

Errata and Comment Period Extension

Proposed Amendments to the Commercial Harbor Craft Regulation

On September 21, 2021, the California Air Resources Board (CARB) released the Notice of Public Hearing to Consider the Proposed Amendments to the Commercial Harbor Craft Regulation (Proposed Amendments). The materials that are subject to the Notice were originally posted on September 21, 2021. As of October 1, 2021, CARB is incorporating these errata into the public record, which provide corrections to three documents:

- Public Hearing to Consider the Proposed Amendments to the Commercial Harbor Craft Regulation. Staff Report: Initial Statement of Reasons.
- Appendix D-1, Draft Environmental Analysis.
- Appendix E: Technical Support Document and Assessment of Marine Emission Control Strategies, Zero-Emission, and Advanced Technologies for Commercial Harbor Craft.

These errata only reflect corrections to the methodology for implementing existing cost inputs and assumptions, and references to subsection numbers of the Proposed Regulation Order. The errata do not include changes to cost inputs, cost assumptions, or other assumptions regarding compliance outcomes. Overall, the direct economic impacts increase from \$1.79 billion to \$1.98 billion between 2023 and 2038. Updated costs remain far below the valuation of health benefits from avoided adverse health outcomes for the same time period, which remains at \$5.25 billion.

The 45-day comment period for this regulatory action opened on September 24, 2021, and was originally scheduled to close at the end of November 8, 2021. With the addition of this errata document to the rulemaking record, CARB is extending the comment period until November 15, 2021. Written comments regarding the Proposed Amendments (including this Errata document) must be received **no later than November 15, 2021**.

Comments submitted in advance of the hearing must be addressed to one of the following:

Postal mail: Clerks' Office, California Air Resources Board
1001 I Street
Sacramento, California 95814

Electronic submittal: <https://www.arb.ca.gov/lispub/comm/bclist.php>

This errata document, including all other posted rulemaking documents regarding this regulatory action, are available on CARB's website at the following address:
<https://ww2.arb.ca.gov/rulemaking/2021/chc2021>

Staff provides the following corrections to the "Public Hearing to Consider the Proposed Amendments to the Commercial Harbor Craft Regulation. Staff Report: Initial Statement of Reasons":

1. Page ES-5, replace "the direct economic costs of \$1.79 billion for the same time period during implementation of the Proposed Amendments" with "the direct economic costs of **\$1.98** billion for the same time period during implementation of the Proposed Amendments".
2. Page III-14, replace "to requirements of subsection (e)(6.1) of the Proposed Amendments" with "to requirements of subsection **(e)(12)** of the Proposed Amendments".
3. Page VIII-4, replace "additional emission reductions relative to requirements of subsection (e)(6.1) of the Proposed Amendments" with "additional emission reductions relative to requirements of subsection **(e)(12)** of the Proposed Amendments".
4. Page IX-6, replace "Staff estimates the total cost of repowering and retrofitting engines for in-use vessels to equal \$1.2 billion through 2038" with "Staff estimates the total cost of repowering and retrofitting engines for in-use vessels to equal **\$1.3** billion through 2038".
5. Page IX-6, replace "Staff estimates the total cost of replacing and acquiring new-build vessels to equal \$472 million through 2038" with "Staff estimates the total cost of replacing and acquiring new-build vessels to equal **\$536** million through 2038".
6. Page IX-7, replace "Staff estimates the total cost of facility shore power infrastructure to equal \$19 million through 2038" with "Staff estimates the total cost of facility shore power infrastructure to equal **\$25** million through 2038".
7. Page IX-8, replace "Staff estimated that 17 charging facilities would need to be installed throughout the State to meet the charging demands resulting from ZEAT requirements. Staff estimates the total cost of zero-emission shore power infrastructure to equal \$146 million through 2038" with "Staff estimated that **22** charging facilities would need to be installed throughout the State to meet the charging demands resulting from ZEAT requirements. Staff estimates the total cost of zero-emission shore power infrastructure to equal **\$195** million through 2038".

8. Page IX-12, replace "Table IX-8", with "Updated Table IX-8".

Table IX-8. Annual Direct Costs of the Proposed Amendments (2019 \$)

Year	Repower and Retrofit Costs	Vessel Replacement Costs	Infrastructure Costs	Administrative Costs	Fuel Cost Savings	Total Costs
2023	\$8,715,488	\$831,139	\$10,544,369	\$21,284,688	-\$1,154,078	\$40,221,606
2024	\$29,948,428	\$3,252,010	\$10,545,134	\$11,020,606	-\$3,654,879	\$51,111,299
2025	\$45,443,479	\$5,158,105	\$10,574,061	\$11,021,273	-\$5,583,033	\$66,613,885
2026	\$57,183,571	\$7,619,589	\$11,543,289	\$11,021,957	-\$7,862,264	\$79,506,142
2027	\$66,597,219	\$12,512,740	\$11,999,355	\$11,022,660	-\$9,640,605	\$92,491,370
2028	\$73,017,786	\$15,846,841	\$12,093,761	\$11,497,406	-\$10,555,874	\$101,899,920
2029	\$77,393,497	\$20,860,983	\$12,363,039	\$7,246,120	-\$11,757,897	\$106,105,742
2030	\$85,289,519	\$28,513,289	\$12,384,103	\$7,246,861	-\$13,529,007	\$119,904,765
2031	\$88,523,359	\$32,900,296	\$12,395,466	\$7,247,622	-\$14,433,936	\$126,632,806
2032	\$91,181,642	\$37,298,134	\$12,401,094	\$7,248,404	-\$15,265,792	\$132,863,482
2033	\$93,001,369	\$44,320,296	\$12,409,412	\$7,723,243	-\$16,694,227	\$140,760,093
2034	\$95,124,398	\$52,602,526	\$12,418,743	\$7,250,035	-\$18,255,381	\$149,140,322
2035	\$95,124,398	\$52,602,526	\$12,422,441	\$3,472,765	-\$18,264,379	\$145,357,751
2036	\$95,124,398	\$52,602,526	\$12,418,589	\$3,473,620	-\$18,268,177	\$145,350,956
2037	\$95,124,398	\$52,602,526	\$12,416,764	\$3,474,500	-\$18,270,745	\$145,347,443
2038	\$95,124,398	\$52,602,526	\$12,414,551	\$3,949,451	-\$18,273,961	\$145,816,965
Total	\$1,191,917,346	\$472,126,054	\$191,344,172	\$135,201,212	-\$201,464,237	\$1,789,124,546

Updated Table IX-8. Annual Direct Costs of the Proposed Amendments (2019 \$)

Year	Repower and Retrofit Costs	Vessel Replacement Costs	Infrastructure Costs	Administrative Costs	Fuel Cost Savings	Total Costs
2023	\$8,715,488	\$831,139	\$12,262,981	\$21,284,688	-\$1,154,078	\$41,940,219
2024	\$29,948,428	\$3,252,010	\$12,263,747	\$11,020,606	-\$3,654,879	\$52,829,911
2025	\$45,443,479	\$5,158,105	\$12,292,673	\$11,021,273	-\$5,583,033	\$68,332,498
2026	\$57,183,571	\$7,619,589	\$13,261,901	\$11,021,957	-\$7,862,264	\$81,224,754
2027	\$66,597,219	\$12,512,740	\$13,717,967	\$11,022,660	-\$9,640,605	\$94,209,982
2028	\$73,017,786	\$15,846,841	\$13,812,373	\$11,497,406	-\$10,555,874	\$103,618,532
2029	\$84,312,036	\$20,860,983	\$14,104,018	\$7,246,120	-\$12,648,422	\$113,874,735
2030	\$96,012,946	\$29,334,838	\$14,144,556	\$7,246,861	-\$14,550,247	\$132,188,953
2031	\$99,246,786	\$33,721,845	\$14,155,919	\$7,247,622	-\$15,455,176	\$138,916,994
2032	\$101,905,069	\$40,093,563	\$14,166,496	\$7,248,404	-\$16,611,071	\$146,802,461
2033	\$103,753,557	\$47,115,725	\$14,174,814	\$7,723,243	-\$18,039,506	\$154,727,834
2034	\$108,165,271	\$63,896,568	\$14,184,145	\$7,250,035	-\$21,050,265	\$172,445,754
2035	\$108,165,271	\$63,896,568	\$14,206,437	\$3,472,765	-\$21,074,640	\$168,666,400
2036	\$108,165,271	\$63,896,568	\$14,202,585	\$3,473,620	-\$21,078,439	\$168,659,606
2037	\$108,165,271	\$63,896,568	\$14,200,760	\$3,474,500	-\$21,081,006	\$168,656,092
2038	\$108,165,271	\$63,896,568	\$14,198,547	\$3,949,451	-\$21,084,222	\$169,125,614
Total	\$1,306,962,720	\$535,830,216	\$219,349,919	\$135,201,212	-\$221,123,728	\$1,976,220,339

9. Page IX-13, replace "Table IX-9", with "Updated Table IX-9".

Table IX-9. Direct Amortized Costs for Typical Business Vessel Owners and Operators of CHC (2019 \$)

Vessel Category	Average Vessel# per Business	Average Direct cost per vessel	Average cost per business
Ferry (Catamaran)	5.8	\$6,333,308	\$36,944,295
Ferry (Monohull)	2.5	\$2,806,487	\$7,016,217
Ferry (Short-Run)	2.7	\$2,532,820	\$6,754,187
Pilot Boat	3.3	\$1,653,379	\$5,511,264
Push/Tow Tug	2.9	\$1,319,801	\$3,804,133
Escort/Ship Assist Tug	3.7	\$3,046,463	\$11,289,832
ATB Tug	4.8	\$4,248,532	\$20,180,525
Research Vessel	1.8	\$673,804	\$1,203,222
CPFV	1.2	\$512,980	\$618,387
Excursion	2.0	\$587,694	\$1,146,383
Dredge	2.1	\$246,863	\$527,390
ATB Barge	4.8	\$1,878,943	\$8,924,978
Bunker Barge	2.8	\$103,554	\$291,834
Other Barge	3.7	\$192,161	\$704,591
Towed Petrochemical Barge	2.2	\$279,549	\$615,008
Crew Supply	2.6	\$515,950	\$1,329,142
Workboat	2.5	\$341,201	\$863,983
Commercial Fishing	1.2	\$44,438	\$51,479

Updated Table IX-9. Direct Amortized Costs for Typical Business Vessel Owners and Operators of CHC (2019 \$)

Vessel Category	Average Vessel# per Business	Average Direct cost per vessel	Average cost per business
Ferry (Catamaran)	5.8	\$6,469,709	\$37,739,967
Ferry (Monohull)	2.5	\$3,051,934	\$7,629,836
Ferry (Short-Run)	2.7	\$2,558,267	\$6,822,045
Pilot Boat	3.3	\$2,047,024	\$6,823,412
Push/Tow Tug	2.9	\$1,494,142	\$4,306,644
Escort/Ship Assist Tug	3.7	\$3,331,993	\$12,347,974
ATB Tug	4.8	\$4,698,850	\$22,319,539
Research Vessel	1.8	\$858,572	\$1,533,164
CPFV	1.2	\$650,332	\$783,962
Excursion	2.0	\$684,332	\$1,334,889
Dredge	2.1	\$246,863	\$527,390
ATB Barge	4.8	\$1,878,943	\$8,924,978
Bunker Barge	2.8	\$103,554	\$291,834
Other Barge	3.7	\$192,161	\$704,591
Towed Petrochemical Barge	2.2	\$279,549	\$615,008
Crew Supply	2.6	\$515,950	\$1,329,142
Workboat	2.5	\$341,201	\$863,983
Commercial Fishing	1.2	\$44,438	\$51,479

10. Page IX-14, replace "Table IX-10", with "**Updated Table IX-10**".

Table IX-10. Calculated Cost Metrics and Cost Impacts to Individuals

Cost Metric	Average Annualized Cost Increase
Cost Per Passenger – High-Speed Ferry, One-Way Trip	\$1.84
Cost Per Passenger – Short-Run Ferry, One-Way Trip	\$0.98
Cost Per Passenger – Excursion Vessels	\$1.23
Cost Increase Per Twenty-Foot-Equivalent Unit – Tug Vessels	\$0.44
Cost Per Pound of Fish – Commercial Fishing Vessels	\$0.04
Cost Per Passenger/day – CPFVs, One-Day Trip	\$26.37
Cost Per Passenger/day – CPFVs, Multi-Day Trip	\$24.56
Cost Per Passenger/day – CPFVs, "6-pack" Vessel*	\$83.50

*6-pack vessels are uninspected passenger vessels that can carry up to 6 passengers (in addition to 2 crew). Due to the smaller passenger capacity and market segment, the costs to individual passengers aboard these vessels were calculated separately.

Updated Table IX-10. Calculated Cost Metrics and Cost Impacts to Individuals

Cost Metric	Average Annualized Cost Increase
Cost Per Passenger – High-Speed Ferry, One-Way Trip	\$1.92
Cost Per Passenger – Short-Run Ferry, One-Way Trip	\$0.98
Cost Per Passenger – Excursion Vessels	\$1.54
Cost Increase Per Twenty-Foot-Equivalent Unit – Tug Vessels	\$0.48
Cost Per Pound of Fish – Commercial Fishing Vessels	\$0.04
Cost Per Passenger/day – CPFVs, One-Day Trip	\$39.78
Cost Per Passenger/day – CPFVs, Multi-Day Trip	\$37.05
Cost Per Passenger/day – CPFVs, "6-pack" Vessel*	\$125.96

*6-pack vessels are uninspected passenger vessels that can carry up to 6 passengers (in addition to 2 crew). Due to the smaller passenger capacity and market segment, the costs to individual passengers aboard these vessels were calculated separately.

11. Page IX-17, replace "The estimated direct costs to local governments equipment and facility owners are \$40.6 million in the period between 2023-2038" with "The estimated direct costs to local governments equipment and facility owners are **\$46.4** million in the period between 2023-2038".
12. Page IX-17, replace "Staff estimates that this will decrease local governments' revenues by \$3.1 million in the period between 2023-2038" with "Staff estimates that this will decrease local governments' revenues by **\$3.5** million in the period between 2023-2038".
13. Page IX-18, replace "Staff estimates that this will increase local governments' revenues by \$27.0 million in the period between 2023-2038" with "Staff estimates that this will increase local governments' revenues by **\$30.4** million in the period between 2023-2038".

14. Page IX-18, replace "Table IX-12", with "Updated Table IX-12".

Table IX-12. Estimated Fiscal Impacts to Local Governments from 2023 through 2038 (2019 \$)

Year	Utility User Tax Revenue	Local Diesel Fuel Tax	Local sales Tax	Total Change in Revenue	Total Direct Costs	Total Fiscal Impact
2023	-\$14,048	\$8,299	-\$2,536,298	-\$2,542,048	\$4,240,445	\$1,698,397
2024	-\$14,055	\$104,311	-\$5,486,375	-\$5,396,119	\$6,435,195	\$1,039,077
2025	-\$15,075	\$177,114	-\$4,345,243	-\$4,183,204	\$4,440,893	\$257,689
2026	-\$49,288	\$181,003	-\$2,944,445	-\$2,812,730	\$3,012,446	\$199,717
2027	-\$65,387	\$187,624	-\$2,337,652	-\$2,215,415	\$3,157,957	\$942,542
2028	-\$68,719	\$195,174	-\$1,586,246	-\$1,459,791	\$2,393,571	\$933,779
2029	-\$78,223	\$192,254	-\$1,061,706	-\$947,676	\$2,387,769	\$1,440,093
2030	-\$78,966	\$211,154	-\$2,237,426	-\$2,105,238	\$3,844,377	\$1,739,138
2031	-\$79,367	\$215,813	-\$1,405,469	-\$1,269,023	\$2,349,023	\$1,080,001
2032	-\$79,565	\$219,334	-\$1,289,847	-\$1,150,077	\$2,215,680	\$1,065,603
2033	-\$79,858	\$226,416	-\$815,618	-\$669,059	\$2,233,673	\$1,564,614
2034	-\$80,186	\$230,206	-\$970,041	-\$820,021	\$2,712,135	\$1,892,114
2035	-\$80,316	\$229,786	\$0	\$149,470	\$282,135	\$431,605
2036	-\$80,179	\$229,608	\$0	\$149,429	\$281,355	\$430,784
2037	-\$80,114	\$229,488	\$0	\$149,374	\$280,978	\$430,352
2038	-\$80,035	\$229,338	\$0	\$149,303	\$288,884	\$438,187
Total	-\$1,023,381	\$3,066,923	-\$27,016,366	-\$24,972,825	\$40,556,516	\$15,583,691

Updated Table IX-12. Estimated Fiscal Impacts to Local Governments
from 2023 through 2038 (2019\$)

Year	Utility User Tax Revenue	Local Diesel Fuel Tax	Local sales Tax	Total Change in Revenue	Total Direct Costs	Total Fiscal Impact
2023	-\$14,048	\$8,299	-\$2,536,298	-\$2,542,048	\$4,366,464	\$1,824,416
2024	-\$14,055	\$104,311	-\$5,486,375	-\$5,396,119	\$6,561,214	\$1,165,095
2025	-\$15,075	\$177,114	-\$4,345,243	-\$4,183,204	\$4,566,912	\$383,708
2026	-\$49,288	\$181,003	-\$2,944,445	-\$2,812,730	\$3,012,446	\$199,717
2027	-\$65,387	\$187,624	-\$2,337,652	-\$2,215,415	\$3,157,957	\$942,542
2028	-\$68,719	\$195,174	-\$1,586,246	-\$1,459,791	\$2,393,571	\$933,779
2029	-\$79,013	\$232,100	-\$2,808,692	-\$2,655,604	\$3,511,100	\$855,496
2030	-\$80,443	\$250,269	-\$2,673,102	-\$2,503,276	\$4,960,967	\$2,457,691
2031	-\$80,844	\$254,929	-\$1,405,469	-\$1,231,384	\$2,356,301	\$1,124,917
2032	-\$81,216	\$258,266	-\$1,467,888	-\$1,290,838	\$2,713,733	\$1,422,895
2033	-\$81,509	\$265,348	-\$818,626	-\$634,788	\$2,249,612	\$1,614,824
2034	-\$81,838	\$272,165	-\$2,021,062	-\$1,830,735	\$5,330,984	\$3,500,249
2035	-\$82,624	\$271,027	\$0	\$188,403	\$294,139	\$482,542
2036	-\$82,487	\$270,850	\$0	\$188,362	\$293,359	\$481,721
2037	-\$82,422	\$270,730	\$0	\$188,308	\$292,982	\$481,290
2038	-\$82,343	\$270,580	\$0	\$188,237	\$300,888	\$489,125
Total	-\$1,041,312	\$3,469,789	-\$30,431,100	-\$28,002,623	\$46,362,629	\$18,360,007

15. Page IX-18, replace "the fiscal impact to local governments is estimated to be approximately \$15.6 million over the regulatory implementation period, from 2023 to 2038" with "the fiscal impact to local governments is estimated to be approximately **\$18.4** million over the regulatory implementation period, from 2023-2038".
16. Page IX-18, replace "The estimated direct costs to State government equipment and facility owners are \$14.3 million in the period between 2023-2038" with "The estimated direct costs to State government equipment and facility owners are **\$15.1** million in the period between 2023-2038".
17. Page IX-19, replace "Staff estimates that this will decrease State government's revenues by \$2.6 million in the period between 2023-2038" with "Staff estimates that this will decrease State government's revenues by **\$2.9** million in the period between 2023-2038".
18. Page IX-19, replace "Increased use of electricity is expected to increase revenues to State government by \$33 thousand in the period between 2023-2038" with "Increased use of electricity is expected to increase revenues to State government by **\$34** thousand in the period between 2023-2038".

19. Page IX-19, replace "Staff estimates that this will increase State government's revenues by \$22.8 million in the period between 2023-2038" with "Staff estimates that this will increase State government's revenues by **\$25.7** million in the period between 2023-2038".
20. Page IX-19, replace "The fiscal impact to State government agencies is estimated to increase revenues by \$14.8 million over the regulatory implementation period" with "The fiscal impact to State government agencies is estimated to increase revenues by **\$15.1** million over the regulatory implementation period".
21. Page IX-21, replace "The estimated direct costs to federal government equipment and facility owners are estimated to be \$12.7 million" with "The estimated direct costs to federal government equipment and facility owners are estimated to be **\$14.7** million".

22. Page IX-20, replace "Table IX-13", with "Updated Table IX-13".

Table IX-13. Estimated Fiscal Impacts to State Governments from 2023 through 2038 (2019 \$)

Year	Costs to CARB	State Diesel Fuel Tax	Energy Resources Fee	State Sales Tax	Total Direct Costs	Collected Compliance Fees	Total Fiscal Impact
2023	\$1,503,623	\$7,001	-\$512	-\$2,139,832	\$1,249,808	-\$2,054,290	-\$1,434,202
2024	\$1,495,623	\$88,006	-\$512	-\$4,628,762	\$2,108,411	-\$2,054,290	-\$2,991,524
2025	\$1,495,623	\$149,428	-\$535	-\$3,666,008	\$1,689,461	-\$2,054,290	-\$2,386,321
2026	\$1,495,623	\$152,709	-\$1,712	-\$2,484,178	\$1,129,929	-\$2,054,290	-\$1,761,919
2027	\$1,495,623	\$158,296	-\$2,236	-\$1,972,238	\$1,186,424	-\$2,054,290	-\$1,188,421
2028	\$1,495,623	\$164,665	-\$2,305	-\$1,338,289	\$886,769	-\$2,054,290	-\$847,827
2029	\$1,495,623	\$162,202	-\$2,579	-\$895,744	\$883,996	-\$2,054,290	-\$410,792
2030	\$1,495,623	\$178,147	-\$2,555	-\$1,887,678	\$1,453,425	-\$2,054,290	-\$817,329
2031	\$1,495,623	\$182,078	-\$2,521	-\$1,185,771	\$867,729	-\$2,054,290	-\$697,152
2032	\$1,495,623	\$185,049	-\$2,533	-\$1,088,222	\$815,612	-\$2,054,290	-\$648,761
2033	\$1,495,623	\$191,023	-\$2,546	-\$688,123	\$822,705	-\$2,054,290	-\$235,608
2034	\$1,495,623	\$194,221	-\$2,555	-\$818,407	\$1,009,910	-\$2,054,290	-\$175,498
2035	\$1,495,623	\$193,866	-\$2,577	\$0	\$59,253	-\$2,054,290	-\$308,125
2036	\$1,495,623	\$193,717	-\$2,595	\$0	\$59,205	-\$2,054,290	-\$308,340
2037	\$1,495,623	\$193,615	-\$2,604	\$0	\$59,181	-\$2,054,290	-\$308,475
2038	\$1,495,623	\$193,489	-\$2,614	\$0	\$62,423	-\$2,054,290	-\$305,369
Total	\$23,937,968	\$2,587,511	-\$33,493	-\$22,793,251	\$14,344,240	-\$32,868,640	-\$14,825,665

Updated Table IX-13. Estimated Fiscal Impacts to State Governments from 2023 through 2038 (2019 \$)

Year	Costs to CARB	State Diesel Fuel Tax	Energy Resources Fee	State Sales Tax	Total Direct Costs	Collected Compliance Fees	Total Fiscal Impact
2023	\$1,503,623	\$7,001	-\$512	-\$2,139,832	\$1,299,119	-\$2,054,290	-\$1,384,891
2024	\$1,495,623	\$88,006	-\$512	-\$4,628,762	\$2,157,723	-\$2,054,290	-\$2,942,213
2025	\$1,495,623	\$149,428	-\$535	-\$3,666,008	\$1,738,773	-\$2,054,290	-\$2,337,009
2026	\$1,495,623	\$152,709	-\$1,712	-\$2,484,178	\$1,129,929	-\$2,054,290	-\$1,761,919
2027	\$1,495,623	\$158,296	-\$2,236	-\$1,972,238	\$1,186,424	-\$2,054,290	-\$1,188,421
2028	\$1,495,623	\$164,665	-\$2,305	-\$1,338,289	\$886,769	-\$2,054,290	-\$847,827
2029	\$1,495,623	\$195,819	-\$2,605	-\$2,369,646	\$1,323,560	-\$2,054,290	-\$1,411,538
2030	\$1,495,623	\$211,148	-\$2,603	-\$2,255,251	\$1,890,352	-\$2,054,290	-\$715,022
2031	\$1,495,623	\$215,079	-\$2,568	-\$1,185,771	\$870,577	-\$2,054,290	-\$661,350
2032	\$1,495,623	\$217,895	-\$2,585	-\$1,238,432	\$1,010,502	-\$2,054,290	-\$571,288
2033	\$1,495,623	\$223,869	-\$2,599	-\$690,661	\$828,942	-\$2,054,290	-\$199,115
2034	\$1,495,623	\$229,621	-\$2,608	-\$1,705,136	\$2,034,677	-\$2,054,290	-\$2,112
2035	\$1,495,623	\$228,661	-\$2,651	\$0	\$63,950	-\$2,054,290	-\$268,707
2036	\$1,495,623	\$228,511	-\$2,670	\$0	\$63,903	-\$2,054,290	-\$268,923
2037	\$1,495,623	\$228,410	-\$2,679	\$0	\$63,878	-\$2,054,290	-\$269,058
2038	\$1,495,623	\$228,283	-\$2,690	\$0	\$67,121	-\$2,054,290	-\$265,953
Total	\$23,937,968	\$2,927,402	-\$34,070	-\$25,674,204	\$16,616,197	-\$32,868,640	-\$15,095,347

23. Page IX-22, replace "The changes in private investment for the Proposed Amendments, relative to the baseline, show increases in private investment as great as \$41 million in 2024 and a decrease as large as \$47 million in 2037" with "The changes in private investment for the Proposed Amendments, relative to the baseline, show increases in private investment as great as \$41 million in 2024 and a decrease as large as **\$54** million in 2037".
24. Page IX-22, replace "In 2037, GSP is estimated to be \$208 million lower than baseline levels, a 0.01 percent decrease" with "In 2037, GSP is estimated to be **\$239** million lower than baseline levels, a 0.01 percent decrease".
25. Page IX-23, replace "Alternative 1 could provide more PM2.5, DPM, and NOx reductions and health benefits but results in higher costs (about 16 percent higher or \$282 million additional cost)" with "Alternative 1 could provide more PM2.5, DPM, and NOx reductions and health benefits but results in higher costs (about 16 percent higher or **\$314** million additional cost)".
26. Pages X-2, replace "Alternative 1 is estimated to cost \$282 million more than the Proposed Amendments from 2023 to 2038" change to "Alternative 1 is estimated to cost **\$314** million more than the Proposed Amendments from 2023 to 2038".

Staff provides the following corrections to the "Appendix D-1, Draft Environmental Analysis":

27. Page D-12, replace "Up to 14 percent of all CHC subject to the Proposed Amendments (approximately 269 out of 3,159 vessels) are expected to cease operations in Regulated California Waters⁸ or be replaced between the years 2023 and 2034" with "Up to **12** percent of all CHC subject to the Proposed Amendments (approximately **368** out of 3,159 vessels) are expected to cease operations in Regulated California Waters⁸ or be replaced between the years 2023 and 2034".
28. Page D-12, replace "there could be up to 269 new vessels built in the 12-year timeframe as a result of the Proposed Amendments" with "there could be up to **368** new vessels built in the 12-year timeframe as a result of the Proposed Amendments".
29. Page D-13, replace "there would be 11 new excursion vessels that are zero-emission capable and would derive 30 percent or more of their power from a zero-emission source" with "there would be **14** new excursion vessels that are zero-emission capable and would derive 30 percent or more of their power from a zero-emission source".
30. Page D-14, replace "there could be, both domestically and abroad, extremely small increases in lithium mining and exports from countries with raw mineral supplies (e.g., Chile, Argentina, and China) to produce the equivalent of 3 light-duty batteries each for 11 vessels" with "there could be, both domestically and abroad, extremely small increases in lithium mining and exports from countries with raw mineral supplies (e.g., Chile, Argentina, and China) to produce the equivalent of 3 light-duty batteries each for **14** vessels".
31. Page D-14, replace "For 11 vessels, this would require about 281.6 kg of lithium", with "For **14** vessels, this would require about **358.4** kg of lithium".
32. Page D-14, replace "To meet an increased demand for refurbishing or reusing batteries, CARB staff anticipates an extremely small increase in use of facilities for these purposes because the demand for batteries is anticipated to be limited to those needed for 11 new excursion vehicles" with "To meet an increased demand for refurbishing or reusing batteries, CARB staff anticipates an extremely small increase in use of facilities for these purposes because the demand for batteries is anticipated to be limited to those needed for **14** new excursion vessels".
33. Page D-15, replace "CARB staff estimate that each new excursion vessel will likely result in charging infrastructure for each of the 11 new vessels deployed" with "CARB staff estimate that each new excursion vessel will likely result in charging infrastructure for each of the **14** new vessels deployed".

34. Page D-16, replace “infrastructure for each of the 11 new vessels deployed” with “infrastructure for each of the **14** new vessels deployed”.
35. Page D-39, replace “As can be seen in Table D-1e below, the Proposed Amendments would require 269 new build vessels and 1,552 repowers between the years 2023 and 2034” with “As can be seen in Table D-1e below, the Proposed Amendments would require **368** new build vessels and **1,584** repowers between the years 2023 and 2034”.
36. Page D-39, replace “Table D-1e” with “**Updated Table D-1e**”.

Table D-1e. Yearly Repower and New Vessel Needs for the Proposed Amendments

	2023	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	Total
Repower	195	234	200	64	61	76	16	215	248	223	7	13	1,552
New Build	5	7	6	10	13	13	35	37	22	31	38	53	269

Updated Table D-1e. Yearly Repower and New Vessel Needs for the Proposed Amendments

	2023	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	Total
Repower	195	234	200	64	61	76	46	215	248	223	7	16	1,584
New Build	5	7	6	10	13	13	35	40	22	50	38	130	368

37. Page D-39, replace “At the height of new vessel building, as estimated by CARB staff to be in the year 2034, vessel construction related emissions could increase by 36 percent” with “At the height of new vessel building, as estimated by CARB staff to be in the year 2034, vessel construction related emissions could increase by **86 percent**”.
38. Page D-70, replace “As can be seen in Table D-1i below, the Proposed Amendments would require about 269 new build vessels and 1,522 repowers done between the years 2023 and 2034” with “As can be seen in Table D-1i below, the Proposed Amendments would require about **368** new build vessels and **1,584** repowers done between the years 2023 and 2034”.
39. Page D-70, replace “At the height of new vessel building, as estimated by CARB staff to be in the year 2034, vessel construction related emissions could increase by 36 percent” with “At the height of new vessel building, as estimated by CARB staff to be in the year 2034, vessel construction related emissions could increase by **86 percent**”.

40. Page D-70, replace “Table D-1i” with “**Updated Table D-1i**”.

Table D-1i Yearly Repower and New Vessel Needs for the Proposed Amendments

	2023	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	Total
Repower	195	234	200	64	61	76	16	215	248	223	7	13	1,552
New	5	7	6	10	13	13	35	37	22	31	38	53	269

Updated Table D-1i. Yearly Repower and New Vessel Needs for the Proposed Amendments

	2023	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	Total
Repower	195	234	200	64	61	76	46	215	248	223	7	16	1,584
New	5	7	6	10	13	13	35	40	22	50	38	130	368

41. Page D-154, replace “Additionally, 16 short-run ferries, 79 other vessels, and 11 new excursion vessels would no longer be required or expected to be built or modified to use zero-emission powertrains” with “Additionally, 16 short-run ferries, 79 other vessels, and **14** new excursion vessels would no longer be required or expected to be built or modified to use zero-emission powertrains”.
42. Page D-155, “Using the statistic of 0.160 kg of lithium per kWh of lithium-ion battery storage, there would be 4,050 kg less of lithium mined as a result of there being 11 fewer new excursion vessels, 16 fewer short-run ferries, and 79 other vessels not adopting ZEAT in response to Alternative 3 versus the Proposed Amendments. This figure of 4,050 kg lithium represents about half of a hundredth of a percent of total global lithium” with “Using the statistic of 0.160 kg of lithium per kWh of lithium-ion battery storage, there would be **4,128** kg less of lithium mined as a result of there being **14** fewer new excursion vessels, 16 fewer short-run ferries, and 79 other vessels not adopting ZEAT in response to Alternative 3 versus the Proposed Amendments. This figure of **4,128** kg lithium represents about half of a hundredth of a percent of total global lithium”.

Staff provides the following corrections to “Appendix E: Technical Support Document and Assessment of Marine Emission Control Strategies, Zero-Emission, and Advanced Technologies for Commercial Harbor Craft”:

43. Page E-46, replace “Table E-17” with “**Updated Table E-17**”.

Table E-17. Estimated Number of Annual Engine Replacements (Repowers), Retrofits, and Vessel Replacements Due to Implementation of the Proposed Amendments.

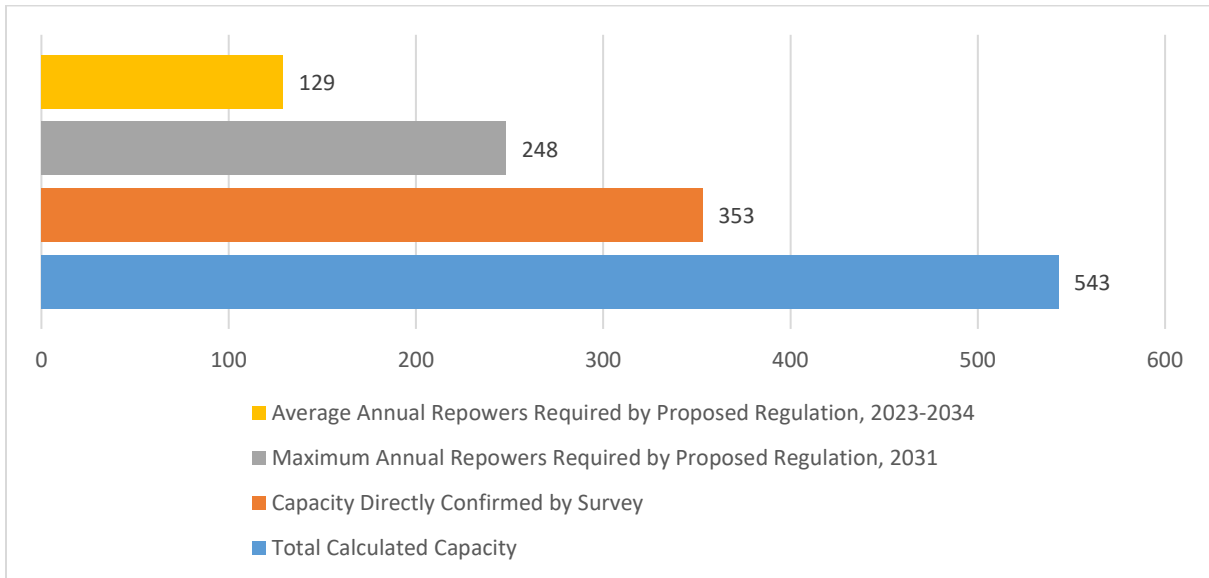
Year	Repower	Retrofit	Vessel Replacement
2023	195	0	5
2024	234	44	7
2025	200	37	6
2026	64	67	10
2027	61	80	13
2028	76	83	13
2029	16	72	35
2030	215	111	37
2031	248	11	22
2032	223	3	31
2033	7	14	38
2034	13	44	53
Average	129	47	22

Updated Table E-17. Estimated Number of Annual Engine Replacements (Repowers), Retrofits, and Vessel Replacements Due to Implementation of the Proposed Amendments.

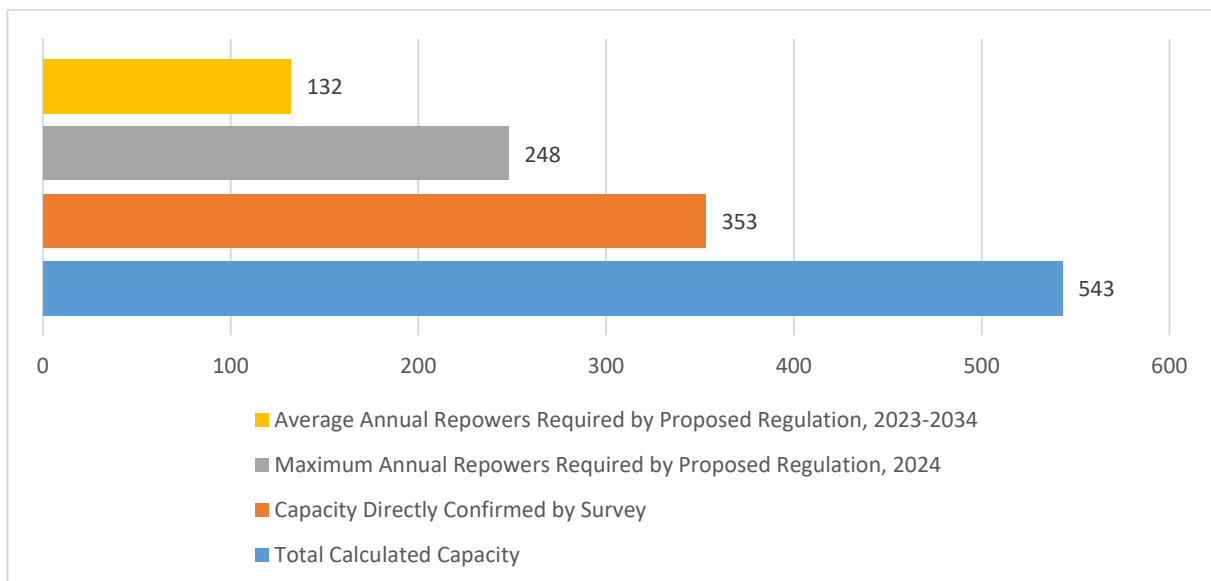
Year	Repower	Retrofit	Vessel Replacement
2023	195	0	5
2024	234	44	7
2025	200	37	6
2026	64	67	10
2027	61	80	13
2028	76	83	13
2029	46	101	35
2030	215	230	40
2031	248	11	22
2032	223	3	50
2033	7	15	38
2034	16	122	130
Average	132	66	31

44. Page E-49, replace "Figure E-13" with "Updated Figure E-13".

Figure E-13. Comparison of Repower Capacity and Number of Repowers Required by the Proposed Amendments

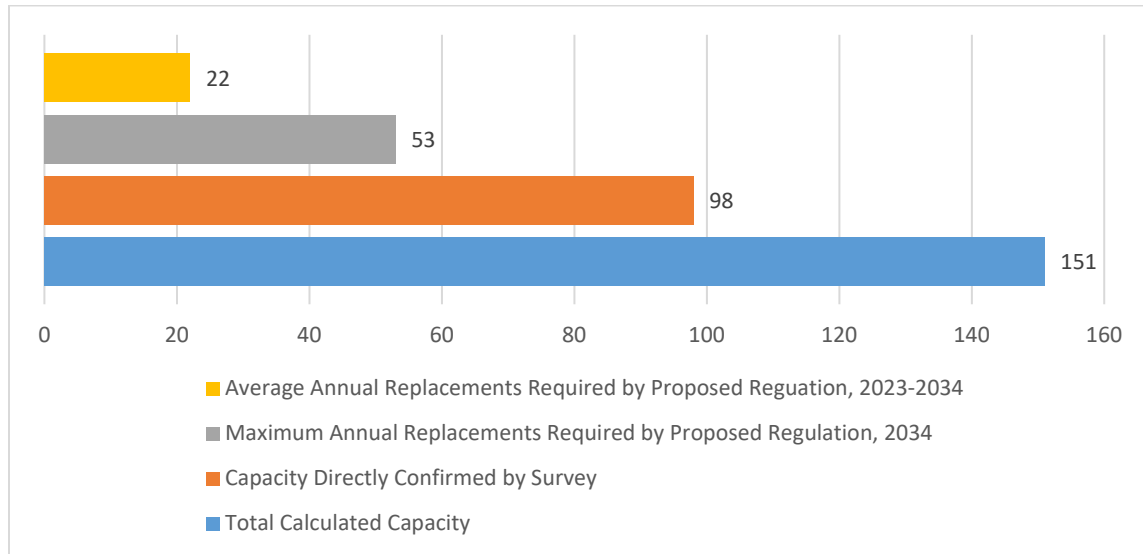


Updated Figure E-13. Comparison of Repower Capacity and Number of Repowers Required by the Proposed Amendments

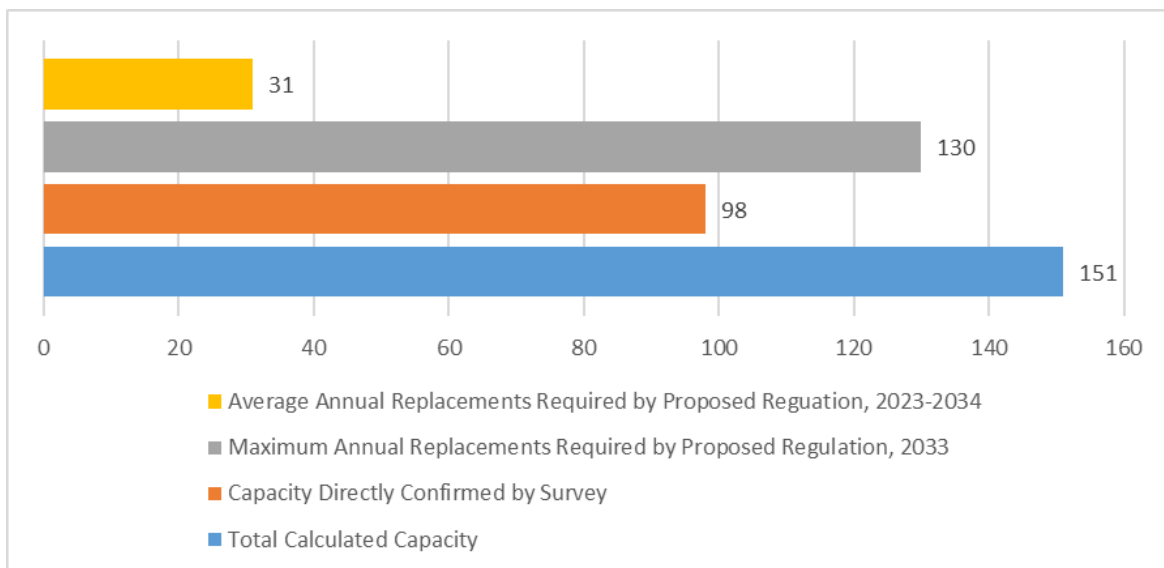


45. Page E-50, replace "Figure E-14" with "Updated Figure E-14".

Figure E-14. Comparison of Vessel Replacement Capacity and Number of Vessel Replacements Required by the Proposed Regulation



Updated Figure E-14. Comparison of Vessel Replacement Capacity and Number of Vessel Replacements Required by the Proposed Regulation



46. Page E-50, replace "The maximum estimated 53 replacements required in a single year (2034) accounts for 54 percent of the capacity which staff confirmed directly through the survey, and 35 percent of the calculated total west coast capacity" with "The maximum estimated **130** replacements required in a single year (2034) accounts for **133** percent of the capacity which staff confirmed directly through the survey, and **86** percent of the calculated total west coast capacity".

Any questions regarding these corrections should be directed to the agency representative David Quiros, Manager, Freight Technology Section by email at david.quiros@arb.ca.gov or by phone at (916) 264-9378.

California Air Resources Board



Richard W. Corey
Executive Officer

Date: October 1, 2021

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see [CARB's website](http://www.arb.ca.gov) (www.arb.ca.gov).