Data Record Reporting Procedures for Over-the-Air Reprogrammed Vehicles Using SAE J1979-3

California Air Resources Board July 28, 2025

Disclaimer

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Background

California's Data Standardization Requirements for 2026 and Subsequent Model Year Light-Duty Zero Emission Vehicles and Plug-in Hybrid Electric Vehicles (title 13, California Code of Regulations (CCR) section 1962.5(c)(5)(B)) provides for manufacturers to compile and submit in-use tracking data records grouped by test groups that are Over-the-Air (OTA) reprogrammed if any of the specified tracking data would be cleared as a result of the reprogramming event. The procedures below describe how the data records should be constructed, formatted, and submitted to the California Air Resources Board (CARB or the Board) for vehicles using SAE J1979-3.

Data Fields and Format

The data fields are presented in the table below. The first five fields describe the data record. The remaining fields are comprised of aggregated data parameters corresponding with title 13, CCR section 1962.5. As indicated in the table, the data fields are computed from single data parameters read from reprogrammed vehicles. All averages and standard deviations should be unweighted. All parameters should be scaled as specified in the relevant industry standard (i.e., SAE J1979-3 and SAE J1979DA).

The header for the comma-separated values (CSV) file should exactly match the template below under "Example Record."

No data fields should be omitted from the header row, even if the vehicle does not support certain parameters. Fields in the data row should be left blank for unsupported data fields as shown in the example records. Each data record should be submitted in a separate CSV file.

Submission Information and Deadlines

Manufacturers are to collect and submit the data to the Executive Officer within 75 days of the release of the OTA software update. The data should not be aggregated

until after 45 days from the release of the software. Vehicles that are not successfully reflashed within this timeframe may be left out of the aggregated data record. Records should be posted to the manufacturers' space on CARB's electronic file system for uploading certification applications (e.g., eFiles) using a filename based on the certification engine family/test group name and the date of the OTA release, as follows: family_OTA_mmddyyyy.csv.

Record Identification Fields

Field Name	Description	Vehicle Parameters	Format
FAMILY	Test Group Name	Certification Identifier for Test Group	Text
CALID	Calibration Identification Number	Calibration Identification Number	Text
CALDATE	Date the calibration was released over the air	none - entered separately	Date DD/MM/YYYY
VEHCOUNT	Number of vehicle records included in the aggregate record	none - entered separately	Integer
CORRUPTCOUNT	Number of vehicle records rejected based on detected data errors	none - entered separately	Integer
ODOMETER-AVE	Vehicle odometer reading (average)	Odometer	Integer
ODOMETER-SD	Vehicle odometer reading (standard deviation)	Odometer	Floating Point
ECUNAME	Name(s) of each propulsion-related Electronic Control Unit that has been reflashed	Electronic Control Unit Name	Text

ZEV Vehicle Operation Tracking

Field Name	Description	Vehicle Parameters	Format
	Distance Traveled		
DT-L-AVE	(average)	Total Distance Traveled	Floating Point
	Distance Traveled		
DT-L-SD	(standard deviation)	Total Distance Traveled	Floating Point
	Total number of		
QTY_PSA_TRIPS-	propulsion system active	Total Number of Propulsion System	
L-AVE	events (average)	Active Trips	Floating Point
	Total number of		
	propulsion system active		
QTY_PSA_TRIPS-	events (standard	Total Number of Propulsion System	
L-SD	deviation)	Active Trips	Floating Point
	Positive Kinetic Energy		
PKE-L-AVE	(average)	Total Positive Kinetic Energy	Floating Point
	Positive Kinetic Energy		
PKE-L-SD	(standard deviation)	Total Positive Kinetic Energy	Floating Point
	Electric Traction Motor A		
ETM_A_TOE_L-	Total Output Energy	Total Electric Motor Output Energy	
AVE	(average)	#1	Floating Point
	Electric Traction Motor A		
ETM_A_TOE_L-	Total Output Energy	Total Electric Motor Output Energy	
SD	(standard deviation)	#1	Floating Point
	Electric Traction Motor B		
ETM_B_TOE_L-	Total Output Energy	Total Electric Motor Output Energy	
AVE	(average)	#2	Floating Point
	Electric Traction Motor B		
5714 D TOF 1 CD	Total Output Energy	Total Electric Motor Output Energy	E
ETM_B_TOE_L-SD	(standard deviation)	#2	Floating Point
FT.4 0 TOF 1	Electric Traction Motor C	T	
ETM_C_TOE_L-	Total Output Energy	Total Electric Motor Output Energy	EL .: D
AVE	(average)	#3	Floating Point
ETM C TOE I	Electric Traction Motor C	T .	
ETM_C_TOE_L-	Total Output Energy	Total Electric Motor Output Energy	
SD	(standard deviation)	#3	Floating Point
	Electric Traction Motor D	Tatal Flactuia Matau Outrout Frances	
ETM_D_TOE_L-	Total Output Energy	Total Electric Motor Output Energy #4	Clastina Daint
AVE	(average) Electric Traction Motor D	#4	Floating Point
ETM D TOE I		Total Floatric Motor Output Francy	
ETM_D_TOE_L- SD	Total Output Energy (standard deviation)	Total Electric Motor Output Energy #4	Floating Point
JD		π - τ	1 loating Foint
PSA-L-AVE	Total Propulsion System Active Time (average)	Total Propulsion System Active Time	Floating Point
I JA-L-AVE	Total Propulsion System	Total Topulsion System Active Time	Tidating Foint
	Active Time (standard		
PSA-L-SD	deviation)	Total Propulsion System Active Time	Floating Point
1 3M-L-3D	ueviation)	Trotarriopulsion system Active Time	I i loating i oilit

Field Name	Description	Vehicle Parameters	Format
	Total Idle Propulsion		
	System Active Time	Total Idle Propulsion System Active	
IPSA-L-AVE	(average)	Time	Floating Point
	Total Idle Propulsion		
	System Active Time	Total Idle Propulsion System Active	
IPSA-L-SD	(standard deviation)	Time	Floating Point
	Total City Propulsion		
	System Active Time	Total City Propulsion System Active	
CPSA-L-AVE	(average)	Time	Floating Point
	Total City Propulsion		
	System Active Time	Total City Propulsion System Active	
CPSA-L-SD	(standard deviation)	Time	Floating Point
	Total Fuel Cell Active		
FCAT-L-AVE	Time (average)	Total Fuel Cell System Active Time	Floating Point
	Total Fuel Cell Active		
FCAT-L-SD	Time (standard deviation)	Total Fuel Cell System Active Time	Floating Point
	Total Fuel Cell System	,	
	Energy Generated	Total Fuel cell System Energy	
TFSEG_L-AVE	(average)	Generated	Floating Point
_	Total Fuel Cell System		
	Energy Generated	Total Fuel cell System Energy	
TFSEG_L-SD	(standard deviation)	Generated	Floating Point
	Total Gaseous Fuel		
FC-L-AVE	Consumed (average)	Total Hydrogen Fuel Consumed	Floating Point
	Total Gaseous Fuel		
	Consumed (standard		
FC-L-SD	deviation)	Total Hydrogen Fuel Consumed	Floating Point
	Total net battery current		
	in propulsion system	Total Net Battery Current in the State	
TNBC_PSA-L-AVE	active operation (average)	of Propulsion System Active	Floating Point
	Total net battery current		
	in propulsion system		
	active operation	Total Net Battery Current in the State	
TNBC_PSA-L-SD	(standard deviation)	of Propulsion System Active	Floating Point
	Total net energy		
	consumed in propulsion		
	system active operation	Total Net Energy Consumed in the	
TNEC_PSA-L-AVE	(average)	State of Propulsion System Active	Floating Point
	Total net energy		
	consumed in propulsion		
	system active operation	Total Net Energy Consumed in the	
TNEC_PSA-L-SD	(standard deviation)	State of Propulsion System Active	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Total energy into battery		
	during propulsion system	Total Energy into Battery during the	
TEB_PSA-L-AVE	active (average)	State of Propulsion System Active	Floating Point
	Total energy into battery		
	during propulsion system		
	active (standard	Total Energy into Battery during the	
TEB_PSA-L-SD	deviation)	State of Propulsion System Active	Floating Point
	Total grid energy into the		
	battery during off-board	Total Grid Energy into the Battery	
TGE_OVC-L-AVE	charging (average)	During Off-Board Charging	Floating Point
	Total grid energy into the		
	battery during off-board		
	charging (standard	Total Grid Energy into the Battery	
TGE_OVC-L-SD	deviation)	During Off-Board Charging	Floating Point
	Total grid energy into the		
	battery from off-board		
GE_CHG_OVC_D	direct current (DC)	Total Grid Energy into the Battery	
C-L-AVE	charging (average)	from Off-Board DC Charging	Floating Point
	Total grid energy into the		
	battery from off-board		
	direct current (DC)		
GE_CHG_OVC_D	charging (standard	Total Grid Energy into the Battery	
C-L-SD	deviation)	from Off-Board DC Charging	Floating Point
	Total grid energy into the		
GE_CHG_OVC_A	vehicle from off-board AC	Total Grid Energy into the Vehicle	
C-L-AVE	charging. (average)	from off-board AC Charging	Floating Point
	Total grid energy into the		
	vehicle from off-board AC		
GE_CHG_OVC_A	charging. (standard	Total Grid Energy into the Vehicle	
C-L-SD	deviation)	from off-board AC Charging	Floating Point
	Total battery energy		
	supplied to an off-board	T . I D 5	
DECC VOV ENDAD	usage during propulsion	Total Battery Energy Supplied to an	
RESS_V2X_EN_N	system non-active	Off-Board Usage during Propulsion	Electric Dodge
ONPSA-L-AVE	operation (average)	System Non-Active Operation	Floating Point
	Total battery energy		
	supplied to an off-board		
	usage during propulsion	Tatal Dattana France Constitution	
DECC VOV ENDAD	system non-active	Total Battery Energy Supplied to an	
RESS_V2X_EN_N	operation (standard	Off-Board Usage during Propulsion	Flantin Divisi
ONPSA-L-SD	deviation)	System Non-Active Operation	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Average battery		
	temperature during	Average Battery Temperature during	
AVG_BATTEMP_PS	Propulsion System Active	Charging/Propulsion System	
A-L-AVE	(average)	Active/Non-Usage of the Vehicle	Floating Point
	Average battery		
	temperature during	Average Battery Temperature during	
AVG_BATTEMP_PS	Propulsion System Active	Charging/Propulsion System	
A-L-SD	(standard deviation)	Active/Non-Usage of the Vehicle	Floating Point
	Energy Storage	T . I.:	
DECC TIME COC DC	Accumulated Time at	Total time at low state of charges	
RESS_TIME_SOC_PS	State of Charge during	where total time includes cumulative	FI D
A_RNG1-L-AVE	PSA < Range 1 (average)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at		
DECC TIME COC DC	State of Charge during	Total time at low state of charges	
RESS_TIME_SOC_PS	PSA < Range 1 (standard	where total time includes cumulative	
A_RNG1-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at	Total times at law state of charges	
RESS_TIME_SOC_PS	State of Charge during	Total time at low state of charges where total time includes cumulative	
A_RNG12-L-AVE	PSA within >=Range 1 < Range 2 (average)	time during propulsion System active	Floating Point
A_MINOTZ-L-AVL	Energy Storage	time during propaision system active	Tioating Foint
	Accumulated Time at		
	State of Charge during		
	PSA within >=Range 1	Total time at low state of charges	
RESS_TIME_SOC_PS	< Range 2 (standard	where total time includes cumulative	
A_RNG12-L-SD	deviation)	time during propulsion System active	Floating Point
7_111012 2 00	Energy Storage	time daming propalation bystem delive	Trouting Forme
	Accumulated Time at		
	State of Charge during	Total time at low state of charges	
RESS_TIME_SOC_PS	PSA within >=Range 2	where total time includes cumulative	
A_RNG23-L -AVE	< Range 3 (average)	time during propulsion System active	Floating Point
_	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	PSA within >=Range 2	Total time at low state of charges	
RESS_TIME_SOC_PS	< Range 3 (standard	where total time includes cumulative	
A_RNG23-L -SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during	Total time at low state of charges	
RESS_TIME_SOC_PS	PSA within >=Range 3	where total time includes cumulative	
A_RNG34-L-AVE	< Range 4 (average)	time during propulsion System active	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Energy Storage		
	Accumulated Time at State		
	of Charge during PSA within		
	>=Range 3	Total time at low state of charges	
RESS_TIME_SOC_PS	< Range 4 (standard	where total time includes cumulative	
A_RNG34-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at State		
	of Charge during PSA within	Total time at mid state of charges	
RESS_TIME_SOC_PS	>=Range 4	where total time includes cumulative	
A_RNG45-L-AVE	< Range 5 (average)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at State		
	of Charge during PSA within	Tatalita a at attaliana af alaman	
DECC TIME COC DC	>=Range 4	Total time at mid state of charges	
RESS_TIME_SOC_PS	< Range 5 (standard	where total time includes cumulative	Eleating Paint
A_RNG45-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage Accumulated Time at State		
	of Charge during PSA within	Total time at mid state of charges	
RESS_TIME_SOC_PS	>=Range 5	where total time includes cumulative	
A_RNG56-L-AVE	< Range 6 (average)	time during propulsion System active	Floating Point
7 _1111000	Energy Storage	time daming proparation bystem delive	Trouting Form
	Accumulated Time at State		
	of Charge during PSA within		
	>=Range 5	Total time at mid state of charges	
RESS_TIME_SOC_PS	< Range 6 (standard	where total time includes cumulative	
A_RNG56-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at State		
	of Charge during PSA within	Total time at high state of charges	
RESS_TIME_SOC_PS		where total time includes cumulative	
A_RNG67-L-AVE	< Range 7 (average)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at State		
	of Charge during PSA within		
	>=Range 6	Total time at high state of charges	
RESS_TIME_SOC_PS	< Range 7 (standard	where total time includes cumulative	
A_RNG67-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage		
	Accumulated Time at State	Total time at high state of charges	
RESS_TIME_SOC_PS	of Charge during PSA	where total time includes cumulative	
A_RNG7-L-AVE	>=Range 7 (average)	time during propulsion System active	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Energy Storage		
	Accumulated Time at		
DECC TIME CO.	State of Charge during	Total time at high state of charges	
RESS_TIME_SOC_	PSA >=Range 7 (standard	where total time includes cumulative	EL .: D : .
PSA_RNG7-L-SD	deviation)	time during propulsion System active	Floating Point
	Energy Storage Accumulated Time at		
RESS_TIME_SOC_	State of Charge during	Total time at low state of charges	
CHG_RNG1-L-	Charging < Range 1	where total time includes cumulative	
AVE	(average)	time during charging	Floating Point
7,112	Energy Storage	anno dannig onarging	1 loating rome
	Accumulated Time at		
	State of Charge during	Total time at low state of charges	
RESS_TIME_SOC_	Charging < Range 1	where total time includes cumulative	
CHG_RNG1-L-SD	(standard deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
DE00 TU 45 00 0	State of Charge during		
RESS_TIME_SOC_	Charging within >=Range	Total time at low state of charges	
CHG_RNG12-L-	[] [] [] [] [] [] [] [] [] []	where total time includes cumulative	Elastina Daint
AVE	< Range 2 (average) Energy Storage	time during charging	Floating Point
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range		
RESS_TIME_SOC_	1	Total time at low state of charges	
CHG_RNG12-L-	< Range 2 (standard	where total time includes cumulative	
SD	deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
RESS_TIME_SOC_	Charging within >=Range	Total time at low state of charges	
CHG_RNG23-L-	2	where total time includes cumulative	EL B
AVE	< Range 3 (average)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during Charging within >=Range		
RESS_TIME_SOC_	2	Total time at low state of charges	
CHG_RNG23-L-	<pre>< Range 3 (standard</pre>	where total time includes cumulative	
SD	deviation)	time during charging	Floating Point

Field Name	Description	Vehicle Parameters	Format
1101011101110	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range	Total time at low state of charges	
RESS_TIME_SOC_C	3	where total time includes cumulative	
HG_RNG34-L-AVE	< Range 4 (average)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range	T . 1.1	
DECC TIME COC C	3	Total time at low state of charges	
RESS_TIME_SOC_C	< Range 4 (standard	where total time includes cumulative	Flantina Daint
HG_RNG34-L-SD	deviation)	time during charging	Floating Point
	Energy Storage Accumulated Time at		
	State of Charge during		
	Charging within >=Range	Total time at mid state of charges	
RESS_TIME_SOC_C	4	where total time includes cumulative	
HG_RNG45-L-AVE	< Range 5 (average)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range		
	4	Total time at mid state of charges	
RESS_TIME_SOC_C	< Range 5 (standard	where total time includes cumulative	
HG_RNG45-L-SD	deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during	Table in a second state of the const	
DECC TIME COC C	Charging within >= Range	Total time at mid state of charges	
RESS_TIME_SOC_C	Pango ((ayoraga)	where total time includes cumulative	Electing Point
HG_RNG56-L-AVE	< Range 6 (average) Energy Storage	time during charging	Floating Point
	Accumulated Time at		
	State of Charge during		
	Charging within >= Range		
	5	Total time at mid state of charges	
RESS_TIME_SOC_C	< Range 6 (standard	where total time includes cumulative	
HG_RNG56-L-SD	deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range	Total time at high state of charges	
RESS_TIME_SOC_C	6	where total time includes cumulative	
HG_RNG67-L-AVE	< Range 7 (average)	time during charging	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Charging within >=Range		
DECC TU 15 000 0	6	Total time at high state of charges	
RESS_TIME_SOC_C	< Range 7 (standard	where total time includes cumulative	
HG_RNG67-L-SD	deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
DE00 TU 45 000 0	State of Charge during	Total time at high state of charges	
RESS_TIME_SOC_C	Charging >=Range 7	where total time includes cumulative	
HG_RNG7-L-AVE	(average)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at	T . 1.1	
DE00 TU 45 000 0	State of Charge during	Total time at high state of charges	
RESS_TIME_SOC_C	Charging >=Range 7	where total time includes cumulative	EL B
HG_RNG7-L-SD	(standard deviation)	time during charging	Floating Point
	Energy Storage		
	Accumulated Time at		
DECC TU 15 000 0	State of Charge during	Total time at low state of charges	
RESS_TIME_SOC_O	Vehicle Off is less than	where total time includes cumulative	
FF_RNG1-L-AVE	Range 1 (average)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during	T . I .:	
DESC TIME SOC O	Vehicle Off is less than	Total time at low state of charges	
RESS_TIME_SOC_O	Range 1 (standard	where total time includes cumulative	
FF_RNG1-L-SD	deviation)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during	T . I.:	
DECC TIME COO O	Vehicle Off within	Total time at low state of charges	
RESS_TIME_SOC_O	>=Range 1	where total time includes cumulative	FI D
FF_RNG12-L-AVE	< Range 2 (average)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within	Table of the state	
DECC TIME COO C	>=Range 1	Total time at low state of charges	
RESS_TIME_SOC_O	< Range 2 (standard	where total time includes cumulative	
FF_RNG12-L-SD	deviation)	time during non-usage of the vehicle	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within	Total time at low state of charges	
RESS_TIME_SOC_O	>=Range 2	where total time includes cumulative	
FF_RNG23-L-AVE	< Range 3 (average)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within		
	>=Range 2	Total time at low state of charges	
RESS_TIME_SOC_O	< Range 3 (standard	where total time includes cumulative	
FF_RNG23-L-SD	deviation)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within	Total time at low state of charges	
RESS_TIME_SOC_O	>=Range 3	where total time includes cumulative	
FF_RNG34-L-AVE	< Range 4 (average)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within		
	>=Range 3	Total time at low state of charges	
RESS_TIME_SOC_O	< Range 4 (standard	where total time includes cumulative	
FF_RNG34-L-SD	deviation)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
DE00 TILLE 000 0	Vehicle Off within	Total time at mid state of charges	
RESS_TIME_SOC_O	>=Range 4	where total time includes cumulative	
FF_RNG45-L-AVE	< Range 5 (average)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during		
	Vehicle Off within	Table and all the C. I.	
DECC TIME COC O	>=Range 4	Total time at mid state of charges	
RESS_TIME_SOC_O	< Range 5 (standard	where total time includes cumulative	Flanting Delet
FF_RNG45-L-SD	deviation)	time during non-usage of the vehicle	Floating Point
	Energy Storage		
	Accumulated Time at		
	State of Charge during	Table and all the C. I.	
DECC TIME COC O	Vehicle Off within	Total time at mid state of charges	
RESS_TIME_SOC_O	>=Range 5	where total time includes cumulative	
FF_RNG56-L-AVE	< Range 6 (average)	time during non-usage of the vehicle	Floating Point

Field Name	Description	Vehicle Parameters	Format
RESS_TIME_SOC_O	Energy Storage Accumulated Time at State of Charge during Vehicle Off within >=Range 5 < Range 6 (standard	Total time at mid state of charges where total time includes cumulative time during non-usage	
FF_RNG56-L-SD	deviation)	of the vehicle	Floating Point
RESS_TIME_SOC_O FF_RNG67-L-AVE	Energy Storage Accumulated Time at State of Charge during Vehicle Off within >=Range 6 < Range 7 (average)	Total time at high state of charges where total time includes cumulative time during non-usage of the vehicle	Floating Point
RESS_TIME_SOC_O FF_RNG67-L-SD	Energy Storage Accumulated Time at State of Charge during Vehicle Off within >=Range 6 < Range 7 (standard deviation)	Total time at high state of charges where total time includes cumulative time during non-usage of the vehicle	Floating Point
RESS_TIME_SOC_O FF_RNG7-L-AVE	Energy Storage Accumulated Time at State of Charge during Vehicle Off >=Range 7 (average)	Total time at high state of charges where total time includes cumulative time during non-usage of the vehicle	Floating Point
RESS_TIME_SOC_O FF_RNG7-L-SD	Energy Storage Accumulated Time at State of Charge during Vehicle Off >=Range 7 (standard deviation)	Total time at high state of charges where total time includes cumulative time during non-usage of the vehicle	Floating Point
RESS_CNTS_DOD_R NG1-L-AVE	Lifetime Energy Storage System Depth of Discharge Counter < Range 1 (average)	Total Number of charge events following a low depth of discharge of the battery	Floating Point
RESS_CNTS_DOD_R NG1-L-SD	Lifetime Energy Storage System Depth of Discharge Counter < Range 1 (standard deviation)	Total Number of charge events following a low depth of discharge of the battery	Floating Point
RESS_CNTS_DOD_R NG12-L-AVE	Lifetime Energy Storage System Depth of Discharge Counter within >=Range 1, < Range 2 (average)	Total Number of charge events following a low depth of discharge of the battery	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Lifetime Energy Storage		
	System Depth of		
DESC CLIES DOD D	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 1, < Range 2	following a low depth of discharge of	FI D
NG12-L-SD	(standard deviation)	the battery	Floating Point
	Lifetime Energy Storage System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 2, < Range 3	following a low depth of discharge of	
NG23-L-AVE	(average)	the battery	Floating Point
	Lifetime Energy Storage		<u> </u>
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 2, < Range 3	following a low depth of discharge of	
NG23-L-SD	(standard deviation)	the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of	T	
DECC CNITC DOD D	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R NG34-L-AVE	>=Range 3, < Range 4	following a low depth of discharge of	Flacting Daint
NG34-L-AVE	(average) Lifetime Energy Storage	the battery	Floating Point
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 3, < Range 4	following a low depth of discharge of	
NG34-L-SD	(standard deviation)	the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 4, < Range 5	following a medium depth of	
NG45-L-AVE	(average)	discharge of the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of	Total Number of charge avents	
RESS_CNTS_DOD_R	Discharge Counter within >=Range 4, < Range 5	Total Number of charge events following a medium depth of	
NG45-L-SD	(standard deviation)	discharge of the battery	Floating Point
INOTO-L-OD	Lifetime Energy Storage	alsonarge of the battery	1 Todding Fourt
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 5, < Range 6	following a medium depth of	
NG56-L-AVE	(average)	discharge of the battery	Floating Point

Field Name	Description	Vehicle Parameters	Format
	Lifetime Energy Storage		
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 5, < Range 6	following a medium depth of	
NG56-L-SD	(standard deviation)	discharge of the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 6, < Range 7	following a high depth of discharge	
NG67-L-AVE	(average)	of the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of		
	Discharge Counter within	Total Number of charge events	
RESS_CNTS_DOD_R	>=Range 6, < Range 7	following a high depth of discharge	
NG67-L-SD	(standard deviation)	of the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of	Total Number of charge events	
RESS_CNTS_DOD_R	Discharge Counter >=	following a high depth of discharge	
NG7-L-AVE	Range 7 (average)	of the battery	Floating Point
	Lifetime Energy Storage		
	System Depth of		
	Discharge Counter >=	Total Number of charge events	
RESS_CNTS_DOD_R	Range 7 (standard	following a high depth of discharge	
NG7-L-SD	deviation)	of the battery	Floating Point

Example Records:

The first row of the data record shall include the field names exactly as shown below. Following the header row are two additional rows of data. The first additional row is for a battery electric vehicle (BEV). The second additional row is for a fuel cell electric vehicle (FCEV). The column names are not repeated for the second example.

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FAMILY, CALID, CALDATE, VEHCOUNT, CORRUPTCOUNT, ODOMETER-AVE, ODOMETER-
SD,ECUNAME,DT-L-AVE,DT-L-SD,QTY_PSA_TRIPS-L-AVE,QTY_PSA_TRIPS-L-SD,PKE-L-
AVE, PKE-L-SD, ETM A TOE L-AVE, ETM A TOE L-SD, ETM B TOE L-AVE, ETM B TOE L-
SD,ETM C TOE L-AVE,ETM C TOE L-SD,ETM D TOE L-AVE,ETM D TOE L-SD,PSA-L-
AVE, PSA-L-SD, IPSA-L-AVE, IPSA-L-SD, CPSA-L-AVE, CPSA-L-SD, TNBC_PSA-L-AVE, TNBC_PSA-
L-SD, TNEC PSA-L-AVE, TNEC PSA-L-SD, TEB PSA-L-AVE, TEB PSA-L-SD, TGE OVC-L-
AVE,TGE_OVC-L-SD,GE_CHG_OVC_DC-L-AVE,GE_CHG_OVC_DC-L-
SD,GE_CHG_OVC_AC-L-AVE,GE_CHG_OVC_AC-L-SD,RESS_V2X_EN_NONPSA-L-
AVE, RESS V2X EN NONPSA-L-SD, AVG BATTEMP PSA-L-AVE, AVG BATTEMP PSA-L-
SD,RESS_TIME_SOC_PSA_RNG1-L-AVE,RESS_TIME_SOC_PSA_RNG1-L-
SD,RESS_TIME_SOC_PSA_RNG12-L-AVE,RESS_TIME_SOC_PSA_RNG12-L-
SD,RESS_TIME_SOC_PSA_RNG23-L-AVE,RESS_TIME_SOC_PSA_RNG23-L-
SD,RESS_TIME_SOC_PSA_RNG34-L-AVE,RESS_TIME_SOC_PSA_RNG34-L-
SD,RESS_TIME_SOC_PSA_RNG45-L-AVE,RESS_TIME_SOC_PSA_RNG45-L-
SD, RESS TIME SOC PSA RNG56-L-AVE, RESS TIME SOC PSA RNG56-L-
SD,RESS_TIME_SOC_PSA_RNG67-L-AVE,RESS_TIME_SOC_PSA_RNG67-L-
SD,RESS_TIME_SOC_PSA_RNG7-L-AVE,RESS_TIME_SOC_PSA_RNG7-L-
SD, RESS TIME SOC CHG RNG1-L-AVE, RESS TIME SOC CHG RNG1-L-
SD,RESS_TIME_SOC_CHG_RNG12-L-AVE,RESS_TIME_SOC_CHG_RNG12-L-
SD, RESS TIME SOC CHG RNG23-L-AVE, RESS TIME SOC CHG RNG23-L-
SD, RESS TIME SOC CHG RNG34-L-AVE, RESS TIME SOC CHG RNG34-L-
SD,RESS_TIME_SOC_CHG_RNG45-L-AVE,RESS_TIME_SOC_CHG_RNG45-L-
SD, RESS TIME SOC CHG RNG56-L-AVE, RESS TIME SOC CHG RNG56-L-
SD,RESS_TIME_SOC_CHG_RNG67-L-AVE,RESS_TIME_SOC_CHG_RNG67-L-
SD,RESS_TIME_SOC_CHG_RNG7-L-AVE,RESS_TIME_SOC_CHG_RNG7-L-
SD, RESS TIME SOC OFF RNG1-L-AVE, RESS TIME SOC OFF RNG1-L-
SD,RESS_TIME_SOC_OFF_RNG12-L-AVE,RESS_TIME_SOC_OFF_RNG12-L-
SD, RESS TIME SOC OFF RNG23-L-AVE, RESS TIME SOC OFF RNG23-L-
SD,RESS_TIME_SOC_OFF_RNG34-L-AVE,RESS_TIME_SOC_OFF_RNG34-L-
SD,RESS_TIME_SOC_OFF_RNG45-L-AVE,RESS_TIME_SOC_OFF_RNG45-L-
SD,RESS_TIME_SOC_OFF_RNG56-L-AVE,RESS_TIME_SOC_OFF_RNG56-L-
SD,RESS_TIME_SOC_OFF_RNG67-L-AVE,RESS_TIME_SOC_OFF_RNG67-L-
SD,RESS_TIME_SOC_OFF_RNG7-L-AVE,RESS_TIME_SOC_OFF_RNG7-L-
SD, RESS CNTS DOD RNG1-L-AVE, RESS CNTS DOD RNG1-L-
SD, RESS CNTS DOD RNG12-L-AVE, RESS CNTS DOD RNG12-L-
SD, RESS CNTS DOD RNG23-L-AVE, RESS CNTS DOD RNG23-L-
SD, RESS CNTS DOD RNG34-L-AVE, RESS CNTS DOD RNG34-L-
SD,RESS_CNTS_DOD_RNG45-L-AVE,RESS_CNTS_DOD_RNG45-L-
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SD,RESS_CNTS_DOD_RNG56-L-AVE,RESS_CNTS_DOD_RNG56-L-SD,RESS_CNTS_DOD_RNG67-L-AVE,RESS_CNTS_DOD_RNG67-L-SD,RESS_CNTS_DOD_RNG7-L-SD

TABCV00.0XYZ,CALID12345678,7/30/2018,2123,8,45146,5897,"ECUA, ECUB",55708.533,8139.3919,1094206.653,117804.7855,11297187.08,918277.6617,10088 99.77,50337.9122,665415.1896,110736.2332,963171.109,100197.5654,444472.6641,9478 4.6316,1040419.611,101844.87,1157408.036,76200.3022,1044858.957,83981.1309,....,57 3.6908,79.0081,48413.7054,7720.9781,99263.5593,10431.853,100669.4735,7889.447,998 76.5298,5435.9128,113848.1207,5177.4862,53747.5748,12226.0433,65.0153,10.1827,774 086.7373,45926.6593,564391.6862,104340.9984,564006.5323,79314.0074,1182790.385,8 1229.1182,1055360.394,119002.0865,867326.9823,109202.0939,705699.3683,53902.980 6,1124484.685,53174.5042,888285.3695,85770.2698,845706.7008,52760.9542,483876.59 69,83634.452,817634.182,91543.9481,937236.246,93457.7214,741886.7576,123289.6344 ,1025378.812,102221.5571,947568.3199,122175.8432,983402.1512,49776.6035,1146116. 439,76895.2042,977508.1671,120079.5782,688518.8457,97425.6303,530690.5541,66370. 6778,577564.0801,109330.1183,1116529.103,99610.3891,476742.1738,85988.4782,12.42 82,0.8647,14.7482,1.3892,15.3731,0.7868,13.2886,1.5704,14.9164,1.8493,7.4885,1429.18 26,16065.1658,1897.9861,11177.163,1935.3975

TABCJ00.0XYZ,CALID12345678,7/30/2018,2123,8,45146,5897,"ECUA, ECUB",55708.533,8139.3919,1094206.653,117804.7855,11297187.08,918277.6617,10088 99.77,50337.9122,665415.1896,110736.2332,963171.109,100197.5654,444472.6641,9478 4.6316,1040419.611,101844.87,1157408.036,76200.3022,1044858.957,83981.1309,54867 9.6893,78935.6064,672666.8545,116354.7009,8236.8268,685.2371,573.6908,79.0081,484 13.7054,7720.9781,99263.5593,10431.853,,,,,,,65.0153,10.1827,774086.7373,45926.6593 ,564391.6862,104340.9984,564006.5323,79314.0074,1182790.385,81229.1182,1055360.3 94,119002.0865,867326.9823,109202.0939,705699.3683,53902.9806,1124484.685,53174. 5042,888285.3695,85770.2698,845706.7008,52760.9542,483876.5969,83634.452,817634. 182,91543.9481,937236.246,93457.7214,741886.7576,123289.6344,1025378.812,102221. 5571,947568.3199,122175.8432,983402.1512,49776.6035,1146116.439,76895.2042,9775 08.1671,120079.5782,688518.8457,97425.6303,530690.5541,66370.6778,577564.0801,10 9330.1183,1116529.103,99610.3891,476742.1738,85988.4782,12.4282,0.8647,14.7482,1. 3892,15.3731,0.7868,13.2886,1.5704,14.9164,1.8493,7.4885,1429.1826,16065.1658,1897. 9861,11177.163,1935.3975