FLEET PERSPECTIVE

EV POLICE PATROL RAISES A LOT OF QUESTIONS & CONCERNS

- WILL TECHNOLOGY MEET POLICE APPLICATION?
- WILL EV BE DURABLE ENOUGH TO ENDURE THE SEVERE APPLICATION?
- WILL THE EV BE CO$T EFFECTIVE AS COMPARED TO GAS PATROL?

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DOES TECHNOLOGY MEET APPLICATION?

POLICE PATROL APPLICATION- COURSE OF A DAY:

- DRIVEN 40 TO 70 MILES EACH DAY,
- HARD ON/OFF BRAKING,
- HARD ON/OFF ACCELERATION ,
- FAST & QUICK STEERING MANUEVERS AT SPEED,
- LONG IDLE PERIODS W/EMERGENCY LIGHTS & ACCS ON CONSUMING FUEL.

EV VEHICLE:

- NORMAL RANGE **265** MILES. SEVERE DRIVING WILL REDUCE RANGE?
- ELECTRIC MOTOR PROVIDES HARD ON & OFF ACCELERATION PERFORMANCE
- LOWER “CG” PROVIDES EXCELLENT STEERING & HANDLING CHARACTERISTICS
- HEAVY DUTY BRAKES & REGENERATIVE BRAKING PROVIDE SOLID BRAKING MINIMAL WEAR, DECREASING SERVICE INTERVALS & COT
- SITTING LONG PERIODS W/EMERGENCY LIGHTS/ACCESSORIES ON, CONSUMES ENERGY FROM BATTERY DECREASING RANGE?

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DURABLITY / PERFORMANCE

CONVENTIONAL POLICE PATROL VEHICLE

- MORE MOVING PARTS & FLUIDS: PISTONS, VALVES, TRANSMISSION, OIL, COOLANT
- VEHICLE PARTS & EQUIPMENT MADE TO MEET SEVERE DUTY APPLICATION
- BUT REQUIRE FREQUENT SERVICES/REPAIRS AT A PREMIUM CO$T
- FREQUENT SERVICE/REPAIRS INCREASE SHOP LABOR TO KEEP THEM IN SERVICE
- AUTOBODY PERFORMED BY ESTABLISHED VENDORS WHO HAVE EXPERIENCE, TRAINING, EQUIPMENT, & PARTS

EV PATROL

- EV FAR LESS MOVING PARTS: NO ENGINE, TRANSMISSION, OIL, RADIATOR FLUID
- SIGNIFICANTLY LESS MOVING PARTS=LESS FREQUENT SERVICES/REPAIRS =REDUCED LABOR, DOWNTIME, & COT, =INCREASE SHOP PRODUCTIVITY
- BRAKING PERFORMANCE ENHANCED BY REGENERATIVE BRAKING SYSTEM =SIGNIFICANTLY LESS BRAKE WEAR & BRAKE REPLACEMENTS.
- DURABILITY/PERFORMANCE EV COMPONENTS UNDER SEVERE DUTY IS UNKNOWN
- CERTIFIED ESTABLISHED AUTOBODY VENDORS LIMITED & COT MAY BE HIGHER.

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LIFE CYCLE COST COMPARISON (@90,000 MILES/5YRS)

ITEM DESCRIPTION	2014 TESLA S85	GAS FORD PPV
OEM COMBINED MPGe / MPG	89 (88-90)	18.5 (16-21)
SEVERE DUTY MPGe / MPG	UNKNOWN	8.36
OEM RANGE	265 (85KWH BATTERY)	344 (18.6 TANK CAP)
SEVERE DUTY RANGE	UNKNOWN	158
ENERGY / FUEL CO$T	$.15KWH	$3.00
5YR ENERGY/FUEL CO$T (EST)	$4,320	$32,297
5YR MAINT/REPAIR CO$T	$3,900	$15,577
VEHICLE CO$T	$61,478.50	$40,500
BUILDUP COSTS/EQUIPMENT	COMPARABLE	COMPARABLE
MAINT, FUEL, PURCH CO$T	$69,698.50	$88,374
CO$T PER MILE-MAINT/FUEL/PURCH COST	.77	.98
ENERGY/FUEL CO$T=100MILES	100MILES = 32KWH=**$4.80** (@$.15-KWH)	100MILES=12.00G= **$36.00** (@$3.00-GALLON)
CO2 EMMISSIONS 5YRS/90K	0 POUNDS CO2	210,994 POUND S CO2

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SUMMARY & CONCLUSION

SUMMARY

UNDER NORMAL DRIVING CONDITIONS, EV APPEARS TO MEET PATROL PERFORMANCE REQUIREMENTS, REALIZED COST SAVINGS AS COMPARED TO A CONVENTIONAL PATROL, & IS ECO FRIENDLY W/LITTLE TO NO CARBON FOOT PRINT.

A FEW CONCERNS:

- SMALL FRONT/PASSENGER SEATS, LIMITED SPACE FOR POLICE EQUIPMENT,
- APPROXIMATE ONE HOUR CHARGING BETWEEN SHIFTS

CONCLUSION:

UNDER SEVERE POLICE DUTY, THE PILOT TEST WILL DETERMINE IF THE EV:

- PERFORMS AS INTENDED
- VEHICLE & COMPONENTS PROVE TO BE DURABLE
- RANGE > = TO 100 MILES (PER 11 HOUR SHIFT)

FINAL RESULTS & DATA ANALYSIS WILL DETERMINE IF THE EV TECHNOLOGY MEETS SEVERE POLICE DUTY APPLICATION & ACTUAL COST EFFECTIVENESS

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