**Introduction**

Promoting the development and use of zero-emission airport ground transportation will help the California Air Resources Board (CARB) achieve the emission reduction strategies outlined in the Mobile Source Strategy, State Implementation Plan and the Sustainable Freight Action Plan. Vehicles like off-airport transportation shuttles that operate on fixed routes, have stop-and-go operations, maintain low average speeds, and are centrally maintained and fueled are ideal candidates for targeting zero-emission battery and fuel cell electric technologies.

The purpose of this survey is to gather detailed information about everyday operations of airport ground transportation fleets and to better understand variations among different types of fleet operations. This survey will help CARB to better estimate individual fleet costs (including vehicles and infrastructure) and understand potential opportunities and challenges associated with incorporating airport shuttles with zero-emission operating capabilities into the fleet. Accuracy and completeness of fleet data, including data collected in this survey, will be vital to CARB’s efforts in developing a measure that integrates efficiently with businesses involved with airport ground transportation and achieves the desired emission reductions. For more information regarding the Zero-Emission Airport Shuttle Bus measure please visit <https://www.arb.ca.gov/msprog/asb/asb.htm>.

**Directions**

**This survey (beginning on page 2) is designed to be completed by companies that operate shuttles providing ground transportation to and from an airport. Companies that provide shuttle service to multiple airports will complete one survey for each airport.** An electronic version of the survey is available at: <https://www.arb.ca.gov/msprog/asb/asbsurvey.htm> . If you are writing your responses by hand and need extra space, you can add extra pages at the end of this survey with the company’s name, your contact information and the question number to which the answer refers.

Surveys should be returned directly to the California Air Resources Board upon completion. CARB will work closely with the Airport Shuttle Bus Workgroup to interpret the results. Please submit any inquiries, along with the completed survey(s) by ***October 20, 2017***. You can either submit the electronic version via email to Mr. Anthony Poggi at [anthony.poggi@arb.ca.gov](mailto:anthony.poggi@arb.ca.gov) or you can print the survey and mail it to the following address:

California Air Resources Board

Incentives and Technology Advancement Branch, 5th Floor

Attn. Anthony Poggi

P.O. Box 2815

Sacramento, CA 95812-2815

Thank you for your assistance in completing this important survey.

We appreciate your efforts.

1. Company/Contact Information

|  |  |
| --- | --- |
| Company Name |  |
| Mailing Address |  |
| City |  |
| State/Province |  |
| Zip |  |
| Phone Number |  |
| Primary Contact Name |  |
| Primary Contact Email |  |
| Primary Shuttle Contact Name (if different from above) |  |
| Primary Shuttle Contact Phone Number |  |
| Primary Shuttle Contact Email |  |

SAMPLE

1. What is the total number of airport shuttles (e.g. shuttles/buses/vans/cutaways) in your fleet? Include any/all vehicles (8,501 lbs. gross vehicle weight rating (GVWR) and greater) that transport passengers to and from the airport.  *If your company does not transport passengers to or from an airport, please disregard the rest of this survey and submit.*
2. Please describe the nature of your business (e.g. off-airport parking, hotel, tourist attraction/ destination). For businesses that exclusively operate shuttles please describe what type of destinations are serviced by your fleet (other than airports).
3. Have you reduced or expanded the number of airport shuttles in your fleet over the last 5 years? Do you have plans to do so over the next 5 years? If yes, please describe the reason(s) for the expansion/contraction and the number of vehicles involved.
4. Are you interested in receiving more information about financial incentives for purchasing zero-emission airport shuttles?  Yes  No

1. The proposed regulation may require in-use diesel and CNG airport shuttles be replaced with zero-emission vehicles.  What specific characteristics of your business contribute towards your concern or support of such a proposed regulation?  (size and scale of operations, shuttle routes, and vehicle purchase patterns, etc.) Please explain below.
2. A small business is defined as having fewer than 100 full time employees; being independently owned and operated; not dominant in its field; and having annual gross receipts of $2 million or less. Are you a small business?
3. Please fill in the table below to record any agency/company (including your own) involved in the maintenance, operation, or ownership of your fleet. If there are multiple entities involved in one category, please list all of them. Please include the NAICS code(s) for each business in the designated area.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Ownership** | | **Operation** | | **Maintenance** | |
| **Company/Agency Name** | **NAICS Code** | **Company/Agency Name** | **NAICS Code** | **Company/Agency Name** | **NAICS Code** |
| 1. |  | 1. |  | 1. |  |
| 2. |  | 2. |  | 2. |  |
| 3. |  | 3. |  | 3. |  |

1. Please fill in the blank spaces below to provide information about your airport shuttle purchase cycle. As these numbers may vary from year-to-year, please use trends/estimations/averages to provide your answers. Please use the empty box if you need to provide any addition clarifying information.

|  |  |
| --- | --- |
| * Average vehicle lifespan: \_\_\_ years. | * Average turnover: \_\_\_ ­­vehicles per year. |
| * Average number of vehicles purchased simultaneously:\_\_\_ | * Percentage of shuttle purchases involving used vehicles: ­\_\_\_ % |

1. Please rank the following factors in order of importance (numbering from 1-11) when evaluating airport shuttles.

|  |  |
| --- | --- |
| * \_\_\_ Total Cost of Ownership | * \_\_\_ Cost-Sharing Opportunities |
| * \_\_\_ Capital Cost | * \_\_\_ Fuel Economy |
| * \_\_\_ Payback Return | * \_\_\_ Performance |
| * \_\_\_ Safety | * \_\_\_ Capacity |
| * \_\_\_ Reliability | * \_\_\_ Familiarity with Technology |
| * \_\_\_ Length/Complexity of Procurement   Timeline |  |

1. Do you currently have or are you in the process of purchasing any zero-emission vehicles in your shuttle fleet? If yes, how many?
2. Do you consider the purchase of zero-emission shuttles or other zero-emission technology in your annual vehicle purchases? If not, what are the issues that prevent the purchase of ZEVs?
3. If available, would your organization be willing to participate in a cost-sharing program for charging infrastructure and equipment?

1. Who do you contact when beginning a new vehicle purchase? *(e.g., dealer, chassis manufacturer, body manufacturer, co-op, or internal purchasing agent)*
2. Are you using any low carbon fuels in your vehicles that service airports in California? If yes, please select the fuel type(s) below. If no, please select the box next to “None”.

CNG  Renewable CNG  Battery Electric  Hydrogen  Biodiesel

Renewable Diesel  None  Don’t Know

1. The Low Carbon Fuel Standard is designed to encourage the use of cleaner low-carbon fuels in California (<https://www.arb.ca.gov/fuels/lcfs/lcfs.htm>). Have you signed up for the LCFS program (e.g. utilizing the reporting tool, credit banking & transfer system)?  Yes  No
2. Describe how you typically purchase fuels by fuel type. *(e.g., annual contracts, spot market, utility, off-site, etc.)*
3. Shuttle/Bus Route Information: Please fill in the table below with information about your airport shuttle fleet’s route(s). Use a different line for each unique route traveled by vehicles in your fleet. Please begin with the routes that are most commonly traveled and only record routes that involve transportation to/from an airport.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Route #** | **Round Trip Distance (miles)** | **Number of Stops** | **Maximum Speed (mph)** | **Average Speed (mph)** | **Round Trips per Day** | **Route Purpose** (e.g. off-airport parking, hotel courtesy, tourist destination) | **Varied or Fixed?\*** |
| **1** | Ex: 4 | 3 | 35 | 20 | 20 | Hotel courtesy | Fixed |
| **2** | 8 | 7 | 50 | 25 | 10 | Hotel courtesy | Fixed |
| **1** |  |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |  |
| **11** |  |  |  |  |  |  |  |
| **12** |  |  |  |  |  |  |  |
| **13** |  |  |  |  |  |  |  |
| **14** |  |  |  |  |  |  |  |
| **15** |  |  |  |  |  |  |  |

***\*****A fixed route is considered one in which vehicles repeatedly transport passengers between the same locations (e.g. off-airport parking lot and an airport). The number of stops along the route may vary but general route traveled and round trip distance are consistent. A varied route is one where the origins, destinations, locations of stop, and/or the round trip distance of the route may fluctuate.*

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Last Eight Digits of VIN #** | **License Plate #** | **Body Type**  **(e.g. Low Floor, Coach, Cutaway Van, Minibus)** | **Length**  **(feet)** | **GVWR**  **(lbs)** | **Engine Model Year** | **Fuel Type** | **Capacity** | | **Operation** | | | | |
| **Seated** | **Total** | **Avg. Miles** | | **Daily Hours of Operation** | **Estimated**  **Daily Idle Time (minutes)\*** | **Mid-Day Refueling Required? (Y/N)** |
| **Annual** | **Daily** |
| 1 | Ex: B263490 | 9X4XXXX | Cutaway | 25 | 14,500 | 2010 | CNG | 22 | 22 | 65,000 | 180 | 15 | 60 | N |
| 2 | D4225320 | 3C2XXXX | “ “ | “ “ | “ “ | “ ” | “ “ | “ “ | “ “ | “ “ | “ “ | “ “ | “ “ | N |
| 3 | H2109754 | 8Z3XXXX | Van | 20 | 10,000 | 2013 | Diesel | 16 | 16 | 52,000 | 140 | 12 | 90 | N |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. Ground Transportation Shuttle Information: Please fill in the table below with information about each airport shuttle operating in your fleet (8,500 lbs gross vehicle weight rating and greater). For your convenience, please group similar/identical vehicles together. Please only include vehicles that are involved in passenger transport to/from an airport. There is no need to repeat identical information for consecutive vehicles (see example below). If you have more airport shuttles than the tables allow please create additional copies of the table as needed.

*\*Daily idle time refers to the amount of time the vehicle is stopped with the engine running while on route (e.g. loading or unloading passengers). To estimate the daily idle time use the following formula:* ***#of daily round trips*** *x* ***avg #of stops per round trip*** *x* ***avg. #of minutes idling at each stop.***

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Last Eight Digits of VIN #** | **License Plate #** | **Body Type**  **(e.g. Low Floor, Coach, Cutaway Van, Minibus)** | **Length**  **(feet)** | **GVWR** | **Engine Model Year** | **Fuel Type** | **Capacity** | | **Operation** | | | | |
| **Seated** | **Total** | **Avg. Miles** | | **Daily Hours of Operation** | **Estimated**  **Daily Idle Time (minutes)\*** | **Mid-Day Refueling Required? (Y/N)** |
| **Annual** | **Daily** |
| 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 45 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Last Eight Digits of VIN #** | **License Plate #** | **Body Type**  **(e.g. Low Floor, Coach, Cutaway Van, Minibus)** | **Length**  **(feet)** | **GVWR** | **Engine Model Year** | **Fuel Type** | **Capacity** | | **Operation** | | | | |
| **Seated** | **Total** | **Avg. Miles** | | **Daily Hours of Operation** | **Estimated**  **Daily Idle Time (minutes)\*** | **Mid-Day Refueling Required? (Y/N)** |
| **Annual** | **Daily** |
| 46 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 49 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 51 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 52 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 53 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 56 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 58 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 59 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Thank you for completing this survey!**