

ENVIRONMENTAL PERFORMANCE OF HEAVY DUTY VEHICLES

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There are many studies looking into the possible environmental and economic impacts of a shift to an alternative economy broadly based on hydrogen fuel. We are not as convinced as others might be that this is an appropriate direction for all energy consumers. Heavy commercial vehicles are often targeted for a change to hydrogen fuel cell power, but our recent studies suggest neither greenhouse gas emissions nor fuel economy are particularly improved by such a change. On the other hand, improvements in existing power train performance have lead to improvements in emissions for these types of vehicles. We will show results from recent work on hybrid buses in New York City, as an example supporting this point of view. In order to do so we will address the following:

- Proposed models of hydrogen production;
 - Emissions evolving from the various production schemes;
 - Vehicle performance –
- with hydrogen as a fuel, including operation and maintenance issues
- with the most modern diesel fuels and technology
- with hybrid power modes
- Sensitivity to initial cost and degree of governmental regulation Our objective is to strike a balance between adopting newly developed technologies and improving existing infrastructure to meet the same or similar environmental goals envisioned for a massive and widespread shift in fuel choice.