

## California Air Resources Board

### **2020 Zero-Emission Vehicle Credits**

The purpose of this report is to provide data that illustrates the status of each manufacturer's compliance with CARB's Zero-Emission Vehicle (ZEV) Regulation (Cal. Code Regs., tit. 13, § 1962.2). The ZEV Regulation requires certain automobile manufacturers to produce ZEVs for sale in California. The waiver for CARB's light-duty ZEV standards remains revoked by the SAFE Part 1 Rule. Until California's authority for its standards for light-duty vehicles is restored, CARB is administering the standards on a voluntary basis. As of model year 2020, all manufacturers, individually and collectively, remain in compliance on that basis.<sup>1</sup> Some manufacturers acquired credits from other manufacturers, consistent with the design of the regulation. The trend continues to project an expanding over-compliance as the technology and market for zero-emission technology matures and in response to favorable policy environments for ZEVs created in California. ZEVs remain a small percentage of the overall fleet, however, highlighting the need for continued policy work to ensure ZEVs are available for all.

### **Model Year 2020 Annual Requirement for Manufacturers**

The ZEV Regulation requires large volume and intermediate volume vehicle manufacturers to bring to and/or operate in California a certain proportion of their sales as plug-in hybrid electric vehicles (PHEVs) or ZEVs, such as battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs). The requirements are somewhat different for large volume and intermediate volume manufacturers. A small volume manufacturer is not required to meet the ZEV credit percentage requirements. However, a small volume manufacturer may earn, bank, and trade credits for the ZEVs and PHEVs it produces and delivers for sale in California.

Under the ZEV Regulation, a vehicle manufacturer's 2020 ZEV requirement is based on 9.5% of their total average production volume of all passenger cars (PCs) and light-duty trucks (LDTs) from 0 to 8,500 pounds (lbs.) delivered for sale in California for the 2016-2018 model years. Under special circumstances, the requirement may be based on the production volume for the same model year if the manufacturer's volume of PCs and LDTs produced and delivered for sale in California decreased by at least 30 percent from the previous year due to circumstances that were unforeseeable and beyond their control.

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<sup>1</sup> Throughout this report, "compliance" is used as a short-hand to describe manufacturers' voluntary decisions relative to the ZEV standard, which is not currently being enforced per the federal actions noted.

Large volume manufacturers must produce a minimum percentage of their credits from ZEVs equal to the minimum ZEV floor and can fulfill their remaining requirement with TZEVs (also known as PHEVs). The minimum ZEV floor for the 2020 model year is 6.0% credits, and the maximum TZEV allowance is 3.5%. Intermediate volume manufacturers may meet all their 9.5% requirement with credits from TZEVs. To illustrate which manufacturers are subject to which requirements, the table below lists the vehicle manufacturers by volume status that have a ZEV requirement in 2020. The table also summarizes the number of new model year 2020 conventional gasoline vehicles, PHEVs, and ZEVs delivered for sale in California, as well as the 3-year average production volume for model years 2016 through 2018, which is used to calculate manufacturers' annual requirements. Additionally, the table displays the 2020 annual requirements for large and intermediate volume manufacturers.

Manufacturer	Volume Status	2020 Light-Duty Passenger Cars & Trucks	2016-2018 Average Light-Duty Passenger Cars & Trucks	Minimum ZEV Credits Required, 2020	Maximum TZEV Optional Credits, 2020	Total Credits Required, 2020
BMW	Large	61,100	83,033.33	4,982.00	2,906.17	7,888.17
Fiat Chrysler (Stellantis)*	Large	112,735	167,014.33	6,764.10	3,945.73	10,709.83
Ford	Large	134,277	200,296.67	12,017.80	7,010.38	19,028.18
GM	Large	163,698	226,611.33	13,596.68	7,931.40	21,528.08
Honda	Large	207,884	302,711.00	18,162.66	10,594.89	28,757.55
Hyundai	Large	73,000	96,547.33	5,792.84	3,379.16	9,172.00
Jaguar Land Rover	Intermediate	24,618	22,880.00	0	2,173.60	2,173.60
KIA	Large	64,117	75,609.67	4,536.58	2,646.34	7,182.92
Mazda	Intermediate	34,716	60,745.67	0	5,770.84	5,770.84
Mercedes	Large	69,124	80,529.33	4,831.76	2,818.53	7,650.29
Nissan	Large	85,579	145,711.67	8,742.70	5,099.91	13,842.61
Subaru	Intermediate	65,598	68,149.33	0	6,474.19	6,474.19
Tesla	Intermediate	65,060	40,998.00	0	3,894.81	3,894.81
Toyota	Large	312,564	394,424.00	23,665.44	13,804.84	37,470.28
Volkswagen*	Large	66,329	117,103.00	3,979.74	2,321.52	6,301.26
Volvo	Intermediate	11,492	11,091.33	0	1,053.68	1,053.68
<b>All OEMs</b>	<b>N/A</b>	<b>1,551,891</b>	<b>2,093,456</b>	<b>107,072.30</b>	<b>81,825.99</b>	<b>188,898.29</b>

\*Same model-year calculation method used to calculate annual requirement. For example, the model year 2020 total annual requirement for Fiat Chrysler (Stellantis) is calculated by  $0.095 \times 112,735 = 10,709.83$ . Similarly, the model year 2020 total annual requirement for Volkswagen is calculated by  $0.095 \times 66,329 = 6,301.26$ .

## **Model Year 2020 Credits Earned for each Manufacturer by Make and Model**

In complying with the ZEV Regulation, manufacturers deliver vehicles for sale or place vehicles in California that generate varying credits based on vehicle type. For example, credits from a BEV delivered for sale are based on the BEV's UDDS all-electric range where the BEV Credit = (0.01) \* (UDDS range) + 0.50, with a cap of 4 credits per BEV [see Cal. Code Regs., tit. 13, § 1962.2(d)(5)(A)]. These credit values are calculated and displayed in CARB's certification executive orders (<https://ww2.arb.ca.gov/new-vehicle-and-engine-certification-executive-orders-my2020-passenger-cars-light-duty-trucks-and-0>).

The table below displays the credits earned by manufacturers for their model year 2020 makes and models through June 30, 2021. Any additional credits earned after this time for model year 2020 makes and models are not reflected in this table.

Manufacturer	Vehicle Type	Make	Model	Number of Vehicles	Credits Per Vehicle	Credits Earned
BMW	TZEV	BMW	530e / 530e xDrive	1,251	0.56	700.56
BMW	TZEV	BMW	X3 xDrive30e	467	0.53	247.51
BMW	BEV	BMW	I3 and I3s (120ah)	404	2.88	1,163.52
BMW	BEV	Mini	Cooper SE Hardtop 2door	85	2.17	184.45
BMW	BEVx	BMW	I3s and I3s with Range Extender	648	2.37	1,535.76
Fiat Chrysler (Stellantis)	TZEV	Chrysler	Pacifica Plug-In Hybrid	2,322	0.78	1,811.16
Ford	TZEV	Ford	Escape Plug-In Hybrid FWD	18	0.88	15.84
Ford	TZEV	Ford	Fusion Energi / Fusion Special Service	1,831	0.66	1,208.46
Ford	TZEV	Lincoln	Aviator Plug-In Hybrid AWD	323	0.56	180.88
GM	BEV	Chevrolet	Bolt	11,079	4.00	44,316.00
Honda	TZEV	Honda	Clarity Plug-In Hybrid	2,473	1.01	2,497.73
Honda	FCEV	Honda	Clarity Fuel Cell	287	4.00	1,148.00
Hyundai	TZEV	Hyundai	Ioniq Plug-In Hybrid	1,404	0.73	1,024.92
Hyundai	FCEV	Hyundai	Nexo	248	4.00	992.00
Hyundai	BEV	Hyundai	Ioniq Electric	751	3.13	2,350.63
Hyundai	BEV	Hyundai	Kona Electric	2,136	4.00	8,544.00
Jaguar Land Rover	TZEV	Land Rover	Range Rover Plug-In Hybrid	628	0.58	364.24
Jaguar Land Rover	BEV	Jaguar	I-Pace S / SE / HSE	660	4.00	2,640.00
Kia	TZEV	Kia	Niro Plug-In Hybrid	1,089	0.70	762.30
Kia	TZEV	Kia	Optima Plug-In Hybrid	241	0.71	171.11

Manufacturer	Vehicle Type	Make	Model	Number of Vehicles	Credits Per Vehicle	Credits Earned
Kia	BEV	Kia	Niro Electric	1,930	4.00	7,720.00
Lightning Systems	BEV	Lightning Hybrids	FT3-86	26	1.72	44.72
Mitsubishi	TZEV	Mitsubishi	Outlander Plug-In Hybrid	217	0.60	130.20
Nissan	BEV	Nissan	Leaf S / SV	1,353	2.81	3,801.93
Nissan	BEV	Nissan	Leaf S Plus	179	4.00	716.00
Nissan	BEV	Nissan	Leaf SV Plus / SL Plus	721	3.80	2,739.80
Subaru	TZEV	Subaru	Crosstrek Plug-In Hybrid	1,684	0.57	959.88
Tesla	BEV	Tesla	Model 3 Long Range (All Trims)	17,974	4.00	71,896.00
Tesla	BEV	Tesla	Model 3 Standard Range	956	3.79	3,623.24
Tesla	BEV	Tesla	Model 3 Standard Range Plus	19,738	4.00	78,952.00
Tesla	BEV	Tesla	Model S (All Trims)	4,244	4.00	16,976.00
Tesla	BEV	Tesla	Model X (All Trims)	6,645	4.00	26,580.00
Tesla	BEV	Tesla	Model Y (All Trims)	15,503	4.00	62,012.00
Toyota	TZEV	Toyota	Prius Prime	9,963	0.88	8,767.44
Toyota	FCEV	Toyota	Mirai	235	4.00	940.00
Volkswagen	TZEV	Audi	Q5 55 Tfsie	1,510	0.63	951.30
Volkswagen	BEV	Audi	E-Tron 55 Sportback Quattro	194	3.42	663.48
Volkswagen	BEV	Porsche	Taycan 4s Perf Battery Plus	849	3.40	2,886.60
Volkswagen	BEV	Porsche	Taycan Turbo	433	3.32	1,437.56
Volkswagen	BEV	Porsche	Taycan Turbo S	222	3.24	719.28
Volvo	TZEV	Volvo	S60 T8 AWD	47	0.62	29.14
Volvo	TZEV	Volvo	S90 T8 AWD	47	0.60	28.20
Volvo	TZEV	Volvo	V60 T8 AWD	40	0.62	24.80
Volvo	TZEV	Volvo	XC60 T8 AWD	426	0.57	242.82
Volvo	TZEV	Volvo	XC90 T8 AWD	528	0.57	300.96
			<b>Total</b>	<b>114,009</b>	<b>N/A</b>	<b>365,002.42</b>

## Manufacturer Credit Balances

A manufacturer may meet the ZEV requirements in a given model year by submitting a commensurate amount of ZEV credits. Credits may be used to meet the credit requirement for that category as well as the requirements for lesser credit earning ZEV categories. For example, credits produced from TZEVs may be used to comply with the portion of the requirement that may be met with credits from TZEVs, but not with the portion that must be satisfied with credits from ZEVs. Credits may be earned previously by the manufacturer or acquired from another party [see Cal. Code Regs., tit. 13, § 1962.2(g)(6)]. The table below displays the 2019 ending credit balances, credits earned in 2020, model year 2020 annual requirements, and ending credit balances (in units of ZEV credits) for all manufacturers who have a ZEV requirement. The ending credit balance represents the cumulative balance since the start of the ZEV Regulation in 1990 and is last updated as of August 31, 2021.

Manufacturer	Category	ZEV (BEV & FCEV)	BEVx	TZEV	NEV+	Discount AT PZEV and PZEV
BMW	2019 Balance	16,493.86	35,705.33	616.68	0.00	0.00
	2020 Credits	1,347.97	1,535.76	948.07	0.00	-
	2020 Requirement	4,982.00	-	2,906.17	-	-
	2020 Ending Balance	15,350.83	32,460.60	948.07	0.00	0.00
Fiat Chrysler (Stellantis)	2019 Balance	73,690.99	0.00	0	0.00	217.95
	2020 Credits*	18,669.00	0.00	1,811.16	0.00	-
	2020 Requirement	6,764.10	-	3,945.73	-	-
	2020 Ending Balance	83,679.27	0.00	0.00	0.00	0.00
Ford	2019 Balance	57,637.84	0.00	73,574.29	6,530.48	3,451.97
	2020 Credits	0.00	0.00	1,405.18	0.00	-
	2020 Requirement	12,017.80	-	7,010.38	-	-
	2020 Ending Balance	45,620.04	0.00	69,721.69	4,777.88	3,451.97
GM	2019 Balance	153,485.24	0.00	129,326.70	3,608.30	0.00
	2020 Credits	44,316.00	0.00	0.00	0.00	-
	2020 Requirement	13,596.68	-	7,931.40	-	-
	2020 Ending Balance	184,204.56	0.00	123,378.15	1,625.45	0.00
Honda	2019 Balance	50,810.87	0.00	14,345.83	8,274.35	3,669.38
	2020 Credits***	12,654.78**	0.00	2,497.73	0.00	-
	2020 Requirement	18,162.66	-	10,594.89	-	-
	2020 Ending Balance	41,065.03	0.00	13,135.35	8,274.35	1,020.66

Manufacturer	Category	ZEV (BEV & FCEV)	BEVx	TZEV	NEV+	Discount AT PZEV and PZEV
Hyundai	2019 Balance	7,480.87	0.00	2,856.95	0.00	2,237.46
	2020 Credits	11,886.63	0.00	1,024.92	0.00	-
	2020 Requirement	5,792.84	-	3,379.16	-	-
	2020 Ending Balance	13,574.66	0.00	1,347.50	0.00	1,392.67
Jaguar Land Rover	2019 Balance	7,195.71	0.00	0.00	0.00	0.00
	2020 Credits	2,640.00	0.00	364.24	0.00	-
	2020 Requirement	0.00	-	2,173.60	-	-
	2020 Ending Balance	7,662.11	0.00	364.24	0.00	0.00
Kia	2019 Balance	13,307.51	0.00	3,351.29	0.00	3,563.98
	2020 Credits	7,720.00	0.00	933.41	0.00	-
	2020 Requirement	4,536.58	-	2,646.34	-	-
	2020 Ending Balance	14,778.00	0.00	3,351.29	0.00	3,563.98
Mazda	2019 Balance	6,117.84	0.00	0.00	0.00	0.00
	2020 Credits	0.00	0.00	0.00	0.00	-
	2020 Requirement	0.00	-	5,770.84	-	-
	2020 Ending Balance	347.00	0.00	0.00	0.00	0.00
Mercedes Benz	2019 Balance	21,588.98	0.00	5,211.65	0.00	0.00
	2020 Credits	0.00	0.00	0.00	0.00	-
	2020 Requirement	4,831.76	-	2,818.53	-	-
	2020 Ending Balance	16,757.22	0.00	2,393.12	0.00	0.00
Nissan	2019 Balance	67,793.74	0.00	0.00	0.00	0.00
	2020 Credits	7,257.73	0.00	0.00	0.00	-
	2020 Requirement	8,742.70	-	5,099.91	-	-
	2020 Ending Balance	61,208.86	0.00	0.00	0.00	0.00
Subaru	2019 Balance	53,567.00	0.00	598.50	1,177.11	527.11
	2020 Credits	0.00	0.00	959.88	0.00	-
	2020 Requirement	0.00	-	6,474.19	-	-
	2020 Ending Balance	50,269.74	0.00	0.00	85.67	0.00
Tesla	2019 Balance	448,913.46	0.00	0.00	0.00	0.00
	2020 Credits*	307,426.71**	0.00	0.00	0.00	-
	2020 Requirement	0.00	-	3,894.81	-	-
	2020 Ending Balance	752,445.36	0.00	0.00	0.00	0.00

Manufacturer	Category	ZEV (BEV & FCEV)	BEVx	TZEV	NEV+	Discount AT PZEV and PZEV
Toyota	2019 Balance	209,242.99	0.00	29,228.35	0.00	43,194.14
	2020 Credits	1,468.00**	0.00	8,767.44	0.00	-
	2020 Requirement	23,665.44	-	13,804.84	-	-
	2020 Ending Balance	187,045.55	0.00	27,642.16	0.00	39,742.93
Volkswagen	2019 Balance	52,492.41	0.00	4,664.44	0.00	0.00
	2020 Credits	6,075.20**	0.00	951.30	0.00	-
	2020 Requirement	3,979.74	-	2,321.52	-	-
	2020 Ending Balance	54,587.87	0.00	3,294.22	0.00	0.00
Volvo	2019 Balance	0.00	0.00	2,857.36	0.00	1,184.92
	2020 Credits	0.00	0.00	625.92	0.00	-
	2020 Requirement	0.00	-	1,053.68	-	-
	2020 Ending Balance	0.00	0.00	2,429.60	0.00	1,184.92
Total	2019 Balance	1,239,819.31	35,705.33	266,632.04	19,590.24	58,046.91
	2020 Credits	421,462.02	1,535.76	20,289.25	0.00	-
	2020 Requirement	107,072.30	-	81,825.99	-	-
	2020 Ending Balance	1,528,596.10	32,460.60	248,005.39	14,763.35	50,357.13

\* Manufacturer involved in transfers. Tesla transferred 18,669.00 BEV credits to Fiat Chrysler and 1,288.00 BEV credits to Mitsubishi.

\*\* Manufacturer reported additional model year 2019 vehicles during the 2020 reporting year. These credits are not included in the model year 2020 credits table prior but are reflected in the 2020 credits column here and in the manufacturer credit balances. The sum of all model year 2019 vehicles across all manufacturers in reporting year 2020 is 17,105 (equivalent to 68,244.51 ZEV credits).

\*\*\* Honda also earned 11,503.02 GHG-ZEV overcompliance credits during the 2020 model year, which are displayed as additional 2020 ZEV credits earned. GHG-ZEV overcompliance credits can be used to fulfill up to 40% of a manufacturer's 2020 ZEV credit requirement. These credits earned may only be used in the applicable model year and may not be used in any other model year (i.e., these credits cannot be banked). For additional information see Cal. Code Regs., tit. 13, § 1962.2(g)(6)(C).

## Manufacturer Ending Balances Through Model Year 2020

The table below lists the credit balances (in units of ZEV credits) as of August 31, 2021 generated since the start of the ZEV Regulation in 1990. This table includes other manufacturers generating credits that do not have ZEV requirements. Inactive manufacturers with zero credit balances are not included.

Manufacturer	ZEV	BEV <sub>x</sub>	TZEV	NEV+	Discount AT PZEV and PZEV
BMW	15,350.83	32,460.60	948.07	0.00	0.00
Fiat Chrysler (Stellantis)	83,679.27	0.00	0.00	0.00	0.00
Ford	45,620.04	0.00	69,721.69	4,777.88	3,451.97
GM	184,204.56	0.00	123,378.15	1,625.45	0.00
Honda	41,065.03	0.00	13,135.35	8,274.35	1,020.66
Hyundai	13,574.66	0.00	1,347.50	0.00	1,392.67
Jaguar Land Rover	7,662.11	0.00	364.24	0.00	0.00
Kia	14,778.00	0.00	3,351.29	0.00	3,563.98
Lightning Systems	78.73	0.00	0.00	0.00	0.00
Mazda	347.00	0.00	0.00	0.00	0.00
Mercedes Benz	16,757.22	0.00	2,393.12	0.00	0.00
Miles	0.00	0.00	0.00	5.14	0.00
Mitsubishi	1,439.00	0.00	1,275.60	0.00	367.11
Nissan	61,208.86	0.00	0.00	0.00	0.00
Subaru	50,269.74	0.00	0.00	85.67	0.00
Tesla	752,445.36	0.00	0.00	0.00	0.00
Toyota	187,045.55	0.00	27,642.16	0.00	39,742.93
Volkswagen	54,587.87	0.00	3,294.22	0.00	0.00
Volvo	0.00	0.00	2,429.60	0.00	1,184.92
Zenith	62.50	0.00	0.00	0.00	0.00
Zipcar	0.00	0.00	0.00	0.00	275.15
<b>Total</b>	<b>1,530,176.33</b>	<b>32,460.60</b>	<b>249,280.99</b>	<b>14,768.49</b>	<b>50,999.39</b>



### **Description of Credits and Spending Rules:**

- ZEV = zero-emission vehicle (fuel cell and battery electric); can be used for both ZEV and TZEV requirements.
- BEVx = range extended battery electric vehicle; BEVx credits can be used for up to 50% of the manufacturer's ZEV credit requirement. BEVx credits can also be used toward meeting the manufacturer's TZEV requirement.
- TZEV = transitional zero-emission vehicle (plug-in hybrid electric vehicles); can be used for up to 3.5% of a large volume manufacturer's 2020 compliance requirement of 9.5% or for all of an intermediate volume manufacturer's 2020 compliance requirement of 9.5%.
- NEV = neighborhood electric vehicle; NEV credits may be used to satisfy up to 25% of the portion of a manufacturer's requirement that can be met with credits from TZEVs.
- Discount AT PZEV and PZEV = conversion of advanced technology partial zero-emission vehicle (clean hybrids) and partial zero-emission vehicle (clean gasoline) credits per 1962.1(g)(2)(f). Discount credits may be used to satisfy up to 25% of the portion of a manufacturer's requirement that can be met with credits from TZEVs. If a manufacturer has both NEV and discount credits, the combined usage of these two types of credit categories toward meeting the manufacturer's TZEV requirement may not exceed 25% (i.e., no stacking).

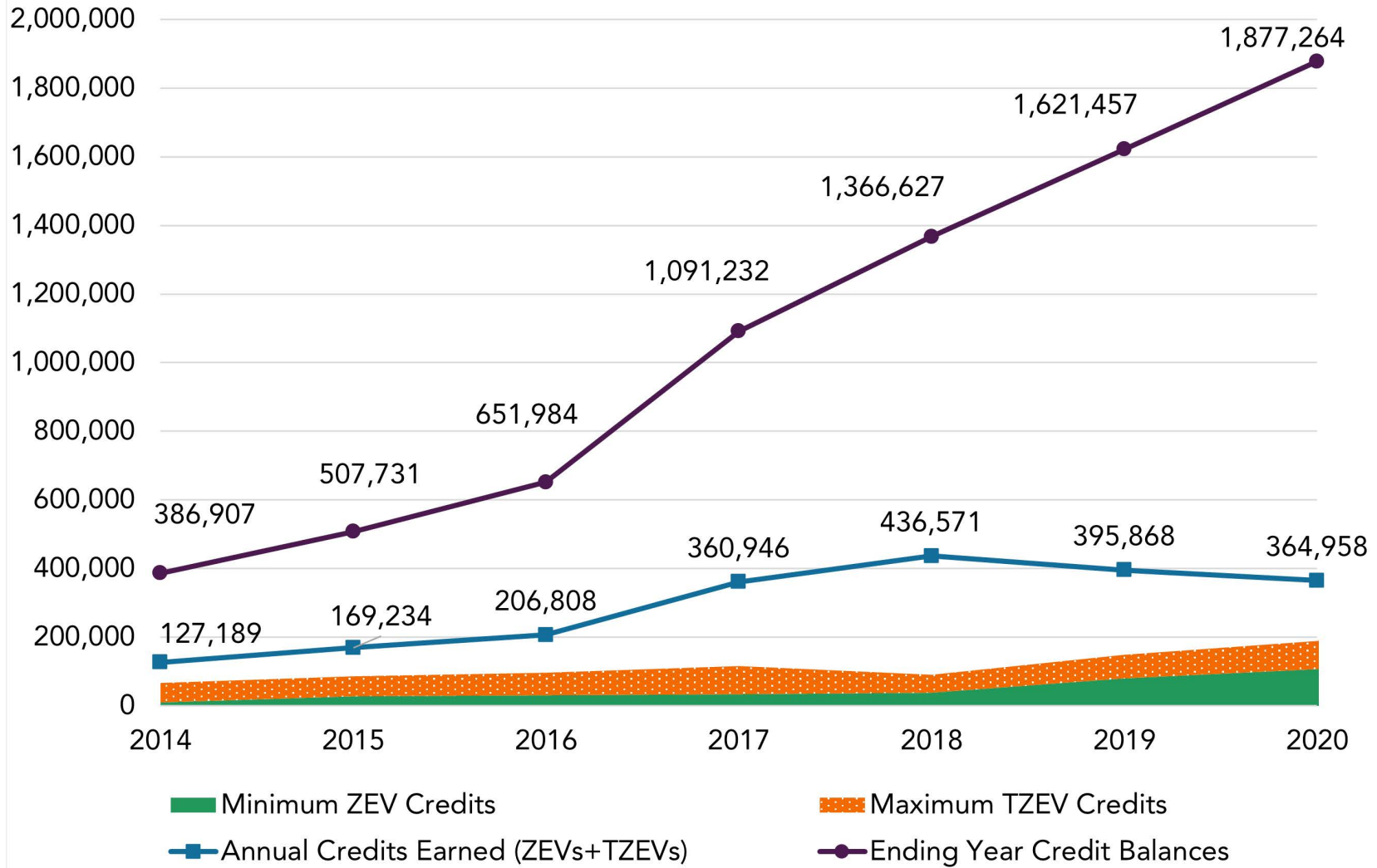
### **Aggregated ZEV Credit Requirement and Credits Earned from Model Years 2014 Through 2020**

The chart below displays the trends associated with manufacturer credit generation, annual requirements, and credit balances from model year 2014 to 2020.

The solid green shaded area represents the minimum ZEV requirement for large volume manufacturers, while the orange dotted area represents the maximum TZEV credits that can be used for compliance for large volume manufacturers. Intermediate volume manufacturers may meet their compliance obligation exclusively with TZEVs. The total annual requirement for all manufacturers is the sum of the orange and green areas (vertically) for each model year.

The blue line with square markers represents the total credits earned (all ZEVs and TZEVs) during each model year for all manufacturers. The purple line with circular markers represents overall cumulative credit balances for all manufacturers at the end of each reporting year, after considering credits earned and credits used for that year. Since the purple line remains far above zero, the entire industry remains in compliance through model year 2020.

### ZEV Regulation Annual Requirements, Annual Credits Earned, and Credit Balances for Model Years 2014-2020\*



\* Lightning Systems and other small volume manufacturers' credits are excluded

## Manufacturer Transfers

Manufacturers may transfer credits with other manufacturers. Below are the ZEV credit transfers recorded between October 1, 2020 and August 31, 2021.

Transferor	Vehicle Type	Total Credits
Tesla	BEV	19,957.00
	<b>Total</b>	<b>19,957.00</b>

Transferee	Vehicle Type	Total Credits
Fiat Chrysler (Stellantis)	BEV	18,669.00
Mitsubishi	BEV	1,288.00
	<b>Total</b>	<b>19,957.00</b>

## Summary and Frequently Asked Questions

**How many vehicles have been brought to and operated in California as a result of the ZEV Regulation?** Credit balances reflect ZEV Regulation compliance through model year 2020, representing a cumulative sales total of approximately 739,000 vehicles including 9,300 fuel cell electric vehicles (FCEVs), 457,900 battery electric vehicles (BEVs) and range extended vehicles, and 271,800 clean plug-in hybrid electric vehicles (PHEVs). Total ZEV and PHEV sales estimates based on vehicle registrations, including those not used for ZEV Regulation compliance are available at <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-charger-statistics>.

**Besides earning credits or transferring credits, what else can contribute to a manufacturer's credit balance?** In the ZEV Regulation, FCEVs earned in one state can be counted as earned in all Section 177 ZEV states – this is called the “travel” provision. When credits earned in the other ZEV states are traveled to California, they are traveled on a one-to-one basis. Travel of BEVs is no longer allowed after the close of the model year 2017 per the ZEV Regulation.

**What do these credit balances mean?** All vehicle manufacturers subject to the ZEV Regulation, currently on a voluntary basis, are in compliance through model year 2020. Positive credit balances represent a successful over-compliance with the ZEV Regulation. Manufacturers can use these balances to meet the ZEV requirements in coming years. This provides flexibility in the timing and production of bringing new clean cars to the market.

**How do you calculate a manufacturer's credit balance?** The current year compliance balance = previous year compliance balance + all credits earned in current year – all credits used to fulfill the annual ZEV requirement + credits transferred to the manufacturer – credits transferred away to other manufacturers.

**How far into the future do these credit balances cover the manufacturers' ZEV requirement?** Discount credits will expire after model year 2025 compliance. Each manufacturer is unique in its strategy of compliance with the ZEV Regulation. It is not possible to predict how and when these credit balances will be spent over the coming years due to the complexity and flexibility of the regulation. There are also various mechanisms in the ZEV Regulation that limit how credits are spent. These balances will be taken into account in future amendments to the regulation.

**Why are the credit balances in ZEV credits instead of grams per mile non-methane organic gases (g/mile NMOG)?** For the 2015 reporting year and onward, credits are expressed in ZEV credits. The purpose of this change is to simplify credit calculations. Balances from 2014 were divided by 0.035 to convert g/mile NMOG credits to ZEV credits.

**How do you calculate a manufacturer's requirement?** For understanding the calculations involved in the ZEV Regulation, please see the ZEV Tutorial link below.

**More Information can be found through these links:**

- [ZEV Regulation](#)
- [ZEV Tutorial](#)
- [ZEV Credit Archive](#)

## **Public Disclosure**

This information is subject to public disclosure as provided in the ZEV Regulation. (Cal. Code Regs., tit. 13, § 1962.2(l).)

## **Contact Us**

For more information, please contact the Advanced Clean Cars Branch at [cleancars@arb.ca.gov](mailto:cleancars@arb.ca.gov).