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For a thriving New England

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Maine Board of Environmental Protection
Maine Department of Environmental Protection
17 State House Station
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Subject: Proposed Chapter 127-A: Advanced Clean Cars II Program
Comments of Conservation Law Foundation

Dear Chair Lessard and Members of the Board of Environmental Protection:

Conservation Law Foundation (CLF)[1] thanks the Board of Environmental Protection ("Board") and the Department of Environmental Protection ("Department") for the opportunity to provide comments on the proposed Advanced Clean Cars II (ACC II) Program.

CLF strongly supports Maine's adoption of the ACC II this year. However, the proposed rule stops short of harnessing the full suite of available climate, economic, health, and environmental justice benefits by only running through model year (MY) 2032 with a midterm Departmental review to consider subsequent model years. To comply with Maine's mandatory decarbonization targets and avail Maine people and businesses of the rule's full value, we urge the Board to incorporate zero emission sales standards through MY 2035 and beyond, ultimately requiring 100% of new light-duty sales to be zero-emission vehicles (ZEVs).

I. Adoption of the Proposed Rule Instead of the Full ACC II Would Make Maine an Outlier Amongst Climate-forward States

Maine's Advanced Clean Cars II Program would establish motor vehicle emission standards by incorporating the requirements of the California Advanced Clean Cars II regulations. California's ACC II is a package of rules that requires an increasing percentage of new light-duty vehicle (LDV) sales to be ZEVs each year. It also includes revised pollutant standards for passenger cars, light-duty trucks, and medium-duty vehicles with internal combustion engines. The ZEV component of California's ACC II starts with a 35% sales requirement for MY 2026 and ramps up to a 100% requirement for MY 2035 and beyond (the "full rule"). Every other state

[1] Founded in 1966, CLF is a nonprofit, member-supported, regional environmental organization, working to conserve natural resources, protect public health, and promote thriving communities in New England. CLF protects New England's environment for the benefit of all people. We use the law, science, and markets to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy. CLF protects and promotes the interests of its 6,000 members, including more than 400 members in Maine.

that has so far adopted this regulation—Oregon, Virginia, Washington, New York, and our neighbors Vermont and Massachusetts—have adopted the ZEV program running through 2035. Rhode Island and Connecticut each have rulemakings underway considering the same (as do several other states).

Here in Maine, the proposed regulation follows the same trajectory, but stops short of 2035, cutting off at an 82% ZEV requirement for MY 2032 (the "proposed rule" or "partial rule"). The Department would review the program by January 1, 2028 to determine incorporation of ZEV percentage requirements for subsequent MYs. If the rule is not extended at that time, Maine would seemingly default to the federal standards.

Far from being ideological or extreme, the full rule is a reasonable approach premised on an enormous record replete with supportive analysis and evidence. The California ACC II was developed based on comprehensive investigation in which more and less stringent ZEV trajectory alternatives were thoroughly considered.[2] A cost benefit assessment determined the proposed regulations will provide "significant benefits" for "human health, public welfare, and the environment."[3] The rules were informed by extensive public process, beginning with years of discussions and including multiple formal opportunities for oral and written comment.[4] The rule's architects carefully crafted the ZEV trajectory through 2035 "based on technology advancements, falling technology costs, a growing consumer interest, manufacturer electrification commitments and projections, and feasibility analysis of model turnover coupled with the necessity of electrifying light duty vehicles to curb the harmful effects of smog-forming and GHG emissions."[5] The California agency ultimately concluded the ZEV trajectory is "appropriate and feasible," as did, presumably, every other regulatory body that has so far adopted it.

The full rule is realistic, data-based, and endorsed by jurisdictions around the country. In contrast, the proposed rule is an outlier, an unnecessarily cautious approach that belies ample evidence that 100% ZEVs by 2035 is achievable and that Maine would net enormous benefits from full implementation. By deviating from the full rule approach, Maine introduces uncertainty into a nation-wide program, casting doubt on the prudence of other states' decisions to go all in. Maine cannot be assured that the rule will advantage the state in the eyes of manufacturers as it is designed to and as previous iterations of the ZEV program have. Moreover, Maine unnecessarily complicates infrastructure and grid planning efforts and investments in the state, also muddling

[2] California Air Resource Board (CARB), Public Hearing to Consider Advanced Clean Cars II Regulations, *Staff Report: Initial Statement of Reasons* (Apr. 12, 2022) at 173-180, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf.
[3] *Id.* at 16.
[4] CARB, Public Hearing to Consider Advanced Clean Cars II Regulations, *Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response* (Aug. 25, 2022) at 3, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/fsor.pdf.
[5] CARB Initial Statement of Reasons, supra note 2, at 41.

the transition for our businesses. And Mainers risk losing out on billions of dollars' worth of benefits.

II. Maine Law Demands the Board Adopt the Full Advanced Clean Cars II Program this Year

A. Climate Change Is Here

Driven by increased human contributions to greenhouse gas (GHG) emissions, our environment is already experiencing the widespread effects of climate change—shrinking glaciers and ice sheets, shifting plant and animal geographic ranges, and extreme droughts, wildfires and rainfall plaguing communities worldwide.[6] In a new study published June 2023, scientists have found that even under a low-GHG-emissions scenario, Arctic summers could be ice-free in less than a decade.[7]

But given humans' role in causing the harmful effects of climate change, we can also act to avoid the most severe impacts. There is a linear relationship between the amount of CO_2 emissions and the increase in global surface temperature, so that every ton of CO_2 released into the atmosphere will worsen climate change.[8] It follows that every ton of CO_2 *not* released will lessen the impacts, so reducing emissions in the near term is imperative.[9]

The Intergovernmental Panel on Climate Change's recent report emphasized that "the extent to which current and future generations will experience a hotter and different world depends on choices now and in the near-term."[10] Maine is already experiencing the impacts of climate change. The University of Maine has warned that our state's "annual temperature has increased 3.2ºF in the last 124 years…[and] the six warmest years on record have occurred since 1998."[11] Now more than ever, it is crucial that Maine act to mitigate worsening impacts, including by reducing transportation emissions by electrification.

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[6] NASA, Global Climate Change, Vital Signs of the Planet, *Earth Will Continue to Warm and the Effects Will be Profound*, available at https://climate.nasa.gov/effects (last accessed June 26, 2023).
[7] R. Zhong, The New York Times, *Arctic Summer Could be Practically Sea-Ice-Free by the 2030s* (June 6, 2023) available at https://www.nytimes.com/2023/06/06/climate/arctic-sea-ice-melting.html (*citing* Yeon-Hee-Kim *et al.*, 14 Nature Communications 3139, *Observationally-Constrained Projections of an Ice-Free Arctic Even Under a Low Emission Scenario* (2023), available at https://doi.org/10.1038/s41467-023-38511-8).
[8] Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, *Summary for Policymakers* (2021) at 28, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.
[9] *Id.* at 27-28.
[10] Intergovernmental Panel on Climate Change, *Climate Change 2023: Synthesis Report, Summary for Policymakers* (2023) at 7, available at https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf.
[11] University of Maine, *Maine's Climate Future 2020 Update* (2020) at 3, available at https://climatechange.umaine.edu/wp-content/uploads/sites/439/2020/02/Maines-Climate-Future-2020-Update-3.pdf.

B. The ACC II is a Natural Outgrowth of Maine's Long-standing Commitment to Reducing GHG Emissions and Tailpipe Pollution

Maine has a history of dedication to combating the climate crisis. The Legislature first set statutory GHG emissions reduction goals in 2003 and tasked the Department with adopting a climate action plan and developing a lead-by-example initiative to help achieve its goals.[12] In 2019, the Legislature passed An Act to Promote Clean Energy Jobs and To Establish the Maine Climate Council (the "Climate Law"), which aligned the state's emissions goals with prevailing climate science and converted the goals to mandatory levels (the "mandatory climate targets").[13] The Legislature charged the Board with ensuring achievement of the state's mandatory climate targets, and directed it to adopt rules doing so, expressly designating those rules as routine technical pursuant to Title 5, chapter 375, subchapter 2-A.[14]

The Maine Climate Council, directed to update the state's Climate Action Plan by the end of 2020 and every four years thereafter,[15] developed *Maine Won't Wait: A Four-Year Plan for Climate Action* (the "Climate Action Plan"), setting forth numerous strategies for achieving the mandatory climate targets.[16] Both the Climate Action Plan and its outgrowth, the Clean Transportation Roadmap, emphasize Maine's need to aggressively pursue GHG reductions in the transportation sector.[17]

The state's history of protective tailpipe emissions standards goes back even further. The federal Clean Air Act establishes the framework for controlling mobile source emissions in the United States. While the law generally prohibits states from adopting their own emissions standards, it grants California a special exemption to do so as long as its standards are at least as protective as the federal ones.[18] Other states may deviate from the federal standards *only* by adoption of standards identical to California's.[19] Maine has long opted for this more stringent approach; the Legislature expressly authorized the Department to adopt California's vehicle emissions standards three decades ago.[20] This authority is bolstered by even longer-standing general grants of jurisdiction over emission standards and air quality.[21] The Department has exercised these authorities on numerous occasions. Maine first incorporated aspects of California's vehicle

[12] An Act to Provide Leadership in Addressing the Threat of Climate Change, P.L. 2003, ch. 237, § 1 (effective Sept. 13, 2003) (codified as amended at 38 M.R.S. §§ 574-577).
[13] 38 M.R.S. § 576-A(1)-(2), (3).
[14] *Id.* § 576-A.
[15] *Id.* §§ 577-A, 577(1).
[16] Maine Climate Council, *Maine Won't Wait: A Four-Year Plan for Climate Action* (Dec. 2020).
[17] Climate Action Plan at 41-42, 107; Governor's Energy Office, Governor's Office of Policy, Innovation and the Future, Cadmus, *Maine Clean Transportation Roadmap* (Dec. 2021) (the "Clean Transportation Roadmap") at 1.
[18] 42 U.S.C. § 7543.
[19] *Id.* § 7507.
[20] An Act Regarding Automobile Air Emission Standards, P.L. 1993, ch. 358, § 1 (codified as amended at 38 M.R.S. § 585-D).
[21] *See* 38 M.R.S. §§ 585, 585-A.

emission standards in 1993.[22] Today, the Department's rules incorporate numerous provisions of California regulations running through MY 2025.[23] Adoption of the full ACC II would be a continuation of this historic and ongoing practice.

C. The Board Must Adopt the Full Advanced Clean Cars II Program this Year to Reduce GHG Emissions 45% by 2030 and 80% by 2050

Maine's Climate Law requires the state to reduce gross annual GHG emissions at least 45% below 1990 levels by 2030 and at least 80% below 1990 levels by 2050, with an interim target in 2040 and a net-zero emissions requirement in 2045.[24] To support the state's plan for achievement, state consultants identified compliance pathways demonstrating the need for widespread electrification of passenger vehicles.[25]

The Board is responsible for ensuring compliance with the mandatory climate targets.[26] The regulations doing so must "be consistent with the climate action plan," "prioritize" GHG emissions by "sectors that are the most significant sources," and "be fair and equitable."[27] The Board has missed its September 2021 statutory deadline[28] and not adopted any rules to reduce emissions from the transportation sector, though the Department has reported repeatedly that cars and trucks are the biggest contributors of CO_2 emissions from fossil fuel consumption in the state.[29]

Failure to adopt the ACC II this year will mean that Maine cannot impact any vehicles prior to model year 2028,[30] and the state will miss the Climate Law's mandatory 45% climate target.[31] The ACC II is the state's best shot at reducing emissions from light-duty cars and trucks and, as

[22] 06-096 C.M.R. ch. 127 (Feb. 17, 1993) (amended 1994).
[23] *See* 06-096 C.M.R. ch. 127, New Motor Vehicle Emission Standards; *see also id.* § 3 Incorporation by Reference.
[24] 38 M.R.S. § 576-A.
[25] Synapse Energy Economics, Inc., *Volume 3: Mitigation Modeling Consolidated Energy Sectors Modeling Results* (Nov. 9, 2020) at 7-13, available at https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/ERG_MCC_Vol3_MaineEmissionsAnalysisSynapse_11-9-2020.pdf.
[26] 38 M.R.S. § 576-A (4).
[27] *Id.* § 576-A (4)(A), (B), (C).
[28] *Id.* § 576-A (4) ("Notwithstanding any provision of section 341-H to the contrary, by September 1, 2021, the board shall adopt rules to ensure compliance with the levels established. . .").
[29] Maine Department of Environmental Protection, Bureau of Air Quality, *Ninth Biennial Report on Progress Toward Greenhouse Gas Reduction Goals* (2022) at 11.
[30] Section 177 of the federal Clean Air Act authorizes states to adopt California's standards if they are identical to California's standards, and so long as states provide vehicle manufacturers *at least two model years' lead time before enforcement*. 42 U.S.C. § 7507. *See also* The International Council on Clean Transportation, *Benefits of Adopting California's Advanced Clean Cars II Standards in Sixteen U.S. States*, Final Report (April 2023) at 10, https://theicct.org/wp-content/uploads/2023/05/ACC-II-project-report-final-042623.pdf (the delay of full ACC II rule implementation by one model year leads to a net loss of emissions benefit of 7.5% in 2027).
[31] Maine Department of Environmental Protection, *Ch. 127-A Rulemaking Fact Sheet*, at 2 ("If ACCII regulation is not adopted, Maine will revert to the less stringent federal standards, and the state will be unable to meet the goals set in the Maine's 2020 Climate Action Plan.").

explained below, it meets the Climate Law's statutory criteria. The Board has no time to lose in adopting the ACC II to give Maine the best chance at complying with the state's mandatory 2030 climate target.

But the Climate Law's obligations don't end with the decade. Rather, they continue to ramp up, requiring the state to reduce GHGs 80% by 2050. Modeling conducted by ERM for CLF illustrates that it is critical for the Board to extend the rule to require 100% of new LDV sales be ZEV by MY 2035 to achieve the 2050 mandatory climate target.[32] Projections of GHG reductions from the full rule and the proposed rule diverge significantly by 2050[33] when, according to the Clean Transportation Roadmap, the LDV fleet must achieve "near-zero emissions."[34] By adopting the full rule, the Board could reduce GHG emissions from personal cars and trucks 89% below 2025 levels by that time, for a cumulative reduction of 49.1 million metric tons (MT) of CO_2e.[35] The proposed rule falls short, cutting GHG emissions only 75% in the same time frame.[36]

The Advanced Clean Cars II Program is "consistent with the Climate Action Plan"

The Board is obligated to adopt rules ensuring compliance with the state's mandatory climate targets.[37] These must be "consistent with the climate action plan."[38] The Board's adoption of the ACC II would satisfy this criterion.

The very first strategy advanced by the state's Climate Action Plan is to "accelerate Maine's transition to electric vehicles."[39] The Plan describes the California standards as a "foundational policy for accelerating EV adoption,"[40] and calls for development of a "statewide EV Roadmap to identify necessary policies, programs, and regulatory changes needed to meet the state's EV and transportation emissions-reduction goals."[41] That document, the Clean Transportation Roadmap, explicitly calls for adoption of the ACC II (and assumes adoption of the *full* rule),

[32] ERM is the largest global sustainability consultancy, which provides technical expertise in addressing environmental, health, safety, risk, and social issues (www.erm.com). On behalf of CLF, ERM has published a report comparing the environmental, public health, and economic benefits of two versions of the ACC II: 1) the partial program as proposed, which ends with MY 2032 and requires vehicle manufacturers to reach 82% ZEV share of new LDV sales; and 2) the full program, which runs through MY 2035 and requires manufacturers to reach 100% ZEV share of new LDV sales. ERM, *Comparison of Maine Adoption of ACC II Results: Through 2032 vs. 2035* (Aug. 17, 2023), https://www.clf.org/wp-content/uploads/2023/08/ME-ACCII-FullStudy.pdf ("ERM Report") (Attachment A hereto).
[33] ERM Report at 7.
[34] Clean Transportation Roadmap at 1.
[35] ERM Report at 7.
[36] *Id.*
[37] 38 M.R.S. § 576-A (4).
[38] *Id.* § 576-A (4)(A).
[39] Climate Action Plan at 41.
[40] *Id.*
[41] *Id.*

explaining that implementation of California's programs in Maine would have a "profound impact on GHG emissions from the transportation sector."[42]

The Advanced Clean Cars II Program is "fair and equitable"

A central tenet of the Climate Law and Climate Action Plan is the advancement of equity through climate policies to "ensure communities and citizens who are often left behind can benefit from climate solutions by having access to opportunities and protection from threats."[43] The Climate Law directs the council to consider actions that "minimize deleterious effects, including those on persons of low income and moderate income," and that create opportunities for economic growth, especially in "rural and economically distressed regions" of Maine.[44] The Council is to "[e]nsur[e] equity for all sectors and regions of the State and that the broadest group of residents benefit . . . with consideration of economic, quality-of-life and public health benefits."[45] Consistent with that theme, the Board's rules ensuring compliance with the mandatory climate targets must be "fair and equitable."[46] The Maine Climate Council Equity Subcommittee introduced its recent report by explaining the rationale for this focus:

> In Maine and across the world, climate change poses the greatest threat to communities which are already marginalized. Low-income communities and communities of color, among others, are often already subject to both social and environmental harm—experiencing disparities in health outcomes, and inequitable access to healthy, efficient, and secure housing, potable drinking water, and reliable transportation.[47]

The impacts of climate change and air pollution affect all Mainers, but residents in low-income and Black, Indigenous, and people of color communities are especially vulnerable and often face the most severe impacts.

The Advanced Clean Cars II Program will advance fairness and equity by reducing toxic air pollution, which disproportionately impacts people of color as well as limited English-speaking households (complementary policies are necessary to ensure benefits reach these populations, *see* section IV(C) below).[48] Fossil fuel vehicles emit nitrogen oxide (NOx) pollution, which

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[42] Clean Transportation Roadmap at 2, 53.
[43] Climate Action Plan at 6.
[44] 38 M.R.S. § 577(7)(B).
[45] *Id.* § 577(7)(C).
[46] *Id.* § 576-A (4)(C).
[47] Maine Climate Council, Equity Subcommittee, *Final Recommendations of the Equity Subcommittee of the Maine Climate Council* (2023) at 5.
[48] U.S. Environmental Protection Agency, *Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income* (September 20, 2021), available at https://www.epa.gov/sciencematters/study-finds-exposure-air-pollution-higher-people-color-regardless-region-or-income; J. Liu, *et al*., *Disparities in Air Pollution Exposure in the United States by Race/Ethnicity and Income, 1990-2010*, 129 Environmental Health Perspectives 12 (2021), available at https://ehp.niehs.nih.gov/doi/10.1289/EHP8584.

contributes to the formation of both particulate matter pollution and ozone (i.e., smog).[49] Toxic air pollution is linked to myriad negative health impacts including asthma, bronchitis, cancers, and premature deaths. At the same time, climate change increases temperatures leading to more days of extreme heat, which exacerbates the health risks associated with hazardous air pollution from our roads.

Adopting the Advanced Clean Cars II Program will help get dirty cars off our roads. It is a crucial baseline step that Maine needs to take to advance towards more equitable transportation systems that don't poison our air. The health benefits of the full rule versus the proposed rule are further expounded in section IV(B) below.

The Advanced Clean Cars II Program "prioritize[s] greenhouse gas emissions reductions by sectors that are the most significant sources"

Consistent with the Climate Law, adoption of the ACC II would also properly prioritize GHG reductions by the most significant sources and account for and give "significant weight" to GHG emissions reductions already achieved.[50] Tailpipe emissions are an appropriate focus of the Board not only because the transportation sector is responsible for nearly half of Maine's climate-disrupting emissions from fossil fuels,[51] but also because its emissions remain "relatively stable"[52] in contrast to other energy sectors that have shown marked reductions in emissions since 1990.[53] Maine's transportation emissions have dropped only 8% in that period.[54] Thus, the Climate Law calls for a focus on the transportation sector, and the proposed rule does so.

Maine law demands the Board adopt the full Advanced Clean Cars II Program now

The state is taking important steps to prepare for the transition away from fossil-fuel powered vehicles. For instance, in 2017, then-Attorney General Mills won $5.1 million from Volkswagen and its affiliates for state environmental law violations, half of which was used to provide financial incentive programs to help public agencies and organizations that serve older people, low-income Mainers, and Mainers with special needs to purchase EVs.[55] In July 2022, Maine's Department of Transportation, Efficiency Maine Trust, and other state agencies developed a Plan for Electric Vehicle Infrastructure Deployment outlining how the state would use approximately

[49] U.S. Environmental Protection Agency, *The Sources and Solutions: Fossil Fuels,* available at https://www.epa.gov/nutrientpollution/sources-and-solutions-fossil-fuels (last accessed Mar. 14, 2023).
[50] 38 M.R.S. § 576-A (4)(B), (C).
[51] Clean Transportation Roadmap at 8.
[52] *Id.*
[53] Maine Department of Environmental Protection, Bureau of Air Quality, *Ninth Biennial Report on Progress Toward Greenhouse Gas Reduction Goals* (2022), at 12.
[54] *Id.*
[55] Settlement funds were also used for the installation of public EV charging stations. Maine.gov, Governor's Energy Office, *Clean Transportation*, https://www.maine.gov/energy/initiatives/clean-transportation (last accessed August 17, 2023); Maine.gov, *Maine's VW Settlement* (2017), https://www.maine.gov/mdot/vw/docs/maine-vw-settlement-summary.pdf (last accessed August 17, 2023).

$19 million in National Electric Vehicle Infrastructure funding approved by Congress in 2021.[56] This month, Recharge Maine, the state's initiative to develop a statewide network of public, high-speed electric vehicle chargers, announced awards of more than $6 million in additional National Electric Vehicle Infrastructure program funds to support the development of new chargers spanning Bangor, Augusta, and the stretch of U.S. Route 1 between Ellsworth and Freeport.[57]

Yet, despite this good work, and despite state-sponsored projections that the light-duty sector needs to rapidly decarbonize to achieve the state's mandatory climate targets, the Board did not "adopt. . . rules to ensure" this transition was underway by September 1, 2021, as directed by the Legislature.[58] If the missed statutory deadline was not reason enough to act with haste, the Clean Transportation Roadmap also shows there is no time to lose—it projects that, even if the *full* ACC II had been adopted *last* year, allowing earlier implementation (i.e. starting with MY 2026 instead of MY 2027), it would *still* not have been enough to hit the state's goals for EVs on the road, nor accordingly, the overarching mandatory climate targets (absent complementary approaches).[59]

The ACC II is the Board's only proposal for cutting GHG emissions from LDV as the looming mandatory climate targets demand. Time is of the essence. Delaying adoption of the ACC II endangers compliance with the mandatory climate targets and needlessly puts off significant public health and economic benefits. And to put the state on a trajectory toward compliance with its short- *and* long-term mandatory climate targets, the Board must amend the proposal to run through 2035 and require 100% of new LDV sales be zero-emission in 2035.

III. The Board Should Adopt the Advanced Clean Cars II Program Under 38 M.R.S. §§ 585, 585-A and 585-D.

The Climate Law and Climate Action Plan in no way limit the Department's existing, broad authority to regulate emissions.[60] The Department's express authority to adopt and enforce motor vehicle emissions controls under Section 177 of the federal Clean Air Act is found in 38 M.R.S. § 585-D. The Department has regularly exercised that authority, including to incorporate by reference and amend California vehicle emissions standards from time-to-time. The Board should exercise its ample authority to adopt the full ACC II rule for all the reasons provided herein.

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[56] MaineDOT, *Maine Plan for Electric Vehicle Infrastructure Deployment (Maine PEVID)* (July 2022), https://www.efficiencymaine.com/docs/pevid-2022.pdf (last accessed August 17, 2023).
[57] MaineDOT, *Recharge Maine Announces Planned Awards of More than $6 Million in Bids to Further Extend Maine's Electric Vehicle Charging Infrastructure*, News Release (August 1, 2023), https://www.maine.gov/tools/whatsnew/index.php?topic=DOT_Press_Releases&id=11496493&v=article2015.
[58] 38 M.R.S. § 576-A (4).
[59] Clean Transportation Roadmap at 30.
[60] *See* 38 M.R.S. §§ 585, 585-A & 585-D.

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IV. The Board Should Adopt the Full Rule to Harness the ACC II's Full Suite of Climate, Economic, Health, and Equity Benefits

Adoption of the proposed rule does not foreclose extension of the ACC II through 2035 subsequent to a mid-term review. But the better path is for the Board to adopt the full rule now, increasing certainty and security for Maine people, businesses, and regulators grappling with a rapidly progressing new frontier, and securing Mainers billions of dollars' worth of additional benefits.

It is inarguable that a major transition of the transportation sector is underway. But projections of the speed, duration and scope of this transformation vary from study to study and day to day, potentially chilling prospective investment. The Board has a unique opportunity to quell some of that uncertainty by putting the state on a clear, defined trajectory to 100% ZEVs in 2035 and beyond. This will smooth and potentially hasten the state's transition.

Adoption of the full rule instead of one that stops short in 2032 supports planning and preparedness. Codifying a ZEV trajectory through 2035 and beyond would inject confidence into the projections used by utilities, regulators, and planners to ensure the readiness of our electricity grid as well as supportive electric vehicle infrastructure. The Public Utilities Commission could more readily assess utilities' proposed grid upgrades based on specific regulatory policies rather than speculations about what may come from a Department determination in a few years. Adoption of the full rule would ensure Recharge Maine, the state's electric vehicle charging network, is adequate and developed along an appropriate timeframe; it would give MaineDOT, Efficiency Maine Trust and other state agencies clear benchmarks to aim for in updating the state's Plan for Electric Vehicle Infrastructure Deployment and other initiatives, potentially availing the state of additional federal dollars.[61]

It's not only state grid and infrastructure planners who would benefit from additional confidence in Maine's electrification trajectory. Municipalities considering installing public chargers could better project what percentage of residents would be driving electric, and when. Companies looking to transition their fleets could invest knowing the direction and timeline along which electric vehicles would be available to purchase. Employers and businesses looking to provide electric vehicle customer services could be more secure in their investments, knowing a Department review wouldn't upend the state's trajectory. Automotive service and repair shops considering training expenditures, certifications and investments to prepare their workplaces for ZEVs would do well to know whether the state's pathway to zero-emission cars is a sure thing.

Moreover, full ACC II adoption sends an unequivocal message to manufacturers and dealers that Mainers demand clean vehicles. Indeed, this is one of the very purposes of the rule.[62]

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[61] *See* MaineDOT, *Reducing emissions through electrification*, https://www1.maine.gov/mdot/climate/electrification/ (last accessed Aug. 16, 2023).
[62] Clean Transportation Roadmap at 2.

Historically, EV market share has been roughly twice as high in states that follow California emission regulations.[63] As no other state has adopted a partial rule, the impact the proposed rule would have is uncertain, but it would seem unlikely to send the clear message that is the rule's intent. The Board can benefit manufacturers and dealers (and the Maine people and businesses that rely on them for vehicles) by laying out a clear pathway forward, rather than perpetuating doubt and uncertainty with a premature mid-term review.

The proposed rule's shorter horizon and mid-term review introduce unnecessary irresolution to a space that, frankly, doesn't need it. Naturally, the Department is entitled to assess and review programs it administers from time to time, and CLF would expect as much. However, making the latter years of the program contingent on completion of a review creates a presumption that the program is ending, absent Department findings to justify deviating from that pathway. In contrast, if the Board adopted the full rule and the Department conducted a midterm review at some point, the presumption would be that the program would continue unless evidence and analysis supported a finding otherwise. Thus, while Department review of ongoing programs is expected and necessary for good operation, making the full program contingent upon a mid-term review—particularly one that is bound to be conducted too early to realize meaningful results[64]—jeopardizes the full program and creates undesirable uncertainty.

Finally, adoption of the full rule instead of the partial rule under consideration makes good economic sense, plugging an extra $4 billion in benefits into Maine's economy. ERM's comparison analysis projects cumulative net societal benefits of $21.1 billion dollars in savings attributable to the full rule in terms of air quality benefits, climate benefits, utility customer savings, and ZEV owner savings.[65] These significant fiscal savings represent an increase of almost 25% over those attributable to the partial rule.

A. The Full Rule Will Maximize Economic Benefits for Maine

Adoption of the full rule will maximize economic growth and development throughout the state. Transitioning Maine to EVs will put downward pressure on electricity rates for all customers, enable significant fuel and maintenance cost savings, attract large charging infrastructure investments, and create high-paying jobs.

The full rule will drive electricity prices down further than the partial rule

Adoption of the ACC II has substantial, positive economic implications for Maine's local economy—with significant extra gains from adopting the full rule instead of the proposed rule.

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[63] Center for American Progress, *Plug in Electric Vehicles: Evaluating the Effectiveness of State Policies for Increasing Deployment* (June. 2018), at 17.
[64] To comply with the Clean Air Act's lead time requirement of two model years, the mid-term review must be completed by the end of calendar year 2029 to impact MY 2033. This means the program will still be in its early years at the time of review, threatening a meaningful determination.
[65] ERM Report at 16.

Among those are cost savings for all Maine electricity customers. Although LDV electrification will drive up utility costs—for incremental generation, transmission, and capacity to serve peak load from EV charging—it will drive up utility revenue even more (i.e., greater sales of electricity).[66] These excesses in revenue will be passed along to customers, reducing Mainers' electricity bills. By adopting the full rule, the Board could save Mainers $169 million in electricity bills by 2050—an extra $43 million on top of what the proposed rule offers.[67]

And that's in addition to the savings enjoyed by EV drivers themselves, who will constitute an increasing percentage of Mainers as the rule progresses. Although the average purchase price of an EV today exceeds[68] that of a combustion engine LDV,

> this average is skewed by the high proportion of luxury ZEVs sold. The ACC II regulations applies to all manufacturers and the luxury market is limited in size such that manufacturers cannot only sell ZEVs to this market to meet the increasing requirements. As more auto manufacturers introduce more mainstream models, the average price of new ZEVs is expected to decline relative to conventional vehicles. The higher production volume requirements of the ACC II regulations, as well as similar regulations globally, will contribute to economies of scale that will help to lower costs from today's levels.[69]

But even accounting for today's upfront cost differential, catalyzing EV sales through 2035 will enable Maine drivers to maximize long-term savings on fuel and maintenance costs—in the hundreds or thousands of dollars a year compared with comparable gas-powered vehicles. These savings are projected to outweigh extra costs associated with EVs (i.e. the incremental cost of purchasing until MY 2030 and the cost of purchasing and maintaining chargers).[70] By MY 2030, the average ZEV owner is projected to save more than $15,000 in lifetime costs as compared to a conventional vehicle.[71] And in latter years, rural drivers will enjoy greater savings than the state average due to higher vehicle miles traveled and therefore higher net fuel savings, as relatively inexpensive electricity displaces gasoline.[72] All told, Mainers that drive ZEVs are expected to save *$14.3 billion* by 2050 if the Board adopts the full rule—more than 25% higher than the

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[66] *Id.* at 11.
[67] *Id.* at 12.
[68] *But see* Energy Innovation, *Electric Vehicle Leasing: The Cheapest Option for New Car Buyers* (Aug. 2023) at 4, https://energyinnovation.org/wp-content/uploads/2023/08/Electric-Vehicle-Leasing-The-Cheapest-Option-for-New-Car-Buyers_FINAL.pdf (evaluating the costs of buying and leasing comparable EVs and gasoline vehicles in all 50 states, finding that for most models evaluated, leasing an EV offers a lower monthly cost than leasing a comparable gasoline vehicle or buying an EV or gasoline vehicle.).
[69] CARB, Public Hearing to Consider Advanced Clean Cars II Regulations, *Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response, Appendix A Summary of Comments to the Overall Advanced Clean Cars II Regulations and Agency Responses* (Aug. 25, 2022) at 159, available at https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/fsorappa.pdf.
[70] ERM Report at 13-15.
[71] *Id.* at 14.
[72] *Id.* at 14, 15.

cumulative owner benefits of the partial rule.[73] Extra disposable income in Mainers' pockets will be reinvested into Maine's economy.

ZEV owner savings (paired with lower electricity rates) are particularly good news for Maine's low-income households, which spend a disproportionate share of their income on transportation fuel, maintenance, and repairs.[74] The ACC II is also expected to bolster and improve the used EV market, which is critical for ensuring the full suite of the rule's benefits reach all Mainers. The "used car market is more than twice the size of the new car segment and outpacing it in growth."[75] As the Vermont Agency of Natural Resources explained in adopting the full rule, the ZEV assurance measures in the ACC II, "such as minimum warranty and durability standards, will ensure these emissions benefits are realized and long-lasting, while supporting more reliable ZEVs in the used vehicle market. Durable and better performing used ZEVs can help increase access to clean vehicle technologies for communities that may not be buying new vehicles, but which do need reliable mobility options."[76]

Maine can maximize federal incentives and create more jobs with the full rule

Adoption of the full rule would afford Maine a unique opportunity to maximize Infrastructure Investment and Jobs Act ("IIJA")[77] and Inflation Reduction Act ("IRA")[78] benefits and incentives. As Maine looks to increase electrification in transport, these laws provide significant federal funding to both state and local governments for EVs and supportive infrastructure.[79]

The state has taken swift steps to ensure IIJA investment in Maine's infrastructure. By executive order of Governor Mills, the Infrastructure Implementation Committee was established in April of 2022 and charged with coordinating the activities of state agencies to maximize the benefits of the Infrastructure Investment and Jobs Act of 2021, developing strategies to leverage the funding allocated to Maine in line with the current MaineDOT Work Plan, Maine's Climate Action Plan,

[73] ERM Report at 13.
[74] Clean Transportation Roadmap at 14 (citing U.S. Bureau of Labor Statistics. "Table 3104. Northeastern region by income before taxes: Average annual expenditures and characteristics, Consumer Expenditure Survey, 2018-2019." https://www.bls.gov/cex/2019/CrossTabs/regbyinc/xregnne.PDF) ("In the Northeast, households with a before-tax income of less than $15,000 per year spend 11% of their income on fuel, maintenance, and repairs while those with an income of $200,000 per year spend 1%.").
[75] CARB Initial Statement of Reasons, supra note 2, at 21.
[76] Vermont Agency of Natural Resources, *Vermont Low Emissions and Zero Emission Vehicle Rule, Final Proposed Rule Responsiveness Summary*, at 20, https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Responsiveness_Summary.pdf.
[77] Pub. L. 117-58 (Nov. 15, 2021).
[78] Pub. L. 117-169 (Aug. 16, 2022).
[79] *See*, The White House, President Joe Biden, Building a Better America, *A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners*, https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf; *see also* The International Council on Clean Transportation, *Analyzing the Impact of the Inflation Reduction Act on Electric Vehicle Uptake in the United States*, White Paper (January 2023), https://theicct.org/wp-content/uploads/2023/01/ira-impact-evs-us-jan23.pdf.

and Maine's Economic Development Strategy.[80] The Mills Administration has estimated that there is $2.5 billion available for Maine through both direct and competitive funds in the areas of transportation, resilience and environmental protection, energy programs and building efficiency, and broadband and technology.[81]

Transportation electrification investments translate to jobs for Mainers. Electrified transportation is a fast-growing source of high-paying jobs.[82] Nation-wide, EV makers added about 22,000 jobs in 2021, with faster growth projected in 2022.[83] Maine already has almost 12,500 clean energy jobs, with 915 in the clean vehicles sector.[84] And these jobs have the potential to pay more than the average across all industries, as evidenced in certain states already.[85]

To ensure that Maine takes advantage of all available IIJA and IRA benefits, it is crucial that Maine take a strong transportation electrification stance and adopt the full rule. The partial rule before the Board would cut short the state's ability to reap the economic, health, and equity opportunities provided through IIJA and IRA investments.

B. The Full Rule Will Save Lives and Millions of Dollars in Health Costs for Maine

The ACC II will slash tailpipe pollution, with huge benefits for air quality and public health. In June 2022, the Health Effects Institute's extensive review of traffic pollution-related health effects literature concluded that exposure to traffic pollution is linked with heart disease, lung cancer mortality, acute lower respiratory infections in children, and asthma onset in both children and adults.[86] The American Lung Association estimates that from 2020 to 2050, an emissions-free transportation sector would help avoid 110,000 premature deaths, 2.78 million asthma attacks, and 13.4 million lost workdays nationwide.[87]

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[80] Maine.gov, *Bipartisan Infrastructure Law*, http://www.maine.gov/bil (last accessed July 31, 2023).
[81] *Id.*
[82] U.S. Department of Energy, *United States Energy and Employment Report 2023*, at vi, available at https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20EXEC%20SUMM-v2.pdf (The number of U.S. energy sector jobs grew 3.8% from 2021 to 2022, and clean energy jobs grew 3.9%, outpacing overall U.S. employment, which increased 3.1% in the same time period.").
[83] E2, *Clean Jobs America 2022* (Aug. 2022), at 2, https://e2.org/wp-content/uploads/2022/08/E2-FS-2022-Clean-Jobs-America.pdf.
[84] *Id.* at 10.
[85] In California for example, which of course is not Maine and is very different from Maine, the EV industry pays an average annual wage of $91,300, well above the average annual wage across all industries of $68,500. Los Angeles County Economic Development Corporation, *Energizing an Ecosystem: The Electric Mobility Revolution in Southern California,* at 37, available at https://laedc.org/wpcms/wp-content/uploads/2020/03/EV_Report_Digital_FINAL_Single_Page.pdf.
[86] Health Effects Institute, Systematic Review and Meta-analysis of Selected Health Effects of Long-Term Exposure to Traffic-Related Air Pollution (updated Apr. 2023), available at https://www.healtheffects.org/system/files/hei-special-report-23_6.pdf.
[87] American Lung Association, *Zeroing in on Healthy Air: A National Assessment of Health and Climate Benefits of Zero-Emission Transportation and Electricity* at 8 (2022), available at https://www.lung.org/getmedia/13248145-06f0-4e35-b79b-6dfacfd29a71/zeroing-in-on-healthy-air-report-2022 (last accessed July 26, 2023).

The Board's adoption of the full rule would save extra lives and millions of dollars in health benefits above and beyond the proposed rule. ERM projects the proposed rule would cut particulate matter 2.5 ($PM_{2.5}$) emissions 69% by 2050 while the full rule would achieve an 85% reduction in the same year[88] ($PM_{2.5}$ refers to inhalable particular matter that is less than 2.5 micrometers in diameter, that can penetrate lungs and even get into the bloodstream[89]). Likewise, ERM's cumulative $PM_{2.5}$ analysis shows a reduction of 269 more metric tons of $PM_{2.5}$ under the full rule by 2050, as compared to the proposed rule.[90] Air quality benefits in terms of reduced Nitrogen Oxides (NOx) emissions similarly show the full rule's enhanced benefits: ERM expects the full rule to decrease NOx emissions 91% by 2050, nearly 10 percentage points more than the proposed rule, for a cumulative benefit of more than 3,200 metric tons.[91] Nitrogen oxides "are a family of poisonous, highly reactive gases" that play a major role in "produc[ing] ozone (smog) on hot summer days."[92]

These aren't just numbers: reductions in air pollution translates to real, quantifiable positive health outcomes for Mainers. The full rule is projected to save an additional nine Mainers' lives (saving 45 lives compared with the business-as-usual scenario), avoid nine extra hospital visits, and reduce minor health incidents by nearly an additional 5,000.[93] And if avoided mortalities aren't persuasive, the cumulative monetized value of these health benefits ought to be: *$546 million* compared with business as usual—*more than $100 million more* than the partial rule.[94] We urge the Board to adopt the full rule this year; it's no exaggeration to say that Mainers' lives depend on it.

C. The Full Rule Benefits Maine's Environmental Justice Populations More than the Proposed Rule, but Maine Must Maximize these Equity Benefits

As explained above in section II(C), the Board's adoption of the full rule is consistent with the spirit and letter of the Climate Law and Climate Action Plan. The impacts of climate change and air pollution affect all Mainers, but residents in low-income and Black, Indigenous, and people of color communities are especially vulnerable and often face the most severe impacts.

ERM projects full rule adoption to result in 93% in-use EVs in Maine in 2050, compared to only 77% under the proposed rule. As discussed above, this has profound impacts on the amount of cumulative GHG emissions within the state through 2050, as well as the amount of particulate

[88] ERM Report at 9.
[89] U.S. Environmental Protection Agency, *Particulate Matter (PM) Basics*, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#effects (last accessed August 3, 2023).
[90] ERM Report at 9.
[91] *Id.* at 8.
[92] U.S. Environmental Protection Agency, Region 1, Nitrogen Oxides (NOx) Control Regulations, available at https://www3.epa.gov/region1/airquality/nox.html (last accessed Aug 20, 2023).
[93] ERM Report at 10.
[94] *Id.*

matter and NOx emissions in Maine's air. Adopting the full rule instead of the proposed rule will lead to greater cuts in air pollution and cleaner air throughout the state. In addition, because adoption of the full rule results in more new EVs, and more new EVs means more used EVs, the full rule also increases accessibility to personal EVs in all price ranges, allowing the benefits of 100% clean cars to reach all Mainers.

The ACC II also promotes transportation justice by allowing manufacturers to fulfill 5% of their annual ZEV requirement (through MY 2031) by earning environmental justice credits.[95] Manufacturers can earn these credits by selling lower priced EVs, placing EVs at a 25% discount in qualifying 'community-based clean mobility programs,' reselling EVs at the end of their lease to participating dealerships, and by offering financial assistance programs for low-income consumers.[96] We urge state entities to work with community and environmental justice organizations to establish and determine appropriate programs that are eligible to earn these credits. These programs should be clearly established as early as possible to encourage manufacturers to take advantage of them.

In short, adoption of the full rule is imperative to reduce as much on-road air pollution as possible, particularly within communities disproportionately exposed to harmful tailpipe emissions. The Department's implementation of the full rule would align with the equity expectations of the state's Climate Law and Climate Action Plan and will help communities historically overburdened with transportation pollution realize the full benefits of zero-emission vehicles.

V. Maine Is Ready to Adopt the Full ACC II Rule Through 2035

Maine stands poised to enjoy billions of dollars' worth of climate, public health, and cost savings because the ACC II is technically feasible and cost-effective. Maine is ready to adopt the full rule to ensure the state reaches its mandatory climate targets, support Maine businesses and people, and clean up Maine's air.

The rule strikes the right balance between reducing emissions and the challenges of a rapidly developing marketplace. In-depth modeling and analysis underpin the ZEV sales trajectory. The first half of the trajectory, for MYs 2026 through 2030, "aligns with what OEMs have stated in projections of ZEVs and PHEVs."[97] High rates of anticipated and announced electrification growth "indicates manufacturers are not only adding specialty low-volume ZEV models but transitioning high-volume gasoline models into ZEVs."[98] The ZEV trajectory slows in the latter five years in recognition that "the last 20-percent of the fleet will be more challenging to electrify than the first 80-percent."[99] A supportive feasibility analysis was conducted "[t]o understand the

[95] 13 C.C.R § 1962.4(e)(2).
[96] *Id.*
[97] CARB Initial Statement of Reasons, supra note 2, at 40.
[98] *Id.* at 40.
[99] *Id.*

upper bound for ZEV deployments."[100] The rules architects "created scenarios based on approximately 350 individual vehicle model redesign schedules . . . to predict how the industry could successfully redesign each model."[101] The analysis "shows a feasible pathway for manufacturers to introduce new ZEVs at the pace necessary to meet the stringency targets while remaining on a conventional redesign schedule and not having to prematurely terminate or redesign an existing model."[102]

Moreover, the rule's numerous crediting mechanisms give manufacturers ample flexibility to account for unforeseeable market conditions, "year-to-year sales fluctuations" and other challenges to EV sales, particularly in the early years.[103] These flexibilities effectively translate into lower stringency requirements, assisting manufacturers in meeting their annual ZEV percentages in the first phase of the program, and phase out as the EV market expands over time.

The transition to electrified personal cars and trucks is already well underway. Vehicle manufacturers and electric battery makers have announced plans to invest $210 billion to support the nationwide transition to vehicle electrification, while nearly every car manufacturer has committed to increasing the number of ZEV models in their fleets.[104] From 2019 to 2021, the number of battery electric and plug-in hybrids on Maine's roads increased by 90%.[105] Nationally, EV sales grew from 361,000 vehicles in 2018 (about 2% of sales) to 810,000 in 2022 (about 6% of sales).[106] EV sales have now topped 3.9 million, and there are more than 90 electric vehicle models available in the United States.[107] This robust growth bodes well for the success of Maine's Advanced Clean Cars II Program, though it doesn't render it unnecessary; Maine needs the ACC II to ensure ZEV sales are on pace to achieve the state's mandatory climate targets, and so that manufacturers bring the vehicles to Maine rather than prioritizing larger markets. Further, as described above, the expansion of ZEV markets also promises to cut up-front purchase costs, which will in any case be outweighed by fuel and maintenance savings by the time of rule implementation.

Finally, Maine's electricity grid can support adoption of the full ACC II. Maine and the region are already preparing for an electrified future in which both the transportation and heating sectors are significantly decarbonized. The processes and analyses underway are identifying the best pathways for bolstering the grid as well as developing non-grid solutions to accommodate and manage additional electricity demand. Of course, forecasting future load and planning upgrades

[100] *Id.*
[101] *Id.*
[102] *Id.* at 41.
[103] *Id.* at 42-46.
[104] N. Gabriel, E.V. Hub, *$210 Billion of Announced Investments in Electric Vehicle Manufacturing Headed for the U.S* (Jan. 12, 2023), available at https://www.atlasevhub.com/data_story/210-billion-of-announced-investments-in-electric-vehicle-manufacturing-headed-for-the-u-s/.
[105] Clean Transportation Roadmap at 1.
[106] Energy Innovation, supra note 68, at 4.
[107] Veloz, *California Electric Vehicle Market Report*, https://www.veloz.org/ev-market-report/ (last accessed Aug. 27, 2023).

has long been a duty of utilities and regional transmission organizations. By setting a defined trajectory for transportation electrification, the full ACC II will aid these efforts by enhancing predictability; this will better enable utilities, regulators, and system operators to forecast, system plan, permit, and build-out infrastructure to accommodate growth. The Board can adopt the rule confident that state and regional entities with jurisdiction over the electricity grid will march ahead in tandem.

While doomsday electrification scenarios assume unmitigated increases in peak electricity demand, relevant Public Utilities Commission (PUC) proceedings are underway to manage and facilitate this load growth. Because electric vehicles have flexible electricity demand (i.e. they can charge any time they are not being driven, and charging time is usually shorter than parking time), there are ample opportunities to adjust energy usage to match the supply of electricity at any given time. "Load shifting strategies are also easy to implement for electric utilities and for public consumers and allow for better integration of renewable energy."[108] Simply avoiding charging at peak times can reduce negative impacts on the grid, increasing efficiency and even reducing costs. By sending price signals to electricity customers, utilities can effectively shift charging to off-peak times when electricity demand is lower. This concept, which is pursued through time varying rates and other mechanisms, is being explored in rate design dockets at the PUC. For instance, the PUC recently approved rate designs for Central Maine Power and Versant Power to incent electric vehicle and heat pump load shifting.[109] In a subsequent rate-making and its follow on proceeding, the PUC and stakeholders are considering options to shift usage away from the summer peak; incentivize the use of heat pumps and other beneficial electrification heating technologies during winter; complement the incentives and programs offered by Efficiency Maine Trust; and target optimized use of electric vehicles and heat pumps, as well as time-of-use rate structure.[110]

Further, the PUC is assessing the current electricity grid and ways to meet future demand. In one docket, the PUC considers utility grid plans to assist in the cost-effective transition to a clean, affordable and reliable electric grid, including by identification of cost-effective near-term grid investments and operations needed to achieve the priorities.[111] Moreover, the PUC has conducted a comprehensive examination of the design and operation of the electric distribution system in Maine to accommodate the increasing integration and operation of distributed energy resources and the potential for a substantial increase in load resulting from climate change policies and initiatives encouraging electrification in the heating and transportation sectors.[112]

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[108] CARB, Public Hearing to Consider the Proposed Advanced Clean Cars II Regulations, Staff Report: Initial Statement of Reasons (Apr. 12, 2022), at 32, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf.
[109] *Maine Public Utilities Commission*, Commission Initiated Investigation into Transmission and Distribution Utility Rate Design to Promote State Policies, No. 2021-325.
[110] *Central Maine Power Company*, Request for Approval of a Rate Change – 307 (7/30/23), No. 2022-152.
[111] *Maine Public Utilities Commission*, Proceeding to Identify Priorities for Grid Plan Filings, No. 2022-322.
[112] *Maine Public Utilities Commission*, Investigation of the Design and Operation of Maine's Electric Distribution System, No. 2021-039.

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Maine is not alone in considering the needs of extensively electrified transportation and heating sectors. The regional transmission organization, ISO-NE, is conducting a 2050 Transmission Study assessing future summer and winter transmission needs due to electrification.[113] The study will develop roadmaps for addressing regional load increasing to as much as 57 GW in winter—that is, 2-3 times bigger than our current grid.[114]

Part of planning for widespread vehicle electrification is also recognizing the enormous potential benefits of aggregated EVs serving as distributed grid resources.[115] Renewable generation, including wind and solar, will feature prominently in low-carbon electricity systems. Battery storage will play an increasingly significant role in balancing intermittent supply and increasing demand. Electric vehicles are essentially electricity storage units on wheels, and therefore could be beneficial grid assets—potentially significant ones.[116] The possibility of electric vehicles providing grid services continues to be explored, but the Board should not overlook this facet of transportation electrification.

VI. Conclusion

Failure to adopt the ACC II rule by the end of 2023 means that Maine will miss out on MY 2027, detrimentally impacting the state's ability to comply with its 2030 mandatory climate target. While adoption of the partial ACC II rule is far better than not adopting the rule at all, Maine will lose out on more than $4 billion in benefits through 2050—including the loss of nine unnecessary lives—and jeopardize the 2050 mandatory climate target by adopting the partial rule instead of the full rule.

Maine is ready for swift adoption. We urge the Board to adopt the full rule, harnessing staggering public health, environmental, and economic benefits for the state.

We thank you for the opportunity to comment on this rule.

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[113] *See, e.g.,* ISO-NE, *2050 Transmission Study, Key Takeaways and Transmission Development Roadmaps* (July 25, 2023) https://www.iso-ne.com/static-assets/documents/2023/07/a10_2023_07_25_pac_2050_study.pdf.
[114] *Id.*
[115] *See, e.g.,* Vermont Responsiveness Summary, supra note 76 at 11 ("There is potential for V2G integration to help supply electricity during peak hours, provide an extra power source during times when renewable energy sources, such as solar, are unavailable, and supply power during electrical outages. EV owners can be compensated for sending electricity back into the grid at peak demand events, thereby reducing demand.").
[116] C. Xu et al., Nature Communications, *Electric vehicle batteries alone could satisfy short-term grid storage demand by as early as 2030* (Jan. 17, 2023), available at https://www.nature.com/articles/s41467-022-35393-0.

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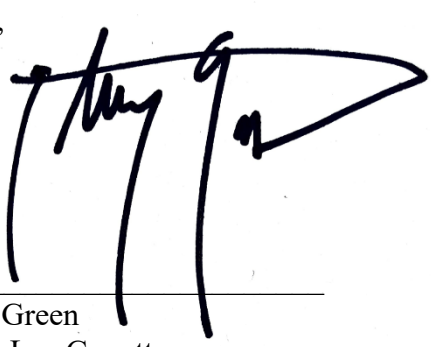
Sincerely,



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- Attachment A: ERM, *Comparison of Maine Adoption of ACC II Results: Through 2032 vs. 2035* (Aug. 17, 2023)
- Attachment B: ERM, *Comparison of Maine Adoption of ACC II Results: Through 2032 vs. 2035, Fact Sheet* (Aug. 17, 2023)

Attachment A

Comparison of Maine Adoption of ACC II Results: Through 2032 vs. 2035

August 17, 2023

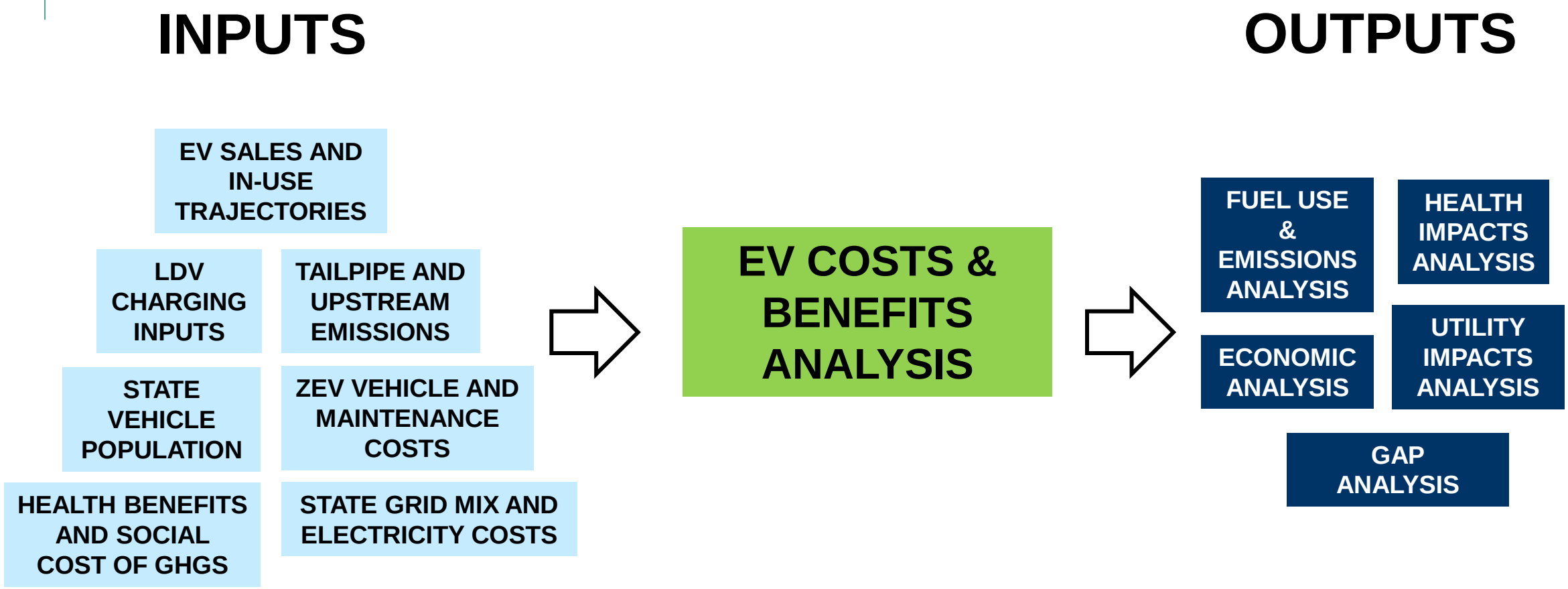
The business of sustainability

ERM

Agenda

- Modeling Framework
- Scenarios
- ZEV Vehicle Population
- Climate Benefits
- Air Quality Benefits
- Cumulative Health Benefits
- Utility Impacts
- Charging Infrastructure
- ZEV Owner Benefits
- Jobs and GDP Impacts
- Cumulative Net Societal Benefits

Modeling Framework Schematic

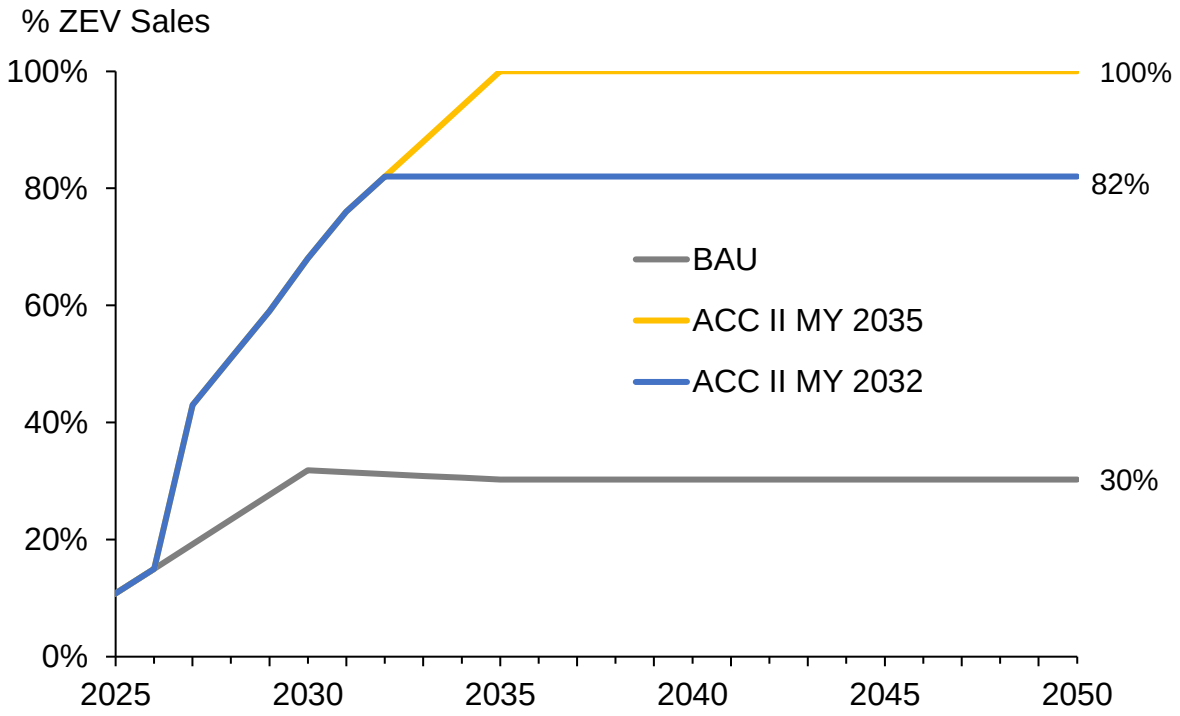


Detailed Model Outputs

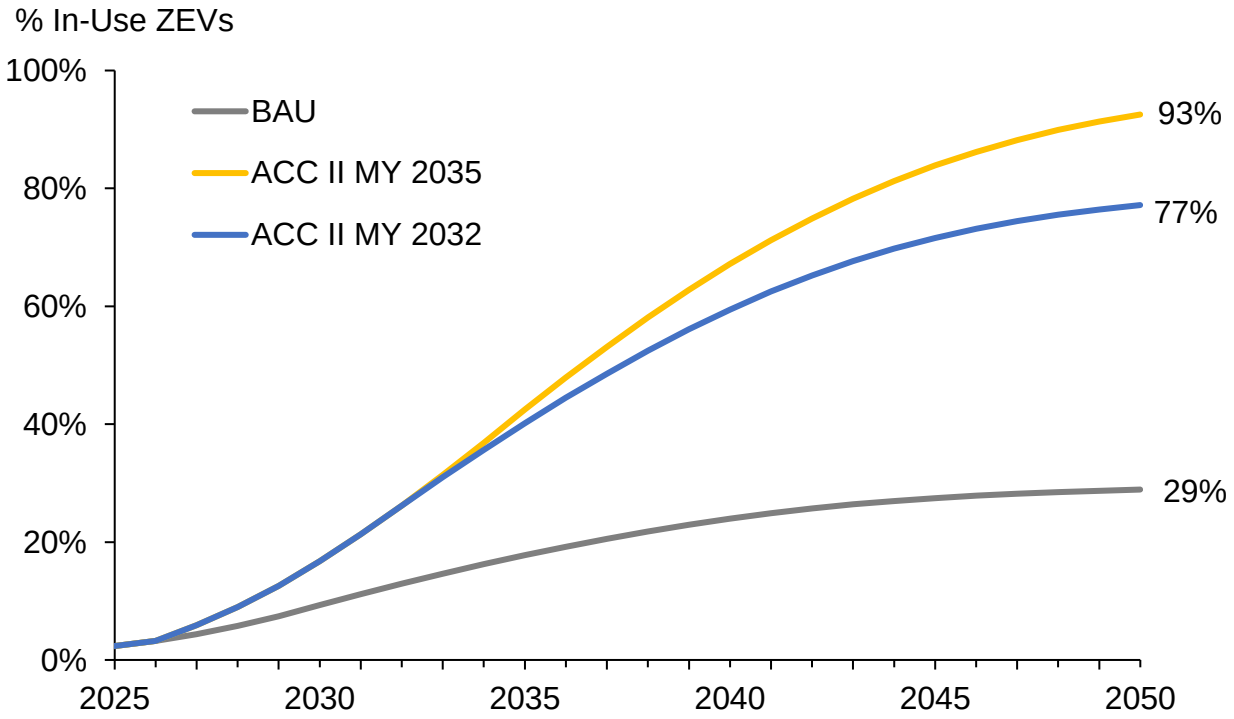
FUEL USE & EMISSIONS ANALYSIS	▪ Δ Fuel use (diesel, gasoline, electricity) ▪ Δ GHG emissions (CO_2, CH_4, N_2O) and criteria pollutants (NOx, PM2.5), including both tailpipe and upstream emissions ▪ Monetized value of net emission reductions
HEALTH IMPACTS ANALYSIS	▪ Δ Premature deaths due to lower NOx and PM emissions ▪ Δ Hospital visits & asthma incidents due to lower NOx and PM emissions ▪ Monetized value of net health benefits
ECONOMIC ANALYSIS	▪ Δ Spending on vehicle purchase, fuel, and maintenance ▪ Charging infrastructure investments ▪ Jobs and GDP Impact
UTILITY IMPACTS ANALYSIS	▪ Δ Electricity use and load ▪ Utility net revenue ▪ Impact on electricity rates
GAP ANALYSIS	▪ Estimate of state-level charging infrastructure needs

Modeled Scenarios

- **Business-As-Usual (BAU)**
  - ZEV sales grow moderately particularly driven by the IRA and current Federal standards
- **ACC II MY 2035**
  - ME adopts the full ACC II regulation requiring the state to reach 100 percent ZEV sales by MY 2035. Sales hold steady in future years.
- **ACC II MY 2032**
  - ME adopts ACC II only through MY 2032 when ZEV sales reach 82%. ZEV sales are held at 82% for future years

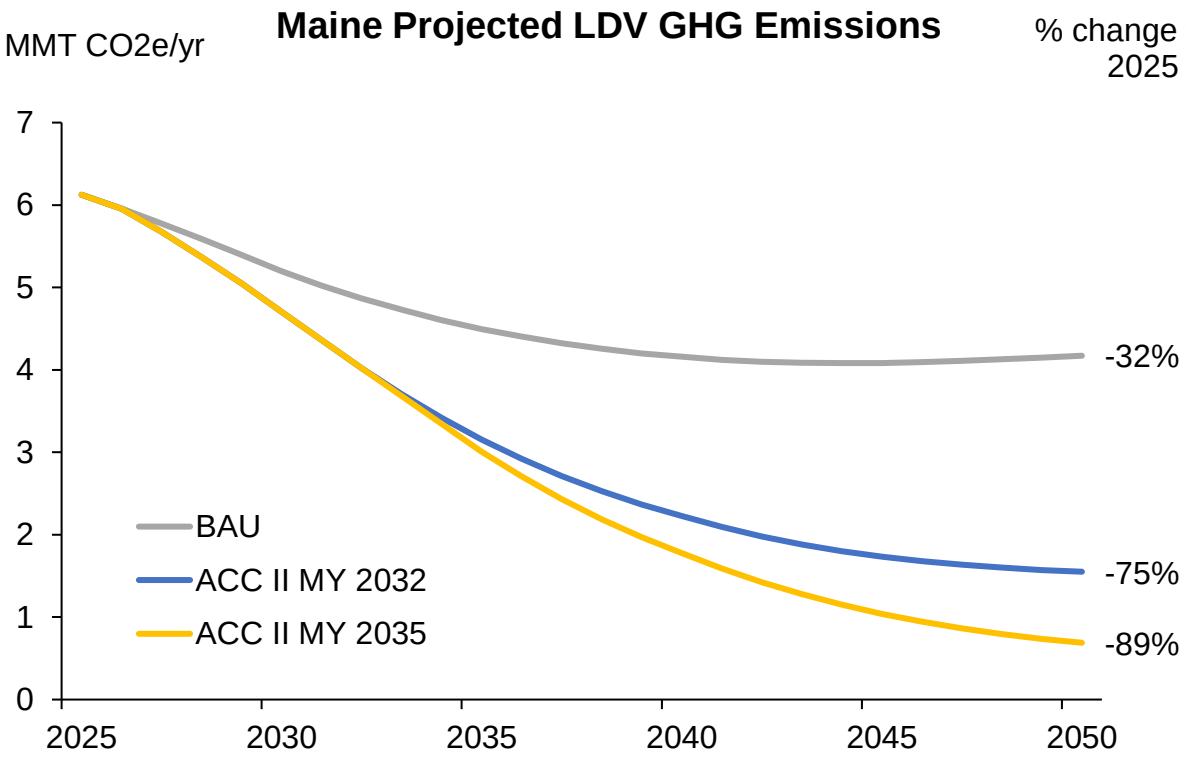


ZEV Population



- The ZEV population is derived from a fleet turnover model that incorporates vehicle survival rates as well as projected growth
- The ACC II MY 2035 scenario results in a significantly higher population of ZEVs by 2050 compared with a scenario held at 82% sales
- This represents a gap of about **230,000 vehicles** (roughly **15%** of the projected 2050 vehicle fleet)

Climate Benefits

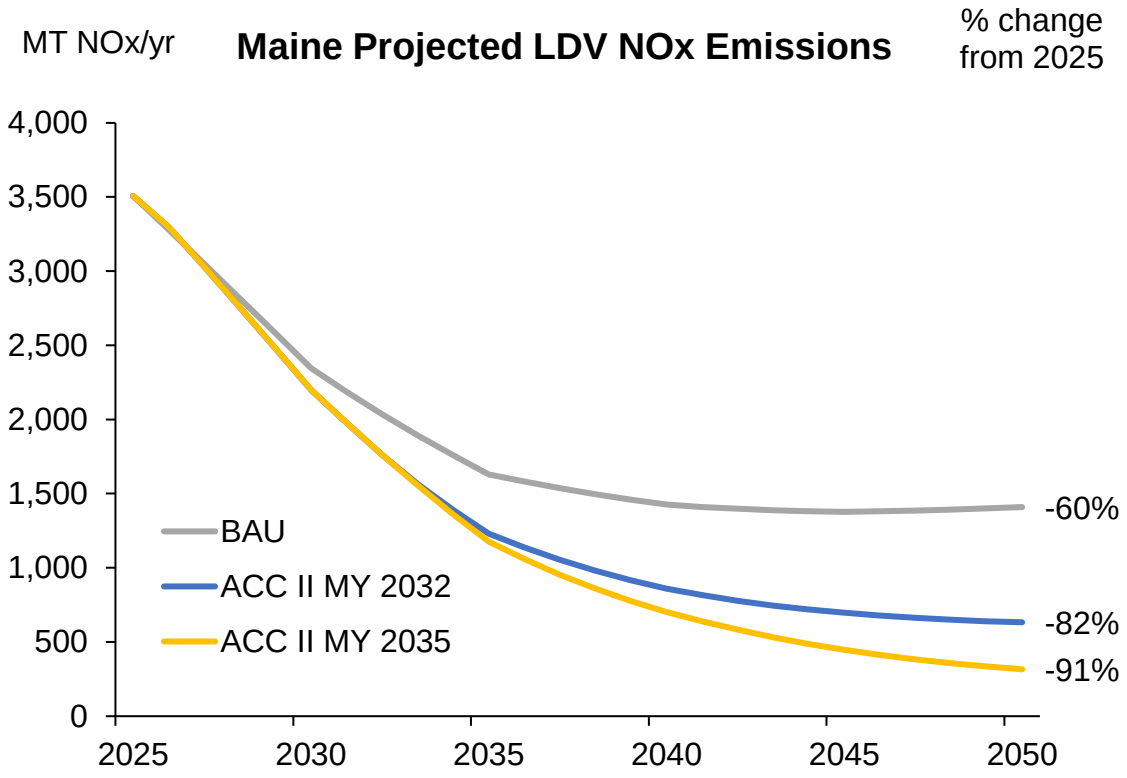


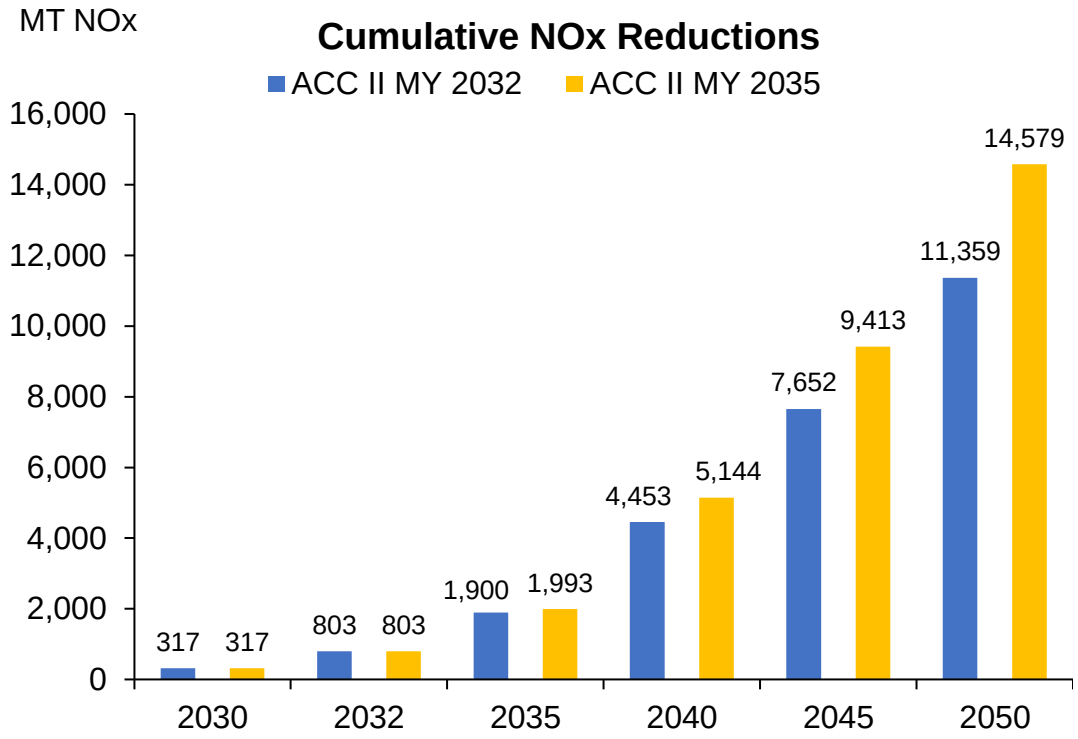
- As the ZEV population grows and part of the LDV fleet turns over to more efficient ICE vehicles, annual CO2e emissions are cut by **~ 89%** in 2050 compared to 2025 in the ACC II MY 2035 Scenario, versus by about **~75%** in the ACC II MY 2032 Scenario.
- In the ACC II MY 2035 Scenario, cumulative reductions reach close to **50 million MT of CO2e** (2027 through 2050) providing a benefit of **$3.9 billion** by 2050, as compared with **40 million MT of CO2e** and **$3.2 billion** for the ACC II MY 2032 Scenario.
- Climate benefits were monetized using IPCC's Social Cost of GHGs

Note: Maine does not have estimates of total LDV GHG emissions in 1990 for percent change comparison to 2050 projections. ERM estimated these emissions to be 6.8 MMT CO2e, based on 1990 transportation sector CO2 emissions from fuel combustion from Maine DEP GHG Report https://www.maine.gov/dep/news/news.html?id=1988154, assuming 62% of these emissions are from LDVs based on 1990 data from EPA U.S. GHG Inventory as proxy for Maine https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf. Resulting estimate of 1990 LDV CO2 emissions from fuel combustion increased to total CO2e based on ERM analysis, informed by tailpipe and upstream emissions factors from GREET used in projection analysis. GHG emission reductions achieved by 2050 compared to 1990 amount to 39%, 77% and 90% for BAU, ACC II MY 2032 and ACC II MY 2035 scenarios respectively.

For simplicity and consistency with federal projections, ERM's "clean electricity generation" mix includes biomass, although ERM recognizes there are emissions associated with this category of fuel sources. Biomass is projected to comprise less than 1% of the fuel mix and the impacts of this inclusion are therefore nominal.

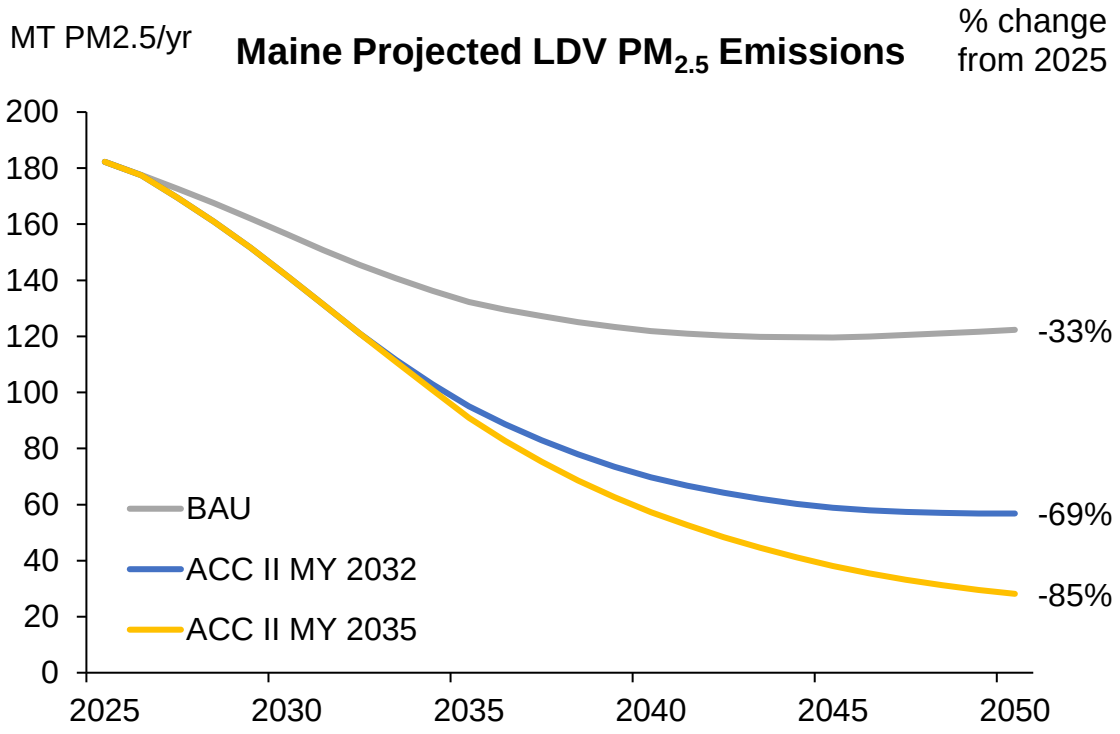
Air Quality Benefits – NOx Emissions

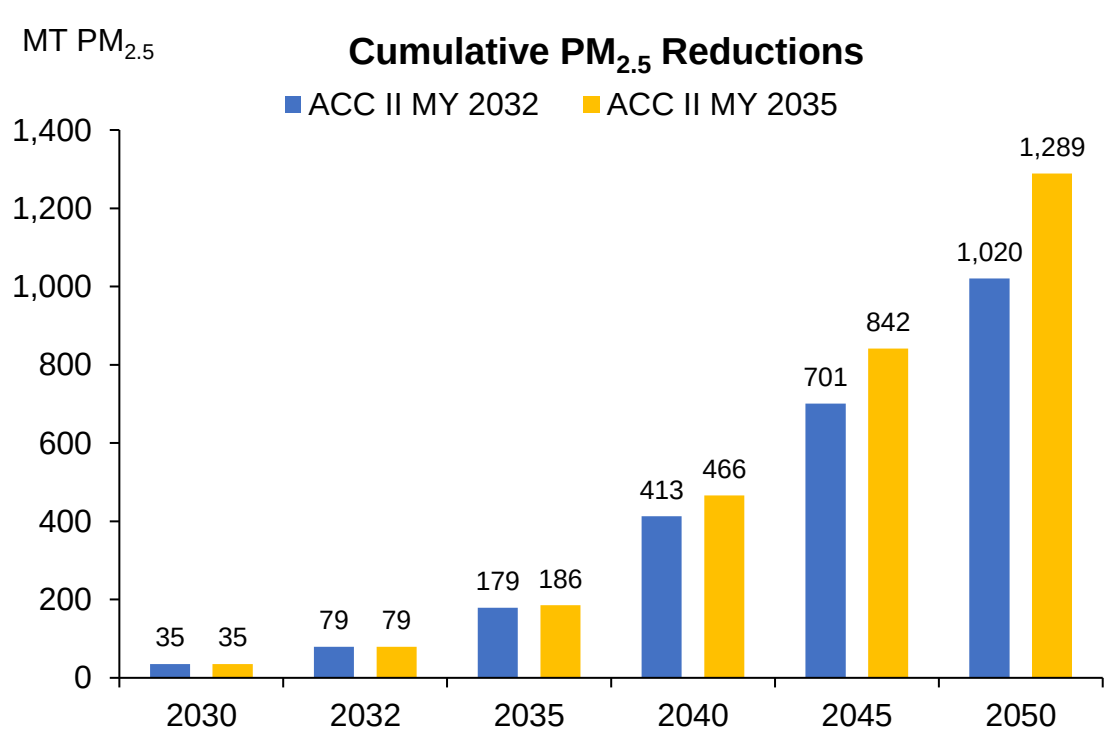




The ACC II MY 2035 Scenario results in **91% reduction of NO_X emissions** by 2050 with a cumulative reduction of almost **14,600 MT** between 2027 and 2050; whereas the ACC II MY 2032 Scenario results in an **82% reduction** by 2050 and nearly **11,400 MT** in cumulative reductions

Air Quality Benefits – PM2.5 Emissions





The ACC II MY 2035 Scenario results in **85% reduction of $PM_{2.5}$ emissions** by 2050 with a cumulative reduction of almost **1,300 MT** between 2027 and 2050; whereas the ACC II MY 2032 Scenario results in a **69% reduction** by 2050 and just over **1,000 MT** in cumulative reductions

Cumulative Health Benefits

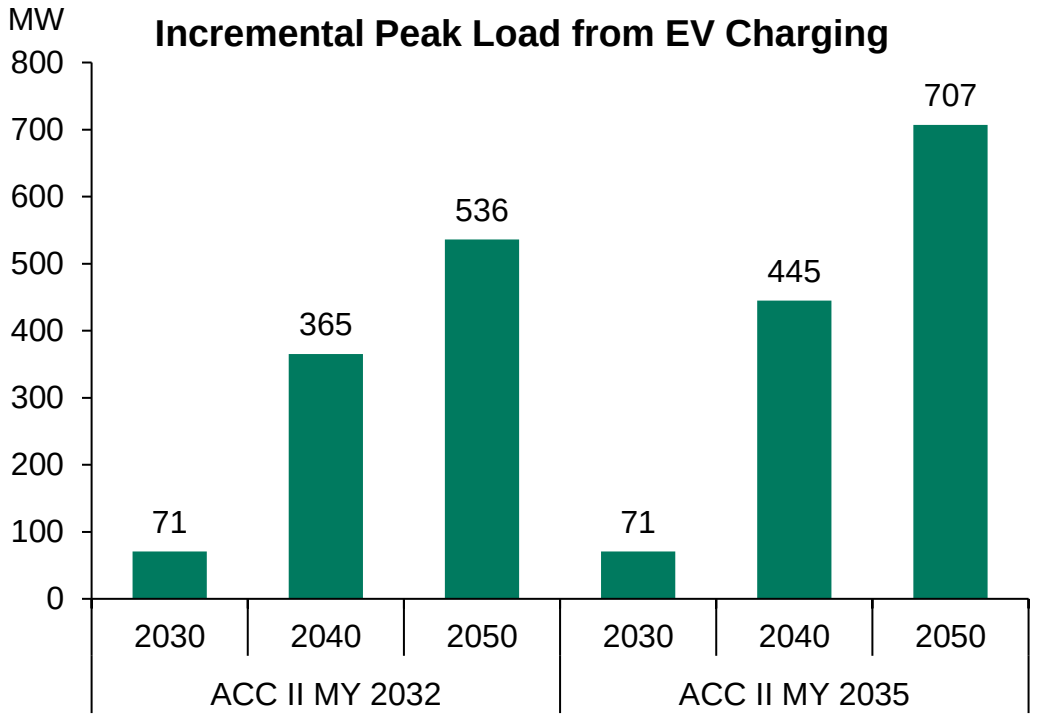
- Reducing criteria pollutant emissions improves air quality and leads to health outcome improvements.
- To convert emission reductions into health benefits, EPA's COBRA model was used.

	Cumulative Reduction by 2050 (MT)		Cumulative Reduced Incidents			Monetized Value (2021$ mill)
	NOx	$PM_{2.5}$	Mortality	Hospital	Minor*	
ACC II MY 2032	11,359	1,020	36	33	20,056	$438
ACC II MY 2035	14,579	1,289	45	42	24,945	$546

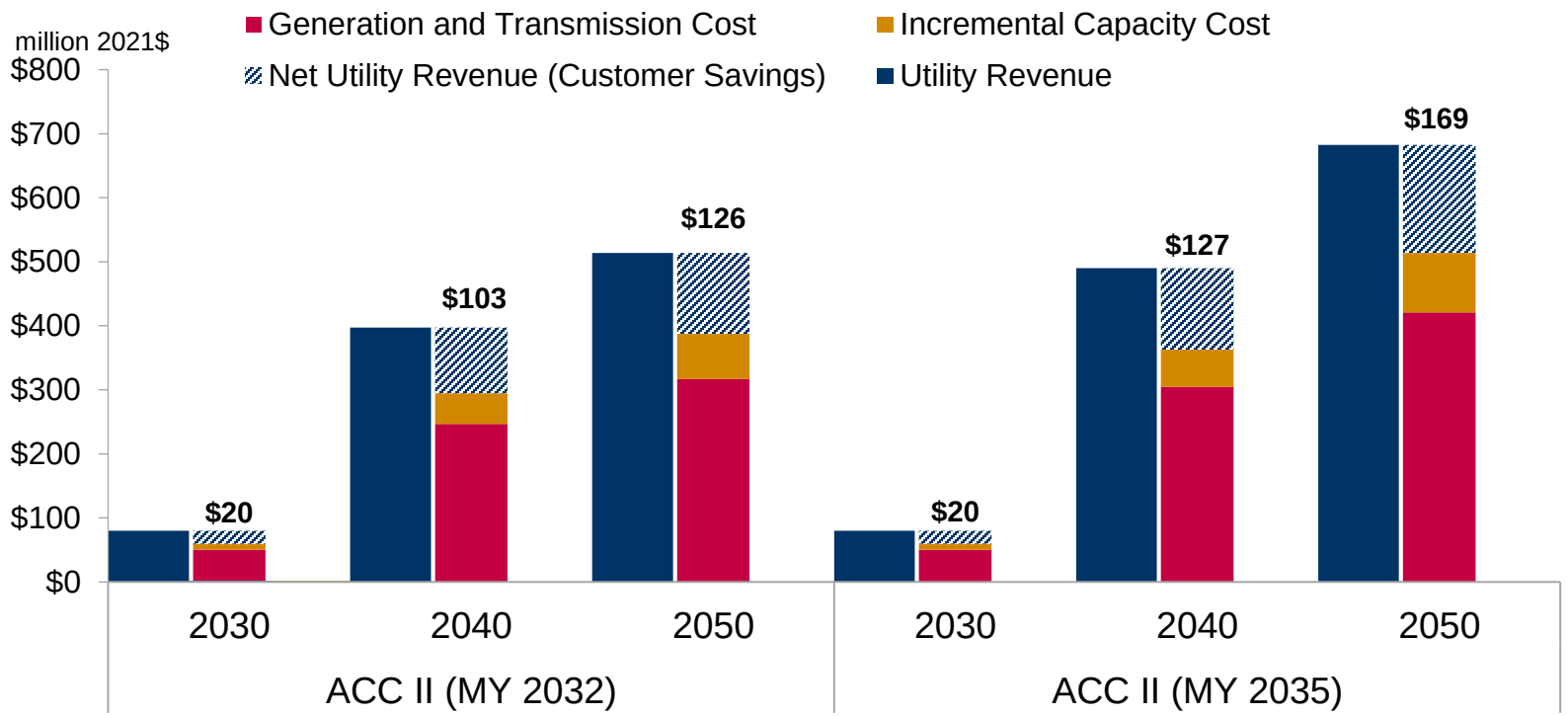
* *Minor health incidents include cases of acute bronchitis and other respiratory symptoms (not resulting in hospitalizations), restricted activity days and lost workdays*

Utility Impacts

- This analysis assumes widespread managed home charging, shifting 70% to off peak hours. This allows ME utilities to minimize grid infrastructure upgrades
- By increasing the efficiency of the grid, and increasing revenue in excess of utility costs, LDV electrification in ME has the potential to reduce electric customer rates.
- LDV electrification drives up utility revenue at the same time it drives up utility costs (e.g. for generation and transmission and incremental capacity). The increased utility revenue exceeds increased costs in both scenarios for every year, resulting in customer savings.



Utility Impacts Continued

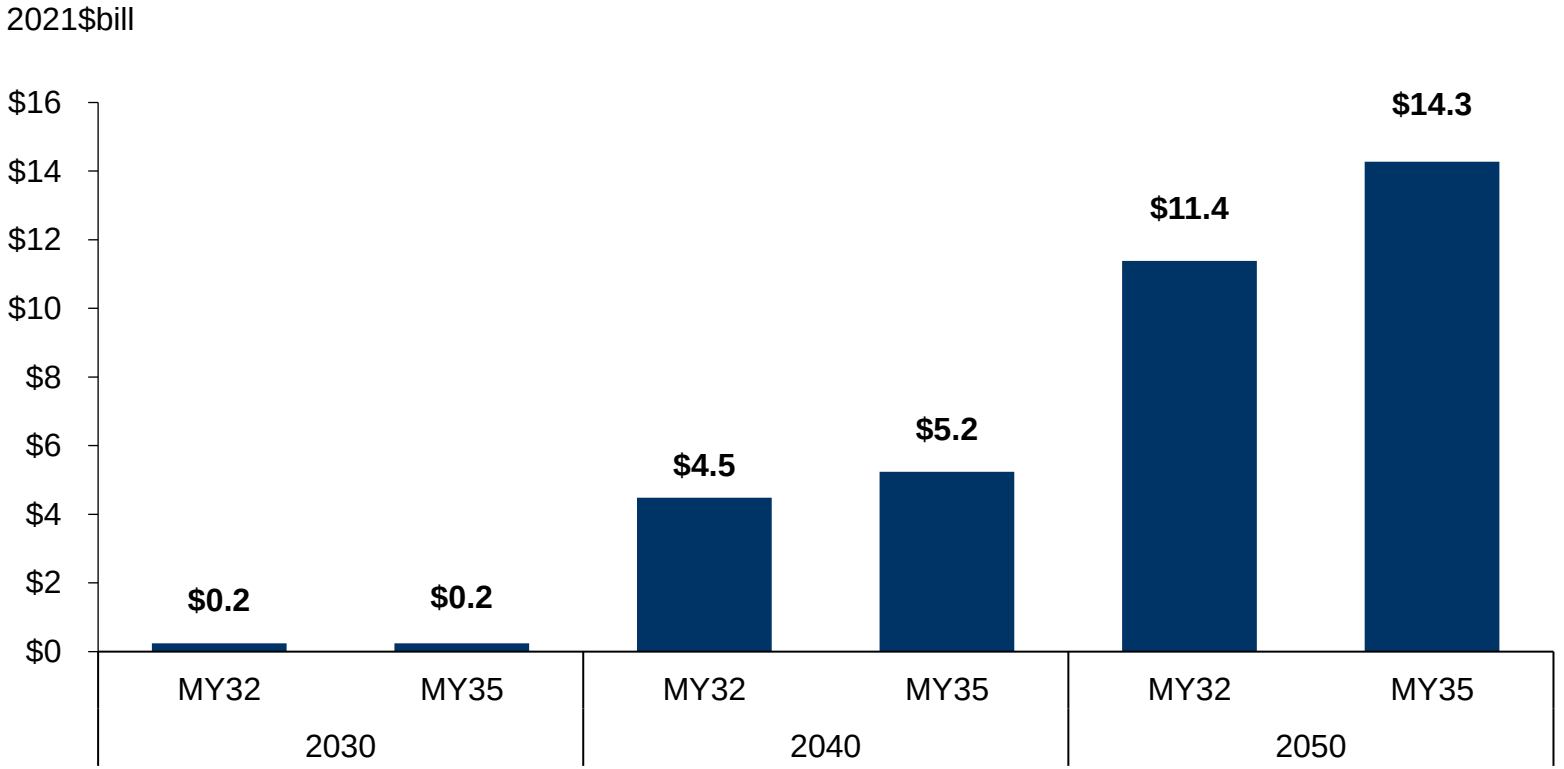


Under the ACC II MY 2032 scenario, annual customer savings are projected to be **$20 million in 2030, rising to $103 million in 2040 and reaching $126 million in 2050**.

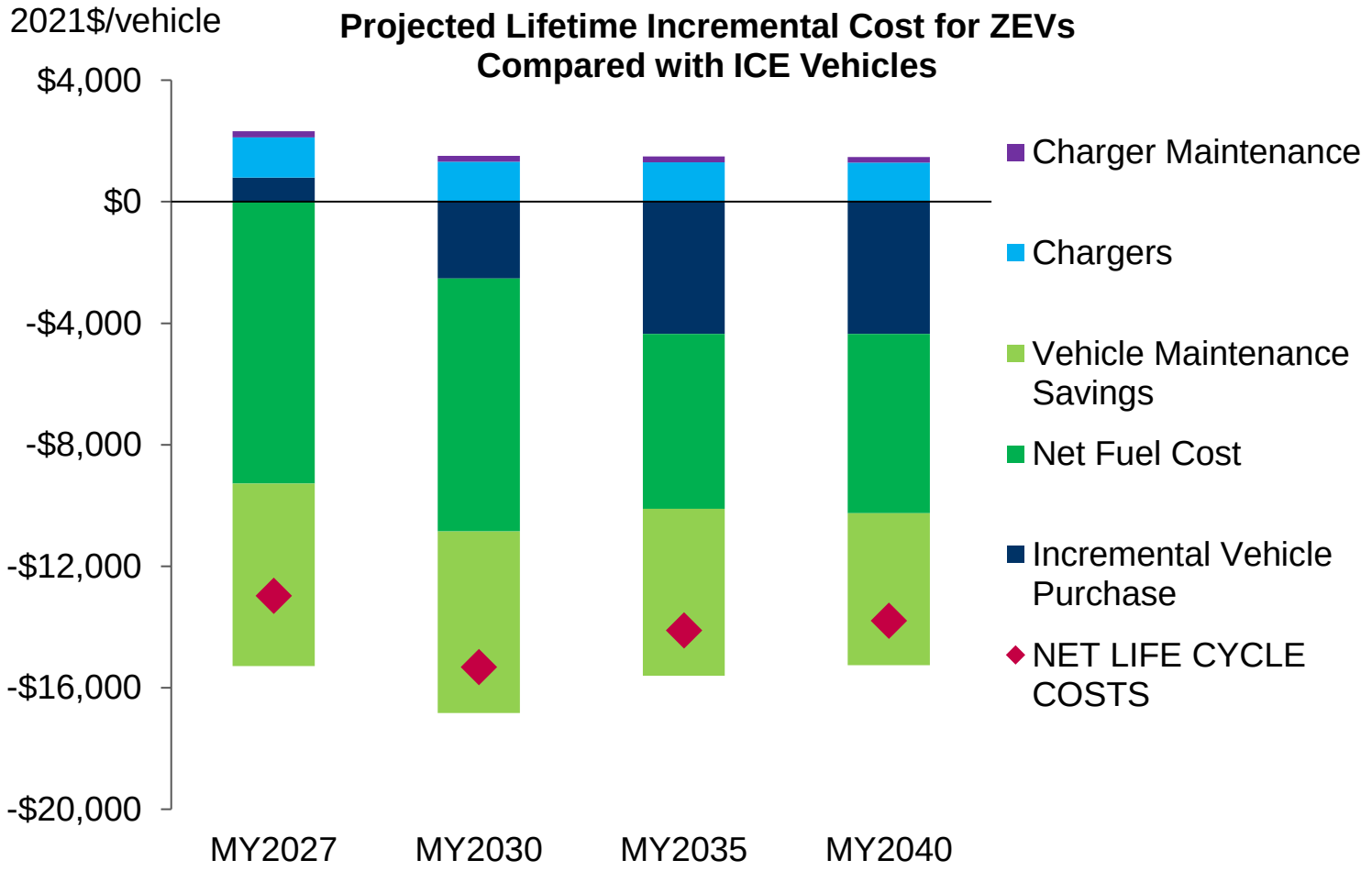
Under the ACC II MY 2035 scenario, annual customer savings are projected to be **$20 million in 2030, rising to $127 million in 2040 and reaching $169 million in 2050.**

ZEV Owner Benefits

- ZEV owner benefits are the net difference of positive costs (incremental cost of purchasing a ZEV, cost of purchasing chargers and their maintenance) and owner savings (fuel and maintenance savings of owning a ZEV)
- ACC II MY2035 scenario results in more than **25%** higher cumulative owner benefits by 2050 compared with an ACC II MY2032 scenario

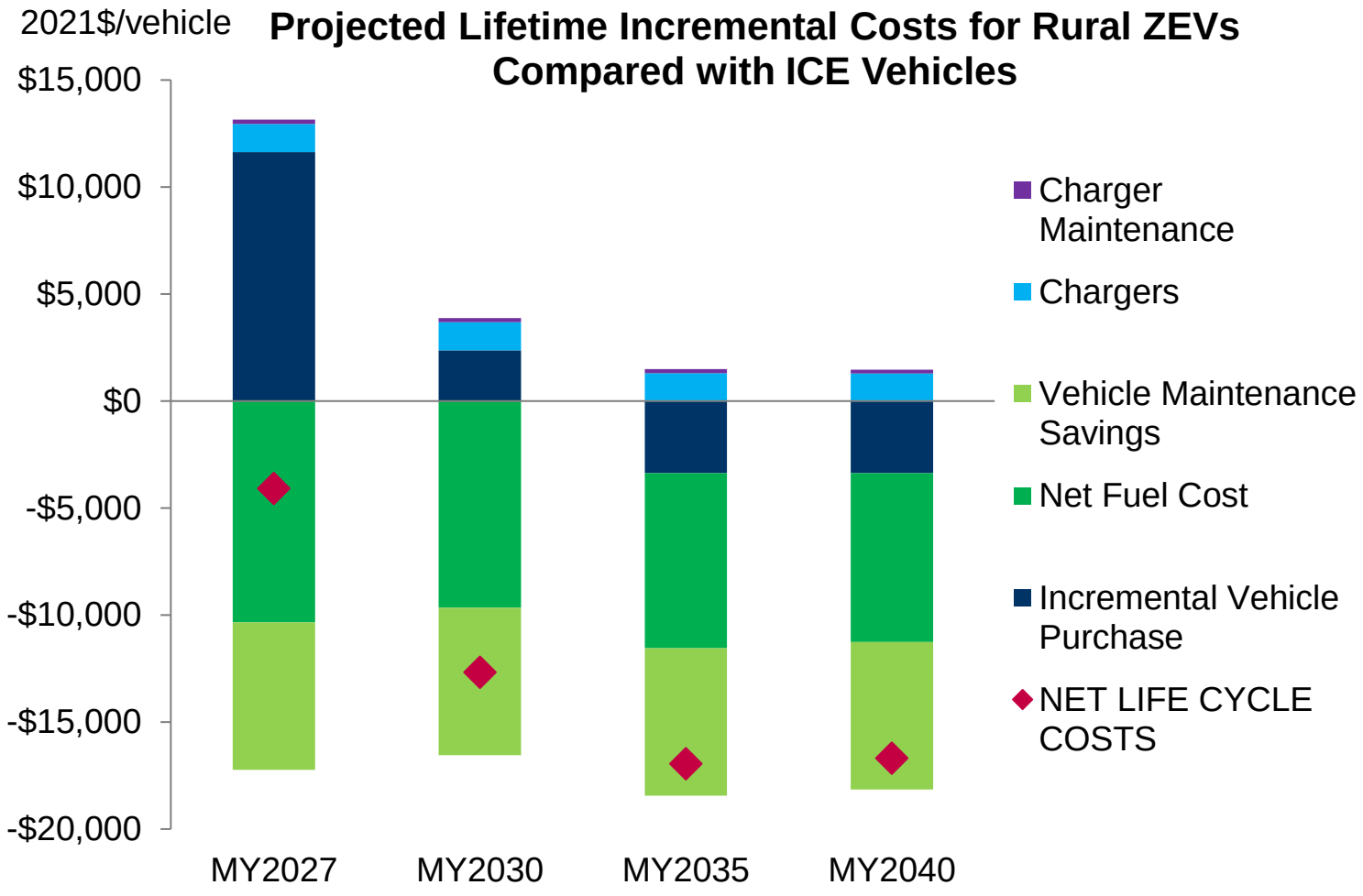


Average ZEV Owner Net Lifecycle Costs



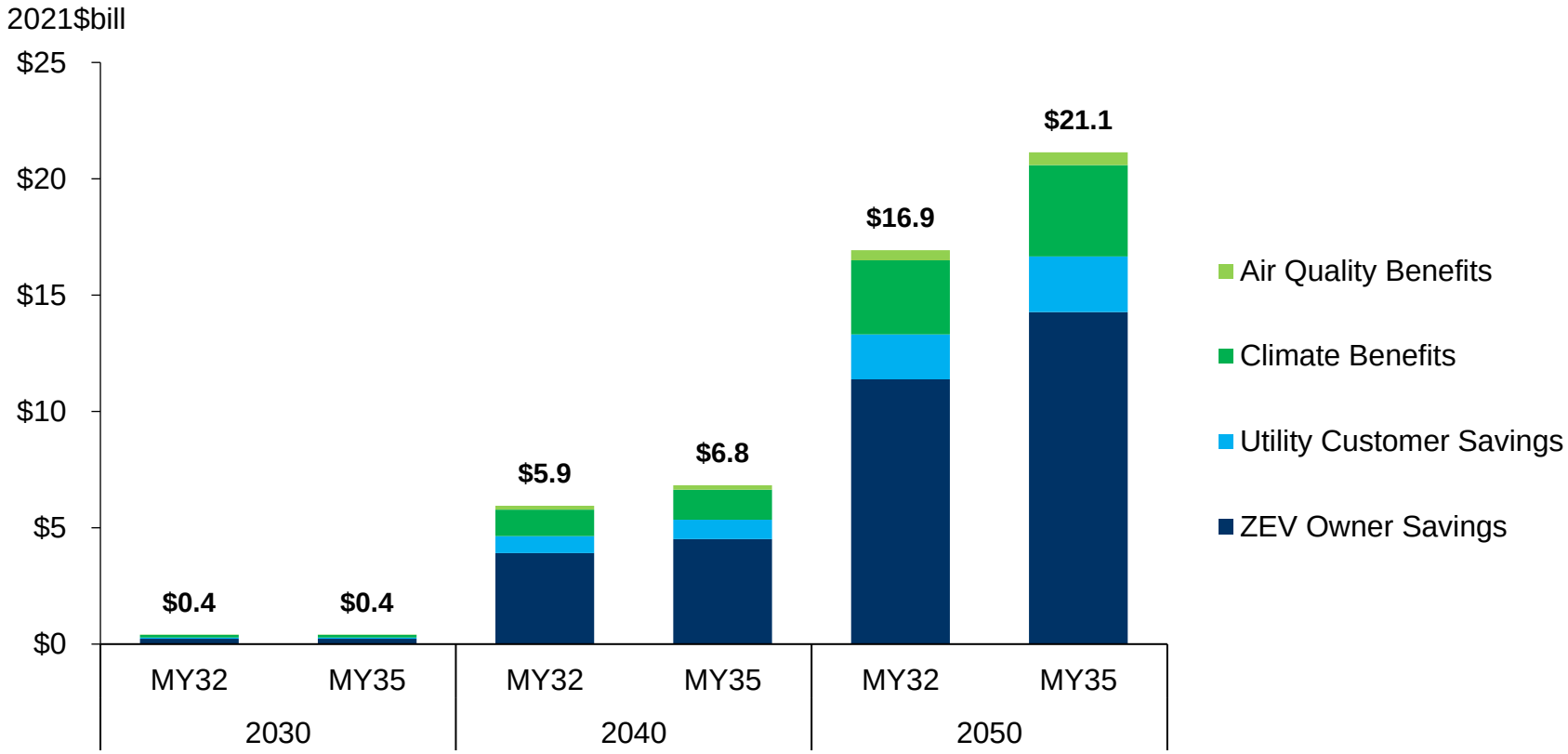
- By MY2030, ZEV owners save more than $15,000 in lifetime costs as compared to a conventional vehicle.
- Even with MY2027 vehicles when ZEV purchase prices are higher, the decrease in fuel and maintenance costs mean lifetime savings for the vehicle owner.
- Assumed 16-year lifetime and 3% discount rate.
- Using a 7% discount rate still results in substantial savings.

Average ZEV Owner Net Lifecycle Costs – Rural Owners



- After MY2030, savings to more than $12,000 due to the incremental purchase cost of the ZEV becoming less expensive than a comparable ICE vehicle.
- Even with MY2027 vehicles when ZEV purchase prices are higher, the decrease in fuel and maintenance costs mean lifetime savings for the vehicle owner.
- Assumed 16-year lifetime and 3% discount rate.
- Using a 7% discount rate still results in substantial savings.

Cumulative Net Societal Benefits



Between 2027 and 2050, cumulative net societal benefits reach **$21.1 billion for the ACC II MY 2035 Scenario; $4.2 billion more than the ACC II MY 2032 Scenario.**

Jobs and GDP Impacts

METRIC		ACC II MY 2032			ACC II MY 2035		
		2030	2040	2050	2030	2040	2050
Net Change in Jobs		3,104	978	922	3,104	1,404	974
Net Change in GDP (2021$ Millions)		$520	$310	$340	$520	$410	$430
Average Annual Compensation	Added Jobs	$103,326	$95,135	$93,690	$103,326	$95,298	$94,367
	Replaced Jobs	$66,172	$61,482	$60,873	$66,172	$61,796	$60,755

Benchmarking ERM analysis to other studies

ERM compared this work to several other studies, and the message is clear:
Full adoption of zero emission vehicle regulations (ACC II) through 2035 provides significant benefits to the climate, local air quality and state economy

ERM comparison to **Energy Innovation's** Energy Policy Simulator (EPS) and **ICCT's** Emission Summary fact sheet results for Maine finds parallels across all three studies:

- GHG emissions reductions range from **66% to 89%** from 2025 levels by 2050*
- Health benefits, such as **42 to 49 less** hospital visits and/or asthma attacks
- Cumulative ZEV owner savings of **$10.5 to $14.3 billion**
- Greater than **500 million gallons** of petroleum fuel use reduced through 2050*

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** ICCT's fact sheet provides benefits through 2040*

Note: Modeling platforms, such as the ones analyzed as part of this benchmarking, are optimized to produce scenario results based on a set of assumptions. ERM did not perform a review of all these assumptions and focused the comparison on modeling outputs and findings associated with potential implementation of ACC II policy.

Thank you

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Attachment B

The Benefits of the Advanced Clean Cars II Program in Maine: Fact Sheet

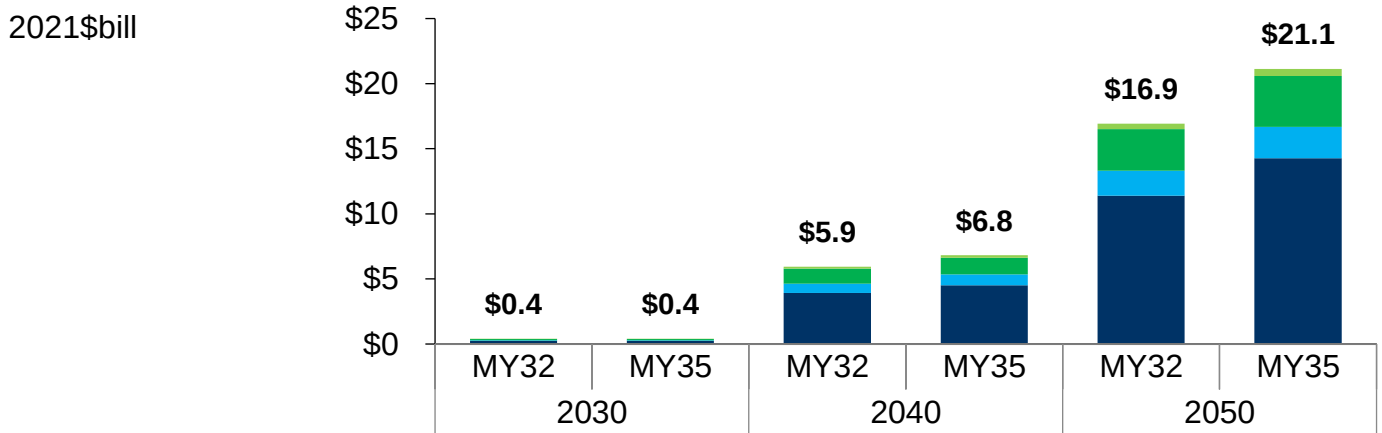
Adoption of the Advanced Clean Cars II ("ACC II") Program in Maine would require vehicle manufacturers to increase sales of light-duty zero-emission vehicles (ZEVs) in the state. This fact sheet compares the environmental, public health, and economic benefits of two versions of the ACC II: 1) the program as proposed, which ends with model year (MY) 2032 and requires vehicle manufacturers to reach 82% ZEV share of new light-duty vehicle (LDV) sales[1]; and 2) the full program, which runs through model year 2035 and requires manufacturers to reach 100% ZEV share of new LDV sales.

To conduct this analysis, ERM modeled ACC II implementation assuming that manufacturers do not use any compliance flexibilities and assuming that Maine reaches 100 percent clean electricity generation by 2040. ERM then looked at compliance ending with MY 2032 (the "ACC II MY 2032 Scenario") versus MY 2035 (the "ACC II MY 2035 Scenario"). Each scenario assumes that the final ZEV sales target required by the ACC II in that scenario holds steady in future years. These two scenarios were compared with a baseline "business-as-usual" (BAU) scenario in which all new LDVs sold in the state continue to meet existing EPA vehicle standards, and ZEV sales increase but never reach more than a third of new vehicle sales each year.

Our analysis projects that in the ACC II MY 2035 Scenario, 93% of the LDV fleet will be zero-emission in 2050, versus a 77% zero-emission LDV fleet in 2050 in the ACC II MY 2032 Scenario, a 16-percentage point decrease. This difference drives additional savings for Maine in the ACC II MY 2035 Scenario for every category modelled.

Net Societal Benefits

ERM modelled net societal benefits including the monetized value of public health and climate benefits, net cost savings for ZEV owners, and net utility customer savings from increased electricity demand for EV charging. In the ACC II MY 2035 Scenario ("MY35" in chart below), Maine's cumulative net societal benefits are more than $21 billion. Whereas, projected net societal cumulative benefits in the ACC II MY 2032 Scenario ("MY32" in chart below) are roughly $4.2 billion lower.



	2030		2040		2050	
	MY32	MY35	MY32	MY35	MY32	MY35
Air Quality Benefits	$0.0	$0.0	$0.2	$0.2	$0.4	$0.5
Climate Benefits	$0.1	$0.1	$1.1	$1.3	$3.2	$3.9
Utility Customer Savings	$0.0	$0.0	$0.7	$0.8	$1.9	$2.4
ZEV Owner Savings	$0.2	$0.2	$3.9	$4.5	$11.4	$14.3
Total	$0.4	$0.4	$5.9	$6.8	$16.9	$21.1

[1] The proposed rule contains a midterm review in which "incorporation of percentage requirements for subsequent years will be determined." The ACC II MY 2032 Scenario models the standard as it is drafted—ending in MY 2032—not as it may be later amended.

Climate Benefits

Adoption of the ACC II in Maine would produce significant reductions in greenhouse gas (GHG) emissions from the LDV fleet, even after accounting for the emissions from producing the electricity needed to power ZEVs. In the ACC II MY 2035 Scenario, GHG emissions are reduced by 89 percent by 2050, for a cumulative reduction of 49.1 million metric tons (MT) of CO2e (2027 through 2050 compared to the BAU Scenario). Whereas, in the ACC II MY 2032 Scenario, GHG emissions approach 75 percent reduction by 2050 (compared to 2025 levels), which corresponds with cumulative reductions of 40.1 million MT of CO2e between 2027 and 2050 compared to the BAU Scenario.

Air Quality and Public Health Benefits

Adoption of the ACC II in Maine would also produce significant reductions in air pollution emissions from the LDV fleet, even after accounting for the emissions from producing the electricity needed to power ZEVs. In the ACC II MY 2035 Scenario, NOx and PM emissions are reduced by 91 percent and 85 percent by 2050, resulting in cumulative reductions of approximately 14,579 MT of NOx and 1,289 MT of PM2.5 compared to the BAU Scenario. Whereas in the ACC II MY 2032 Scenario, NOx emissions exceed an 80 percent reduction, while PM emissions approach 70 percent reduction by 2050 compared to 2025 levels. These reductions correspond with cumulative reductions of 11,359 MT of NOx emissions and 1,020 MT of PM2.5 compared to the BAU Scenario.

These reductions will improve air quality resulting in public health benefits from reduced mortality, hospital visits and lost workdays. The ACC II MY 2035 Scenario saves nine lives compared with the ACC II MY 2032 Scenario, and saves 45 lives compared to BAU:

Cumulative Public Health Benefits of Advanced Clean Cars II Adoption 2027 - 2050

Scenario	Cumulative Reduced Incidents (Counts)			Monetized Value
	Mortality	Hospital	Minor*	(2021$ mill)
ACC II MY 2032	36	33	20,056	$438
ACC II MY 2035	45	42	24,945	$546

* *Minor health incidents include reduced cases of acute bronchitis and other respiratory symptoms and reduced restricted activity days and lost workdays*

Utility Customer Savings

In both scenarios, utility revenue from LDV electrification exceeds increased costs from LDV electrification. This results in net utility revenue, and that translates to savings for Maine consumers. In the ACC II MY 2035 Scenario, Mainers are projected to save $20 million in 2030, rising to $127 million in 2040 and reaching $169 million in 2050. Mainers will save more than $40 million more than in the ACC II MY 2032 Scenario.

ZEV Owner Benefits

The analysis estimated annual incremental costs associated with purchase and use of light-duty ZEVs compared with baseline internal combustion engine (ICE) vehicles that operate on petroleum fuels. The average light-duty ZEV purchased in MY 2027 will result in over $14,000 in lifetime savings thanks to fuel and maintenance savings that outweigh the projected incremental purchase cost (around $800 more than an ICE vehicle) as well as the charger costs. Additionally, for MY 2030 and beyond, the average ZEV purchase price is projected to be lower than the average ICE vehicle, such that ZEV owners will realize savings of more than $15,000 over the lifetime of the vehicle. The ACC II MY 2035 Scenario is estimated to yield $14.3 billion in cumulative net ownership cost savings for Maine ZEV owners between 2027 and 2050, $2.9 billion higher than in the MY 2032 Scenario.