations (As Amended August 4, 2005). Therefore, in accordance with the provisions of 40 CFR 86.1844-01(d)(14) including the provisions of 40 CFR Parts 85, 86 and 600, Ford requests that an Executive Order be issued for the PC test group listed in this Application for Certification.

Additionally, Ford Motor Company is requesting the Air Resources Board approve the following Partial Carryover Application for PFMXT00.0BG2 based on Partial Carryover data from NFMXT00.0BG2 and Executive Order number A-010-2402-1. By signing this letter, Ford Motor Company is certifying that this model year's application package:

1. Includes no change of the emission standards/FELs, regulation requirements, emission characteristics of the engine, or test procedures requirements.

2. The 2023 application package differs from the 2022 application package only by:

☒ Model year
☒ Test Group/Engine/Vehicle/Evaporative family name (typically the first character)
☐ Manufacturer contact information
☒ Projected sales data
☐ Model information (may only add models if the certification emission levels are not changed)
☒ Part numbers (durable to full useful life and no impact on certification emission levels)
☐ Equipment types (i.e. crane, dozer, generator, etc.)

3. All other information in the 2023 application package is identical to the 2022 application package (incorporates all approved running changes to date).

4. The application package is complete and named correctly using the appropriate Document Management System (DMS) file and workflow naming conventions and submitted using the correct workflow process.

Please contact Mark Pietron at 313-805-7139 or mpietron@ford.com, if you have any questions regarding this submission.

Sincerely,

DocuSigned by:
Glen Heiser
324C4D0A823E490...

Glen A. Heiser, Manager
Emissions Certification, Homologation & Compliance
Vehicle Homologation & Compliance, SE&SE

cc S. Hada
cc M. Desai

CCAPS Manual Payment Request

(North America)

REF NO: 306146

NAME AND ADDRESS OF PAYEE

Environmental Protection Agency-MVECP

U.S. Bank - Government Lockbox 979032

1005 Convention Plaza SL-MO-C2-GL St. Louis, MI 63101

The requestor is responsible to ensure the supplier code has correct company name, remit to and/or banking information whether the payment is going by check or electronically by ACH.

Employee	Ex-Employee / Board of Director	Mail Attachments	Separate Check	Special Handling
			Y	

Supplier Code	CCAPS Plant Code	Due Date	Currency	Amount
GXHSA	10	ASAP		312,895.00

REASON FOR DISBURSEMENT

CERTIFICATION FEES - EPA STANDARD ENGINE FAMILY, EXHAUST EMISSION CONTROL SYSTEM

COMMENTS (Shown on Remittance Advice/Not to include PII)

2023 CERTIFICATION FEES - PFMXT02.72JQ, PFMXT03.54JK, PFMXT03.54JM, PFMXT03.57AT, PFMXT00.0BG2, PFMXT05.03DP, PFMXT02.0S7B, PFMXV00.0B3R, PFMXT02.02NP, PFMXT02.53CE, PFMXT03.33F1 (FORMS ATTACHED)

LOC CODE	GEN. LED.	SUB. ACCT.	SUB. DIV.	DEPT	PROD. CODE	BALANCE REFERENCE	MISC. REFERENCE	INVOICE #	INVOICE DATE	AMOUNT (Bracket Credits)	1099 Tax Type
5100	25A	00217		5100S910		F102A	EPA			312,895.00	N
									TOTAL	312,895.00	

Pre-requisites for Payment :

1. Requestors or Approvers to ensure the following
   - Receipt of Service
   - Price Validation
   - Supported by invoice or other documentation
2. Check if payment item is on Uses of Manual Payment Requests
3. For Finance Approval follow Corporate Approval Authorities - Method of Payment

TYPE OF INVOICE:

MANUAL PAYMENT REQUEST CATEGORY (use drop down with Alt+down arrow key): Legal Matters- Environmental Fees

Requestor

Preparer/Requestor	CDS ID	Sign	Date
	TOLIVER		5/5/2022

Operations Approval - Receipt of Service

DocuSigned by:

Approver	CDS ID	Sign	Date
	GHEISER	Glen Heiser 324454DCB23E436...	5/5/2022

Approvals per Corporate Approval Authorities - Method of Payment

Payment Item is on Uses of Manual Payment Requests

	CDS ID	Sign	Date
Finance LL5+ or Plant Controller (LL6) Unlimited	PBLANCAS	DocuSigned by: Patricia Blancas Rivera 98D37B2D5DA0498...	5/5/2022
Finance LL6 < $250,000			

Payment Item is not on Uses of Manual Payment Requests

	CDS ID	Sign	Date
Finance LL4+ Unlimited			
Finance LL5 < $25,000			

It is important to protect personal data when retaining and forwarding this Payment Authorization Form and attachments, if any. Every effort must be made to prevent exposure.

The space below may be used for additional local requirements

July 2021 North American Check Request Form (Previous editions without the above fields may NOT be used)

306146

PA_MV CP_v

S A Fee Form

Help and EPA nstructions

* Required Field

General Information

Date: 05/04/2022

Process Code *

Submit New Fee Filing Form

Manufacturer Code *

FMX

Manufacturer Name *

FORD MOTOR COMPANY

Contact Name *

TINA OLIVER

Contact Email Address *

TOLIVER@FORD.COM

Contact Phone *

3133238938

Calendar Year complete application submitted to EPA *

2022

PL ASE NOTE: These fees apply to complete certification applications received by PA from January , 2022, through December 3 , 2022. The applicable fee is determined by the calendar year in which the complete certification application is received, not the model year.

Engine Family / Evaporative Family / Test Group *

PFMXT00.0BG2

ertificate equest Type (Industry Sector Code)

Certificate Request Type *

- On-highway LDV, LTD, MDV/V, HDV Chassis Cert (Federal) (A, B, D, J, T, V)
- On-highway HDE Dyno Cert (Federal) (E, H)
- On-highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)
- On-Highway Motorcycle (C)
- On-Highway HDV Evap (F)
- On-highway LDV, LTD, MDTPV, HDV Chassis Cert (California Only) (A, B, D, J, T, V)
- On-Highway HDE Dyno Cert (California Only) (E, H)
- Nonroad SI (B)
- Nonroad CI (D, J)
- Locomotive (G, K)
- All Nonroad recreational, excluding Marine engines (A, V)
- All Marine (including HDE) (A, E, V)
- Component Certification for Evaporative Emissions (F)

IMO Name (Required for dual US/IMO Marine Only)

ICI VIN Number (Required for ICIs Only)

Do you qualify for a Reduced Fee? *

No

Payment Information

Amount Owed

$28,445.00

Payment Type *

Offline ACH

omments

Mark ietron: Pay.gov Tracking ID: 2700D1KR; Agency Tracking ID: 76236206495

EPA Form Number 3520-29
OMB Control No. 2060-0545
App oval e pires 12/31/2022
The public repo ting and recordkeeping burden for this collection of information is estimated to average 12 minutes per esponse. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this add ess.

16 Test Results

16.1 EPA Certification Summary Information Report (CSI)

Certification Summary Information Report

Manufacturer	Ford Motor Company	**Manufacturer Code**	FMX
Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	10/07/2022 10:21:56 AM
Model Year	2023		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	--
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Electric Motor

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Electricity	--	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	Yes
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	Yes
Fuel Cell Indicator	No	**EPA Vehicle Class**	LDT4, MDPV
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	--
Federal Clean Fuel Vehicle ILEV	--	**California Partial Zero Emissions Vehicle Indicator**	--
Durability Group Name	PFMXEEVNNG1H	**Durability Group Equivalency Factor**	1.0
Reduced Fee Test Group	No	**Certification Region Code(s)**	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	11/21/2022	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Not Applicable	**SFTP Tier 2 Composite CO Option**	--
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	PFMXT02.53CE
Test Group OBD Compliance Level	Full - no deficiencies	**Number of Test Group OBD Deficiencies**	0
OBD Deficiencies Comments	This BEV program does not have OBD compliance requirements. Items filled in for the purpose of passing system validation because they are required fields.		
Mfr Test Group Comments	2022MY F150 LIGHTNING PLATINUM BEV EXTENDED RANGE. Reporting EPA confirmatory tests from November 2021.		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Ford Motor Company	1 - Ford	117 - F150 LIGHTNING PLATINUM 4WD	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No
Ford Motor Company	1 - Ford	117 - F150 LIGHTNING PLATINUM 4WD	Federal	All Wheel Drive	Automatic	1	No
Ford Motor Company	1 - Ford	112 - F150 LIGHTNING EXTENDED RNG 4WD	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No
Ford Motor Company	1 - Ford	116 - F150 PICKUP LIGHTNING 4WD	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No
Ford Motor Company	1 - Ford	116 - F150 PICKUP LIGHTNING 4WD	Federal	All Wheel Drive	Automatic	1	No
Ford Motor Company	1 - Ford	112 - F150 LIGHTNING EXTENDED RNG 4WD	Federal	All Wheel Drive	Automatic	1	No

Engine Description

Hybrid Type	--	**Hybrid Description**	--
Engine Type	--	**Mfr Engine Description**	--
Engine Block Arrangement	--	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	--	**Oil Viscosity/Classification**	
Number of Cylinders/Rotors	--	**Mechanically Variable Compression Ratio Indicator**	--

After Treatment Device(s) (ATD)

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	--
Mfr Emission Control Device Comments	--

Official Test Numbers

Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity	--	--	--	--	--	--	--	--	--	--

Official Charge Depleting Test Numbers

Test Group Fuel	UDDS	Highway
Electricity	NFMX10072968	NFMX10072969

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	403	**Battery Energy Capacity**	410
Battery Specific Energy	210	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Both	**Driver Controlled Regenerative Braking**	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	2		
Motor/Generator Type 1	AC permanent magnet synchronou	**Rated Motor/Generator Power**	210
Motor/Generator Type 2	AC permanent magnet synchronou	**Rated Motor/Generator Power**	210
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	This is a pure BEV vehicle. The Drive Motors are both AC permanent magnet synchronous machines.		

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	NFD1-0.0-J-556 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	NFMXT00.0BG2	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2022		

Vehicle Model

Represented Test Vehicle Make	Ford	**Represented Test Vehicle Model**	F-150 Lightning

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	Yes		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1.03
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	NTFDAANJ05	**Rated Horsepower**	420
Displacement (liters)	0.001		
Air Aspiration Method	Naturally Aspirated	**Air Aspiration Method, if 'Other'**	N/A - BEV
Number of Air Aspiration Devices	--	**Air Aspiration Device Configuration**	--
Charge Air Cooler Type	N/A	**Drive Mode While Testing**	4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	6318	**Equivalent Test Weight (pounds)**	7500
GVWR (lbs)	8550	**N/V Ratio**	25.1
Axle Ratio	3.73		
Transmission Type	Electric Vehicle	**# of Transmission Gears**	1
Transmission Lockup	No	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	46.57	0.3416	0.03585	-3.53	-0.0289	0.03664	20.4

Emission Control Device Comments --

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Manufacturer Test Vehicle Comments --

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Test #	**NFMX10072968**	**Test Procedure**	**81 - Charge Depleting UDDS**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	11/16/2021	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000), MDPV (Federal Tier 2, GVWR 8501-10000)	**DF Type**	Mfr. Assigned
Verify Test Lab ID	EPA - NVFEL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3299	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	238	**Recharge Event Energy (kiloWatt-hours)**	150.6
Charge Depleting Range (Calculated miles)	447.8	**Charge Depleting Range (Actual miles)**	447.8
All Electric Range Unadjusted (miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
Equivalent All Electric Range (miles)	447.8		
Number of Charge Depleting Bags/Phases Conducted	1	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon-Related Exhaust Emissions	0
2	Drive Trace Absolute Speed Change Rating	1.15
3	Drive Trace Energy Economy Rating	0.41
4	Drive Trace Inertia Work Ratio Rating	2.37
5	Manufacturer Fuel Economy	100.2

Manufacturer Test Comments submitting the EPA confirmatory test through the Ford CDX interface. Mfr original cert test being confirmed is NFMX10071768. EPA confirmatory test: 20220013001 Test Record#: D329_202111160724_00120 Test Site: EPA-D329

Certification Summary Information Report

Test Group PFMXT00.0BG2 **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Test #	**NFMX10072969**	**Test Procedure**	**84 - Charge Depleting Highway**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	11/16/2021	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000), MDPV (Federal Tier 2, GVWR 8501-10000)	**DF Type**	Mfr. Assigned
Verify Test Lab ID	EPA - NVFEL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3299	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	238	**Recharge Event Energy (kiloWatt-hours)**	150.6
Charge Depleting Range (Calculated miles)	367.4	**Charge Depleting Range (Actual miles)**	367.4
All Electric Range Unadjusted (miles)	--	**Derived 5-Cycle Coefficient Model Year**	--
Equivalent All Electric Range (miles)	367.4		
Number of Charge Depleting Bags/Phases Conducted	1	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon-Related Exhaust Emissions	0
2	Drive Trace Absolute Speed Change Rating	1.15
3	Drive Trace Energy Economy Rating	0.41
4	Drive Trace Inertia Work Ratio Rating	2.37
5	Manufacturer Fuel Economy	82.2

Manufacturer Test Comments submitting EPA confirmatory test through Ford CDX interface. Original Mfr cert test being confirmed is NFMX10071769. EPA Test: 20220013001 Test Record#: D329_202111160724_00120 Test Site: EPA-329

Certification Summary Information Report

Test Group PFMXT00.0BG2 **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Fuel Properties

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Consolidated List of Standards

Exhaust Standards

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--
Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Charge Depleting Highway

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	MDPV (Federal Tier 2, GVWR 8501-10000)	**Standard Level**	Federal Tier 3 Bin 0
Fuel	Electricity	**Test Procedure**	Charge Depleting UDDS

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Glossary

Useful Life			
4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		

Emission Name			
HC-TOTAL	Total Hydrocarbon	METHANOL	CH3OH - Methanol
CO	Carbon Monoxide	N2O	Nitrous Oxide
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
NMOG	Non-methane organic gases	CO2 BAG 4	Bag 4 Carbon Dioxide
HCHO	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
H3C2HO	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
HC	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
METHANE	CH4 - Methane	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only

Certification Region			
CA	California + CAA Section 177 states	FA	Federal

Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50
OT	Other	T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0

Transmission Type Code			
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual
A	Automatic	OT	Other
AM	Automated Manual	SA	Semi-Automatic
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)

Drive System Code			
4	4-Wheel Drive	P	Part-time 4-Wheel Drive
F	2-Wheel Drive, Front	A	All Wheel Drive
R	2-Wheel Drive, Rear		

Certification Summary Information Report

Test Group	PFMXT00.0BG2	**Evaporative/Refueling Family**	--

Additional Terms and Acronyms

AFC	Alternative Fuel Converter	ICI	Independent Commercial Importer
CSI	Certificate Summary Information	ORVR	Onboard Refueling Vapor Recovery
DF	Deterioration Factor	SIL	Shift Indicator Light
Evap	Evaporation, Evaporative	Trans	Transmission

17 California Requirements

17.1 Statement of Compliance

17.1.1 General Statement

Ford Motor Company states that in regard to the vehicle control systems and all related parameters the production vehicles will be identical to the test vehicles which are used for certification testing.

17.1.2 Drivability Statement

The 2023 model year Ford F150 BEV vehicles meet the typical drivability requirements that the United States market expects, including acceleration rates, braking performance and stability performance. Furthermore, this vehicle meets all applicable FMVSS standards.

17.2 Supplemental Data and Certification Review Sheet

17.2.1 Certification Review Sheet

See Attachment.

E.O.#.

2023 MY MODEL-YEAR AIR RESOURCES BOARD CERTIFICATION REVIEW SHEET ZEV-PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: Ford Motor Company Test Group: PFMXT00.0BG2

Range Test Results								
		(check one)	(check one)			System	System	Vehicle
Vehicle ID	Trans	TW _____	DPA _____		Unadjusted Range	AC (Wh/mi)	DC (Wh/mi)	DC (Wh/mi)
		ETW / GVWR _X____	RLHP _____					
			dyno coeff. X					
NFD1-0.0-J-556	CVT	7500	F0 = 46.57	EPA Confirmatory Test	447.80	336.30	355.76	297.91
			F1 = 0.3416				304.29	
			F2 = 0.03585				293.02	
							292.89	
				EPA Confirmatory Test	367.42	409.86	369.37	363.07
							356.78	

Battery Test Results: Specific Energy (Whr/kg) _210

Vehicle Models	Trans type	Calibration	ETW (lb)	Tires	TRLHP
Ford F150 Lightning Platinum	CVT (single speed)	NTFDAANJ05	7500	275/50R22	20.44

Fuel Fired Heater Test Results (emission results in grams/mile): NA

NMHC
CO
NOx

Remarks:

----------ARB USE ONLY ----------

Application Processed By: _____ Date:_____

Reviewed by: _____ Date: _____

17.3 Reserved

17.4 Credits

17.4.1 Description of multi-manufacturer arrangements

Not applicable to this program. Ford is the sole manufacturer of this product.

17.4.2 Credit Calculation

As per the California EPA ARB document: "California Exhaust Emissions Standards … for 2018 and Subsequent Model Zero-Emission Vehicles…", which was adopted in California on Mar 22, 2012, the 2023 model year F150 Lightning AWD BEV Extended Range will receive 4.00 ZEV Credits for each vehicle sold, according to the following formula:

ZEV Credit =

(0.01)*(UDDS Range)+0.50 = (0.01)*(448)+0.50 = 4.98 (4.00 Credits allowed).

17.5 Vehicle Safety

17.5.1 All Information for Safe Operation of Vehicle

Details on how to operate the vehicle can be found in the owners guide.

Note that the vehicle is started and driven in the same manner as a conventional I.C.E. vehicle.

17.5.2 Information on Safe Handling of Battery System

The battery is to be serviced only by technicians that are authorized to do so by Ford. The detail will be available prior to production

17.5.3 Description of Emergency Procedures

Emergency procedures are described in Owner's guide. Please refer to owner's guide for details.

APPLICATION REVISIONS

PFMXT00.0BG2

NO.	DATE	PAGE(S)	DESCRIPTION

Engine Test Group: PFMXT00.0BG2
Issued: 5/10/2022
Revised: