

Greg Pratt

18-7-6



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Eureka, CA 95501

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September 26, 2018

45-Day
Docket No. 1
Table IV.3
1st Board Written

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of the Humboldt Transit Authority, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. Humboldt Transit Authority operates a fixed-route trunk service along the U.S. 101 Corridor as well as an extension to Willow Creek along Highway 299. HTA also provides both intercity and local transit service in the southern portions of the county. In addition, HTA operates intra-city fixed-route service in the City of Eureka under the Eureka Transit Service with a transit fleet comprised of (7) 35' Gillig Low Floors, (17) 40' Gillig Low Floor, (9) Class E Cutaways, and (4) Class C Cutaways. Today, HTA received its first BEV. A 40' Proterra Extended Range electric bus that will be used on the commuter route between the College of the Redwoods and Humboldt State University during peak times. Concurrently, we are in the process of installing an 85 kW PV solar array to help offset the cost of charging. This past June, HTA applied for over seven million dollars to purchase another two electric buses and converting our agency over to a microgrid to prepare for multiple buses. *Greg*

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. **While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.**

B-2

C-5, E-2

The majority of HTA's commuter and intercity routes are 300+ miles which would mean either purchasing more buses for the same service or restructuring the routes. Capital funding for rural agencies is limited, especially when the price tag of the recent BEV we purchased was \$940,000 (before the HVIP). Restructuring routes means more operational costs because of the extra time it takes to "deadhead" buses from the yard to the starting/ending point in the route.

For the last two years we have been told from electric bus manufacturers that the nominal range of the slow charge bus is 200 to 300 miles. HTA's newly purchased extended range Proterra E2 bus, which boasts a nominal range of 250 miles, displayed a range of 90 miles after it was fully charged. Until we get the bus in service and test it, we have no idea what the range will be after factoring in large passenger



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C-5 loads, mountainous terrain, and running all the standard peripherals that are becoming the standard. I would like to see real data from rural operators before setting some of the milestones that are outlined in the ICT.

As you move to finalize the proposed regulation, the Humboldt Transit Authority believes you should be guided by one question: “What will happen to transit service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition to fully electrified bus fleets more closely align with the warnings of California’s public transit agencies?” To help navigate this question, we urge the Air Resources Board to review current range and cost-specific data obtained and provided by both large and smaller operator’s experience as well as unbiased consultants when estimating the actual impact of Innovative Clean Transit on public transit service delivery and review the following considerations:

B-2 • **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – before a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8 • **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

E-10, E-13 In addition, the HVIP is an equitable and efficient process for offsetting the cost of a zero emission bus. However, CARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance the rollout plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful. We urge the Air Resources Board to review and compare purchase orders and actual costs associated with the purchase of CNG/Clean Diesel vehicles and Battery-electric vehicles. Battery-electric buses are more than double the cost of CNG/Clean Diesel Buses after HVIP vouchers. The HVIP program and PG&E transit budgeting are non-dedicated, temporary funding sources available to implement a costly and sometimes unreliable form of technology. Dedicated and reliable funding and incentive programs will allow for continuity of services when implementing the technology.

E-9 • **Delayed Compliance:** The Humboldt Transit Authority strongly supports the delayed compliance for small operators with adopting the rollout plans and purchase mandates. As a small operator, additional time will be needed to secure funding for developing and adopting the rollout plans. Implementation of Innovative Clean Transit may require our agency to purchase and build new storage facilities to meet infrastructure requirements of electric charging stations. The additional time needed to develop the rollout plans support the need for the later purchase



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mandate timeline. The later purchase mandate should also benefit our agency to take advantage of lower vehicle prices as demand increases and supply chains mature. **Humboldt Transit Authority** routes average 300 miles and a largest of being 360 miles and service provided in less ideal ZEB-driving conditions, such as inclement weather and steep grades. Delayed compliance allows our agency to begin purchasing Electric Buses as the technology advances and begins to meet range requirements for our standard routes. Earlier compliance may force our agency to otherwise cut services, some of which provide lifeline services to individuals with limited mobility options.

- **Cutaway Definition:** The Humboldt Transit Authority also supports the proposed definition of a cutaway bus. These vehicles are the workhorse of small transit systems due to their lower capital and operating costs. These vehicles are produced in a wide variety of sizes, and the proposed definition specifying vehicles weight of 14,000 pounds to 26,000 pounds is appropriate. In addition, the rule recognizes that a commercially available zero emission cutaway bus is currently not available.

H-1-2

- **Small Operator Definition:** As an agency that operates **18** vehicles during peak operations but has **37** vehicles total, we urge the Board to reconsider the definition of a “small operator” and use the definition employed by federal and state programs for compliance purposes. The proposed regulations define a small operator as any operator with less than 100 buses. Humboldt Transit Authority urges the Board to rely on the current federal definition that specifies a small operator as having less than 100 buses **during peak operations**. The number “100” is nominal and does accurately portray the size of an operator as a whole. Many vehicles in a fleet may not be regularly used: some may only be used during emergencies or during fleet maintenance, may be retired, or may be vehicles that have met their useful life. We urge CARB not to rely solely on NTD data for the total number of buses because these numbers can represent total buses on the lot including buses being sold or disposed that have met their useful life and back up vehicles used for emergencies.

E-9, E-13

- **Funding Considerations:** We urge the Air Resources Board to consider the vast difference between agencies considered small to both the Federal Transit Administration and California Department of Transportation but not the Air Resources Board. These agencies are traditionally rural or non-profit/ADA providers with inequitable funding in comparison to “other” large operators pooled into the same definition by the Air Resources Board. These agencies have much smaller staffing capacities and current transit employment trends, such as driver and maintenance staff shortages are exacerbated in smaller communities. These agencies often have much larger routes and service areas. Rural transit systems and ADA/non-profit providers face unique challenges that are not considered in the regulation as it exists today due to vague definitional standards.

We respectfully ask that you consider the comments we have provided in addition to those provided by the California Transit Association and the California Association for Coordinated Transportation (CALACT.) Our agency is committed to alleviating providing mobility options to our community and reducing the dependence on single use vehicles. We support efforts to reduce pollution in our community but ask that you consider our comments as to protect California’s transit agencies, and the riders who rely on our service, from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.



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If you have any questions or comments, please feel free to contact me at (707) 443-0826.

Sincerely,

Greg Pratt
General Manger

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board

45-Day
Docket No. 3
Table IV.3
1st Board Written



810 Mission Avenue
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September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of **North County Transit District (NCTD)**, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. NCTD offers services that are a vital part of San Diego's regional transportation network. NCTD moves approximately 11 million passengers annually by providing public transportation for North San Diego County with a transit fleet comprised of 133 full size CNG buses, 9 full size Diesel buses, and 81 gasoline cut-away vans and minivans. NCTD is currently in the process of drafting contracts to purchase 6 Battery Electric Buses (BEB) and related charging equipment thru a partnership with San Diego Gas and Electric (SDG&E) as well as a study to determine the challenges and facility requirements of moving the entire fleet of full size buses to ZEB technology.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. **While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues that must be worked through.**

B-2

As you move to finalize the proposed regulation, **NCTD** believes you should be guided by one question: *"What will happen to transit agencies facing a ZEB purchase requirement, and the riders who rely on our service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition more closely align with the warnings of California's public transit agencies?"* To help navigate this question, the California Transit Association has offered you a series of recommendations designed to manage the risks associated with pursuing the laudable goal of cleaner air for all Californians.

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EXECUTIVE DIRECTOR
Matthew O. Tucker

GENERAL COUNSEL
Lisa A. Winters

We urge you to adopt these recommendations in full, and emphasize the importance of the following two provisions:

B-2

- **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – before a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8

- **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

Only by amending the proposed regulation to include the California Transit Association's recommendations, will you protect California's transit agencies and the riders who rely on our service from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at 760-967-2867.

Sincerely,



Matthew Tucker
Executive Director

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



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COMMISSION

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18-76

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45-Day
Docket No. 4
Table IV.3
1st Board Written

September 27, 2018

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Jane Kim
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Sam Liccardo
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Alfredo Pedrosa
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Association of Bay Area Governments

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James P. Sperring
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Transportation Agency

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Alix Hockelman
Deputy Executive Director, Policy

Andrew B. Fremier
Deputy Executive Director, Operations

Brad Paul
Deputy Executive Director,
Local Government Services

Ms. Mary D. Nichols, Chair
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812-2815

RE: Proposed Innovative Clean Transit Regulation

Dear Ms. Nichols:

Thank you for the opportunity to provide comments on the proposed Innovative Clean Transit (ICT) regulation that will have its first hearing before the CARB Board on September 28. The Metropolitan Transportation Commission (MTC) is the transportation planning and funding organization for the nine-county San Francisco Bay Area. MTC is also the designated recipient of federal transit formula funds in the region, and distributes Federal Transit Administration (FTA) funds to 22 independent transit operators to help procure new buses when fleets are due for replacement.

MTC continues to share CARB's goal of reducing GHG and other emissions through electrification of transit fleets, and is supportive of constructive policies that would accelerate the transition to zero-emission buses (ZEBs). MTC's letter dated July 23, 2018 provided our comments on the Draft Proposed Regulation Summary that was released by CARB staff in June. Since the final proposal going to the Board is consistent with the draft summary, our July 23 comments still stand, but we want to use the new opportunity for public comment to reiterate our views on what we consider the key issues with the regulation.

Funding Issues

Sufficient funding levels continue to be critical to the successful transition to zero-emission fleets. CARB staff's analysis of the proposal acknowledges that up-front capital costs – for the buses and especially for the required charging or fueling infrastructure – will be higher than for conventional buses. MTC staff estimates that these incremental costs for the Bay Area alone will be roughly \$1.9 billion through 2040. CARB's analysis projects that these incremental costs will be more than offset by reduced operating costs for ZEBs, but early adopter transit agencies argue that that conclusion is not supported by their experiences with ZEB operating and maintenance costs.

E-9

Even if CARB's analysis is correct and ZEBs will save money in the long run, there is still a need for additional funding for the incremental capital costs, as operating cost savings would not begin to accumulate until after the buses are in service. CARB staff's proposal suggests that existing federal and state transit funding programs are sufficient, but current funding sources for transit capital projects, such as FTA formula funds, the Transit and Intercity Rail Capital program or the Low Carbon Transportation Operations Program, are already oversubscribed, so relying on those sources for the higher costs of ZEBs and required infrastructure is unrealistic and would diminish funding for other important needs.

The proposal also points to funding programs that are dedicated to clean vehicle technology projects, such as CARB's Heavy Duty Zero Emission Pilot Deployment Program or FTA's LoNo program, but funding from these programs is very limited relative to the demand, which makes getting a grant somewhat akin to winning the lottery – great, but unlikely. If ZEB purchases are to become routine events, transit operators need reliable, recurring funding sources rather than the uncertainty and volatility of discretionary funding programs.

E-8 In our view, the two most suitable current funding sources for the incremental costs of ZEB procurements are programs managed by CARB – the Hybrid Voucher Incentive Program (HVIP) and the Volkswagen Environmental Mitigation Trust. However, ZEBs procured to comply with the purchase requirement schedule would not be eligible for either of these sources; only ZEBs purchased earlier or in greater numbers than required would be eligible.

This policy is intended to create an incentive for early compliance, but operators do not have much discretion over when they procure buses. Buses are typically replaced every 12 to 14 years, and cannot be replaced early due to federal funding requirements. CARB's incentive funding approach will therefore result in inequitable treatment of operators based solely on the vagaries of their bus replacement cycles. For example, a large operator whose next major procurement is due in 2022, the year before the purchase requirement takes effect, could use HVIP funds for all of the ZEBs they purchase, while a similar operator whose next replacement does not start until 2029, when the ZEB requirement would be 100%, would not be eligible for any vouchers.

E-10 Funding for charging, fueling and maintenance infrastructure is of particular concern. Zero-emission conversion has high initial infrastructure investment requirements, as the electric substations and hydrogen fueling equipment are installed for the first buses in service. Over time, the marginal costs of these improvements will be reduced, but operators will need financial assistance to begin their fuel source transition. Further, because the charging and fueling infrastructure for ZEBs is a prerequisite, and not ancillary, to ZEB purchasing, additional funding sources for this purpose need to be identified early in the process for operators to be successful in meeting the deadlines for transition to zero-emission fleets.

HVIP vouchers currently include a small enhancement (additional funds) for infrastructure costs, but CARB staff is proposing to eliminate the enhancement after FY2018-19 to streamline HVIP administration. There are currently no other CARB funding programs that could help cover ZEB-related infrastructure costs. The California Public Utilities Commission recently approved PG&E's expenditure of \$236 million on transportation electrification, but these funds will likely be spent on a variety of transportation sectors besides transit.

E-7 To address these serious concerns, MTC recommends that CARB:

- Seek funding levels for HVIP that are sufficient to provide vouchers for all ZEBs procured in the state (other than those funded with VW Trust funds);
- Redirect funding from CARB's discretionary funding programs to HVIP to provide a reliable, non-discretionary source for ZEBs and related infrastructure;
- Make HVIP funds available for mandated ZEB purchases as well as early adopters.

- Retain the infrastructure enhancements for HVIP vouchers or develop another funding source for infrastructure costs.
- In addition, transit operators need to be able to lock in HVIP funds at least two years before the vouchers are needed to pay for ZEBs, so the operators know they have sufficient funds when planning procurements. As the current timely use policy requires vouchers to be cashed in within one year of award, MTC also suggests CARB extend the timely use policy to better align with actual procurement practices.

This funding is particularly critical for transit operators, which are public agencies with limited funding options for these types of major capital investments. MTC looks forward to supporting CARB's advocacy in the Legislature for this funding realignment.

Regulation Starting Date & Implementation Plans

- H-2-3 The ZEB purchase requirements that form the core of the ICT proposal would take effect in 2023 for large operators and 2026 for small operators. If the funding issues discussed above can be addressed, these dates should provide sufficient lead time for operators large and small to plan procurements and line up needed funding. For operators that are able to procure ZEBs prior to the start dates, they would allow those operators to take advantage of the HVIP and VW funding opportunities. They should also allow more time for ZEB prices to continue to come down due to greater economies of scale, reducing the incremental cost of procuring ZEBs compared to conventional buses.
- H-5-1 MTC also supports CARB's proposal for operators to develop plans to achieve the 2040 all-zero-emission goal, including types of ZEBs, schedule for ZEB procurements, plans for infrastructure and staff training, and funding needs. In conjunction with the later start date, this element will assist operators in moving forward strategically with ZEB rollout. Further, MTC fully endorses the proposal's flexibility to comply
- H-12 with the regulation through the use of individual and group implementation plans, which will allow operators to meet local needs such as bus replacement schedules and emergency response requirements.
- H-3-1 Additionally, the inclusion of waivers for early compliance is a welcome addition to the proposal and could motivate operators to collaborate on procurements to meet the minimums to achieve the waivers.
- H-8-1 Similarly, we appreciate CARB providing flexibility for deferrals or exemptions if available ZEBs do not have sufficient range to meet daily mileage requirements. Finally, we also support exclusion of zero-emission cutaways and smaller buses, over-the-road coaches, and articulated buses until 2026 or until
- H-4-1 such vehicles have completed Altoona testing.

ZEB Bonus Credits & SFMTA Trolley Coaches

- H-7-1, H-7-4 CARB's revised proposal includes a provision to grant bonus credits for battery-electric buses (BEBs) put in service before 2018 and for fuel-cell electric buses (FCEBs) placed in service before 2023, with double credit for FCEBs placed in service before 2018. MTC supports the bonus credits as an effective way to reward the early adopters who incurred high costs to help push the development of ZEB technology toward commercialization, and for operators of FCEBs that have substantially higher costs – and greater range and performance – than BEBs.

Electric trolley coaches operated by SFMTA are treated as ZEBs under the current Transit Fleet Rule, but not under the ICT proposal. SFMTA's zero-emission electric trolley coach fleet is the largest such fleet in the United States, representing a significant investment in zero-emission bus technology. The use of electric trolley coaches clearly advances CARB's goal of reducing GHG and other emissions and improving air quality. On a well-to-wheel basis, SFMTA's trolley coaches are actually cleaner than other ZEB technologies, as the source of their electric power is hydroelectric. Additionally, because of the unique topographic challenges in San Francisco, electric trolley coaches are the only ZEBs currently available that can scale the 23% grades that exist on some of their routes. MTC, therefore, supports SFMTA's position that the proposed regulation be revised to:

- Give one bonus credit to operators for each electric trolley coach placed in service between January 1, 2018 and January 1, 2020.

MTC would further recommend that the proposed regulation be revised to be generally technology-neutral, allowing operators to choose locally the ZEB technology that best suits their service provision needs.

Operating Costs & Regulatory Assessments

E-1 CARB's revised proposal does not address the concern expressed by transit operators that the operating costs of ZEBs already in service have been higher than for conventional buses, primarily for electricity and maintenance. This experience contradicts CARB staff's analysis that operating cost savings over the life of a battery electric bus would more than offset the higher up-front capital costs. To address these concerns, MTC recommends that CARB work collaboratively with the transit operators and other stakeholders to:

B-3

- Conduct an independent third-party analysis of costs (operational and capital) and work collaboratively with transit agencies to establish benchmarks for ZEB cost, performance and weight.
- Conduct periodic assessments of whether ZEB technology and the market are meeting the benchmarks, and of barriers to electrification, including funding.
- If the benchmarks have not been met or funding or other barriers are inhibiting ZEB implementation plans, CARB should consider revisions to ZEB purchase requirements or other strategies to overcome barriers to implementation.
- However, if the benchmarks have been met or funding barriers have been resolved, CARB may enforce the purchase requirements established by the regulation, as reflected in transit operators' individual or group ZEB roll-out plans.

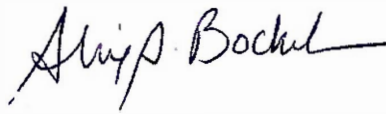
B-2

We believe this approach strikes the right balance between providing assurance to the transit operators and their funding partners, including MTC, that the transition to zero emission fleets will not impair the ability to provide transit service and fund other transit priorities on the one hand, and providing assurance to CARB and other stakeholders that transit operators will be held accountable in implementing their transition plans on the other.

Ms. Mary D. Nichols, Chair
California Air Resources Board
September 24, 2018
Page 5 of 5

MTC looks forward to continuing to work with CARB and the Bay Area transit agencies to support the transition of the region's transit fleet to zero emission, while minimizing financial and operational risk to the transit fleet particularly in the early years of the transition. If you have any questions about our comments, please contact Kenneth Folan at kfolan@bayareametro.gov or 415-778-5204. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Alix A. Bockelman". The signature is written in a cursive style with a horizontal line extending to the right.

Alix A. Bockelman
Deputy Executive Director, Policy

cc: Bay Area State Legislative Delegation
Jack Broadbent, Bay Area Air Quality Management District

AAB: GT

J:\PROJECT\Funding\FTA\Green Fleet\CARB ICT\MTC CARB ICT Comment letter 2018-09.docx



Emanuel Wagner
18-7-6

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Shirin Barfjani
Mobile Source Control Division
California Air Resources Board
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Sacramento, CA,

**45-Day
Docket No. 5
Table IV.3
1st Board Written**

September 28, 2018

Dear Shirin Barfjani,

The California Hydrogen Business Council would like to thank the staff at the Air Resources Board for their excellent work on developing a draft Innovative Clean Transit Regulation proposal that the CHBC can support. Moving transit in California in the direction of zero-emission will address several of California's clean energy, GHG emission and oil reduction, and PM reduction goals, many of which will directly benefit low income communities currently most affected by pollution from transit and transportation.

We believe that fuel cell electric bus and hydrogen as a fuel will enable successful execution of the ICT regulations and will reduce risks for Transit Agencies with two zero emissions options to choose from based on their routes and operational requirements.

In reviewing the proposal, the CHBC would like to recommend a few minor tweaks to enable transit agencies to make truly informed decisions about their zero-emission strategy.

The CHBC conducted a workshop on Fuel Cell Electric Buses on September 11, as part of CTE's Zero Emission Bus conference. CHBC is happy to make the presentations from that workshop available on our website www.californiahydrogen.org.

In doing so, we believe we can provide a context for our comments outlined below, as they address specific issues that were raised by transit agencies and industry in the course of the workshop.

Specifically, CHBC recommends the following changes to the draft ICT Rule:

H-5-3

2023.1(d)(1)

- **Modify part (B) to read: Analysis and assessment of both FCEB and BEB alternatives, and justification for the proportions of each in the Rollout Plan**

- **Add to part (C): Infrastructure plans in the Rollout Plan must include estimates of time and costs that will be incurred by the transit agency for all charging and/or fueling infrastructure required, to insure these factors have been taken into account**

H-5-4 **Additionally, moving the deadline for the Rollout Plan to 2021 will allow important deployments of BEB's and FCEB's to generate data which will be invaluable to transit agency assessments. Both AC Transit and Orange County Transit Agency are taking delivery of multiple BEB's and FCEB's from a single manufacturer this year and into next year. Operational service of these buses will be in earnest in the beginning of 2019, meaning that performance reporting will not be available until well into 2020. Moving the rollout plan deadline ahead to 2021 will allow data to be collected across a full year of operation, for consideration by all California transit agencies for their Rollout Plans.**

This recommended change to 2023.1(d)(2) (A) is as follows:

- **A large transit agency must submit its board approved Rollout Plan along with its approval to the Executive Officer by July 1, 2021.**

In essence, the CHBC believes that transit agencies should not make decisions based on the limited information for small projects when committing to a pathway to a 100 ZEV-based transportation strategy. Instead, additional data from projects showcasing fuel cell bus fleets and battery bus fleets, their capabilities, fuel and electricity cost and time, infrastructure cost, footprint, viability at scale, range, customer satisfaction, reliability etc. should become more known prior to mandating a decision on large scale investment.

The CHBC and its members would be happy to work with ARB on those details and provide follow-up recommendations.

We appreciate your time and look forward to the next steps in the development process of the ICT.

Best,



Emanuel Wagner
CHBC Deputy Director

David Warren

18-7-6



NEW FLYER OF AMERICA

6200 Glenn Carlson Drive
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September 28, 2018

California Air Resources Board
1001 I Street
Sacramento, CA 95814

45-Day
Docket No. 6
Table IV.3
1st Board Written

Dear Members of the California Air Resources Board,

New Flyer is North America's heavy-duty transit bus leader, and actively supports over 44,000 heavy-duty transit buses currently in service, of which 7,300 are powered by electric motors and battery propulsion and 1,600 are zero-emission. New Flyer incorporates the widest range of drive systems available including: clean diesel, near-zero NOx emission natural gas, diesel-electric hybrids, and zero-emission electric trolley, battery, and fuel cell buses. The New Flyer Group, which includes Motor Coach Industries (MCI), operates four California facilities in Ontario, Los Alamitos, Fresno and Hayward.

New Flyer is fully committed to support the objectives and goals of the forthcoming Innovative Clean Transit Regulation to achieve air quality and climate mitigation targets, the associated environmental benefits, energy savings and the reduction of petroleum fuel dependence.

From the perspective of the leading original equipment manufacturer (OEM) of zero-emission buses (ZEBs) in the transit industry, New Flyer offers the following comments on the current state of zero-emission bus technology and the associated infrastructure to implement large fleet ZEB deployments.

Comment 1 (Range)

C-5

The range of zero emission buses is highly variable. New Flyer engineering analysis shows the current state-of-the art battery electric bus range, from any manufacturer including New Flyer, is capped at 175-225 miles in severe conditions extreme heat (115 degrees), steep terrain and aged batteries. This falls short of the typical 350 mile range capability of a CNG or diesel bus. While battery technology will improve, the range gap must be considered in a one-for-one bus replacement plan with a CNG or diesel transit bus.

Comment 2 (Initial Cost)

E-2

New Flyer does not expect the premium, or incremental capital cost of zero emission buses to diminish in the foreseeable future. For long range buses, batteries can equate to over 35% of the material cost of a bus. Industry experts forecast battery technology and higher manufacturing volumes will drive cost improvement. However, cost improvement will likely be offset by OEMs adding additional battery capacity to meet transit's extended range requirements. The market volatility of cell chemicals, potentially unstable trade policies, and the impact both factors may weigh on the Federal Transit Administration Buy America procurement requirements are also not predictable, nor long-term forecastable.

Comment 3 (Weight)

C-6

The weight of the best available, state of the lithium-ion batteries, from any bus manufacturer is substantial; a key factor limiting range.

Built to **RELY ON.**



For a long range bus, battery weight equates to the combined total weight of not 1, not 2 but 3 cars such as the Honda Fit. The significant weight of batteries for electric propulsion limits the total passengers a transit bus may legally carry. New Flyer strongly encourages ARB staff to review all Federal Transit Administration bus test reports, including the most recently published from all manufacturers, to note warnings of axle and gross vehicle weight overload on certain ZEBs.

Comment 4 (Fuel Cell Electric Buses)

C-2 New Flyer is commercializing hydrogen fuel cell electric buses as an effective option for transit agencies. Fuel cells are used as range extenders for a battery-electric bus, performing as on-board battery charger, to provide range comparable to diesel and CNG buses and the ability to refuel quickly. During 2018 and 2019, New Flyer will deliver 27 fuel cell buses to California for commercial deployment. For fuel cell buses to become widely accepted, continued hydrogen market expansion with public and private infrastructure investment will yield growth through manufacturing volume cost reduction with this type of ZEB.

Comment 5 (Interoperable Charging Equipment)

C-7 New Flyer has strongly advocated for industry interoperable charging equipment, and we have forgone proprietary charging equipment. Industry charging standards comprised of SAE-J1772, SAE-J3105, SAE-J2954, and SAE-J3068 remain under development and are expected to be in place by fourth quarter 2019. New Flyer strongly encourages the State of California to require all battery-electric buses purchased using California State funding to adhere to the accepted charging interoperability standards.

Comment 6 (Infrastructure)

C-10 Charging supply equipment and the installation and integration is a major consideration in the deployment of zero-emission buses. New Flyer has invested significant resources to support the complex infrastructure integration efforts with the zero-emission buses. On-route high-power charging systems, in particular, may involve up to 25 industry stakeholders and 2-3 years from planning to commissioning. Grid integration and power management will inevitably be the most challenging aspect of ZEB fleet conversion for the Innovative Clean Transit Regulation.

In summary, we thank the Air Resources Board for consideration of these comments and New Flyer's opportunity to actively participate with ARB Staff throughout this rule making process.

Respectfully,

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SMART
California - Arizona - Nevada - Hawaii

International Association of
SMART
SHEET METAL | AIR | RAIL | TRANSPORTATION
Local Union 105

UNITED STEELWORKERS
USW
UNITY AND STRENGTH FOR WORKERS
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Shirin Barfjani
Air Pollution Specialist
California Air Resources Board
1001 I Street
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RE: Comments on Innovative Clean Transit Rule Initial Statement of Reason and Job Creation

Dear Ms Barfjani,

D-1 On behalf of the organizations listed below, we urge the California Air Resources Board ("CARB") to highlight the value of high quality job creation associated with the Innovative Clean Transit Rule ("ICT"). While we strongly support the Rule's movement toward 100 percent zero emission buses, the Rule should also acknowledge the need for a 'holistic approach' to meet all of the community needs, including access to quality jobs in addition to air quality standards and combatting climate change.

CARB can and should encourage transit agencies to use policy tools that have a proven track record of delivering on high quality job creation, access to these jobs for disadvantaged communities and apprenticeship and pre apprenticeship programs. We recommend that CARB encourage transit agencies to use workforce policies, such as the US Employment Plan, as part of California's transition to zero emission buses through CARB's Statement of Reasons. We propose sample language in the statement of reason as seen in the attached document.

Currently, the Initial Statement of Reason discusses how the ICT can help address the disproportionate barriers that low-income and disadvantaged communities face. We applaud CARB's efforts to both achieve equitable access to clean transportation and overcome barriers that are "magnified for those with limited financial resources." We also appreciate that CARB highlights the potential job creation benefits of the ICT and even cites Jobs to Move America's Community Benefit Agreement with BYD as a potential outcome.

However, we believe that the Initial Statement of Reasons does not recognize the link between intentional workforce policies and the job quality / job access outcomes identified in the BYD example. We are concerned that without intentional policies, the co-benefits of "high quality job opportunities" and "employment in disadvantaged communities" described by the Statement of Reason are less likely to materialize.

LA Metro is the best example of an agency that leverages its zero emission bus efforts in ways that create economic benefits for low-income Californians. Of the seven listed electric bus manufacturers, only BYD has signed a Community Benefits Agreement (CBA). The CBA was spurred by LA Metro's commitment to proactive policies that create good jobs for communities facing significant barriers to employment.

LA Metro also has a Construction Careers Policy that ensures that all construction projects are done via skilled trades that utilize apprenticeship programs and pay family-sustaining wages. These workforce policies continue to lift barriers to employment to underserved workers and meet the intended goals of the SB350 Barrier Study. CARB has upcoming opportunities to require the use of such workforce policies for the zero emission transit fleets' infrastructural build out. This will ensure zero emission infrastructure is performed by a skilled workforce and result in optimum performance and protect public safety. As well, these kind of intentional workforce policies provide access to communities that have been previously underrepresented in the skilled trades.

D-1 We recognize CARB's leadership in helping develop recommendations and policies that can deliver co-benefits for all communities. CARB's "Low-Income Barriers Study, Part B: Overcoming

Barriers to Clean Transportation Access for Low-Income Residents,¹ UC Berkeley's "Methods to Assess Co-Benefits of California Climate Investments²" developed for CARB, and CARB's "Clean Vehicle Rebates, Reporting Document³" have all pointed to ways that ARB can assert proactive leadership to assist disadvantaged communities.

CARB can continue its leadership by laying the groundwork to maximize economic opportunities for low income residents. CARB should recommend transit agencies (and CARB itself) link incentives to those projects that demonstrate "economic benefits for low income residents" and by connecting these residents to good quality clean transportation jobs and the associated training and workforce development opportunities.

CARB and transit agencies across the state have the power to signal the importance of job access and job quality to electric bus manufacturers by encouraging the adoption of policies such as the US Employment Plan and the Construction Careers Policy. We believe that the Statement of Reason is the next logical step demonstrating the importance of investing in a clean economy that works for every Californian.

Sincerely,

John E Harriel Jr.
Founder
Big John Cares

JB Tengco
West Coast Director
Blue Green Alliance

Stephanie Tsai
Climate Justice Program Associate
California Environmental Justice Alliance

¹ California Air Resources Board. "Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents." https://ww2.arb.ca.gov/sites/default/files/2018-08/sb350_final_guidance_document_022118.pdf. (Feb. 2018), p. 16.

² Roland-Holst, et al; Center for Resource Efficient Communities, UC-Berkeley. "Methods to Assess Co-Benefits of California Climate Investments." https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ucb_lit_rev_on_jobs.pdf?_ga=2.236175171.399163388.1536262243-1971758094.1469233960. (Nov. 2017), p. 2.

³ California Air Resources Board. "Clean Vehicle Rebates, Reporting Document." <https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials>. Data Dictionary p. 8.

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President/Business Manager
SMART Local 105

David Campbell
Secretary-Treasurer
United Steelworkers (USW) Local 675

**Proposed Additions to the ICT Initial Statement of Reasons
(Additions are in Bold)**

D-1

We commend ARB for highlighting job creation, especially as exemplified at BYD as a potential co-benefit of the Rule especially for communities facing significant barriers to employment. To strengthen language around job creation co-benefits, ARB should specify the characteristics of good jobs, as defined by previous ARB studies. Furthermore, ARB should also include examples of policies such as the US Employment Plan that have led to the types of co-benefits ARB has identified in the SB350 Barrier Report.

Section ES-8

“Third, ZEB manufacturers can bring high quality jobs, **as defined in previous ARB studies and reporting standards on co-benefits**, to California, including in disadvantaged and low-income communities, which is a unique opportunity for these communities for workforce expansion and training.”

Section V-4

“E. Benefits in Disadvantaged Community and Job Creation

The proposed ICT regulation is anticipated to deliver environmental benefits that include GHG and criteria pollutant emission reductions in the DAC areas where there are more transit dependent riders. In addition to reducing emissions, the ZEB industry is bringing high quality employment opportunities to California. There are several ZEB manufacturers with plants located in California, such as BYD Motors Inc., Complete Coach Works, Ebus, El Dorado National California, GILLIG, GreenPower, and Proterra. As the production of ZEBs increases, so would the number of manufacturing and related jobs for DAC areas. Electricians, construction companies (such as infrastructure installers), some bus manufacturers, fuel V-5 cell and battery producers, and electric drivetrain parts and components suppliers can fall into the small business category. **To ensure that California maximizes the job creation opportunity, CARB and transit agencies should leverage high quality jobs through the promotion of proactive policies such as the US Employment Plan and Construction Careers that provide family sustaining wages, benefits, apprenticeship and pre apprenticeship training, targeted hire in disadvantaged communities, safe working conditions, job retention, and leave policies.”**

Section VII-3

"In addition to reducing emissions, the proposed ICT regulation is expected to attract ZEB industries to bring high quality job opportunities to California and to support employment in disadvantaged communities. As the demand and production of ZEBs increases, so would the number of ZEB manufacturing, operation and maintenance related jobs in California. For example, BYD, located in Lancaster, California, has a community benefits agreement (CBA) with Jobs to Move America (JMA), which will support the creation of a robust U.S. jobs program through deep investments in pre-apprenticeship and training programs. This CBA has a goal of recruiting and hiring 40 percent of its workers from populations facing significant barriers to employment, such as veterans and returning citizens. 97 In addition, populations that have historically been excluded from the manufacturing industry, such as women and African Americans are also expected to be recruited and placed. The agreement also includes commitments from BYD to work with the JMA coalition to provide support systems for these workers to strengthen retention efforts, such as providing transportation for workers who may not have access to a car. *Considering previous missed opportunities in workforce policy, CARB should incentivize high quality job creation within evolving zero-emission transportation industries. ARB has defined high quality jobs as those with family sustaining wages, benefits, apprenticeship and pre apprenticeship training, targeted hire in disadvantaged communities, safe working conditions, job retention, and adequate leave.*