Key Results: Request for Qualifications for Heavy-Duty Fuel Cell Electric Trucks

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In July 2025, ARCHES released a Request for Qualifications (RFQ) to solicit eligibility information on its 5,000 Truck Ecosystem (5TE) approach, consisting of scaled "cluster" deployments. ARCHES sought information from eligible Class 8 truck OEMs and/or fuel cell component manufacturers across eight required evaluation criteria which support prospective FCET fleet operators' needs: technology readiness level (TRL) and performance validation, manufacturing readiness level (MRL) and scale-up capabilities, service and support network, parts supply, operational track record, OEM fleet partners, incentives and production volumes, and financial strength.

The RFQ garnered nine responses, with seven eligible respondents, and resulted in three responses that scored above the minimum required score. OEMs were required to provide incentive schedules for $5/kg and $10/kg costs of hydrogen dispensed to the end user in order to result in a total cost of ownership (TCO) comparable to operating diesel trucks. Ultimately, the incentive amount needed per FCET was heavily dependent on the hydrogen price. Respondents proposed the total number of trucks to be deployed per year over multiple years and the required incentive amount per truck. The aggregated data from the submissions are:

- **Total trucks proposed:** 7,341
- **Timeframe:** 200-300 trucks per year as early as 2026-2030, 1,000-1,700 trucks per year by 2031-2035
- **Incentive per truck:**
    - $5/kg H2 at the pump: the average incentive varies by manufacturer from around $100,000 per truck to just over $200,000 per truck.
    - $10/kg H2 at the pump: the average incentive varies by manufacturer between $400,000 to $500,000 per truck.

The results demonstrate how important it is to reduce the price of hydrogen at the pump. If the State of California and industry collaborate to scale hydrogen production and supply chain investment to drive the price of hydrogen fuel down toward $5/kg, historic HVIP (Clean Truck and Bus Voucher Program) funding levels may be sufficient to catalyze the FCET market in California. However, to be effective over the long term, OEMs and fleets need confidence that incentives will be available for 200-300 FCETs per year from 2026-2030, growing to 1,000-2,000

FCETs per year from 2031-2035. Therefore, it will be important that the HVIP program, or a similar incentive program, is consistently funded from year to year and that sufficient funding is specifically dedicated to support FCETs through 2035.

With stable incentives and consistent deployments through 2035, FCETs will likely be able to compete with diesel on a TCO basis without HVIP-style vouchers starting after 2035. Note that reaching TCO parity will remain highly sensitive to fuel costs — more expensive diesel and/or less expensive hydrogen will accelerate reaching TCO parity.