



# MEMO

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**To: CT Department of Environmental Protection**  
**From: Madeleine Weil, Environment Northeast**  
**Date: November 23, 2005**  
**Re: ENE Comments DEP Transit Bus Draft Report**

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Thank you for the opportunity to present comments on the Draft Transit Sector Report (11/07/05).

In Special Act 05-7, the CT General Assembly directed CTDEP to develop a recommended strategy for reducing diesel particulate matter emissions from all transit buses 2006 and older by a) installing diesel particulate filters that are verified to achieve an 85% reduction in PM or b) using an alternative fuel verified to achieve an 85% reduction in PM. The CT General Assembly established December 31, 2010 as the deadline by which CTDEP's strategy should bring all transit buses into compliance with the Act's emission reduction requirements.

The draft "Transit Sector Report" contains three strategy options. Of the three, Option #1 is the only option that meets the prescribed emission reductions according to the timeline established by the CT General Assembly in SA 05-7. It is also the only one of the three options that received any discussion by the Transit Subcommittee. We respectfully suggest that the Report be clarified, so as not to imply that Options 2 and 3 comply with the General Assembly's directive in SA 05-7 or that they have been vetted or recommended by the subcommittee.

ENE Comments, Summary:

- Environment Northeast believes that SA 05-7 asks the DEP to present a specific set of recommendations, rather than point to a set of options;
- While DEP has made an effort to separate costs associated with business-as-usual implementation of federal regulations, we believe that this principle has been applied inconsistently. Costs and benefits of Option 2, for example, should properly be considered business-as-usual. These costs should be addressed in regular transit budgets, and are not attributable to any proposed Clean Diesel Plan options;
- Where the DEP report identifies costs or emission reduction rates that depart from EPA projections, the source of the alternative estimate should be prominently cited and an explanation provided for the discrepancy. It would also provide more information for readers if these costs or emission reductions were expressed as a range, rather than just highlighting one or the other;
- We request that the DEP notify stakeholders of the process and timeline for reviewing and including subcommittee and public comments in later drafts of the report.

Below are some additional, specific comments pertaining to the draft plan:

- Page 4-5: *"In many instances, diesel engines cannot achieve the requisite temperatures [for diesel particulate filters] and other technology options must be considered."* Cool exhaust temperatures do prevent effective function of DPFs for some diesel engines (most notably, some school buses). However, this is not typically a problem for transit bus retrofits, as thousands have been successfully fit with DPFs across the country, including fleets throughout California, New York City, Philadelphia, Washington, D.C., Boston, Providence, Seattle, Houston, Chicago, and Providence, as well as Stamford, CT. Also, as the particular problem specific to Series 50 Detroit Diesel engines and their DPFs has been thoroughly discussed and addressed in the Subcommittee, we think it important that this problem not be attributed to the general experience with transit buses and DPFs generally. The statement in question should be revised to reflect the general experience for transit buses, excluding the situation with Series 50 Detroit Diesels;
- Page 7: *"The capital cost of purchasing each 2007 MY bus will be approximately \$14,500.00 greater than current replacement prices because emissions controls will be included on all buses manufactured for the 2007 MY and later."* On page 11, this figure is footnoted, "Costs were derived by CT Transit based on experience with the Stamford fleet and manufacturers' projections." We request that DEP provide a more specific citation for this figure, as it is significantly higher than the estimated \$8,000 discussed at the 8/29 Transit subcommittee meeting (see DEP notes from 8/29 meeting, circulated by email 9/29) at which manufacturers and CT Transit personnel were present;
- Page 7: *"...Costs of filters may be less than current projections."* In EPA's Regulatory Impact Analysis for the 2007 onroad emission rules, they project that incremental hardware costs for medium heavy duty vehicles associated with PM and NOx reductions would cost approximately (1999 dollars) \$2,560 in the short term (2007-2011) and \$1,410 in the long term (2012 and beyond), see <http://www.epa.gov/otaq/regs/hd2007/frm/exec-sum.pdf>. Costs included in the DEP's report are more properly characterized as current costs, rather than projected costs;
- Page 7: Filter replacement costs for 2007 and beyond buses should be considered a business-as-usual cost since they will be the result of upkeep on components used to comply with the federal EPA rules;
- Page 7: EPA's rulemaking projects that when ultra-low sulfur standards are fully phased in (October 2006) incremental costs are expected to drop to 4.5 - 5 cents per gallon more than current costs;
- Page 8: At 29.4%, the ULSD benefit measured in the NYC case study is between 3-6 times higher than the benefit projected by EPA (5-10%, depending on the application). At a minimum, it would be useful for the Report to indicate the specific circumstances under which that level of reduction was achieved;
- Page 8: As DEP notes, achieving additional reductions of NOx is critical to solving CT's 8-hour ozone non-attainment problem. However, SA 05-7 specifies fine particulate matter rather than NOx because the health impact is much more significant (2-20 times more dangerous per ton than NOx, more than 100 times more dangerous than ozone: Westcott, 2005, for Emission Control Technology Association);
- Page 10: We do not want to minimize the importance of obtaining NOx reductions, however we do not believe that achieving NOx reductions should be put forth as a reason to put off PM2.5 reductions until 2019 and thereby fail to comply with the terms of SA 05-7. If CT needs to mandate the 12-year turnover policy to ensure NOx reductions are achieved according to the business-as-usual schedule, then that should be done on top of achieving PM2.5 reductions in the short term. As a member of the subcommittee, ENE is not aware that any specific information was submitted to cast into doubt the continuation of CTDOT's voluntary 12-year turnover policy;

- Page 11, 12: Where the implementation of federal regulations (incremental capital costs, fuel costs, and operating costs) require the expenditure of additional funds, these incremental costs should be addressed in the regular transit budget, not as a part of the Clean Diesel Plan. The price tag (and benefits) of federal implementation is, in this draft, attached to both Options 2 and 3 – we think inappropriately;
- Page 11: Dollars per ton comparisons between Options 1, 2, and 3 are potentially misleading as currently drafted. Again, the report claims benefit (in this case, NOx benefits) from a business-as-usual implementation of federal regulations. Even if there were specific information provided casting doubt on CTDOT's ability to maintain the 12-year turnover schedule, this change would happen at the margin (a bus may be replaced in 13 or 14 years rather than 12). In this draft report, DEP takes NOx credit for any and all bus turnover (including pre-1997 buses), and includes this benefit in the cost-effectiveness calculation for Options 2 & 3. This is inconsistent with the way that PM benefits have been calculated throughout the report. Were this approach to NOx to be appropriate, we would suggest that all the PM benefits should be recalculated using the same approach;
- Page 11: Because PM is more harmful to health than NOx, the California Air Resources Board (CARB) has adopted the convention of valuing PM reductions 10 times NOx reductions (Michael Jackson, TIAX, presentation at DEP Finance Panel, Oct. 26). If comparative cost-effectiveness is to be a key component of DEP's analysis, CARB conventions should be used;
- Page 16: Option 3 supposes that the New Haven and Hartford buses would be awarded CMAQ funds to retrofit. We agree with DEP that there is reason to single out fleets in urban "hot spots," where ambient PM levels may be particularly high. We believe that Bridgeport, Norwalk, and Waterbury, should be singled out for the same reason. There are clearly environmental justice issues in these communities as well.