Appendix F – Municipal Fleets

F.1 Fleet Contacts

Agency	First	Last	Email	Phone	Ext	County
City of Carpinteria	Matt	Roberts	mattr@ci.carpinteria.ca.us	(805) 755-4443		Santa Barbara
City of Buellton	Rose	Hess	roseh@cityofbuellton.com	(805) 688-5177		Santa Barbara
City of Goleta	Bob	Morgenstern	rmorgenstern@cityofgoleta.org	(805) 968-6769		Santa Barbara
City of Lompoc	Dirk	Ishiwata	d_ishiwata@ci.lompoc.ca.us	(805) 875-8048		Santa Barbara
City of Santa Barbara	Gary	Horwald	ghorwald@santabarbaraca.gov	(805) 564-5402		Santa Barbara
City of Santa Maria	Robert	Dupuis	rdupuis@cityofsantamaria.org	(805) 925-0951	2229	Santa Barbara
County of Santa Barbara	Eric	Barker	ebarker@countyofsb.org	(805) 681-5573		Santa Barbara
Santa Barbara MTD	Steve	Hahn	shahn@sbmtd.gov	(805) 705-1277		Santa Barbara
UCSB	John	Behlman	john.behlman@tps.ucsb.edu	(805) 893-5416		Santa Barbara
City of Camarillo	Kevin	Jorgensborg	kjorgensborg@ci.camarillo.ca.us	(805) 388-5377	711	Ventura
City of Moorpark	Ashraf	Rostom	arostom@moorpark.ca.gov	(805) 517-6362		Ventura
City of Oxnard	Joe	Rodriguez	joseph.rodriguez@ci.oxnard.ca.us	(805) 385-8011		Ventura
City of Port Hueneme	Fred	Camarillo	fcamarillo@cityofporthueneme.org	(805) 986-6556		Ventura
City of Santa Paula	Jose	Arreola	jarreola@spcity.org	(805) 933-4268		Ventura
City of Simi Valley	John	Willoughby	jwilloughby@simivalley.org	(805) 583-6489		Ventura
City of Thousand Oaks	Larry	McKinney	lmckinney@toaks.org	(805) 449-2499	0	Ventura
City of Ventura	Mary Joyce	Ivers	mjivers@ci.ventura.ca.us	(805) 652-4539		Ventura
County of Ventura	Peter	Bednar	peter.bednar@ventura.org	(805) 672-2040		Ventura
CSUCI	Ray	Porras	ray.porras@csuci.edu	(805) 437-8434		Ventura
Gold Coast Transit	Reed	Caldwell	rcaldwell@gctd.org	(805) 483-3959	134	Ventura
City of Ojai	Greg	Grant	grant@ojaicity.org	(805) 646-5581		Ventura
Ventura Unified School District	Wendy	Stevens	wendy.stevens@venturausd.org	(805) 641-5000	1320	Ventura
Cal Poly Transportation/Facility Services	Scott	Loosley	sloosley@calpoly.edu	(805) 756-2816		San Luis Obispo
Cal Poly University Police	Debbie	Anderson	djanders@calpoly.edu	(805) 756-6680		San Luis Obispo

Agency	First	Last	Email	Phone	Ext	County
City of Morro Bay	Rob	Livick	rlivick@morrobayca.gov	(805) 772-6569		San Luis Obispo
City of Pismo Beach Transportation	Dan	Johnson	djohnson@pismobeach.org	(805) 773-7057		San Luis Obispo
Cuesta College	Terry	Reece	treece@cuesta.edu	(805) 546-3100	2531	San Luis Obispo
Lucia Mar Unified School District	Sharon	Harwin	sharon.harwin@lmusd.org	(805) 474-3000	5881	San Luis Obispo
Port of San Luis Harbor District	Jay K.	Elder	jaye@portsanluis.com	(805) 595-5400		San Luis Obispo
San Luis Coastal Unified School District	Annie	Sharp	asharp@slcusd.org	(805) 596-4105	4203	San Luis Obispo
County of SLO	Rocky	Buoy	rbuoy@co.slo.ca.us	(805) 781-5120		San Luis Obispo
City of SLO	Isaac	Shuck	ishuck@slocity.org	(805) 781-7046		San Luis Obispo
City of Arroyo Grande	Raul	Juarez	rjuarez@arroyogrande.org	(805) 473-5468 (805) 459-5855		San Luis Obispo
City of Atascadero	Bob	Joslin	Bjoslin@atascadero.org	(805) 461-5000		San Luis Obispo
City of Paso Robles	Bob	Solway	bsolway@prcity.com	(805) 227-7276		San Luis Obispo
San Luis Obispo Transit Authority	David	Roessler	droessler@slorta.org	(805) 781-4835		San Luis Obispo

F.2 Fleet Operator Survey Items

Introduction

With support from the **California Energy Commission**, the Central Coast Alternative Fuel Vehicles Collaborative ("the Collaborative") is distributing this survey to gauge the level of adoption and interest in alternative fuel vehicles among municipal fleet operators.

The regional Collaborative is a partnership of the Air Pollution Control Districts for Ventura, Santa Barbara, and San Luis Obispo counties; the Community Environmental Council, and the Central Coast Clean Cities Coalition.

If you have any problems completing the online survey, please contact Cameron Gray, the Collaborative Coordinator, at **805-963-0583 x111** for assistance.

To begin the survey, please click the **'Next'** button below.

Screening Questions

- How many vehicles does your organization have in its fleet?

Light-duty	<10	10-50	>50	
Medium-duty	<10	10-50	>50	
Heavy duty	<10	10-50	>50	
Transit bus	<10	10-50	>50	
Other	<10	10-50	>50	(light towers, material handling, tugs)

- What is the zip code of your primary fleet yard? _____
- Is your organization

  Government Utility Business

  - Which best describes your role?

    I decide to buy vehicles or recommend vehicles to a board

    I recommend/suggest vehicles, but do not make the decision

    I perform maintenance on vehicles, but do not make recommendations on purchasing

    I drive vehicles

Questions

This survey is to understand and measure awareness and adoption of alternative fuel vehicles in California fleets.

1. Please choose as many answers as apply for each vehicle or fuel:

	Have one or more in fleet	Plan to purchase in 2015	Interested, but no current plan to purchase	Not interested in adding to fleet	Need more information to make a decision	Used to be in fleet, but discontinued	Do not consider an alternative fuel
Plug-in battery electric							
Plug-in hybrid or range extended electric							
Natural gas (CNG or LNG)							
Methanol							
Hydrogen fuel cell							
Clean diesel							
E85							
Propane							

2. For each vehicle or fuel, please select the statements that are true for <u>your</u> fleet

	Size and types of vehicles I need are available	Can justify the cost of vehicle, fuel and ownership	Vehicles are reliable and maintenance is available	I have access to fueling or charging	Driving range or performance meets needs	Rebates and incentives are available	Is a public benefit (reduced GHG, pollution, or petroleum)
Plug-in battery electric							
Plug-in hybrid or range extended electric							
Natural gas (CNG or LNG)							
Methanol							
Hydrogen fuel cell							
Clean diesel							
E85							
Propane							

3. In a few words, please describe your biggest challenge or concern about adding alternative fuels and vehicles to your fleet. (Open Ended)

4. Please tell us if information or education about the following would address your challenges:

	Not at all	Not really	A step in the right direction	Yes	Absolutely
Total cost of ownership					
Available rebates and incentives					
Government mandates and regulations					
Fleet purchasing language or policy					
Public fueling/charging availability and future growth					
Fueling/charging at fleet yard					
Public benefits					
Safety					
Maintenance or mechanic training					

Other: _____

5. Please read the following short paragraph about a new vehicle type that is coming to market and then answer three yes/no questions:

Green fuel is a renewable, gaseous fuel used vehicles that range from small off-road vehicles (forklifts, tugs) to passenger cars to transit buses. Green fuel is available at gas stations and dispensers accept credit cards for payment. The vehicles fill in minutes, have range similar to their gasoline/diesel counterparts and have zero emissions. Operating the vehicles meets California's requirement for ZEVs and the vehicles are eligible for HOV stickers. Purchase price is higher than conventional vehicles, but can be offset with rebates and cost of ownership is similar to other alternative fuels.

   a. Paying for fuel with a credit card would be a problem for my fleet. YES NO
   b. It's important that we obtain ZEVs to meet state requirements. YES NO
   c. The benefits and rebate can justify the higher purchase price. YES NO

6. If you wanted to learn more about green fuel and green fuel vehicles, which THREE ways would be most effective for you? *(pick three)*
   - Radio, newspaper or magazine advertising
   - Stories in printed or online magazines
   - A Green Fuel website and social media
   - Vehicle loaner program
   - Podcasts or other digital media
   - Workshops or training events
   - Presentations at Clean Cities or association meetings
   - Other _____

<u>Survey Submission Message</u>

Congratulations! You've completed the Tri-Counties Alternative Fuel fleet survey.

To submit your completed survey, please click the '**Done**' button below.

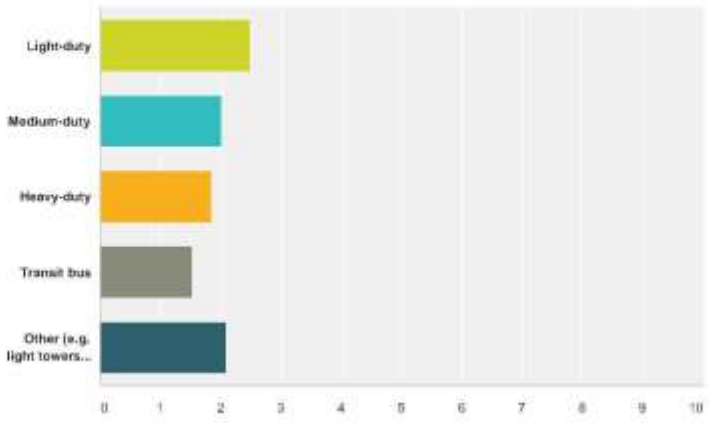
Thank you!

F.3 Survey Results

Note: Complete survey data in MS Excel format is available upon request.

Q1 How many vehicles does your organization have in its fleet?

Answered: 25 Skipped: 0



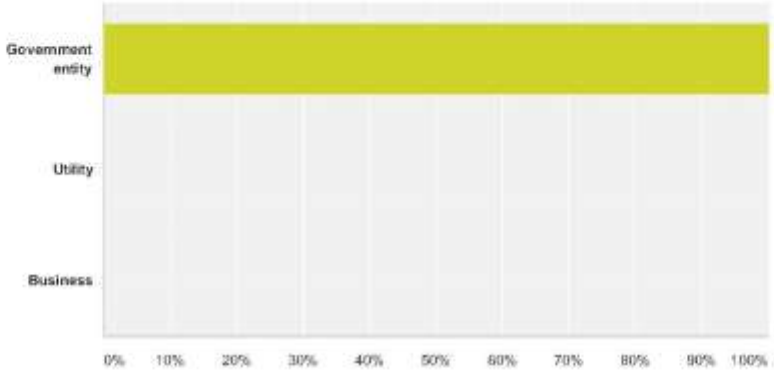
	< 10 vehicles	10 - 50 vehicles	> 50 vehicles	Total	Weighted Average
Light-duty	8.70% 2	34.78% 8	56.52% 13	23	2.48
Medium-duty	30.00% 6	40.00% 8	30.00% 6	20	2.00
Heavy-duty	42.11% 8	31.58% 6	26.32% 5	19	1.84
Transit bus	57.89% 11	31.58% 6	10.53% 2	19	1.53
Other (e.g. light towers, materials handling, tugs)	38.46% 5	15.38% 2	46.15% 6	13	2.08

Q2 What is the zip code of your primary fleet yard?

Answered: 25 Skipped: 0

Q3 Is your organization a:

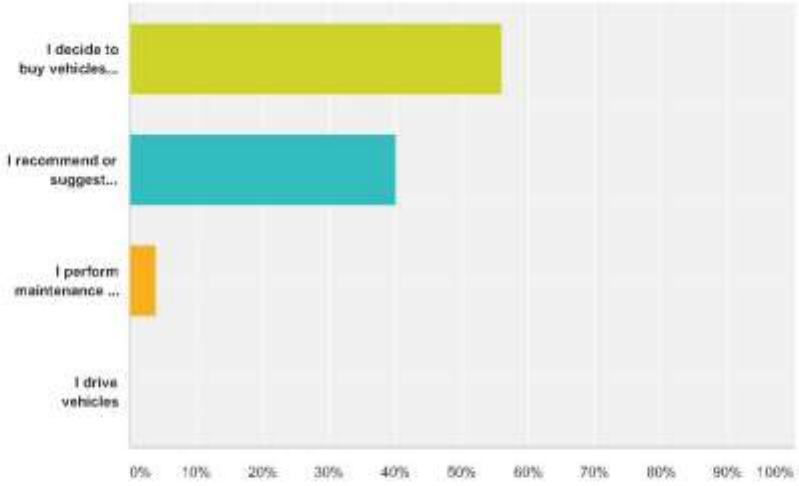
Answered: 25 Skipped: 0



Answer Choices	Responses	
Government entity	100.00%	25
Utility	0.00%	0
Business	0.00%	0
Total		25

Q4 Which best describes your role?

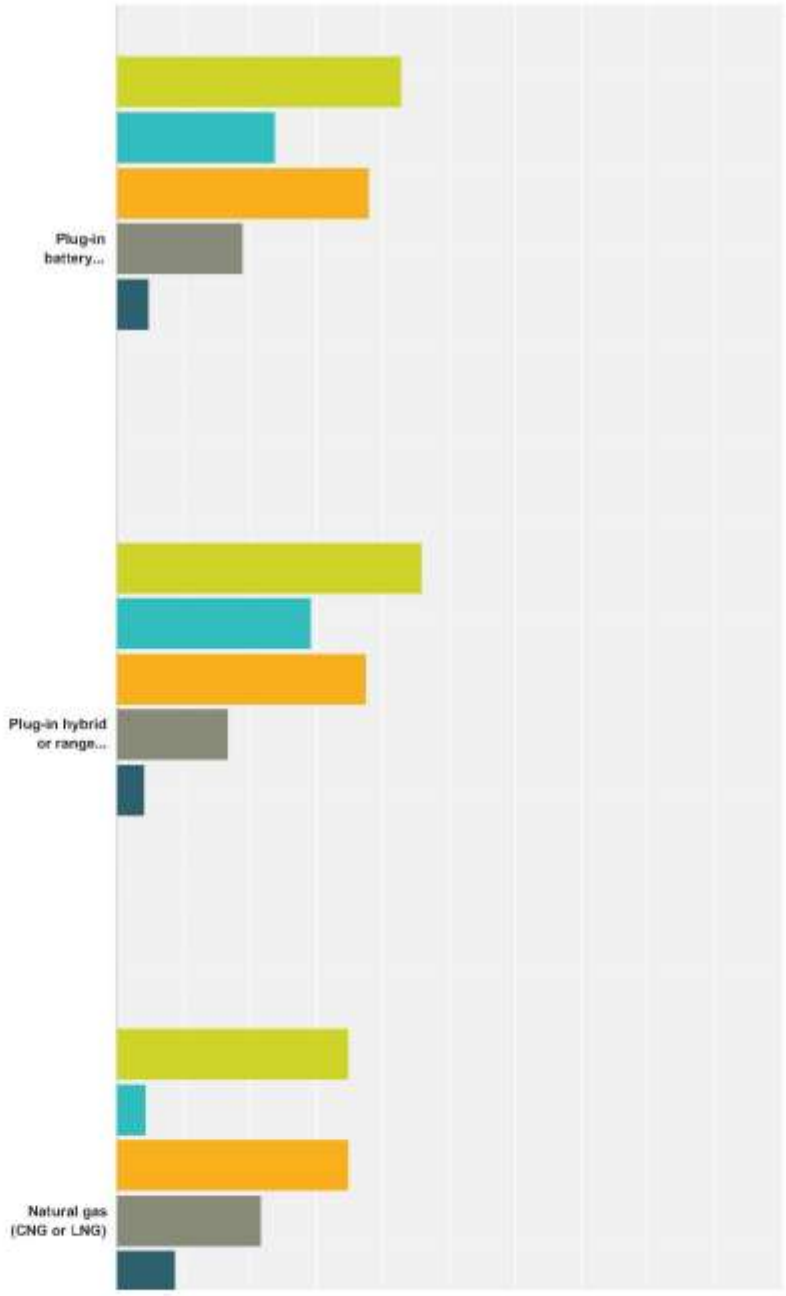
Answered: 25 Skipped: 0

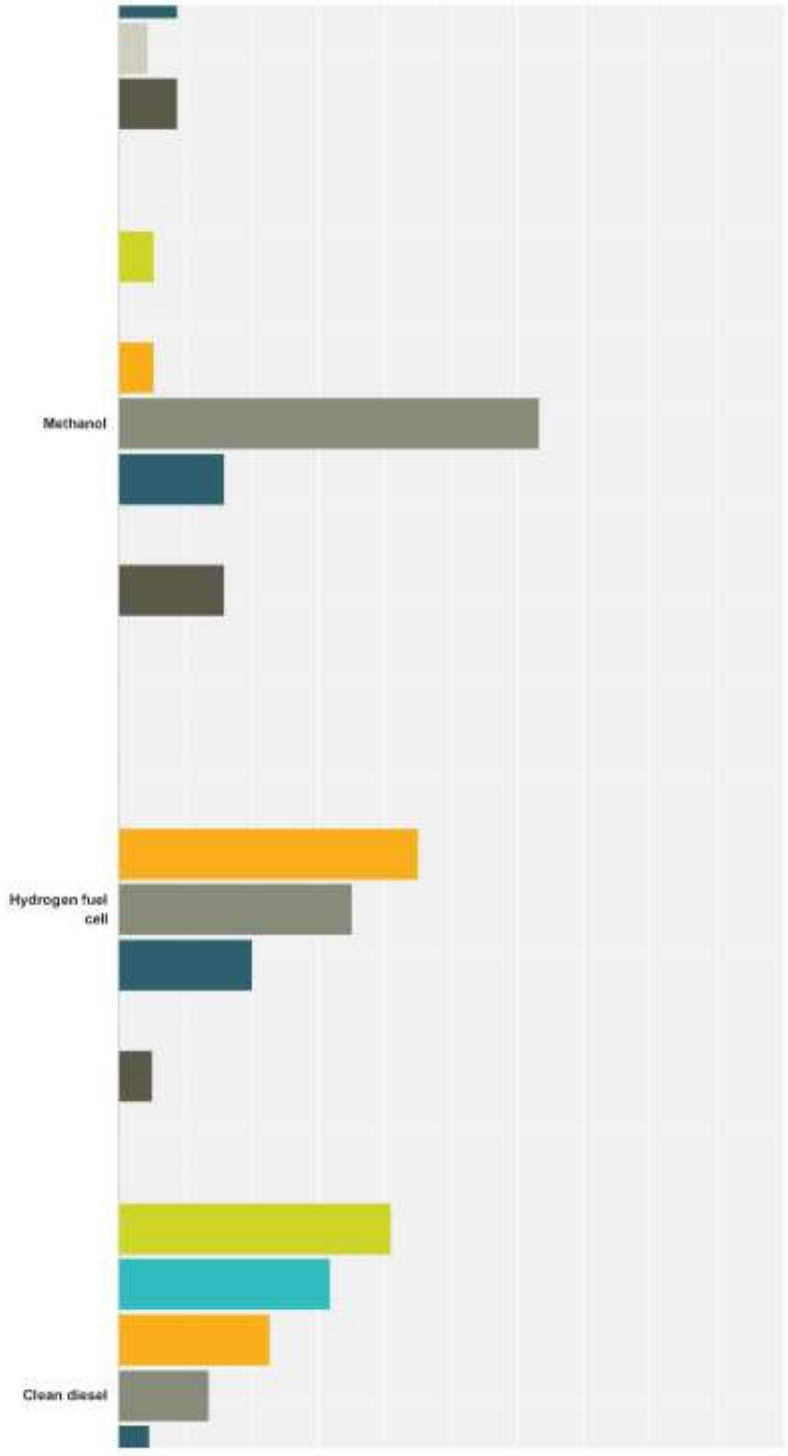


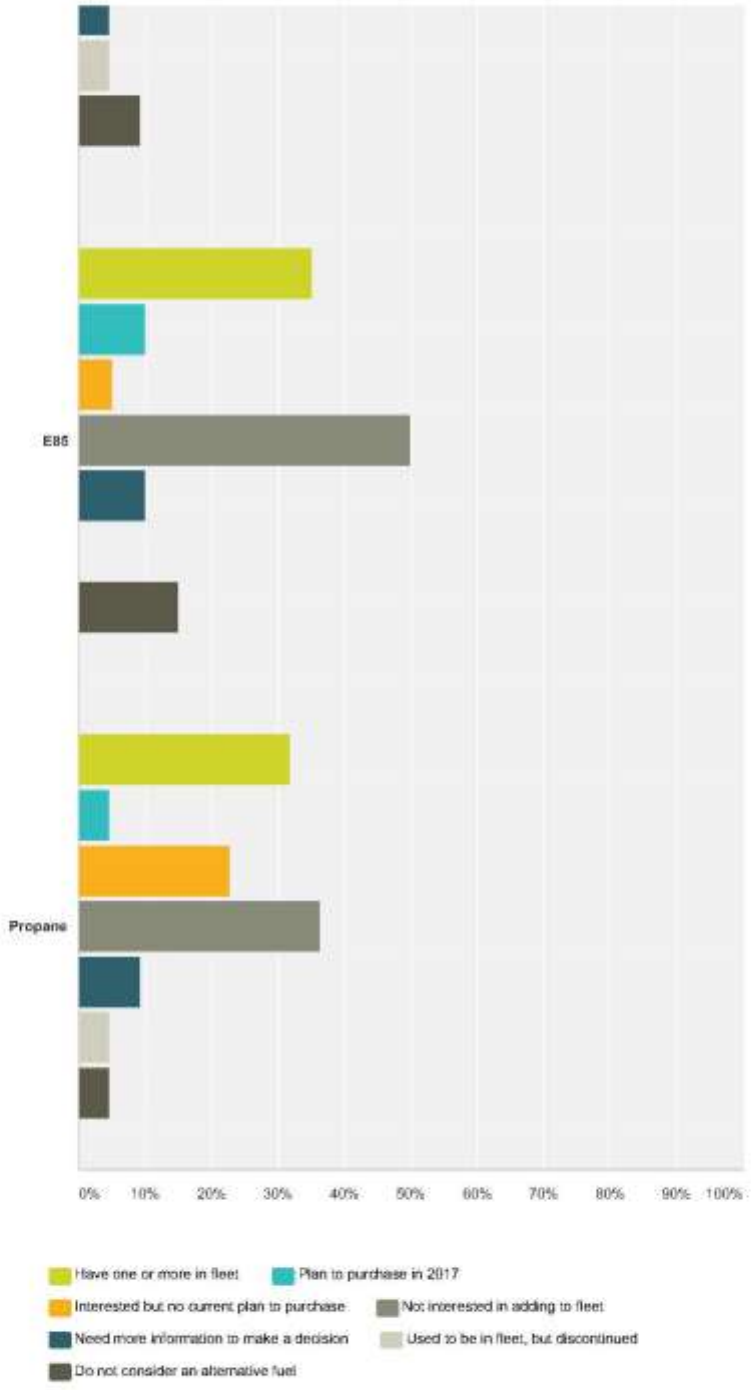
Answer Choices	Responses	
I decide to buy vehicles or recommend vehicles to a board	56.00%	14
I recommend or suggest vehicles, but do not make the decisions	40.00%	10
I perform maintenance on vehicles, but do not make recommendations for purchasing	4.00%	1
I drive vehicles	0.00%	0
Total		25

Q5 Please choose as many answers as apply for each vehicle or fuel:

Answered: 25 Skipped: 0



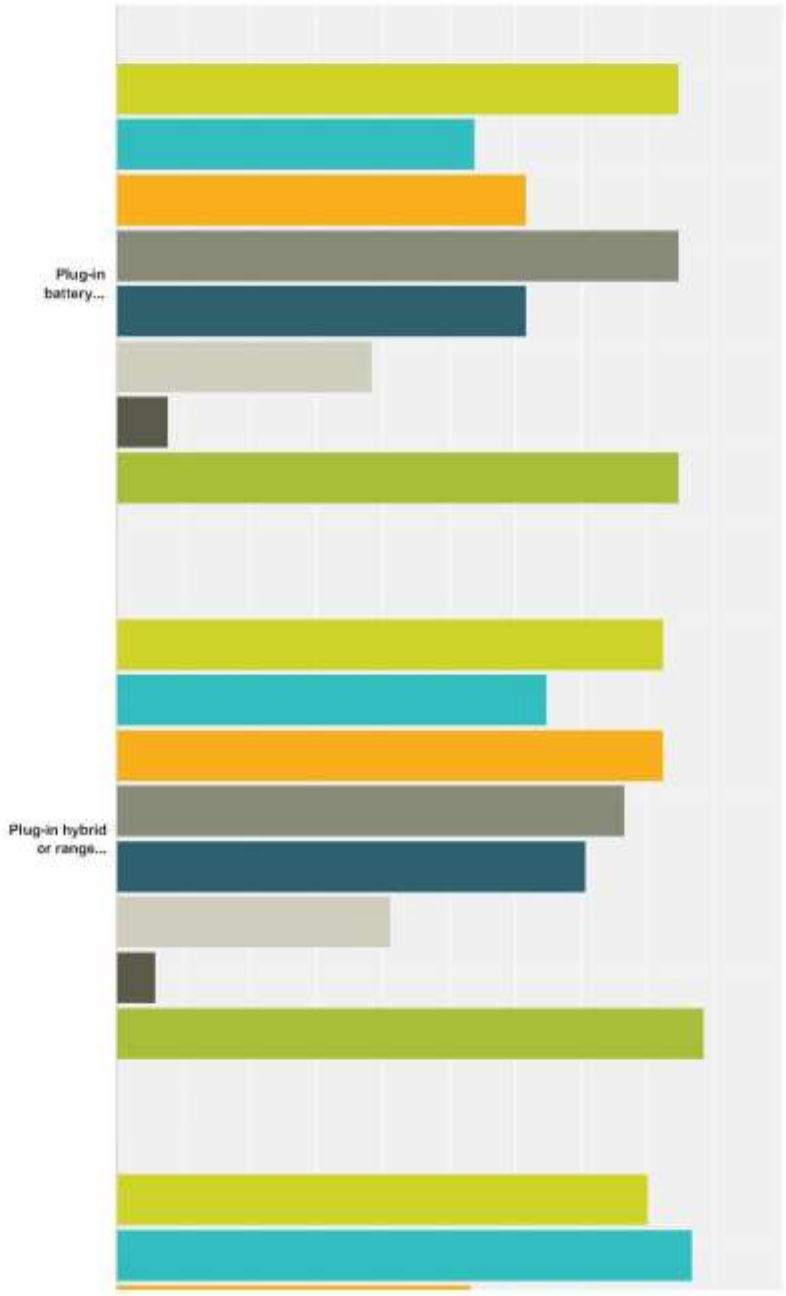

Methanol
Hydrogen fuel cell
Clean diesel

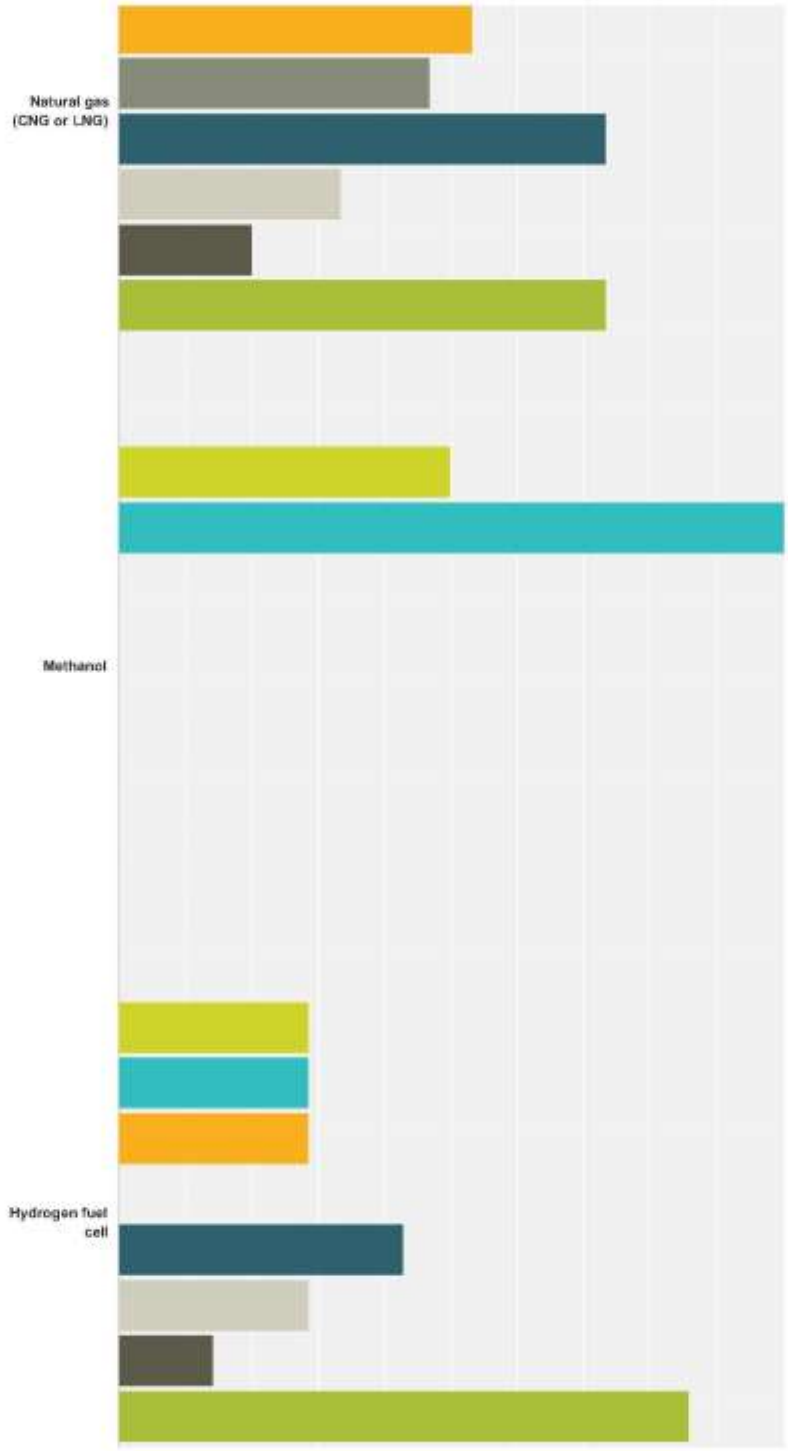

E85
Propane
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Have one or more in fleet
Plan to purchase in 2017
Interested but no current plan to purchase
Not interested in adding to fleet
Need more information to make a decision
Used to be in fleet, but discontinued
Do not consider an alternative fuel

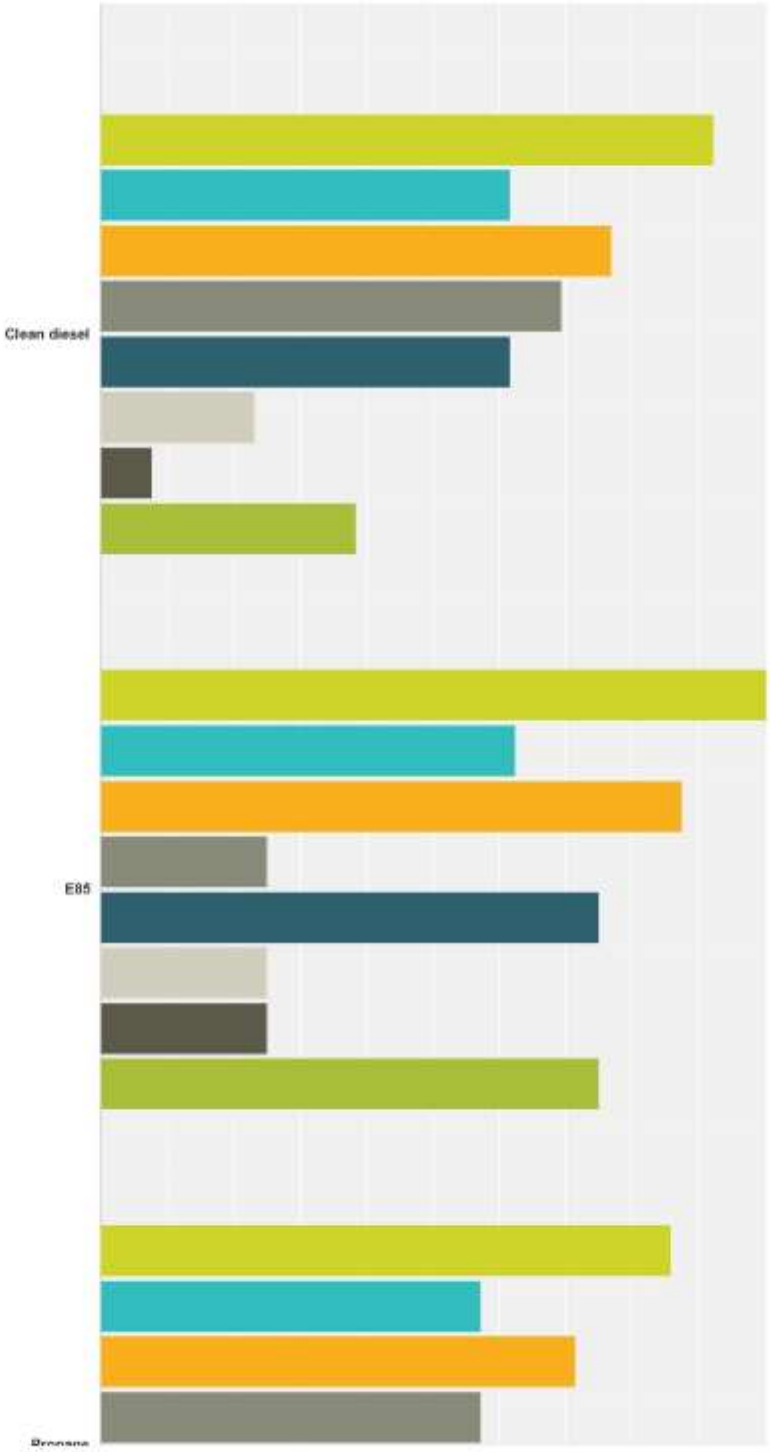
	Have one or more in fleet	Plan to purchase in 2017	Interested but no current plan to purchase	Not interested in adding to fleet	Need more information to make a decision	Used to be in fleet, but discontinued	Do not consider an alternative fuel	Total Respondents
Plug-in battery electric	42.86% 9	23.81% 5	38.10% 8	19.05% 4	4.76% 1	0.00% 0	0.00% 0	21
Plug-in hybrid or range extended electric	45.83% 11	29.17% 7	37.50% 9	16.67% 4	4.17% 1	0.00% 0	0.00% 0	24
Natural gas (CNG or LNG)	34.78% 8	4.35% 1	34.78% 8	21.74% 5	8.70% 2	4.35% 1	8.70% 2	23
Methanol	5.26% 1	0.00% 0	5.26% 1	63.16% 12	15.79% 3	0.00% 0	15.79% 3	19
Hydrogen fuel cell	0.00% 0	0.00% 0	45.00% 9	35.00% 7	20.00% 4	0.00% 0	5.00% 1	20
Clean diesel	40.91% 9	31.82% 7	22.73% 5	13.64% 3	4.55% 1	4.55% 1	9.09% 2	22
E85	35.00% 7	10.00% 2	5.00% 1	50.00% 10	10.00% 2	0.00% 0	15.00% 3	20
Propane	31.82% 7	4.55% 1	22.73% 5	36.36% 8	9.09% 2	4.55% 1	4.55% 1	22

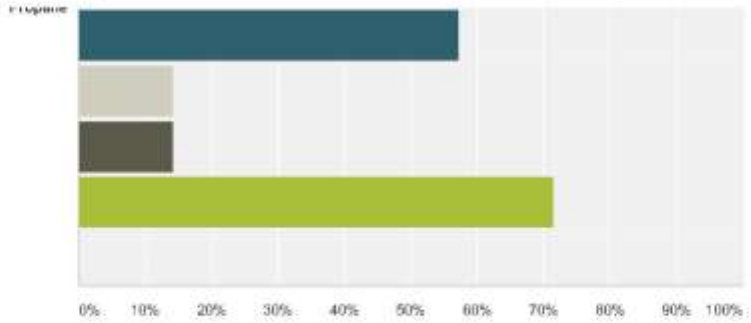
Q6 For each vehicle or fuel, please select the statements that are true for your fleet:

Answered: 21 Skipped: 4




Natural gas (CNG or LNG)
Methanol
Hydrogen fuel cell


Clean diesel
E85



Size and type of vehicles I need are available
Can justify the cost of vehicle, fuel, and ownership
Vehicles are reliable and maintenance is available
I have access to fueling or charging
Driving range or performance meets needs
Rebates and incentives are available
Federal tax credits are available for fleet operators
Is a public benefit (reduced GHGs, pollution, or petroleum)

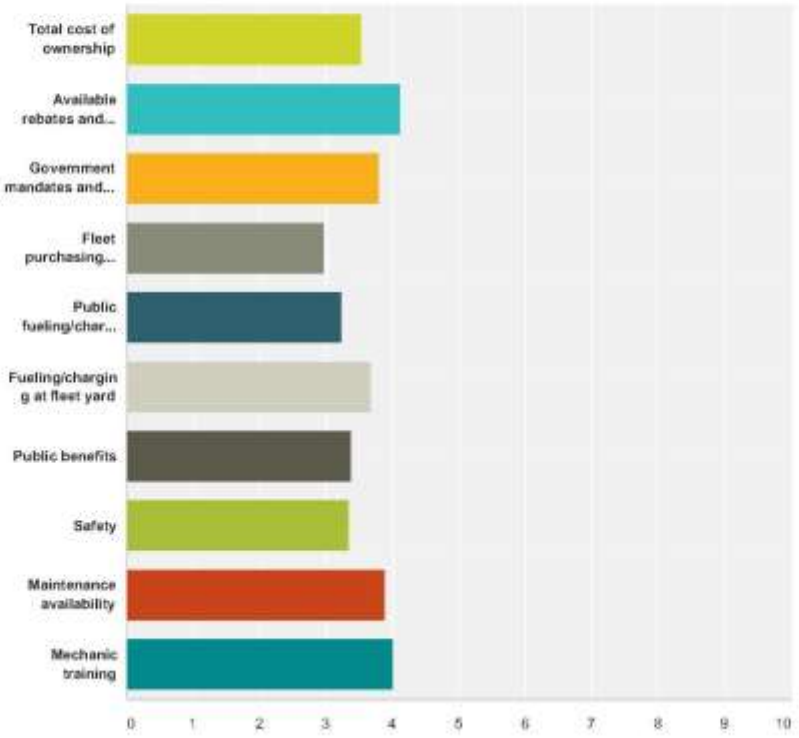
	Size and type of vehicles I need are available	Can justify the cost of vehicle, fuel, and ownership	Vehicles are reliable and maintenance is available	I have access to fueling or charging	Driving range or performance meets needs	Rebates and incentives are available	Federal tax credits are available for fleet operators	Is a public benefit (reduced GHGs, pollution, or petroleum)	Total Respondents
Plug-in battery electric	84.62% 11	53.85% 7	61.54% 8	84.62% 11	61.54% 8	38.46% 5	7.69% 1	84.62% 11	13
Plug-in hybrid or range extended electric	82.35% 14	64.71% 11	82.35% 14	76.47% 13	70.59% 12	41.18% 7	5.88% 1	88.24% 15	17
Natural gas (CNG or LNG)	80.00% 12	86.67% 13	53.33% 8	46.67% 7	73.33% 11	33.33% 5	20.00% 3	73.33% 11	15
Methanol	50.00% 1	100.00% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	2
Hydrogen fuel cell	28.57% 2	28.57% 2	28.57% 2	0.00% 0	42.86% 3	28.57% 2	14.29% 1	85.71% 6	7
Clean diesel	92.31% 12	61.54% 8	76.92% 10	69.23% 9	61.54% 8	23.08% 3	7.69% 1	38.46% 5	13
E85	100.00% 8	62.50% 5	87.50% 7	25.00% 2	75.00% 6	25.00% 2	25.00% 2	75.00% 6	8
Propane	85.71% 6	57.14% 4	71.43% 5	57.14% 4	57.14% 4	14.29% 1	14.29% 1	71.43% 5	7

Q7 In a few words, please describe your biggest challenge or concern about adding alternative fuels and vehicles to your fleet.

Answered: 22 Skipped: 3

Q8 Please tell us if information or education about the following would address your challenges related to alternative fuels and vehicles:

Answered: 25 Skipped: 0

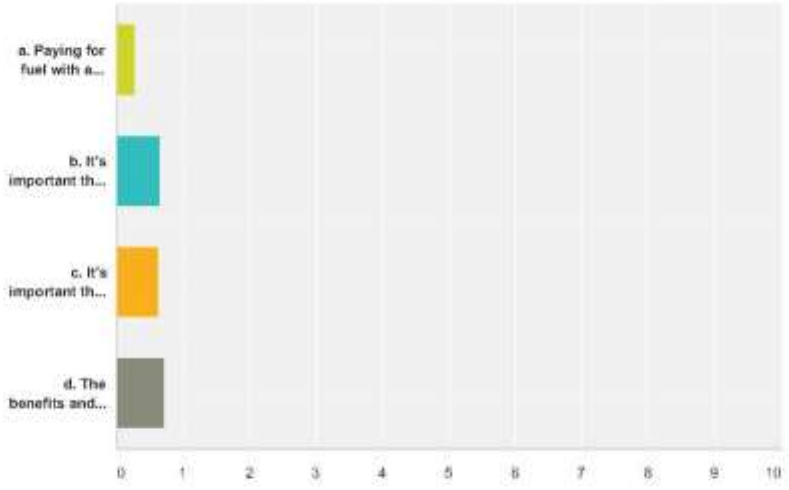


	Not at all	Not much	A step in the right direction	Yes	Absolutely	Total	Weighted Average
Total cost of ownership	16.00% 4	4.00% 1	20.00% 5	32.00% 8	28.00% 7	25	3.52
Available rebates and incentives	4.00% 1	0.00% 0	16.00% 4	40.00% 10	40.00% 10	25	4.12
Government mandates and regulations	0.00% 0	12.50% 3	20.83% 5	41.67% 10	25.00% 6	24	3.79
Fleet purchasing language or policy	12.00% 3	24.00% 6	28.00% 7	28.00% 7	8.00% 2	25	2.96
Public fueling/charging availability and future growth	4.00% 1	36.00% 9	16.00% 4	20.00% 5	24.00% 6	25	3.24
Fueling/charging at fleet yard	12.00% 3	12.00% 3	8.00% 2	32.00% 8	36.00% 9	25	3.68

Public benefits	4.17% 1	20.83% 5	29.17% 7	25.00% 6	20.83% 5	24	3.38
Safety	4.35% 1	26.09% 6	26.09% 6	17.39% 4	26.09% 6	23	3.35
Maintenance availability	0.00% 0	4.17% 1	41.67% 10	16.67% 4	37.50% 9	24	3.88
Mechanic training	4.00% 1	8.00% 2	20.00% 5	20.00% 5	48.00% 12	25	4.00

Q9 Please read the following short paragraph about a new vehicle type that is coming to market and then answer three yes/no questions:Green fuel is a renewable, gaseous fuel used in vehicles that range from small off-road vehicles (forklifts, tugs) to passenger cars to transit buses. Green fuel is available at gas stations and the fuel's dispensers accept credit cards for payment. The vehicles fill in minutes, have range similar to their gasoline/diesel counterparts and have zero emissions. Operating the vehicles meets California's requirement for ZEVs and the vehicles are eligible for HOV stickers. Purchase price is higher than conventional vehicles, but can be offset with rebates and cost of ownership is similar to other alternative fuels.

Answered: 25 Skipped: 0

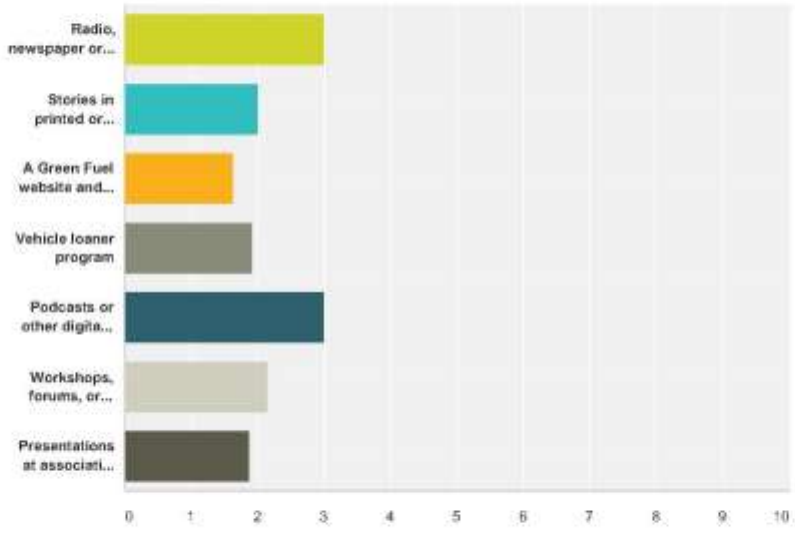


	Yes	No	Total	Weighted Average
a. Paying for fuel with a credit card would be a problem for my fleet.	28.00% 7	72.00% 18	25	0.28
b. It's important that we obtain ZEVs to meet state requirements.	64.00% 16	36.00% 9	25	0.64

c. It's important that we obtain ZEVs to meet local government requirements.	**62.50%** 15	**37.50%** 9	24	0.83
d. The benefits and rebate can justify the higher purchase price.	**70.83%** 17	**29.17%** 7	24	0.71

Q10 If you wanted to learn more about green fuel and green fuel vehicles, which three (3) ways would be most effective for you?

Answered: 25 Skipped: 0



	Way 1	Way 2	Way 3	Total	Weighted Average
Radio, newspaper or magazine advertising	0.00% 0	0.00% 0	100.00% 2	2	3.00
Stories in printed or online magazines	22.22% 2	55.56% 5	22.22% 2	9	2.00
A Green Fuel website and social media	61.54% 8	15.38% 2	23.08% 3	13	1.62
Vehicle loaner program	33.33% 4	41.67% 5	25.00% 3	12	1.92
Podcasts or other digital media	0.00% 0	0.00% 0	100.00% 3	3	3.00
Workshops, forums, or training events	23.81% 5	38.10% 8	38.10% 8	21	2.14
Presentations at association meetings	40.00% 6	33.33% 5	26.67% 4	15	1.87

F.4 Local Government Fleet Interview Template

Notes for Interviewers

This interview template is intended to provide a loose framework for obtaining information about fleet operators' interest and awareness in fuel cell electric vehicles (FCEVs). The goal of these interviews is to develop a more nuanced understanding of specific opportunities and barriers to FCEV deployment in municipal fleets, as well as fleet managers' openness to installing hydrogen refueling infrastructure at their agency/organization.

The information obtained through interviews with municipal fleet managers will supplement and build upon insights obtained from the online fleet manager survey. The template outlines *potential* areas of inquiry for interviewers, and some ideas for specific questions that could be asked. If it becomes clear over the course of the interview that there are specific issues or areas warranting deeper exploration, there's no need to stick to the template. The goal is to listen closely to people's responses and adapt questions as need, so the interview unearths information of the greatest relevance and significance.

Template

Introduction

- Take a moment to get acquainted, and establish rapport.
    - *"Hi. How is your day going?"*
- Provide general background for the conversation, without revealing the specific focus on FCEVs.
    - "*Over the last three years, a coalition of regional agencies and stakeholders have developed several Readiness Plans for alternative fuel vehicles with grant funding from the California Energy Commission."*
- Help the interviewee understand why they are being interviewed.
    - *"As we look ahead to the implementation of the readiness plans for the Tri-Counties region, we want to get a better understanding of the opportunities and challenges that managers are faced with as they seek to incorporate cleaner, lower-emission alternative fuel vehicles (AFVs) into their municipal/public fleets. And that brings us to today's conversation."*

General Fleet Management Questions

- Challenges
    - "*In general, what are the 3 foremost challenges you face with vehicle procurement? What about the 3 biggest challenges related to operating and maintaining your fleet?*"
- Plans & Policies
    - "*Has your agency/organization adopted any plans/policies related to the procurement of AFVs for their municipal fleet (for example, a Climate Action Plan)? If so, how have these policies influenced your procurement practices? Have they been helpful or burdensome?*"
    - "*Are you aware of resources such as the regional AFV Readiness Plan, EV Readiness, and forthcoming Hydrogen Readiness Plan?"*

Alternative Fuels Questions

- Procurement

    - "*What are the considerations that you weigh most heavily when making procurement decisions about AFV?"*
    - "*Are you open to leasing vehicles? Are you leasing any vehicles right now?"*
    - *"What factors are most influential in your decisions to purchase or not purchase an AFV?*"
- Barriers
    - "*What would you say are the 3 biggest barriers that stand in way of getting more AFVs into your fleet?*"
    - "*Are there unique challenges related the procurement of AFVs. If so, what are they?*"
    - "*What, if any, are the operational challenges you face with incorporating AFVs into your fleet?*"
- User Demand
    - "*How is the demand for alternative fuel vehicles among staff that utilize your fleet services and vehicles?"*
    - *"If demand is lower for AFVs, have staff indicated why they are less inclined to use these vehicles? If so, what were there reasons?*"
- Fuel
    - "*Do you have fueling/charging infrastructure installed onsite for your AFVs?"*
    - *"Would you be open to incorporating AFVs that would need to refuel offsite if a fueling station for the AFV was nearby?"*
    - *"Do you prefer to have onsite fueling infrastructure for you AFVs? If so, why?"*
- Maintenance
    - "*How does the availability of maintenance for different AFVs affect your decision to include them in the fleet?"*
    - *"Do you feel that there are good programs and resources available for training your mechanics and technicians to work on AFVs? Would it be helpful if new training programs or resources were developed?"*
    - *"If a nearby dealership could maintain the AFV, would you be comfortable incorporating the AFV into your fleet without your mechanics/technicians being trained? If not, why?"*

Hydrogen & Fuel Cell Electric Vehicles

- Lead-in
    - "*We received California Energy Commission funding to develop a regional hydrogen readiness plan…"*
- Awareness
    - *"How familiar are you with FCEVs and hydrogen fueling infrastructure?"*
    - "*What are the benefits of FCEVs that you are aware of?"*
- Adoption
    - *"Would you consider incorporating FCEVs into your fleet despite the vehicles' higher upfront cost? Would you consider the vehicles if incentives or discounts for fleet operators could reduce the cost of purchasing or leasing an FCEV?"*
    - *"Toyota is offering to cover the cost of fueling their Mirai FCEV with hydrogen for three years, up to $15,000. If you did not have to pay to fuel FCEVs with hydrogen, would you be more likely to lease or purchase an FCEVs for your fleet?*

- Stations
    - "*Would you be open to hosting a hydrogen refueling station at your agency/organization? What if grant funding was available that would cover the station's installation costs?"*
    - "*If you hosted a hydrogen refueling station at your agency/organization, would you be open to making it publicly accessible?*
    - *Do you forsee any major barriers that would prevent shared public-private use of your hydrogen fueling station? If so, what are these barriers?"*

<u>Close Out</u>

- Best Practices and Fleet Management Networks
    - *"How do you stay informed about best practices for fleet management and AFV deployment?"*
    - "*What networks or groups are you a part of that discuss fleet management issues?*
    - "*Are there any fleet management symposiums or conference that you would recommend attending?*
    - "*Who coordinates these groups? Could you share their contact info with me?"*

- Thank you!
    - "*I really appreciate you taking the time to talk today."*
    - *"Is it alright if I follow up with you if any other questions come up?"*
    - *"Thank you!"*

F.5 Fleet Manager Interview Notes

Interview Date	Notes
1/5/2017	The contact has 5 propane vehicles in operation today; received grant and used funds to purchase 4 Ford bi-fuel pick-ups but now use only gasoline for fuel because OEM support dried up; previously leased 2 all-electric Ford Rangers and a Toyota RAV-4 EV. Per the contact, the government has no intention to add additional AFVs to the government fleet at this time. However, plans are in motion to replace 2 of the propane trollies in the next two years, with grant funding already secured; delivery hoped for in 2018. Seems like little consideration had been given to trying something different and moving to all-electric shuttles. The contact cited concerns about the ability to deliver air conditioning on all-electric shuttles. When asked about hydrogen and FCEVs, the contact indicated that they "knew a little bit" but was not interested in bringing FCEVs to the fleet, mentioning that hydrogen seemed to be in the very early stages. The contact is the sole mechanic of the fleet, and is therefore very busy. The contact has a "minimal" amount of time to research alternative fuel options.
1/9/2017	Foremost challenges: (1) fueling/charging infrastructure, and securing funding to install infrastructure; (2) availability of AFVs with range greater than 250 miles; (3) making case for AFV return on investment in fiscally conservative environment. Has 10 Chevy Volt PHEVs in fleet. The contact carefully considers whether fleet vehicles will be in demand, and mentioned that County staff have been less inclined to drive battery electric vehicles. The contact guessed that this was due to range anxiety. Onsite fueling infrastructure for any alternative fuel vehicles is a must. The contact mentioned that it would be helpful if more OEM training for automotive technicians were available, as would more tech/mechanic repair training programs from state and local governments. The contact is on a community college Board for their County and advocates for improved programs there that will better address repairs for the coming generation of AFVs. The contact said they would be open to installing a hydrogen dispenser on site if the high cost could be covered by a grant. "Hydrogen is fuel of future", not looking to procure FCEVs now. Would need in-house maintenance for FCEVs to incorporate them into the fleet, partly due to unionization of auto techs. Not comfortable with dealership maintenance due to slow turn around; per the contact, dealers don't make money off fleet vehicle repairs, so their maintenance teams haven't always provided the best service. Open to installing shared hydrogen fueling infrastructure. Member of NAFA, MEMA, public fleet managers' association, CalStart, and local Gold Coast fleet manager group.
1/6/2017	Brief conversation. The contact has a very small fleet and is not looking to add any alternative fuel vehicles at this time. Fuel cell electric vehicles and hydrogen were not indicated as being of interest. Lessons: fleet size matters, and staff capacity is key.

Interview Date	Notes
1/23/2017	The contact indicated that their three major challenges as a fleet manager are: (1) time constraints, making it difficult to find time to research alternative fuel vehicles; (2) balancing the costs and benefits, as well as operating characteristics and vehicle applications; (3) poor availability of AFVs for certain vehicle classes or applications, especially larger light-duty vehicles and medium- and heavy-duty trucks. The contact also said that the lack of incentives available to public fleet operators makes it difficult to justify the higher upfront cost of the vehicles. Investment in fueling infrastructure is another hurdle. The contact's records indicate that user demand at the Government is lower for certain types of AFVs, particularly EVs where range is a concern. The Climate Action Plan for the Government includes a goal to reduce emissions from fleet vehicles; however, it does not include specific targets. When asked, the contact indicated that targets would make fleet management more difficult and could increase costs for the Government. The contact was not supportive of such a move. The fleet has leased vehicles in the past, but said that the experience was underwhelming in terms of cost efficiency. The contact is open to incorporating FCEVs into the fleet, and would consider installing onsite hydrogen fueling infrastructure if it was cost effective or funded by an outside entity. The contact said that shared public-private fueling would not be an option for the Government due to the limited space in their fleet yard and its location. When asked about training for maintenance of new AFVs, he said that more local resources for his technicians would be helpful. They currently must travel to LA for trainings to work on EVs. The contact has "sublet" maintenance to outside technicians/businesses. The contact prefers that this work be completed nearby, but has to have some out-of-town repairs done on CNG vehicles. The contact also indicated that they would be much less likely to incorporate a Mirai into their fleet if the vehicle's fuel incentive went away. The contact stays informed about AFVs through print materials/publications, the regional Gold Coast fleet group, the LA-based Municipal Equipment Management Group, NAFA, and attends one conference a year (usually GFX).

Interview Date	Notes
1/19/2017	The contact said that his challenges with incorporating AFVs include: (1) the availability of certain types of vehicles, especially larger light-duty service vehicles and medium- and heavy-duty trucks (anything like the Ford Transit is hard to come by); higher upfront vehicle costs for AFVs. The organization has over 400 vehicles. 95% of their purchases for light-duty vehicles are targeted to AFVs. The contact carefully considers fitting vehicles to their application, so they have not seen many issues with low user demand; in general, staff and fleet service users seem very open to using the PEVs and other AFVs available today. The contact indicated that greening the campus fleet will be essential to achieving climate targets set by their organization, but the lack of available and affordable vehicles beyond the smaller LDV class makes it difficult to begin implementation now. E85 is viewed as a bridge to meeting these goals and may be used more in the next 2-5 years. With regard to installing fueling infrastructure, stranded assets are a concern. A lack of available financial capacity to install new fueling infrastructure is a challenge. The contact felt that staff were well equipped to get training for maintenance on AFVs, but said more local resources couldn't hurt. The contact is open to outsourcing maintenance if need be. For FCEVs, the contact would want onsite fueling since the local hydrogen fueling station is located more than 10 miles away in Santa Barbara. The contact likes the Mirai that they demoed a couple months ago, and would love to incorporate it into their fleet if onsite fueling were available, but doesn't see this being possible in the next couple years due to financial constraints. The free fuel incentive offered by Toyota does make the Mirai more attractive in their opinion. The contact felt that his managers would be open to exploring shared public-private fueling, but grant funding for the station install would be key given current costs. The contact attends an annual fleet conference, and has access to a fleet manager listserv. Can provide match funding for grant opportunities.
1/23/2017	This local governments fleet operator retired earlier this year, and a replacement has not yet been hired. The contact is filling in on an interim basis, and did his best to answer interview questions. Per the contact, the government has a small number of hybrid vehicles in their fleet (not the plug-in variety). The major factor informing their vehicle procurement decisions is cost of purchasing and operating vehicles. AFVs have not factored prominently into their fleet accord to the contact because the government has not found them to be "cost effective", even though they have a large fleet (over 300 vehicles). Investing in fueling infrastructure is another challenge. When asked about FCEVs, the contact said that they would need more information about costs associated with purchase and use. The indicated that their organization was not interested in exploring hydrogen and FCEVs now. The contact also indicated that it required a great deal of staff time to access funding from state programs and secure vehicle incentives. The contact added that staff already struggle to meet existing state and federal requirements. Information about state programs focused on directing GGRF investment to Disadvantaged Communities was shared with the contact by the interviewer, who also offered to help the government procure funding through types of pathways for fleet modernization and emission reductions.

Interview Date	Notes
1/31/2017	The contact expressed support for incorporating alternative fuel vehicles into their local government fleet, but indicated that supervisors who authorize vehicle procurement could use additional education on the benefits of alternative fuels and zero emission vehicles. It sounded like more internal support is needed, especially around upfront vehicle cost, incentives, and long-term operating costs. Infrastructure, especially for PEVs, is a challenge. The local government only has a single EV charging station that is located at on facility. The contact would like to have fleet PHEVs for this location and the fleet yard, with EVSE at both sites. The contact said that there are currently no plans or policies in place that require their fleet to move forward with AFV procurement, but the contact's goal is to make the organization green so they want to incorporate the lowest emission vehicles into their fleet that they can. The is leasing a vehicle currently, but will purchase when the lease term ends.
2/1/2017	The contact indicated that their greatest challenge with incorporating alternative fuel vehicles is securing funding for vehicles that have a higher upfront cost and for installing additional fueling/charging infrastructure. They acknowledge that there is a tension between fiscal considerations and GHG/air quality benefits. The availability of alternative fuel vehicles for a wide range of duty classes and applications is another challenge. The contact said their local government has a policy on the books for vehicle depreciation cost collection, which provides a steady stream of additional funding for vehicle replacements. The contact also has a goal for 20% of all fleet vehicles to be alt-fuel vehicles. Major consideration that inform alt-fuel vehicle purchase include cost, safety, reliability, environmental benefits, and vehicle application. The organization has leased vehicles in the past, including a Toyota RAV4 EV, but prefers to purchase vehicles because it is more cost effective in the long run. User demand for alternative vehicles is high. The contact attributed this to the online checkout system they use for fleet vehicles, which provides training and information to staff about the vehicle they will be driving. This helps familiarize staff with new technologies. There are 22 government charging stations installed for electric vehicles. 19 of these stations are public and the other 3 are for private use by staff. The contact is open to fueling vehicles offsite if a station is within reasonable distance (3-5 miles), and the government uses fueling credit cards. Maintenance of the vehicles isn't an issue; the contact said that their technicians have access to good training, though more local resources would be welcome. If a vehicle is under warranty or if a major repair needs to be completed, the contact will send vehicles to dealership for repair as this is more cost effective. However, they are only comfortable using dealerships that are certified to work on new technologies if the repair is for an EV or other clean vehicle technology. The contact expressed openness to deploying FCEVs in the government fleet if fueling stations were located nearby. They seemed enthusiastic about piloting an FCEV and said that they'd be willing to drive longer distance to refuel the vehicle if need be. The contact indicated that a fuel incentive like the one offered by Toyota would factor into her consideration of piloting an FCEV. The contact didn't feel that the government would be able to accommodate shared public-private fueling infrastructure. Per their account, the government is small. Even with grant funding for a refueling station, they didn't think that a shared option would be viable. However, they were supportive of working with other private or public entities to explore the possibility of bringing hydrogen to their area.

Interview Date	Notes
2/2/2017	The contact indicated that, in general, funding is the major challenge for their agency when trying to procure alternative fuel vehicles. They said that there are no internal policies or local government requirements for the transit agency to reduce emissions, but was supportive of bring cleaner vehicles to the region. The agency has invested heavily in CNG buses and fueling infrastructure. The fleet includes 56 CNG busses, 24 paratransit vehicles, and 14 CNG light duty vehicles. No other alternative fuels are in use at the agency, but the contact was open to exploring other options. However, they expressed reservations about being on the "bleeding edge" since it entails risks of stranded assets. The contact indicated that they are somewhat familiar with FCEVs, but could not go into specifics. Details about the benefits of FCEVs and ongoing efforts to create a statewide hydrogen fueling network were explained to the contact. They would be open to incorporating FCEVs into their fleet. They felt that grant funding would be crucial to this endeavor, and foresaw challenges with gain support from transit agency decision-makers. They also wondered about the potential risk of bring a new fueling technology to the agency. A new facility is currently under construction, and the contact felt that there would be plenty of room for an on-site hydrogen fueling station at its fleet yard. Shared public-private fueling at the site would not be an option, and sharing offsite hydrogen fueling infrastructure would present challenges; specifically, the union at the agency does not permit drivers to fuel vehicles. If hydrogen fueling happened offsite, the buses would need to return to the fleet yard so the appropriate staff member could refuel at the offsite location. The contact seemed happy with his current access to training resources for mechanic working on their CNG busses. The Southern California Regional Transit Training Consortium (SCRTTC) provides training. Staff either travel to Los Angeles or SCRTTC staff provide onsite training. The contact stays up-to-date on best practices by attending California Transit Association symposiums and American Public Transit Association conferences. They are also a member of the regional Gold Coast Fleet Managers group.
2/8/2017	The local government fleet management team was very supportive of efforts to green their fleet, and has taken more steps to incorporate alternative fuel vehicles than most governments of their size. However, staff had limited knowledge of FCEVs and were not able to report the vehicle's operating characteristics or environmental benefits. The contacts were supportive of incorporating fuel cell electric vehicles once the interviewer provided more information about performance characteristics and environmental benefits. One of the foremost barriers for adoption due to the bid process used for vehicle procurement. The contacts indicated that the lowest cost bidder wins and that environmental benefits are not considered. Since financial considerations dominate, it will be difficult to adopt higher-cost FCEVs. Hydrogen is currently unavailable in their area, so additional financial outlays would be required for onsite fueling unless a public hydrogen station is constructed and operating nearby. One thing that was very clear from the conversation was staff's passion for rolling out solutions that will address climate change. Both contacts were receptive to potential grant-funded pilot projects for hydrogen buses, shared public-private fueling, and FCEVs demonstrations. The main issue standing in the way of this work would be resource capacity, so outside dollars with no-to-low match funding requirements would be essential.

Interview Date	Notes
2/10/2017	The contact indicated that their local government was currently demoing an FCEV and is moving in the direction of acquiring an FCEV for their fleet. The primary consideration for new vehicle purchases is the return on investment, which is tied to both vehicle use and fuel costs. In general, the contact has found that EVs don't pencil out over their lifetime, with a cost that is $6,000 to $7,000 more than conventional automobiles. However, the fuel incentive on the Mirai made it attractive to lease. This will give the local government a chance to try the vehicle out before moving forward with a purchase. The contact was not sure about the possibility of installing onsite hydrogen fueling infrastructure. The thought that it would be possible to fit a hydrogen station into their fleet facilities, but had questions about permitting requirements. In their opinion, installing onsite fueling infrastructure would only be a consideration if their organization procured several FCEVs for their fleet. With regard to shared public-private fueling, the contact foresaw several issues. Specifically, fleet fuel goes untaxed at their organization but fuel sold to the public is taxed. If hydrogen is taxed for public sale, the contact felt that it would be unrealistic to provide shared public-private fueling due to the differences in tax assessment.
2/14/2017	This was a follow-up interview with the Energy Manager of the organization whose fleet manager was interviewed on 2/10/2017. Discussed opportunities for installing hydrogen at facilities operated by the local government entity. Per the contact, a fueling station located near one of their campuses could open up opportunities for fueling medium- and heavy-duty hydrogen trucks. Another opportunity would be to install a H2 station at a nearby gas station since this is located near some facilities. For the truck idea, the contact indicated that their government has 3 to 6 diesel trucks in operation 6 days a week at their campus. The estimates that each truck burns at least 70 gallons of fuel per day. Replacing these diesel vehicles to ZEVs could significantly reduce GHG and criteria air pollutant emissions.

Interview Date	Notes
2/14/2017	The major barrier to the deployment of more clean, low-emission vehicles is funding for the agency. Another significant barrier is past experiences experimenting with alternative fuels that have left a bad taste in the agency's mouth. Per contacts, the agency has a very strong clean diesel component that is reliable and low emission, but other efforts to incorporate non-diesel technologies got messy. Specifically, the agency tried to incorporate 4 hybrid electric diesel buses into their fleet several year ago, but these hybrid vehicles were very unreliable. The agency canceled their order for 2 of the 4 buses. A court battle also ensued. This experience makes staff and their Board hesitant to experiment with hydrogen or all-electric options, despite their support for clean vehicle technologies. Overall, the contacts didn't think that the types of routes the agency runs would be conducive to many alternative fuel technologies because their fleet vehicles travel long distances. Mechanic training and maintenance were other significant issues. It can be difficult to get training for their staff, and new technologies can slow down work in their shop and overwhelm staff who are new to working on novel types of buses. The agency would need to know that they have strong support from OEMs and outside agencies to get their staff trained for maintenance of hydrogen vehicles. Infrastructure costs and building retrofits were another consideration. The contacts felt that a loaner program for hydrogen vehicles would be a good way to make sure that new technologies are a good fit for their operations. This could be supported by a mobile fueling station, such as the one Toyota has used in some regions. The contacts said that there are plans in development for a new fleet facility. They seemed to think that there could be opportunities for installing a hydrogen fueling station at this site, possibly with shared- public-private fueling since they are located near US 101. However, the agency would need to derive financial benefit from the station or have any financial risk assumed by an outside party who owns and operates the station. The challenge would be getting board approval given past experiences with alt-fuels.

Interview Date	Notes
2/14/2017	The contact shared that their local governments fleet management division is currently under resourced. The prevailing attitude among leadership is that fleet management and related emissions are not a priority right now. The contact said that other large infrastructure projects are getting the bulk of attention. The contact is filling in for a fleet manager who had to take leave as well as an operations manager who was eliminated due to budget issues. It is all they can do to keep the current fleet running. The local government has several CNG vehicles, but do not have any BEVs or PHEVs. More support for training mechanics on new technologies would be beneficial. The contact would like more local training programs. The organization is part of a municipal planning group for LA and Orange County, but trainings are in these metropolitan areas. These travel requirements make it difficult for staff to attend because the organization eliminated budget for these trainings. The contact has test driven a Toyota Mirai and seemed impressed with the vehicle. They were familiar with the benefits of FCEVs, but was less aware of state activities to help fund the creation of a robust hydrogen fueling network. The contact said that they would be open to leasing a Toyota Mirai or other FCEV; however, they were not responsible for making these decisions about lease agreements. That is up to higher-level decision makers their Finance division. The contact said that a fuel incentive such as the one available for the Mirai would be helpful in making a case. When asked about the possibility of installing onsite hydrogen fueling infrastructure, the contact was declined to make a statement but expressed support for alternative fuels in general. They also felt that space constraints at their fleet yard would make it difficult to justify installing fueling infrastructure for hydrogen, especially if it is only used by a small number of vehicles. The contact said that there are several fueling station located near the fleet yard, including several Shell stations that the organization has a fleet fuel card agreement with. Installing hydrogen fueling stations at these Shell locations may be a better option since both the organization and residents could fuel FCEVs.

Interview Date	Notes
2/14/2017	The contact indicated that financial constraints are a barrier to FCEV adoption, as well as procurement of other alt-fuel vehicles. The limited availability of alternative fuels infrastructure and a lack of resources to fund installations of fueling/charging infrastructure was another barrier. The contact also said that they have a small staff of auto technicians working at the organization, so maintenance can be a challenge. To make maintenance more manageable, the contact is trying to consolidate like brands and technologies into the fleet, rather than diversifying. More local training programs would help train their team to work on a wider range of vehicles. Auto technicians currently must travel for trainings. There are currently 5 PHEVs in the fleet, and 5 or 6 standard HEVs (no plug). The local government has a Climate Action Plan in place that addresses fleet emissions; however, the contact was unable to recall specific details during the phone conversation. Procuring lower emission vehicles is a priority and environmental performance factors into purchasing decisions, but the dominant factor is the purchase price for vehicles. The contact had a basic knowledge of FCEVs, describing them as "very clean". The contact wasn't aware of FCEVs operating characteristics, so these were explained by the interviewer. The contact was also aware that the limited availability of hydrogen fuel is an issue, but didn't know that the state was helping fund the construction of 100 hydrogen fueling stations. If FCEVs "penciled out" financially and fuel became available in their area, the contact would consider adding FCEVs to the fleet. They said that purchasing FCEVs wouldn't be an option due to the higher vehicle costs and a lease agreement would be the only way their organization could incorporate an FCEV until prices fall. The contact was supportive of installing onsite fueling infrastructure, but a decision to install a hydrogen fueling station would need to involve higher level officials. He also said that there are nearby fueling station located less than a quarter mile to US 101 that could support shared public-private fueling.

Interview Date	Notes
2/16/2017	The contact said that the most significant barrier to getting cleaner vehicles into their fleet is the long routes that their vehicles need to travel along daily (150 to 200 miles). Due to these long trip distances, the organization has focused on clean diesel technologies for their fleet. The organization also has 2 propane vehicles and is installing a large 1000-gallon propane storage tank onsite. Propane will be used to fuel vehicles traveling shorter distances. The contact did not feel that pure electric vehicles would be an option now, but was open to incorporating all-electric options if they could reliably travel 200+ miles and fast charging infrastructure could be brought to the fleet yard. The contact said their organization fall outside of the two major areas where grant funds are being directed currently (i.e. very small and very large metropolitan organizations). The organization does not have any specific goals for reducing fleet emissions that they have adopted, but they do follow all ARB requirements for clean diesel vehicles. The contact indicated that more local programs to train mechanics would be helpful, especially for their propane vehicles. Specifically, mechanics are not trained to repair sensors on the propane vehicles that go out often, and OEM repair facilities for their propane buses are located 5 to 6 hours away. The contact was not familiar with FCEVs, so the interview explained the technology and the vehicle's operating characteristics. Information about state activities to help fund a hydrogen fueling network was also provided. After being briefed on the characteristics and benefits of FCEVs, the contact said that she would be open to incorporating these vehicles into the fleet if hydrogen fuel and larger FCEVs were available. There are only 3 manufacturers offering vehicles that meet the state specifications for their fleet. The contact said that they had not heard of any FCEV that are currently available or planned for release by these manufacturers. Shared public-private fueling would not be an option for the organization per the contact, but they would be open to working with their board to bring private hydrogen fueling infrastructure to the fleet headquarters. The contact said they stay up to speed on fleet management and alt-fuels through conferences and print publications.

Interview Date	Notes
3/1/2016	The contact indicated that major barriers to the adoption of alt-fuel vehicles at their organization included (1) the lack of availability for three-quarter ton plus trucks using alt-fuels, (3) funding constraints, and (3) infrastructure issues. Per the contact, the organization does not have a centralized fleet and departments are required to come up with their own funding streams for new vehicle procurement or replacement of older vehicles. Consequently, vehicles tend to be used until the end of their life. Their organization is working to create a centralized fleet system to support better fleet management. For the most part, vehicles used in their fleet operate on-site but there are a smaller number of fleet pool vehicles that are used for longer trips. A large portion of the alt-fuel vehicles in use are neighborhood electric vehicles that are charged using a standard 120-volt outlet. There are level 2 EV charging stations in some parking lots. The organization also purchased 2 bi-fuel trucks that use gasoline and propane. However, the propane fuel system took up a significant amount of payload capacity. Manufacture support has also been limited. The contact indicated that their organization has signed on to a Carbon Neutrality policy which seeks to have net zero carbon emissions by 2030. The organization has also developed a climate action plan. There are no specific goals in place for reducing fleet emissions. However, transition to low- and zero-emission technologies is a priority. The contact felt that a specific goal could help create greater alignment in fleet purchasing policies. The contact does not make the final purchasing decisions for fleet vehicles and indicated that the decision-maker above them have signed off on the purchase of larger, less fuel-efficient trucks than were recommended. Specific policies could help to address this issue. The contact said that 95% of all vehicle maintenance happens on-site, with repair services delivered by his team of automotive technicians. More local programs would help support training and cost savings. The contact also expressed a need for more manufacturer-specific training resources. The contact was not aware of the operating characteristics and benefits of FCEVs, nor were they aware of California's support for the construction of statewide hydrogen refueling network. After receiving basic information about fuel-cell electric vehicles and FCEVs, the contact indicated that they would be open to incorporating FCEVs into their fleet if they were affordable and hydrogen fuel was available on-site or nearby. Incentives such as free hydrogen fuel would help with FCEV adoption. The organization is located close to two major highways/freeways, so it could be an ideal location for hydrogen refueling infrastructure. The contact also indicated that there are several gas stations located nearby. If hydrogen were installed at these stations, FCEVs in their fleet could use a credit card to pay for hydrogen there. The contact relies heavily on a supervising technician for leading-edge information about the latest alternative fuels and technologies.