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Alternative Fuel Sources for Crown's Fleet of Cargo Vans

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CAPSTONE:

ALTERNATIVE FUEL SOURCES FOR CROWN'S FLEET OF CARGO VANS

ABSTRACT

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Growing concerns of crude oil prices soaring per barrel level, conventional fuel consumers are affected by the cost of fuel per gallon of gasoline. This has impacted the bottom-line of many organizations in the transportation sector, relying heavily on gasoline. Therefore, embracing an alternative fuel initiative is important to addressing the issues of price fluctuations of crude oil. A business strategy to address issues of price fluctuations (crude oil), Crown Equipment Corporation is taking initiative to finding alternative fuel serving a fleet of service vans, with consideration for diesel, battery-electric (lithium), compressed natural gas (CNG), and liquid petroleum gas (LPG). Data is obtained from a variety of sources including Crown Equipment Corporation, WEX, and Government and EPA sites. Black book, alternative fuel vehicle manufacturers' websites, online search engines, and research case studies from other private/public entities are also involved. Both qualitative and quantitative analysis was applied to understand challenges of technology adoption process. Further development of comprehensive cost comparison: alternative pathways to current unleaded gasoline for Crown's fleet of service vans. Total cost of ownership was estimated and compared over a period of 10 years, a cost/benefit analysis/ratio

and return on investment was also estimated and compared. The findings show BEV as the most probable alternative source of fuel with lowest total lifecycle cost despite its high vehicle cost. Comparing CNG and LPG, the total lifecycle cost for LPG is considerably lower; however, CNG is preferred due to long-term price stability, profitability and environmental concerns.