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Taxi and Limousine Commission  
Office of Legal Affairs  
40 Rector Street, 5<sup>th</sup> Fl  
New York, NY 10006

## NYC Taxi Lease Cap Review Submission

In March 2007, Stax Inc. independently launched a study of the NYC taxi market. Our intent was to conduct an independent, statistically valid, and unbiased analysis of fuel consumption and the potential cost-benefit of hybrids. Upon proving conclusively that a hybrid taxi has a dramatically lower total cost of ownership (vehicles + gasoline) than a Crown Victoria, we continued our research and analysis to understand what was keeping the market from changing to hybrids. We sought to understand incentives and potential misalignments of incentives and to provide NYC with an analysis that could unlock the potential savings provided by a hybrid and distribute those savings among drivers and medallion owners. The following summary of our analysis, originally shared with the TLC in fall of 2007, details our recommendation that NYC raise shift prices for hybrid vehicles.

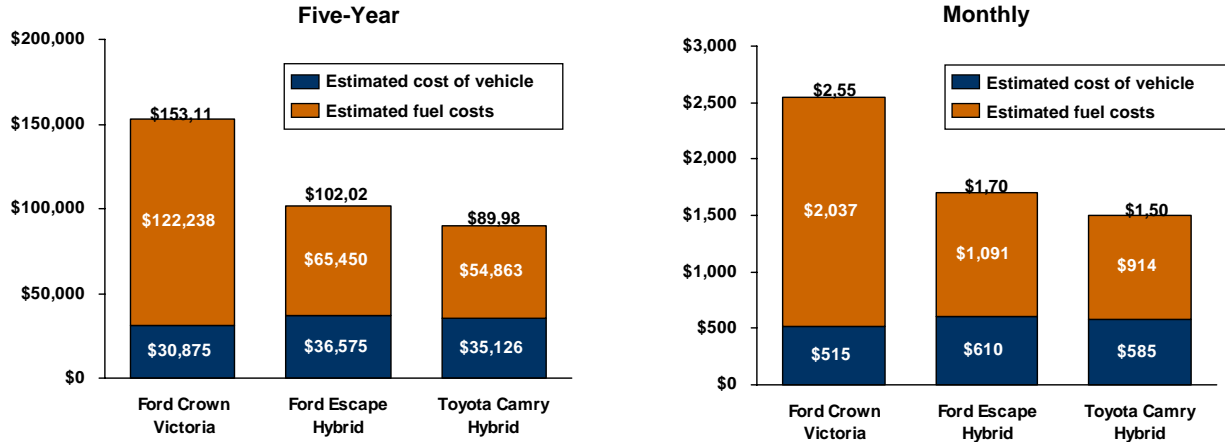
Stax initiated and funded this work. At the time of this letter, Stax has no affiliation with a taxi service or automotive company and no paid consulting arrangement with NYC. Stax has also been working with Boston, LA, Phoenix, Denver, and Chicago to leverage our findings in their efforts to improve their transport systems.

Stax Inc. is a consulting firm focused on market strategy, business strategy, and due diligence for acquisitions. Stax clients include Fortune 500 companies and the largest private equity firms in the world. Our clients turn to Stax's for these kinds of analyses before making large investments.

Stax study results:

Based on our independent research and analysis. Savings from reduced fuel consumption with a hybrid taxi alone more than pays for the higher cost of a hybrid vehicle over a Crown Victoria, on a monthly basis, over the life of the vehicle. At \$3 per gallon of gasoline, the five-year savings are approximately \$50,000—and monthly savings of \$800–\$1,000 (see Exhibit I).

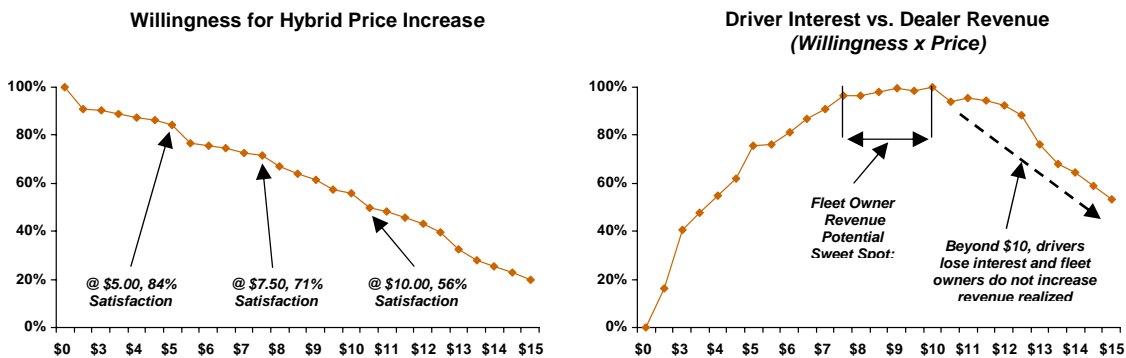
Exhibit I. Five-year and Monthly Cost of Vehicle and Fuel for an NYC Taxi



Given such savings, one might expect more fleets to transition to hybrids without mandatory regulation. This depends on incentives, however. The roughly 4,000 independent owner/operators who drive their own vehicles six shifts per week and lease the vehicle out the rest of the week should have the most interest in switching, as they can personally realize savings from the gas they would put into the tank every day. However, fleet owners or leasing company managers who never drive their vehicles have no financial incentive to switch to a hybrid, as the hybrids cost more to buy and maintain, and the price at which these vehicles can be leased to drivers is fixed. The changes in policy mandating a conversion to hybrids create additional costs for large fleet owners and a massive benefit to the drivers—but leaves no opportunity for fleet owners to recoup any of their added costs or for drivers to share their savings with the fleet owners.

We hypothesized that drivers would be willing to spend more money per shift to lease a hybrid if the car proved more economical to run per shift than their increase in rental rates. In the spring/summer of 2007, Stax conducted a price sensitivity study with 200 NYC taxi driver participants. We found taxi drivers are willing to share in the savings from fuel-efficient vehicles by paying more money per shift for a vehicle that consumes less gas—and ultimately leaves more money in their pockets at the end of every shift.

Exhibit 2. Taxi Driver Willingness for Hybrid Price Increase and Comparison with Dealer Revenue



Our analysis indicates that fleet owners can maximize revenue between \$7.50 and \$10.00, and that an excellent price/ideal for the drivers would be around \$5.00. Beyond \$10.00, too many drivers lose interest, and fleet owners are not expected to increase realized revenue. At \$5.00, 84% of drivers would be satisfied with the deal, while only 71% would be satisfied at \$7.50.

Stax recommends allowing owners to charge \$7.50 per shift premium rate for hybrid vehicles for the next two years, then moving to a \$5.00 premium for hybrid vehicles. This would provide a strong incentive for early conversion by fleet owners. We don't expect all fleet owners to convert immediately; by limiting the premium to hybrids, drivers will still be able to rent older vehicles at a lower shift rate—no one will be able complain about rates rising indiscriminately.

These rates would lead to real cost recouping for fleet owners buying the newer technology and provide a return on investment to fleet owners. A fleet owner with a hybrid, charging an additional \$5 per shift x 55 shifts per month would see \$275 in free cash flow with which to cover the higher auto payment (for the more expensive vehicle) and stock a new set of spare parts over the Crown Victoria. The exhibit below highlights the profit potential and therefore incentive to convert to hybrids if shift pricing is increased accordingly for hybrid vehicles. Note these are all calculated at gasoline at \$3.00 per gallon (March 2007 prices).

### *Exhibit 3. Profit Potential and Conversion Incentive with Shift Pricing Increase*

#### **Independent Owner/Operators will be able to charge more per shift when renting and save on gas while driving.**

	Difference in Outright Purchase Cost (Hybrid vs. CV)	Difference in Mo. Lease Payment (Hybrid vs. CV <sup>a</sup> )	Monthly Add'l Revenue from Leasing to Other Drivers <sup>b</sup>	Monthly Savings (Gas + Maintenance)	Monthly Bottom Line	Annual ROI on Increased Cost for Financed Hybrid vs. CV	5-Year ROI on Increased Cost of Outright Purchased Hybrid vs. CV
<b>\$5.00 Cap Increase</b>	(\$3,600–\$4,800)	(\$70–\$95)	\$150	\$470–\$550	\$520–\$620	650%–980%	770%–1160%
<b>\$7.50 Cap Increase</b>	(\$3,600–\$4,800)	(\$70–\$95)	\$220	\$470–\$550	\$590–\$700	720%–1180%	860%–1290%

#### **Fleet Owners will have a strong incentive to move toward hybrid vehicles as soon as possible.**

	Difference in Outright Purchase Cost (Hybrid vs. CV)	Difference in Mo. Lease Payment (Hybrid vs. CV <sup>a</sup> )	Monthly Add'l Revenue from Leasing to Drivers + Monthly Maintenance Savings <sup>c</sup>	Annual Bottom Line per Vehicle	Annual ROI on Increased Cost for Financed Hybrid vs. CV	5-Year ROI on Increased Cost of Outright Purchased Hybrid vs. CV
<b>\$5.00 Cap Increase</b>	(\$3,600–\$4,800)	(\$70–\$95)	\$315	\$3,800	230%–350%	300%–430%
<b>\$7.50 Cap Increase</b>	(\$3,600–\$4,800)	(\$70–\$95)	\$450	\$5,400	380%–540%	470%–660%

#### **Drivers will still see substantial gas savings while driving hybrid vehicles.**

	Savings per Shift	Savings per Month <sup>d</sup>	Savings per Year
<b>\$5.00 Cap Increase</b>	\$12–\$15	\$300–\$400	\$3,800–\$4,800
<b>\$7.50 Cap Increase</b>	\$10–\$13	\$250–\$350	\$3,000–\$4,000

- a. Crown Victoria—5-year fully depreciated lease.  
b. Assumes owner-operator leases vehicle 29 shifts per month and drives 26 shifts per month.  
c. Assumes 90% vehicle utilization.  
d. Assumes driver leases vehicle 6 shifts per week (26 shifts per month).

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In response to concern about how much an increase in the lease cap would cost drivers if the savings from a hybrid drop due to a drop in gasoline prices. With a \$7.50 per shift lease cap increase, gas has to fall to \$1.28 per gallon before a driver will lose money over current economics in a Crown Victoria, not that this is expected anytime soon. With a \$5.00 per shift lease cap increase, gas has to fall to \$0.85 per gallon for a driver to be out of pocket over their spend per day on a Crown Victoria (again, keeping in mind the economic climate in mid-2007).

Increasing the per shift lease cap for hybrids will align incentives by allowing the medallion owner and driver to share the economic benefit of a hybrid, providing medallion owners a financial incentive to spend more money to convert their vehicles and maintenance operations.

Other municipalities have identified the incentive disconnect, and the legislative changes appear to be providing alignment. The city of Boston recently enacted a \$5.00 per shift lease cap increase for new vehicles and an additional \$5.00 increase for hybrids. Drivers of hybrids are afforded other benefits, such as preferred access at Boston's Logan Airport (there is a per-shift limit for this benefit). In Boston, hybrids have higher utilization rates than Crown Victorias within the same fleet. And San Francisco Mayor Gavin Newsome has signed legislation to increase the lease cap for hybrid and CNG taxis by Stax's recommended \$7.50 per shift bump. While these efforts are still relatively recent, early indications are that the program in Boston has been successful. In San Francisco, there has been backlash among drivers of CNG vehicles, as they do not provide the same economic advantage for the driver as hybrids—incentives for those drivers have been misaligned.

A word about our methodology:

Stax conducted 380 direct interviews with NYC taxi drivers from May 2007–July 2007. We chose to collect consumption data from drivers over using traditional MPG statistics, as MPG does not take into account NYC taxi driving conditions: 120 miles in 12 hours, constant stop, start, and idle.

More than half of our interviews included price sensitivity questions, which, when analyzed, gave us a quantitative understanding of driver satisfaction versus potential lease cap increases. Drivers were asked to rate on a 10-point scale their likelihood to lease a hybrid at four different premium price points.

Regards,

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